SACRAMENTO MUNICIPAL UTILITY DISTRICT
UPPER AMERICAN RIVER PROJECT
(FERC NO. 2101)

RECREATION DEMAND
TECHNICAL REPORT

Prepared by:

Devine Tarbell & Associates, Inc.
Sacramento, California

The Louis Berger Group
Oakhurst, California

Prepared for:

Sacramento Municipal Utility District
Sacramento, California

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7.2 Recreation Demand Study

7.2.1 Pertinent Issue Questions

The Recreation Demand Study addresses the following recreational resource questions:

8a. Does the project affect recreation at the following areas: Highway 50 at the turnoff for Ice House Road and Wentworth Springs Road?
27. Is there demand for trails under power line corridors? If so, what opportunities/constraints exist to use power line corridors as trails?
29. Is there a demand for flat-water recreation at Chili Bar reservoir? ***[This issue question was included in the strawman outline for the Demand Study however a separate study will be developed to address this question. See section 7.2.5 below.]***
30. Is there a need for connections between existing and future trails within and outside UARP? If so, are there opportunities to provide connections between existing and future trails within and outside UARP?
72. What are the regional recreational demands (current, past and projected) in view of the primary recreational opportunities on these projects?
73. Are the existing sport fishing opportunities adequate to meet existing and future recreation demand?

7.2.2 Background

The Recreation Demand Study will identify recreation activities, facilities, opportunities and services that are currently in demand (i.e., desired by recreationists) and may be in demand in the future. Demand for recreation will be assessed in the Project vicinity and at the regional level to provide context to the conditions in the Project vicinity. Past recreational demand will be assessed to provide a context of recreational trends.

7.2.3 Study Objectives

The objectives of this study include:

- Identifying the demand for recreation activities and opportunities
- Identifying the demand for recreation facilities
- Identifying the demand for recreation services
- Identifying trends in past and future demand
- Answering all pertinent issue questions listed above in 7.2.1

7.2.4 Study Area and Sampling Locations

Outdoor recreation demand (including trails) will be discussed at two levels: 1) regional and 2) Project vicinity, and the study area will correspond to these two categories. The study area defined as *regional* will include the Highways 50, 80, and 88 corridors, between the California Central Valley and the Highway 395 corridor. The study area defined as the *Project vicinity* will include the area generally within one-quarter of a mile of Project reservoirs (including locations or river access points in the High Country, Crystal Basin and Canyonlands), as well as other locations beyond the one-quarter mile zone identified in consultation with the ENF and other interested participants, and agreed to by SMUD. The discussion of demand in the Project vicinity will include site specific details regarding recreation activities, facilities, opportunities and services.

7.2.5 Information Needed From Other Studies

Data from recreation user interviews conducted as part of the Visitor Use and Impact Study and information from the Recreation Supply Study and use level information from the Visitor Use and Impact Study are needed to assess demand for recreation activities, facilities, opportunities and services in the Project vicinity. Question no. 29 will be answered in a separate study to be developed jointly with PG&E and SMUD.

7.2.6 Study Methods And Schedule

REVIEW OF PUBLISHED OR OTHERWISE AVAILABLE INFORMATION-A review of the following information sources will be conducted to obtain information on trends in regional recreation demand: California Statewide Comprehensive Outdoor Recreation Plan (1993), California Recreation Preference Study, El Dorado Trail Plan, El Dorado County Chamber of Commerce Tourism Plan, CDFG Hunting and Fishing License data, CDBAW boat registration data, ENF RIM data and LRMP's for ENF, TNF, LTBMU. Other sources of information that will be used will include websites with current research information on state and regional recreation trends. This review will be initiated during 2002 and completed by the spring of 2003.

INTERVIEWS WITH AGENCIES AND PRIVATE RESORT OPERATORS-Key operational staff will be contacted to obtain anecdotal information describing their perception or assessment of user demand in the Project vicinity in terms of past trends and predicted future trends. Attempts will be made to contact the managing staff at the following private resorts in the Project vicinity: Ice House Resort and Robbs Valley Resort. Campground hosts or other on-the-ground personnel will also be interviewed to obtain their perspective on trends and specific demand for facilities and services based on their observations or from their direct conversations with the recreation visitors. Interviews will be initiated in 2002 and completed by the spring of 2003.

7.2.7 Analysis

The information developed in this study will be used to describe the demand that exists locally and regionally for recreational activities, facilities, opportunities and services. The Recreation Needs Assessment will compare the results of the Recreation Demand Study and the Recreation Supply Study for recreation activities, facilities, opportunities and services to determine recreational needs that may be met by the Project and identified in the Project Recreation Plan.

7.2.8 Study Output

The study output will be a narrative report organized in two sections to discuss demand at the regional and Project vicinity levels. Charts, graphs and tabular data may be included to describe trends and projected demand for the range of activities and it will include the issue questions addressed, objectives, study area, methods, results, analysis, discussion and conclusions. The report will be prepared in a format that allows the information to be inserted directly into the Licensee-prepared Draft Environmental Assessment that will be submitted to the FERC with the Licensee's application for a new license.

7.2.9 Preliminary Estimated Study Cost

SMUD's consultant estimates that this study will cost $32,000 $\pm$ 20 percent.

7.2.10 Recreation and Aesthetics TWG Endorsement

This study plan was approved on February 22, 2002 by the following entities of the TWG: ENF, SWRCB, American River Recreation Association, NPS, and SMUD. This study plan will be sent out to other members of the Recreation and Aesthetics TWG for their consideration.

The Plenary Group approved this study plan on March 6, 2002. The participants at the meeting who said they could "live with" the study plan were: Taxpayers of EDC, ENF, Camp Lotus/ARRA, SMUD, EDC, PG&E, EDC Citizens for Water, PCWA, NPS, BLM, CDFG, California Outdoors, and SWRCB. None of the participants at the meeting said they could not "live with" the study plan.

7.2.11 Literature Cited

None.

RECREATION DEMAND TECHNICAL REPORT

SUMMARY

The demand for public recreation facilities, services and opportunities is investigated from various perspectives on regional and local levels. This study reports the review of research and planning documents, population forecasts, interviews with key contacts considered to knowledgeable about public demand and trends in recreation (use and activity) and results from visitor surveys conducted for the relicensing effort that pertain to recreational demand.

Regionally (California, Washington, Oregon, Alaska and, Hawaii), there will continue to be increasing numbers of people participating in outdoor recreation activities over the next 50 years. Land-based activities such as bird watching, hiking, backpacking, primitive area camping, off-road driving and walking are increasing in popularity whereas fishing, hunting, sailing and horseback riding are declining in popularity. In California and in the counties near the UARP specifically, there appears to be a decline in the number of fishing and hunting licenses issued over the past ten years. However, the UARP reservoirs appear to have a considerable amount of angling use.

National trends for motorized boating reflect overall stability. The number of motorized watercraft registered in California has increased over the last 30 years. However the growth trend has leveled off over the past ten years. Within El Dorado and Sacramento counties, there has been a slight increase in the number of motorized watercraft registered. The use of personal watercraft (PWC) has been growing steadily and about 15 percent of the vessels registered are PWC. The current trend in PWC registration is fairly stable.

The California Outdoor Recreation Plan reports that the population of California is approximately 34 million and it is projected to grow by 31 percent by 2020. Central Valley and Sierra Nevada foothill counties will see the largest increases in population and Hispanic and Asian/Pacific Islander ethnic groups will account for most of the growth. Seniors are another growing demographic segment of the population. Although recreational walking is the activity with the greatest participation, nature study and wildlife viewing are growing in popularity and are also preferred activities for Hispanics and seniors. Demographic changes may cause a rise in demand for opportunities for large group camping and picnicking, wildlife viewing, interpretive and educational programs and services and campgrounds that can accommodate recreational vehicles. The CORP reports that demographic shifts may also decrease the demand for hunting and fishing opportunities in the future. Mountain biking, scuba diving, kite surfing, wilderness backpacking, rock climbing, bungee jumping and hang gliding will continue to be popular activities in California. Off-highway vehicle (OHV) use is growing in the Pacific Region at an expected rate of 40% over the next 50 years. OHV use and geo-caching are increasing in popularity in California as well.

The El Dorado County Chamber of Commerce reported interest in promoting recreation activities that will increase tourism within the county. These activities include OHV use, mountain biking, cross-country skiing and whitewater boating. The El Dorado County General Plan supports these interests with objectives that include expanding trail systems, conserving and promoting the SFAR (whitewater boating), expansion of the ski industry, and development of additional camping facilities.

El Dorado County planning documents indicate the intent to develop trails and trailheads within the county that connect population centers to other cities and counties. There are five proposed locations in the county planning document that may provide linkages to the UARP.

Based on use figures from El Dorado County it appears that whitewater boating use has declined over the past seven years. However, tourism and recreational boating are increasing forms of recreational activities both in the region and in the local vicinity. The Forest Service observes an increasing demand for challenging whitewater opportunities and areas for ‘play boating’.

For dispersed recreation use at and near the UARP, SMUD’s estimate of over 67,000 recreation days in 2002 indicates that the demand for dispersed recreation opportunities at and near the UARP appears high. The most popular activities for visitors to the UARP include swimming, hiking/walking, fishing (lake or reservoir),

picnicking, and wildlife viewing. A minority of summer-time visitors surveyed expressed that changes or improvements were needed in the UARP. Overall the types of changes included: the expansion, as well as the reduction, of the OHV trail system, better signage for trails, more trails for biking, hiking and equestrian use, better trail maintenance, more boat/hike-in campgrounds, trails to access the shoreline, campsites closer to the shoreline, access and facilities for persons with disabilities, and to add restrooms and trash removal in some dispersed use areas. Some of the suggestions provided by winter-time visitors included: improving and expanding the areas plowed for access, opening campgrounds during the winter, managing OHV use during the winter, grooming trails, and to keep the access open to boat launches and improvements to the Loon Lake Chalet.

From the ENF perspective, the demand for most recreation opportunities will continue to rise. The ENF expects to see an increase in day use such as scenic driving, and picnicking. Also likely to increase are winter activities such as snowshoeing, snow play, cross-country and back-country skiing. The public has and will continue to demand more user comforts at developed recreation facilities such as boarding docks, flush toilets, showers and electrical hook-ups. Recreation facilities will need to be designed to respond to the demand for large group visitation and persons with disabilities. There will also be a growing demand for both motorized and non-motorized trails. Within the spectrum of bicycling activities, the ENF believes that there will more visitors seeking paved paths or trails for biking rather than dirt surfaced or cross-country types of bicycling experiences. There will also be an increase demand for interpretive opportunities for cultural and environmental resources. The demand for dispersed recreation opportunities and especially those opportunities located near water will continue to increase as well. The ENF believed there are decreasing numbers of users who participate in hunting, fishing and recreational shooting. However, there may be a slight increase in demand for wintertime fishing opportunities.

1.0 INTRODUCTION

This technical report is one in a series of reports prepared by Devine Tarbell & Associates, Inc., and The Louis Berger Group, Inc. for the Sacramento Municipal Utility District (SMUD) as an appendix to the SMUD's application to the Federal Energy Regulatory Commission (FERC) for a new license for the Upper American River Project (UARP or Project). This technical report focuses on recreation demand at the UARP and identifies recreation activities, facilities, opportunities and services that are currently in demand (i.e., desired by recreationists) and may be in demand in the future. This report includes the following sections:

- **BACKGROUND** – Includes when the applicable study plan was approved by the UARP Relicensing Plenary Group; a brief description of the issue questions addressed, in part, by the study plan; the objectives of the study plan; and the study area. In addition, requests by resource agencies for additions to this technical report are described in this section.
- **METHODS** – A description of the methods used in the study, including a listing of study sites.
- **RESULTS** – A description of the salient data results. Raw data where copious and detailed model results are provided in a separate compact disc (CD) for additional data analysis and review by interested parties.
- **FINDINGS** – A broad statement of report findings.
- **LITERATURE CITED** – A listing of all literature cited in the report.

This technical report does not include a detailed description of the UARP Alternative Licensing Process (ALP) or the UARP, which can be located in the following sections of SMUD's

application for a new license: The UARP Relicensing Process, Exhibit A (Project Description), Exhibit B (Project Operations), and Exhibit C (Construction).

Additionally, this technical report does not include a discussion regarding the effects of the UARP on recreational resources or associated environmental resources, nor does the report include a discussion of appropriate protection, mitigation and enhancement measures. A discussion regarding resource impacts associated with the UARP is included in the applicant-prepared preliminary draft environmental assessment (PDEA) document, which is part of SMUD's application for a new license. Development of resource measures will occur in settlement discussions, which will commence in late 2004, and will be reported on in the PDEA.

2.0 BACKGROUND

The UARP Recreation and Aesthetics Technical Working Group (TWG) developed a total of eight recreation studies to collect information to answer the issue questions relating to recreation resources associated with the UARP. This report contains the results of the Recreation Demand Study which is discussed below.

2.1 Recreation Demand Study Plan

On March 6, 2002 the UARP Relicensing Plenary Group approved the Recreation Demand Study Plan that was developed and approved by the Recreation and Aesthetics TWG on February 22, 2002. The study plan was designed to address, in part, the following issues questions developed by the Plenary Group:

Issue Question 8.	Does the project affect recreation at the following areas: Highway 50 at the turnoff for Ice House Road and Wentworth Springs Road?
Issue Question 27.	Is there demand for trails under power line corridors? If so, what opportunities/constraints exist to use power line corridors as trails?
Issue Question 29.	Is there a demand for flat-water recreation at Chili Bar reservoir?
Issue Question 30.	Is there a need for connections between existing and future trails within and outside UARP? If so, are there opportunities to provide connections between existing and future trails within and outside UARP?
Issue Question 72.	What are the regional recreational demands (current, past and projected) in view of the primary recreational opportunities on these projects?
Issue Question 73.	Are the existing sport fishing opportunities adequate to meet existing and future recreation demand?

Specifically, the objectives of the study plan were to:

- Identify the demand for recreation activities and opportunities
- Identify the demand for recreation facilities
- Identify the demand for recreation services
- Identify trends in past and future demand
- Answering all pertinent issue question listed above

As discussed above, this *Recreation Demand Technical Report* does not address UARP impacts or protection, mitigation or enhancement measures. Therefore, this report does not address Issue Question 8. In addition, this report does not address Issue Question 29: "Is there a demand for flat-water boating on Chili Bar Reservoir?" As described in the Recreation Demand Study Plan, a separate study will be developed by Pacific Gas and Electric Company and SMUD to address Issue Question 29.

Outdoor recreation demand (including trails) is discussed at two levels: 1) regional; and 2) UARP vicinity. The study area is defined as it corresponds to these two categories. The study area defined as *regional* includes the corridors of Highways 50, 80 and 88, between the California Central Valley, on the west, and Highway 395, on the east. The study area defined as the *UARP vicinity* is compartmentalized into three areas: reservoirs, developed facilities, and dispersed use areas. It includes the area generally within one-quarter of a mile of UARP reservoirs (including locations or river access points in the High Country, Crystal Basin and Canyonlands, as defined in the *Visitor Use and Impact Technical Report*), as well as other locations beyond the one-quarter mile zone identified in consultation with the ENF and other interest participants, and agreed to by SMUD. The discussion of demand in the UARP vicinity includes site-specific details regarding the demand for recreation facilities, opportunities and services.

2.2 Water Types

The Water Balance Model Subcommittee developed a recommendation for defining water types. However, these water types do not pertain specifically to the Recreation Demand Study.

2.3 Recreation TWG Determination of Adequacy

At the July 28, 2004, Recreation TWG meeting, the Recreation TWG determined that the *Technical Report on Recreation Demand*, dated February 2004, is adequate subject to all comments submitted by the TWG participants being incorporated into a new version of the report and reviewed by the Recreation TWG. Table 2.3-1 summarizes all comments and action items and references how each comment was addressed.

Table 2.3-1. Response to Recreation TWG comments on the *Technical Report on Recreation Demand* dated February 2004.

Comment	Reference
1. Link activities of visitors to regional activities. Use: EID EA (visitor surveys to Hwy 50 and 88 corridor information), Michael Tarrant 1991 as sources of information. (July 28).	Michael Tarrant was contacted however he stated he has not published any information about recreation demand that would be relevant to this geographic location. EID visitor survey data has been incorporated in Sections 4.3.3 and 4.4.8.
2. Investigate use patterns of different operators (managers) in the region. (July 28)	Additional interviews were conducted with recreation managers at El Dorado Irrigation District, Pacific Gas and Electric Company, City of Lake Tahoe, CLM President/CEO and Folsom Lake State Park. Results of these interviews are incorporated in Section 4.3.3.
3. Remove reference to LRMP growth rate projections; use growth projections that better represent actual visitors, activity trends and use estimates—from survey zip code data (paragraph 5, May 13, 2004 letter). (July 28).	All reference to the estimated growth projections published in the ENF LRPM has been removed from the report. An analysis of zip codes is provided in Section 4.3.
4. References to fishing and hunting license sales needs more clarification concerning that license sales are not a proxy for activities (paragraph 6, May 13, 2004 letter). (July 28)	Text has been added to Section 4.2.2 to explain that license sales are not a proxy for participation.
5. Statewide ethnicity trends may not reflect the trends of the UARP, however this need is not critical during the first approximately 10 years. (July 28)	Ethnic trends are discussed in Section 4.3.1.1 however the Recreation TWG did not request any specific changes to this section of the report.
6. The demographic information that was collected in the visitor survey effort should be included in the report – length of stay, frequency of visits, number in group, etc.	Tables have been added to the report that display the results of the length of stay, frequency of visits, and group size. This information is presented in Section 4.4.
7. Consult with ENF on who else should be interviewed. (July 28)	This was completed, and an additional interview was conducted with Fisherman's Warehouse. Multiple attempts were made to interview staff at RV dealerships, to no avail. The additional information collected is included in Section 4.3.3.7.
9. Include a discussion of the amenities identified in the visitor surveys. (July 28)	The results of the visitor surveys that indicate needed changes or improvements are included in Section 4.4.7.
10. Include a demographic discussion about effects of demographic changes. (July 28)	Discussion about demographic effects on demand are included in Sections 4.1.7 and 5.1.2.

Table 2.3-1. Response to Recreation TWG comments on the *Technical Report on Recreation Demand* dated February 2004.	
Comment	**Reference**
11. Change the tables in the report to eliminate percentage change. Calculate actual numbers. (July 28)	Percentage of change has been eliminated from the tables and graphs. Actual numbers have been calculated and presented.
12. Use estimates will be explained in the text. Off-line discussion needs to occur with ENF to modify use estimates (i.e., develop a range). (July 28)	Use estimates were developed in consultation with the ENF staff and information provided by the agency has been incorporated into Sections 4.5 and 4.6 of the report.
13. Add a discussion on a reservoir-by-reservoir basis, where applicable. Characterize the demand, where are they coming from, types of activities, etc., (from visitor surveys), include references of other studies appropriate. (July 28)	Section 5.2 includes a discussion of the existing and projected types of demand for reservoirs and geographic areas at and near the UARP.
14. Include the reporting of the turn-away days (as analyzed in consultation with ENF). (July 28)	The reporting of the turn-away days has been re-analyzed consistent with ENF consultation to present the data by weekday, weekend and holiday. This information is included in the report Appendix A.

3.0 METHODS

The methods used to collect data for this study included reviewing published or otherwise available information, and interviews with visitors, agency staff and facility operators. These methods are described in greater detail below.

3.1 Review of Published or Otherwise Available Information

Information reviewed for this study included:

- Recreation Trends and Markets: The 21st Century (Kelly and Warnick 1999).
- Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell 1999).
- Fishing and hunting license statistics from the California Department of Fish and Game website: www.dfg.ca.gov
- Boat registration information from the California Department of Boating and Waterways website: www.dbw.ca.gov
- California Outdoor Recreation Plan 2002 (CA Dept. of Parks and Recreation 2002)
- Public policy handbook of the El Dorado County Chamber of Commerce (revised January 4, 2002). www.eldoradocounty.org
- El Dorado General Plan, Parks and Recreation Element
- El Dorado County Master Trail Plan, Draft 1997 Revision

- El Dorado County Bicycle Transportation Plan, March 2001
- Public Opinions and Attitudes on Outdoor Recreation in California 1997 (CA Dept. of Parks and Recreation 1998)
- Eldorado National Forest (ENF) visitor use data 1999-2002 and various other information sources provided related to visitor use estimates.
- El Dorado County 2003 Preliminary River Use Summary, undated.
- Population Data and Projections from the California Department of Finance website: www.dof.ca.gov
- Fish and Wildlife Service National Survey of Fishing, Hunting and Wildlife, 2003.

3.2 Interviews with Key Contacts

Interviews with agency staff and recreation facility operators were conducted in the summer of 2002. The interviews were conducted using a list of questions developed to collect data for this study as well as other recreation studies. Additional interviews were conducted in 2003 and 2004 with recreational business representatives and Forest Service recreation officials. The data collected from these interviews were reviewed and used to characterize demand for recreation facilities, services and opportunities. Interviews were conducted with the following individuals:

Name(s)	Facility/Title	Date of Interview
George & Rosemary Lewis	Ice House 1/Campground Host	August 11, 2002
Irene Harpel	Sunset 1/Campground Host	August 11, 2002
Darryl & Sue Balderston	Loon Lake/Campground Host	August 19, 2002
Frank O'Halloran	Robbs Resort/Owner	August 28, 2002
Julie Wentworth	Ice House Resort/Owner	August 28, 2002
Jim Pence	Wench Creek/Campground Host	August 28, 2002
Sharon Figg	Wolf Creek/Campground Host	September 1, 2002
John Sailor	Sunset 3/Campground Host	September 1, 2002
John Young	AL&L[1] Area Manager	September 20, 2002
Laurel Brent-Bumb	Chief Exec. Officer, El Dorado County Chamber of Commerce	June 9, 2003
Susan Welter	The River Store, Coloma/Owner	October 24, 2003
Rob Henderson	REI, Sacramento/Store Manager	October 29, 2003
Ryan Bott	CA Canoe & Kayak/Store Mgr.	January 12, 2004
Lester Lubetkin	Forest Recreation Officer, ENF	January 29, 2004
Rich Platt	Resource Officer, Pacific RD-ENF	January 29, 2004
David Boyer	Recreation Officer, Pacific RD-ENF	January 29, 2004
Trini Juarez	Recreation Planner, FS Regional Office	February 12, 2004
Don Pearson	Director of Parks and Recreation, El Dorado Irrigation District	July 13, 2004
Francie Griffith	Folsom Lake State Recreation Area	July 13, 2004
Ross Jackson	Sr. Land Project Analyst, Pacific Gas and Electric Company	July 15, 2004

Name(s)	Facility/Title	Date of Interview
Jerry Mullen	Fisherman's Warehouse, Sacramento	August 20, 2004
Eric Mart	CLM[2], President/CEO	August 25, 2004
Red Wood	CLM, Operations Staff	August 25, 2004
Gary Moore	City of So. Lake Tahoe-Parks & Recreation Dept., Recreation Superintendent	August 26, 2004

[1]American Land and Leisure, ENF Concessionaire operating recreation facilities in Crystal Basin
[2]California Land Management, Forest Service Concessionaire operating recreation facilities at Lake Tahoe

3.3 Results from Surveys Collected for the Visitor Use and Impact Study

Interviews were conducted in 2002 and 2003 with recreation users at Crystal Basin and in the Canyonlands. Some of the questions included in the survey were designed to collect information about user preferences, latent demand and needed improvements. This information is used in this report to assess demand for recreation facilities, services and opportunities from the perspective of the recreation users in the UARP vicinity. The reader is referred to the *Visitor Use and Impact Technical Report* for a complete discussion of the visitor surveys conducted by SMUD.

3.4 Site Observations and Operations Staff Consultation

Information about specific sites that were described in the issue questions were reviewed to assess their suitability and to observe visitor use patterns. In the course of performing work associated with other studies in 2003, SMUD's staff observed the intersections of Ice House Road and Highway 50 and areas along Wentworth Springs Road. Anecdotal information was collected about the conditions of the sites observed.

Additionally, SMUD consulted with its operational staff about recreational uses that currently or which may potentially take place in the power line corridors of the UARP.

4.0 RESULTS

4.1 National Recreation Demand

National trends and participation rates are included as part of the overall evaluation of outdoor recreation demand. The following is a summary of national trends as estimated through the use of national marketing surveys that are completed each year for over 15,000 households and in recent years exceeded 23,000 to 25,000 households (Kelly and Warnick 1999). The authors of this publication recognize various limitations to understanding trends projections. In summary, they identified the following ideas as pertinent to an understanding of the limitations of trends projections:

- Research has indicated that there is no reliable correlation between expenditures on equipment and actual participation; and, ownership of equipment is not an accurate index of participation;

- Data collection on outdoor recreation participation surveys are not comparable; original data have been lost; and samples, activities studied, measures of frequency, and demographic measures vary from one study to another;
- Due to the limitations of data sources, analysis must be divided between long and short term trends, admitting that only the most dramatic shifts for long term trends can be identified with any confidence; short-term or over the last decade the statistical analysis is relatively precise. (Kelly and Warnick, 1999, pp. 6-7).

Kelly and Warnick acknowledged the complexities in 'looking ahead'. "This art, not science, always deals in likelihoods rather than sure-ities, in relatives rather than absolutes" (Kelly and Warnick, 1999, p. 9). The author's examined some of the trends particularly applicable to a recreation resources framework for projections:

4.1.1 Demographic Trends (Kelly and Warnick, 1999, pp. 11-12)

a) Growth towards an older population; better health and declining fertility.
b) Fertility and family size; decline in the number of children per family, with small projected increases in population under the age of 5 in the next 30 years.
c) Diversity in household composition; number of children living with two parents has declined; economic disadvantages of single parenting; and results of marriage dissolution and family instability.
d) Other demographic trends including: relatively stable size of population in the USA; half of growth in the US will be due to immigration from primarily southern Asia and Latin America; Baby Boom cohort is 40% larger than any other preceding cohort will continue to age as a 'population bulge.'
e) Education levels are higher for every succeeding cohort.

4.1.2 Economic Trends

4.1.2.1 Income and Employment (Kelly and Warnick, 1999, pp. 13-14)

a) Scope of economic enterprise is now global rather than national.
b) Long-term trend for the economy is a decline in rates of productivity growth.
c) Labor-intensive production is being shifted to regions with relatively low wages
d) The percentage of income spent on recreation remained fairly consistent (average of 6.5%) until the 1990's, increasing gradually about 1.5%. Expenditures since 1950 have been correlated with a growing economy.

4.1.2.2 Income and Wealth (Kelly and Warnick, 1999, pp. 14-15)

a) Conservative estimates from the Bureau of the Census in 1993 was that 20% of the population with the highest incomes received over half of the total income and the lowest 20% about 1 percent; another estimate is that within the US the highest 5% of the population possess 90% of the total wealth, and according to the Congressional Joint Committee, it is expected that these disparities are increasing.

b) Lowest end in earnings, up to 20%, has no discretionary income at all, while at the other end, 10% have enough to allocate significant amounts to leisure; leaving those in the middle class, approximately 70% spending estimated modest amounts between $500-$5,000 per year.
c) 'Unemployment and minimum wage jobs for the bottom 30% suggest that the marginal and sub-marginal household percentage may be increasing.' The results suggest that if the above trends continue, recreation markets will expand at the upper end, but reduced overall for the lower 60% of the population.

4.1.3 Employment Trends (Kelly and Warnick, 1999, pp. 15-16)

a) There has been a shift to service-sector employment and the service sector is more likely to employ women. Trends of increased employment for women in the workplace are long-term, with steady increases of 9% per year through the 50's, 60's, and 70's. Most women report that the primary motivation is economic. Yet most female employment is at the lower end of the income spectrum.
b) Current projections for households headed by two adults are that dual incomes will rise from 65% in 1990 to over 80% by the turn of the century.
c) Based on the trends towards service sector and employment, there has been a dramatic increase in irregular 'off-time' work schedules, resulting in a high percentage of the work force not working regular M-F, 8-5 schedules. Hence, recreation schedules may become more variable and 'less confined to traditional weekends, evenings, and vacations.'
d) Scarcity of time and increased discretionary income of two-income households places more emphasis on quality recreation choices.

4.1.4 Social Factors (Kelly and Warnick, 1999, pp. 16-17)

a) Stable Market Segments (relative to 'leisure lifestyles'):
    i. High-end consumers (major market high cost items, resorts, second homes, deluxe travel).
    ii. Blue collar workers (at-home and community programs and use of recreation resources with low cost)
    iii. Poverty Class (leisure close to home and relatively cost-free, television, informal interactions).

b) Changing Market Segments (relative to 'leisure lifestyles'):
    i. New class with university degrees (considerable discretionary income, residence base is important, urban and suburban in location, dual income households; sport, culture, and other community based engagements).
    ii. Middle mass (travel on budget by car, invest in major items such as boats or vehicles, employing local and regional resources).

c) Important factors affecting recreation choices for each of the socioeconomic groups and segments of the recreation market include: age, family status, gender and the amount of quality educational opportunity.

4.1.5 Leisure Resources

Kelly and Warnick (1999) have recognized the influence of changes in access to resources such as time, space (housing and energy costs), money, social resources, skills, and choices. *Time* addressed the time crunch affiliated with multiple role responsibilities, recognizing that acute work pressures may be on those with the greatest family role requirements. The role of *space* addressed the high costs of housing and energy are reducing the proportion of the population who live in detached homes with considerable recreation space. The impact of "high cost of indoor and outdoor space limits the expansion of public and business provisions for recreation" (p. 20). Hence activities that require costly space will be limited by the ability of agencies supported through tax dollars to provide it. *Money,* once again, focused on the distribution of income changing recreation market segments, increasing in the 'new' market segment, as well as those whose incomes are close to marginal, with the 'middle' mass category possibly reducing in size. *Social* resources look at family size, marriage dissolution, geographic mobility, and increased at-home entertainment affect the development of skills for activities that require regular interaction with others, such as team sports, political action, and organization building (p. 21). *Skills* specifically address higher education levels raising the skill repertoires for a variety of recreation activities. More people have opportunities with a range of activities, with skills being introduced at younger ages. *Choices* are greater for engagement in recreation than they were 20 years ago. One example is the increase in niche markets, multiple ways to bicycle. While trends indicate a movement towards greater recreational resources available to the public, the author's caution that these are neither universal nor consistent—as households with more discretionary income may have less time (Kelly and Warnick, 1999, pp. 19-20).

4.1.6 Leisure Lifestyles

Kelly and Warnick (1999) also note the influence of leisure lifestyles on participation. Based on the "20/80" rule utilized in estimating market demand, translated to recreation, this rule of thumb suggests that "20-25% of the most active participants in an activity do 80% of the total participation as measured by frequency and duration" (Kelly and Warnick, p. 21). Accordingly, this implies that the "20% who are most committed to an activity constitute 80% of the demand for resources, facilities, equipment, and instruction" (p. 21). Kelly and Warnick also suggested that for most activities, the dedicated percentage varies from 20-50%, relative to skill and conditioning requirements; and, the total market is slightly less than 80% (pp. 21-22). However, the author's state that in most cases, "a minority of participants constitutes the bulk of participation days and the major market for resources" (p. 22). Additionally of that committed minority, 20-30% engaged in their chosen activity with any regularity.

4.1.7 National Market Trends by Activity

Utilizing the National Sporting Goods Association (NSGA) and Simmons Market Research Bureau (SMRB), 1995, Study of Media and Markets, Kelly and Warnick compiled national projections for outdoor recreation activities. The following is a summary of their work.

4.1.7.1 Canoeing

NSGA data reported by Kelly and Warnick suggests that there is stability with slight fluctuation with canoeing activities. Eighty percent of the people who canoe at all have identified the activity occurring occasionally. Authors have suggested that it is likely that it will continue as an occasional activity, yet also imply that the promotion of kayaking may lessen the demand for canoeing. (Source: Kelly and Warnick, 1999, p. 121)

4.1.7.2 Power boating

Power boating is another activity with a wide range of styles and costs associated to the activity. Trend data are available since 1979 and depict stability through 1990 at 6%, with a slight decline of 4.5-5% during 1991-1995, with a return to 6% in 1995-1996. Based on the 1995 rates, 7.5% were male compared to 5.3% female. Power boating is skewed towards higher incomes, with 11% high and 5% moderate incomes, highest rates of participation for 25 to 55 year olds. Midlife adults, younger 'Boomers' are the growth segments, especially among college graduates with more likely disposable income. Some of the speed boating market may be lost to jet skiing, for which data was just starting to be collected at the time of this publication. Some growth is expected, but not likely to be more than 2-4% over the next ten years. (Source: Kelly and Warnick, 1999, pp. 94-97)

4.1.7.3 Rafting/Kayaking

According to Kelly and Warnick, SMRB has not tracked rafting and kayaking—only the NSGA. The total participants increased significantly from 2.5 million in 1995 to 3.9 million in 1996. While authors suggest both whitewater and social rafting were in a growth phase, these estimates are considered limited. (Source: Kelly and Warnick, 1999, pp. 121)

4.1.7.4 Visiting beach or waterside

Within the national trends data, Kelly and Warnick also mention picnic as part of this activity. The overall rates since 1990 have increased from 8% to 10%. This is considered a 'general activity' with little significant market segmentation differences with the exception of those having children at home (higher rates), those with higher education or income (make trips at a 35% higher rate). As a classic family activity, there is a decline with age, resulting in some decline as 'Boomers' children leave home. (Source: Kelly and Warnick, 1999, pp. 173)

4.1.7.5 Fishing (Freshwater)

According to Kelly and Warnick, market segmentation for a particular form of fishing or locale requires site-specific analysis, because attractive and/or accessible resources may run against national trends. Due to the proximity of the project to freshwater access, only freshwater fishing and fly fishing will be reported. Adult fishing is gendered overall, with males fishing at twice the rate of females. Due to the inclusive nature of the activity, education, income, marital status, and household composition do not identify markets significantly. Cost and fishing style are correlated to income however. While there are no strong growth segments, Kelly and Warnick

state that those 35 and older have seen some increase, suggesting that 'Boomers' are the most likely target for potential growth—especially if they introduce children to the activity. Stylistic markets need to be analyzed separately to ascertain target markets for investment in the future. (Source: Kelly and Warnick, 1999, pp. 115-117)

4.1.7.6 Fly Fishing

Fly fishing is a niche activity, with no long-term trend data available. Authors suggested that "such a specialized niche activity does not tend to have dramatic changes in either direction." The core market is composed of those who have developed the skills and place high priority on the activity. Participation rates by age stay relatively stable until the age group 55-64, at which time they drop by over 2%, and then halve again at the 65 years and older category. (Source: Kelly and Warnick, 1999, pp. 120-121)

4.1.7.7 Hunting

Based on national market research (Simmons Market Research Bureau, Study of Markets, New York, NY), participation rates for hunting nationally have declined from the 70's through 1991, with some rebound in the mid-90's; however rates are still under 10% (Kelly and Warnick, 1999, p. 107). Kelly and Warnick (1999) indicated that males with a history of hunting were considered to be a dedicated core market. However, as noted within Simmons Market Research data (1980, 1985, 1990, 1995), participation rates have dropped most among those under the age of 35; with the most dedicated markets aging and not being fully replaced by succeeding generations (Kelly and Warnick, 1999, pp. 108-109). In summary, Kelly and Warnick (1999) have suggested that demographics of aging, coupled with reduced access to resources have indicated a sustained gradual decline as probable. (Source: Kelly and Warnick, 1999, pp. 107-109)

4.1.7.8 Backpacking

SMRB adult surveys yields 5 to 9 million backpackers (95 to 143 million participation days) during 1995, with an overall growth rate of just over 1 percent a year. The rate in the Western United States is over 3 times that of the rest of the country. Growth is fastest for females, those over the age of 55, and those with low incomes, even though the participation of low income households in urban areas is relatively low. (Source: Kelly and Warnick, 1999, pp. 94-97)

4.1.7.9 Hiking

Kelly and Warnick suggest that hiking is somewhat difficult to discern from backpacking to extended walking. The adult trend data begin in 1979 and show fluctuation, in part because of the way in which hiking has been defined. Both SMRB and NSGA data suggest an overall growth trend, with a particular rebound in the 1990's, rising to over a 12% growth rate in 1996. Growth is somewhat higher for older adults including 65 and over, suggesting 'Boomers' of both genders may be the likely growth market. Recent upward trends suggest long term growth, accelerated by expanding safe and accessible hiking venues, especially within local trail systems (Source: Kelly and Warnick, 1999, pp. 102-104)

4.1.7.10 Horseback riding

Horseback riding in the context of the national trends and market report is also varied in the types of riding people engage in—from formal competitive indoors (western, English, dressage, jumping) to lessons in rural rental stables, to trail riders that may engage once a year. The general trend includes all of the above and has been relatively stable since 1979. However, during 1995 and 1996 there was a slight upturn in participation 5.6% and 6.1% respectively. The most significant growth was among those committed to some form of riding and who rode regularly. In general, Kelly and Warnick suggested that riding remained a niche activity with overall stability or only slight increases likely. (Source: Kelly and Warnick, 1999, pp. 104-106)

4.1.7.11 Camping (includes primitive and developed)

Based on the results of Kelly and Warnick's work, the SMRB camping market reports included a range of both developed and undeveloped site use, as well as a range of equipment use, from tents to RV's. While the overall trend from 1979-1994 showed a gradual decline with a rate of just under 15%, there were indications of a rebound to 12.6% in 1995 and nearly 14% in 1996. Growth would appear to be among families with school-age children. The upward trend documented during 1995 and 1996 was general, without clear segments. Kelly and Warnick also suggested an increase among single parents in safe and accessible environments. (Source: Kelly and Warnick, 1999, pp.97-100)

4.1.7.12 Mountain and Rock Climbing

Trend data for adults is available from 1993 and from households including children and adults from 1990. Various activities include climbing high-tech rock faces, mountain expeditions, and relatively simple climbing of more accessible faces. The results of participation suggest that this is an age-graded activity, with an 8% rate for those 18-24, falling to 3% for age 25-44, 3 % for 45 to 54, and 1% for those 55 and older. The core growth market as suggested by Kelly and Warnick are the young with adequate incomes, particularly located in the West. This core growth market is not growing in size and likely to remain a niche activity. (Source: Kelly and Warnick, 1999, pp. 111-113)

4.1.7.13 Mountain Biking

Trend data for mountain biking were short term, and recently mountain biking has been sub-divided into off-road and on-road (trail) biking. Mountain biking is a growth niche activity and in the initial stages of its growth cycle. The SMRB data for two years show a slight decline from 5% to 4.7% from 1995-1996. Authors conclude that the short-term trend data are not reliable and the likelihood is that growth may be peaking, yet the plateau level is still undetermined. The market is male dominated (60%), with participation by the relatively young. Growth areas may be in households with children old enough to participate, yet it remains "a strenuous resource-based activity with built in limitations in environments and requirements." Kelly and Warnick state that "one critical factor [in projected growth] will be access to back-country trails versus

limits placed by those who are concerned with resource degradation (Source: Kelly and Warnick, 1999, pp. 109-111)

4.1.7.14 Sailing

Trend data is available from 1979 for sailing activities. Sailing is varied from low to high end, competition to vacation cruises, with fluctuating declining trends overall. Kelly and Warnick explain that sailing has had a long-term but irregular decline. It is a niche activity with an estimated 5 million participants. The age decline is gradual, with participation of college graduates sailing 40% higher than those with some college. Those with high incomes have sailing participation rates over double those of moderate income, and sailing is twice as high among singles. Authors project that if any growth occurs at all, it would be with "mid-lifers who can afford substantial leisure toys." While sailing competition has generally been with youth, more active sailing such as sailboarding is likely to erode this market over time (Source: Kelly and Warnick, 1999, pp. 127-128).

4.1.7.15 Walking for Exercise

Due to its engagement of a growth population segment (older adults), walking has one of the clearest growth trends as a designated activity. The overall rate has risen from 19 percent in 1988 to 35 percent in 1995 and 1996. The annual change rate is 10 percent, and those that walk do so regularly (80 percent). While there is no gender bias, any significant market differentiation by education level, moderate or high income, or marital status, walking is lease common in the Southeast and Northeast, with the highest by 20% in the West. Even with slight decline in age participation rates, older adults are still participating at relatively large proportions: 7% for 55 to 64, and 9.5 percent for 45 to 54 ages, with 65 and over retaining about 3 percent. The 'Boomers' are the major growth market as they age. "The sizable core of walkers is likely to remain strong in the next decade with possible spillover to indoor venues and treadmills (Source: Kelly and Warnick, 1999, pp. 56-57).

Note: The following activities included in the regional reports were not addressed nationally within the Kelly and Warnick analysis, *Family gathering, Off-road driving, Picnicking, Sightseeing, Non-consumptive wildlife activities, Non-pool swimming, Visiting historic places.*

4.2 Regional Recreation Demand

4.2.1 Outdoor Recreation in American Life: A National Assessment of Supply and Demand Trends (Cordell 1999)

One of the most comprehensive documents for market and trend analysis specific to outdoor recreation both nationally and regionally, is: Outdoor Recreation in American Life: A National Assessment of Supply and Demand Trends (Cordell 1999). Within the text, trends and forecast demand for outdoor recreational activities at both national and regional levels are discussed. While this publication included an assessment of recreation demand over a much larger region than the study area, the activities and trends discussed in this publication are relevant to the

UARP, due to the central California location and proximity to large population centers. Nationally, trends and future projections point toward continued increases in the number of participants, trips, and activity days for outdoor recreation across nearly all types of recreation activities. Land-based activities, rather than activities that occur on water or snow and ice, constituted the largest single category of outdoor recreational participation.

The report distinguishes between activity days, primary-purpose trips, and overall participation rates. Nationally the five fastest growing outdoor recreation activities through the year 2050 measured in **activity days** are expected to be: visiting historic places (116% growth), downhill skiing (110% growth), snowmobiling (99% growth), sightseeing (98 percent growth), and non-consumptive wildlife activity (97 percent growth). Activities expected to grow the slowest with regards to **activity days**, included fishing (27% growth), primitive camping (24% growth), cross country skiing (18% growth), off-road vehicle driving (7% growth), and hunting (minus 2% growth). (Cordell 1999, p. 349).

With respect to annual **primary-purpose trips**, the five fastest growing outdoor recreation activities through the year 2050 are expected to be: downhill skiing (122% growth), biking (116% growth), snowmobiling (110% growth), sightseeing (98% growth), and developed camping (80% growth). The five slowest growth activity areas as measured by primary-purpose trips are expected to be: hunting (6% growth), primitive camping (0% growth), off-road vehicle driving (minus 22% growth), family gatherings (minus 25% growth), and picnicking (minus 45% growth).

Lastly, the report summarized the five fastest growing and slowest growing outdoor recreation activities through the year 2050 as measured by the **number of participants**. The five fastest growing relative to numbers of participants are expected to be: cross-country skiing (95% growth), downhill skiing (93% growth), visiting historic places (76% growth), sightseeing (71% growth), and biking (70% growth). Subsequently, the five slowest growing outdoor recreation activities measured by participants are expected to be: rafting (26% growth), backpacking (26% growth), off-road vehicle driving (16% growth), primitive camping (10% growth), and hunting (minus 11% growth) (Cordell, 1999, p. 349).

Overall **days spent** and **numbers of participants** in winter, water-based, and developed land-based activities will, in general, grow faster than the population (Cordell, 1999, p. 349). Along with other dispersed land-based activities, hunting and fishing (consumptive use activities), are not expected to increase in both activity days and participation numbers as fast as population growth, with the exception of non-consumptive wildlife activities (both developed and dispersed).

Perhaps more applicable to the UARP area under study were the Pacific Region Analyses which included Alaska, California, Hawaii, Oregon, and Washington states. Based on the findings of the regional analysis, water and land-based activities will shift toward fewer **primary-purpose trips** per capita while at the same time there will be **more days spent** on these activities as well as **more participants in these activities**. The projected change in various recreational activities is summarized below in Table 4.2-1.

Table 4.2-1. Baseline (1995) and projected participation for activities in the Pacific Region, 2000 to 2050. (Source: Cordell 1999)							
Activity	**Estimated No. of Participants (Millions)**						
	1995	**2000**	**2010**	**2020**	**2030**	**2040**	**2050**
Water-based Activities							
Canoeing	1.2	1.27	1.45	1.56	1.81	2.03	2.27
Motorboating	6.3	6.74	7.69	8.32	9.58	10.65	11.89
Non-pool swimming	11.6	12.30	13.8	14.96	16.59	18.21	19.95
Rafting/Floating	2.3	2.42	2.76	2.99	3.50	3.98	4.53
Visiting Beach or waterside	20.70	22.36	25.05	27.53	30.22	33.12	35.60
Fishing	7.5	7.88	8.40	9.00	9.23	9.75	10.35
Hunting	1.7	1.60	1.45	1.34	1.24	1.14	1.09
Non-consumptive Wildlife Activities	16.70	18.04	20.54	22.88	25.38	27.56	29.56
Land-based Activities							
Backpacking	3.80	3.99	4.26	4.67	4.71	5.09	5.55
Hiking	1.09	1.18	1.34	1.46	1.67	1.82	1.98
Horseback riding	2.40	2.52	2.83	3.10	3.50	3.86	4.25
Off-road driving	4.70	4.89	5.17	5.64	5.64	5.92	6.25
Primitive camping	5.60	5.88	6.33	6.89	7.11	7.56	8.06
Rock Climbing	1.70	1.75	1.80	1.97	1.90	2.06	2.28
Biking	9.80	10.39	11.66	12.64	13.82	14.99	16.17
Developed camping	8.80	9.33	10.47	11.62	12.76	13.99	15.22
Family gathering	19.30	20.65	23.16	25.09	27.41	29.72	31.85
Picnicking	15.80	16.91	18.96	20.70	22.75	24.33	25.75
Sightseeing	18.50	20.17	23.31	26.27	29.23	32.19	34.60
Visiting Historic Places	13.80	14.90	16.84	18.35	20.15	21.8	23.18
Walking	133.70	137.71	149.74	161.78	173.81	185.84	195.20

4.2.2 California Department of Fish and Game

Another source of data utilized were the sale of hunting and fishing licenses. Generally, hunting and fishing license purchases have declined since 1992. Because residents and visitors may purchase and choose to use or not use their licenses anywhere in the state, this information is considered to be one of several sources used to evaluate the demand for fishing and hunting within the UARP.

Within the state of California, the number of fishing and hunting licenses issued has declined between 1992 and 2001, with a slightly static period since 1998. Table 4.2-2 below summarizes the number of hunting and fishing licenses issued by the State of California from 1992 to 2001.

Together, Sacramento and El Dorado counties represent the largest population centers in the region. Additionally, because the majority of visitation to the UARP comes from Sacramento and Eldorado counties (see Table 4.4-1) that depend on the sites or areas visited, the number of licenses issued was also explored specific to these counties. Data showing fishing and hunting license issuance specific to these counties are shown in Figures 4.2-1 and 4.2-2. Within El Dorado and Sacramento counties the number of licenses parallels the statewide average, decreasing since 1992. These trends are also consistent with national market trends within the United States as reported by the NSGA and SMRB data. With respect to hunting activities,

decreased rural populations, residential urban sprawl, and loss of environments to other use has contributed to a decline in hunting activities (Kelly and Warnick, 1999). With respect to fishing, as noted by Kelly and Warnick (1999), trend data for stylistic markets need to be analyzed separately to ascertain target markets for investment of resources in the future; and, at present there is not sufficient trend data to project fly fishing estimates.

Table 4.2-2. Hunting and fishing licenses issued by the State of California from 1992 to 2001. (SOURCE: CDFG 2003)

	Fishing Licenses			Hunting Licenses		
	Sacramento County	**El Dorado County**	**All CA Counties**	**Sacramento County**	**El Dorado County**	**All CA Counties**
1992	118,746	16,507	1,248,907	31,584	2,822	287,291
1993	122,225	13,569	1,269,368	29,754	1,321	269,853
1994	97,975	12,916	1,234,839	24,400	1,688	253,447
1995	79,331	14,531	1,163,881	23,939	1,619	244,247
1996	81,065	15,048	1,155,072	23,203	1,488	288,004
1997	81,486	14,924	1,137,273	22,853	1,466	223,993
1998	76,903	14,438	1,076,366	22,346	1,422	222,552
1999	78,590	14,052	1,062,676	22,528	1,264	222,183
2000	80,213	14,194	1,054,315	22,195	1,021	217,293
2001	79,634	13,565	1,022,363	22,000	1,068	217,573

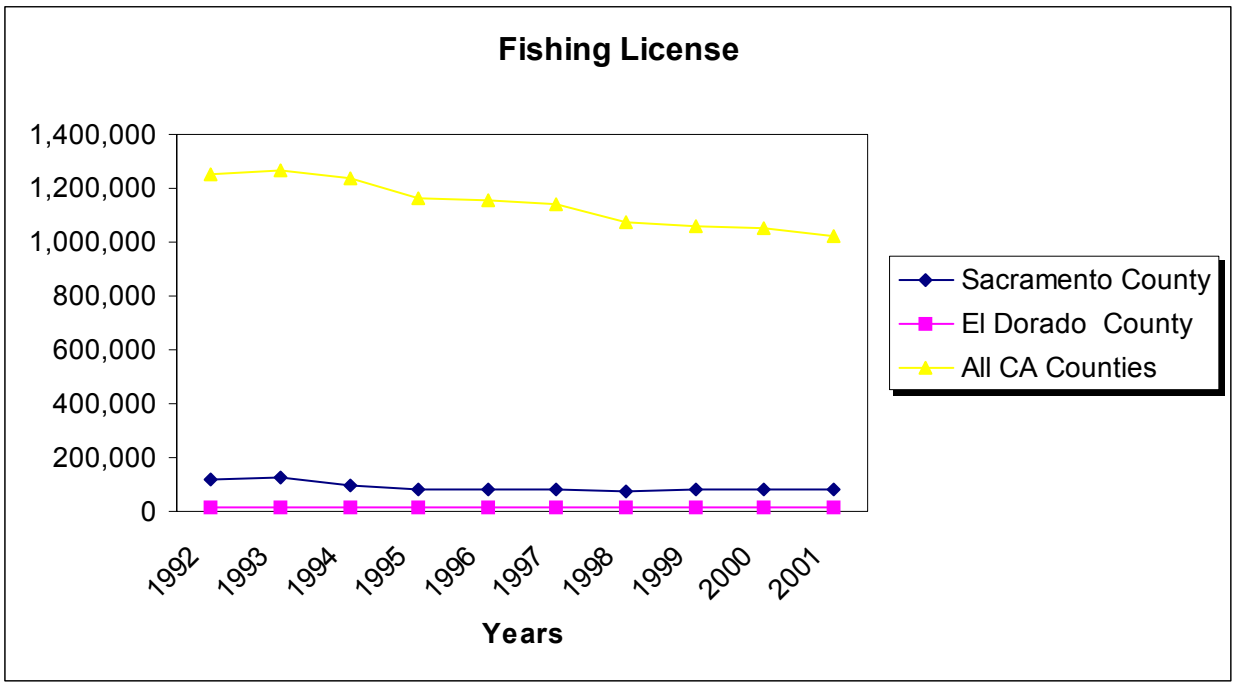

Figure 4.2-1. Fishing licenses issued by the State of California from 1992 to 2001. (SOURCE: CDFG 2003)

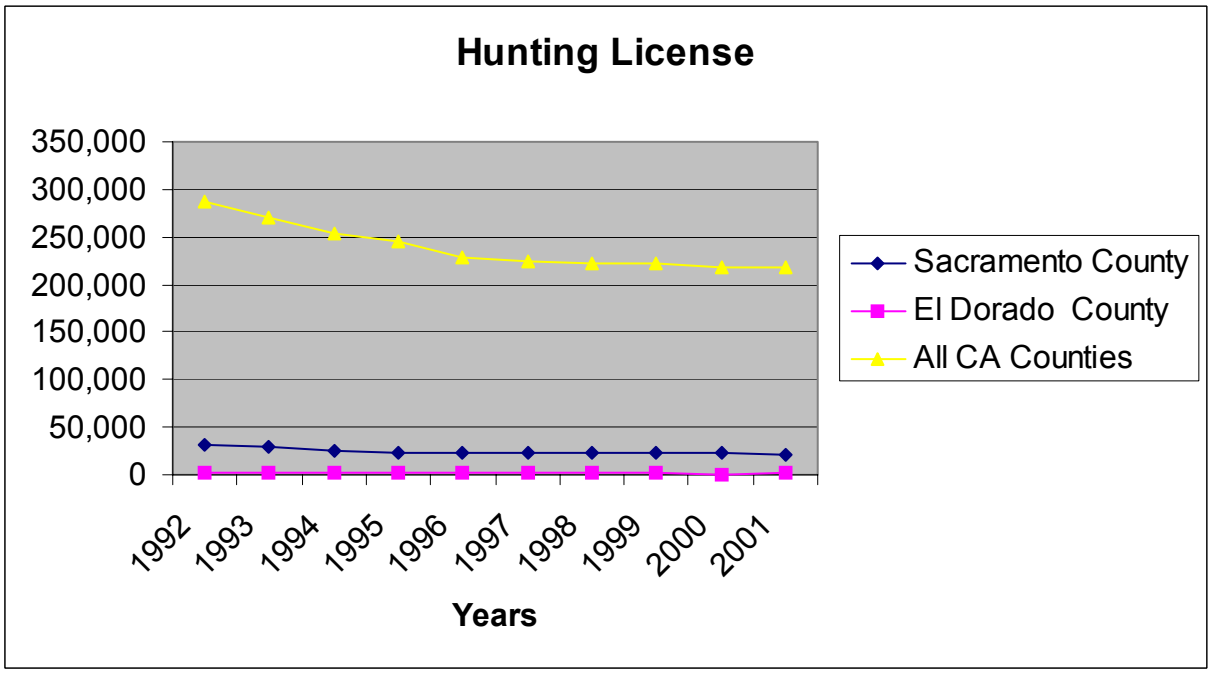

Figure 4.2-2. Hunting licenses issued by the State of California from 1992 to 2001. (CDFG 2003)

Trends in hunting and fishing in California are also discussed in the 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, California (FWS 2003). The report estimates that 2.3 million of the 2.4 million anglers in the state are California residents. Similarly, an estimated 261,000 of the 278,000 hunters in the state are California residents. Looking at trends in the numbers of hunters and anglers who reside in California, the number of anglers has decreased 12 percent and the number of hunting participants has decreased 48 percent between 1991 and 2001. The trend indicated from this information source is consistent with other data sources referenced above.

4.2.3 California Department of Boating and Waterways

Table 4.2-3 below summarizes the vessel registration data from 1970 to 2002 and Figures 4.2-3 through 4.2-6 show graphical representations of these data. The data are presented for all vessels, including personal watercraft (PWC), in California. Registration data for Sacramento and El Dorado counties are also presented due to the significant proportion of the visitors in the region reside in these counties. Sacramento and El Dorado counties include the largest population centers in the region. For El Dorado and Sacramento counties, the number of registered watercraft appears to be fairly static. PWC registration in California began to rise in 1993 and it has been fairly constant since 1997. PWC registration within Sacramento County shows a slight increasing trend over the past ten years, which appears to be continuing. PWC registration within El Dorado County has been fairly constant since 1997 and this trend appears to have a slight decrease in 2002, but generally stable.

Table 4.2-3. Number of vessels registered in California and in the counties of Sacramento and El Dorado, 1970-2002.

	Total No. (including PWC) in CA	Total No. (including PWC)/1000 CA population	No. of Vessels (including PWC) in Sacramento County	No. of Vessels (including PWC) in El DoradoCounty	Total No. of Personal Watercraft in CA	No. of Personal Watercraft Registered in Sacramento County	No. of Personal Watercraft Registered in El Dorado County
1970	420,800	20.7	28,140	2,660	N/A	N/A	N/A
1980	556,000	23.6	32,891	4,662	N/A	N/A	N/A
1990	795,335	26.7	42,530	9,905	N/A	N/A	N/A
1991	818,143	26.7	43,754	10,683	N/A	N/A	N/A
1992	822,430	26.3	43,708	11,014	N/A	N/A	N/A
1993	829,157	26.1	43,397	11,429	91,000	N/A	409
1994	841,311	26.2	43,044	11,675	110,255	2,582	543
1995	860,672	26.6	43,473	12,172	113,639	2,795	572
1996	881,092	27.3	43,933	12,694	141,264	3,450	815
1997	894,347	27.3	44,117	12,956	154,264	3,747	965
1998	894,725	26.9	43,953	13,054	160,919	3,952	992
1999	954,716	28.3	46,689	13,928	171,891	4,222	1,051
2000	904,843	26.2	44,409	13,350	169,989	4,340	979
2001	967,909	27.8	47,674	14,423	181,875	4,734	1,072
2002	896,090	25.5	45,324	13,899	157,687	4,603	919

Source: California Department of Boating and Waterways 2003

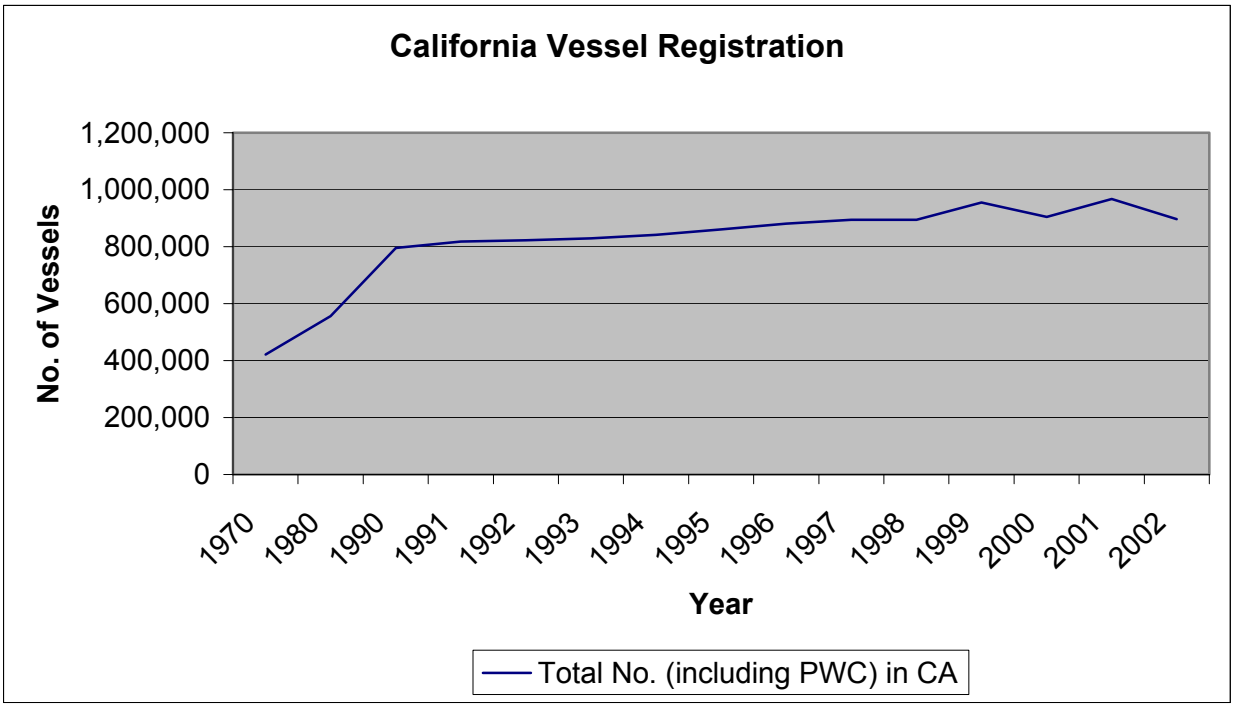

Figure 4.2-3. Number of vessels registered in California 1970-2002. (CDBAW 2003)

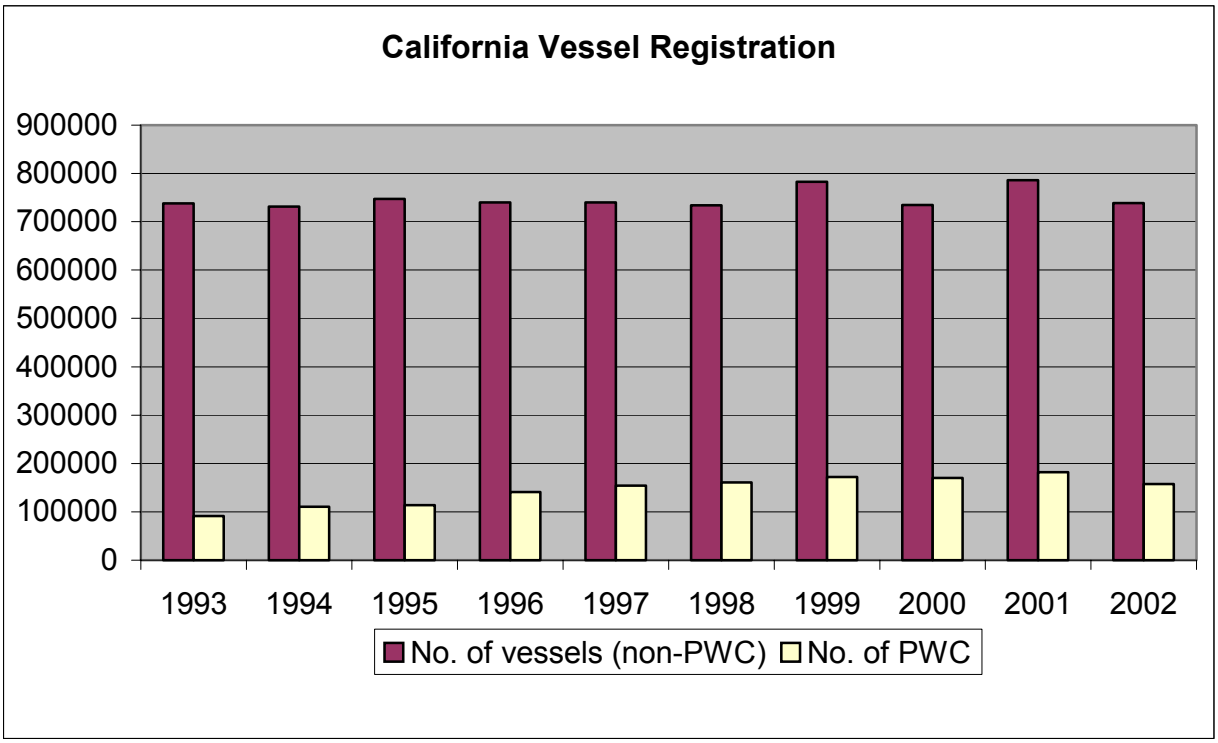

Figure 4.2-4. Number of vessels registered in California 1993- 2003. (CDBAW 2003)

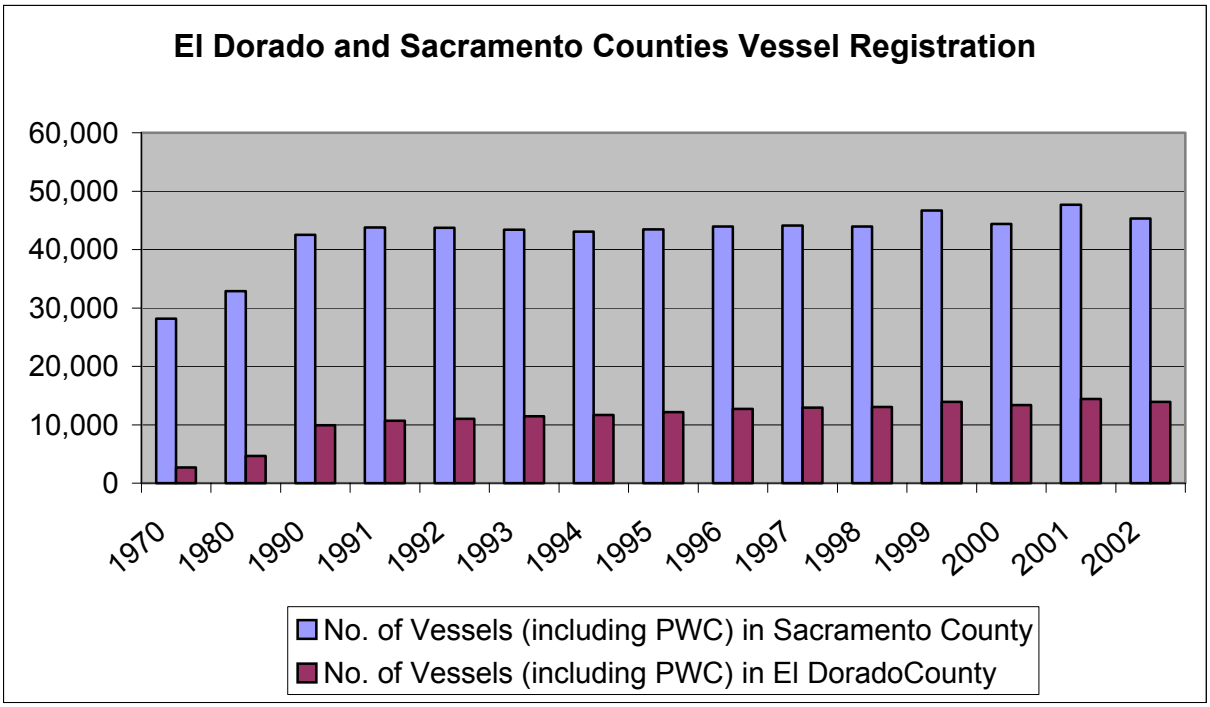

Figure 4.2-5. Number of vessels registered in Sacramento and El Dorado counties 1970 to 2002. (CDBAW 2003)

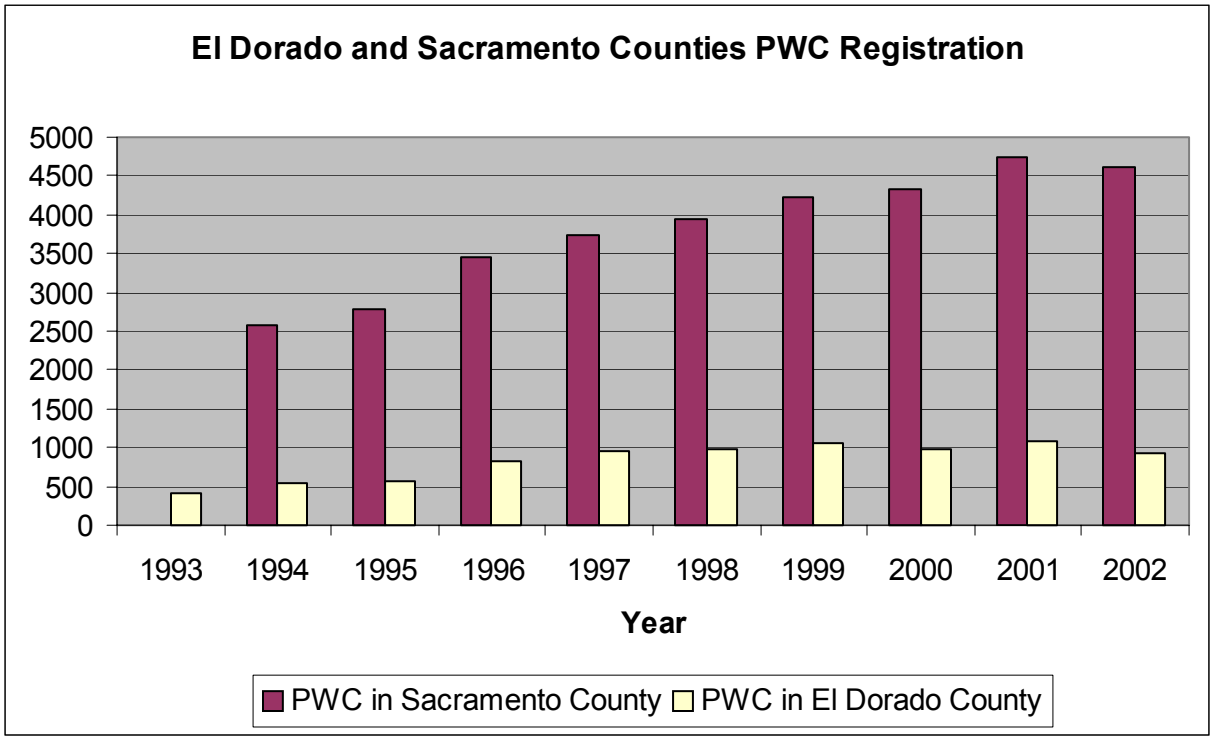

Figure 4.2-6. Number of PWC registered in Sacramento and El Dorado counties 1993 to 2002. (CDBAW 2003)

4.2.4 California Outdoor Recreation Plan

SMUD reviewed the California Outdoor Recreation Plan (CORP) prepared by the California Department of Parks and Recreation (2002) to acquire information about recreation demand. Although the CORP does not pertain to specifically to public lands such as the ENF, portions of the report that pertain to recreation demand are summarized here to provide a regional context.

According to the CORP, during the 1990's California's population grew from 30 million to 34 million people, with projections for 2020 population increasing by 31 percent. The high-growth rate counties are primarily located in the Central Valley and foothills of the Sierra Nevada. Hispanic and Asian/Pacific Islander populations account for most of the growth over the last decade. This trend is projected to continue, with California's Hispanic population growing by 58 percent and the Asian/Pacific Islander population increasing by 55 percent. At the same time, Californians of European descent will increase slightly at a projected 4 percent. Another growing segment of the population are persons between the ages of 55 to 75 years. As life expectancy and good health increase, there will be approximately twice as many people who will be more active for a longer period of time in the future than currently exists.

Population growth trends combined with the majority of the state's citizens (75%) acknowledging the importance of outdoor recreation to a quality life, indicate that the demand for public and private outdoor recreation opportunities and open space will continue to grow.

Traditional outdoor recreation activities remain popular and will increase into the future. According to the CORP, Californians spend most of their time participating in activities that require less equipment, and need fewer technical skills. Californian's top 15 recreation activities, in order greatest to least participation, include:

1	Walking (recreational)
2	Visiting museums, historic site
3	Use of open grass or turf areas
4	Driving for pleasure
5	Beach activities
6	Visiting zoos and arboretums
7	Picnicking in developed sites
8	Trail hiking
9	Swimming in lakes, river, ocean
10	Attending outdoor cultural events
11	General nature and wildlife study
12	Attending outdoor sports/events
13	Camping in developed sites
14	Swimming in outdoor pools
15	Bicycling (on paved surfaces)

Non-consumptive wildlife activities such as nature study, bird watching, and wildlife viewing are growing in popularity. These activities are also listed as preferred by Hispanics and seniors which are two growing demographic segments of the population. Interest will also continue in adventure recreation activities (i.e., mountain biking, scuba diving, kite surfing and wilderness backpacking) and high-risk recreation activities (i.e., rock climbing, bungee jumping and hang

gliding). There is a growth trend in Off-Highway vehicle (OHV) use which has increased in popularity over the past seven years in California. Geo-caching is an emerging recreation activity. This activity is essentially a modern day treasure hunt using Global Positioning System devices. Activities with declining popularity in California include hunting and fishing. The CORP states that U.S. Fish and Wildlife Service found that among California populations, Blacks and Hispanics are far less likely to hunt and fish than the general population.

The CORP reports six issues associated with recreation management in California, including a corresponding list of actions necessary to address these issues. The majority of actions described within the report fall into political, financial, programmatic categories, or prescribe planning and do not provide specific guidance that can be used to assess what priorities the State has for providing various recreation opportunities. However, the action items corresponding to the issue statements provide some indication of the California Department of Park and Recreation priorities for recreation and are listed in Table 4.2-4.

Table 4.2-4. Pertinent issues and action items included in the CORP. (SOURCE: California Outdoor Recreation Plan, 2002)	
Issue No. 1	**The Status of Parks and Recreation**
Action Item No. 7	Support efforts that emphasize the elements of the park and recreation field most valued by the general public; i.e., contributions to their "quality of life", bringing families together, and investing in their children. Pursue legislation, grant programs, and agency initiatives for developing a "Child's Bill of Rights for California Outdoors
Issue No. 3	**Access to Public Park and Recreation Resources**
Action Item No. 5	Establish and fund inclusive camping programs at three selected sites to bring individuals with disabilities, youth, elderly and ethnic groups together for educational and recreational experiences. These three sites will serve as models for inclusive camping and will include family camp experiences, multi-generational programs and leader training on ADA, activity adaptation, safety and design. Educational support should come from recreation educators.
Issue No. 4	**Protecting and Managing Natural Resource Values**
Action Item No. 4	Adopt a statewide environmental education program and code of ethics for appropriate use of parks and recreation areas and make materials readily available for any public, private and non-profit provider.
Action Item No. 5	Enter into an agreement with the California Department of Education or local school districts to create a partnership to develop outreach plans to educate youth on preserving and protecting natural resources.
Action Item No. 6	Natural systems should be prioritized for restoration and a funding source should be identified where overuse and misuse has compromised the ecological integrity of an area.
Issue No. 5	**Preservation and Protection of Californian's Cultural Heritage**
Action Item No. 1	Increase the number of significant private and publicly owned historic resources that are protected and preserved in all geographic regions of the state, conducting a gap analysis for missing or under represented cultural themes to serve as a priority guideline for future acquisitions.
Action Item No. 5	Promote education, training, and outreach programs on the values of historic preservation.

4.2.5 Public Opinions and Attitudes on Outdoor Recreation in California

The Public Opinions and Attitudes on Outdoor Recreation (POAOR) in California (Dept. of Parks and Recreation 1997) includes an assessment of demand for recreation opportunities in the state. The report ranks the public's participation in 43 different recreation activities. These are listed below in Table 4.2-5.

Table 4.2-5. Listing of recreation activities in no. of participation days, a characterization of existing latent demand for these activities in California and how each activity ranks among activities studied in the POAOR.

Activity (Listed in Order of Greatest to Least No. of Participation Days)	Characterization of Existing Latent Demand (High, Medium or Low)	Ranking of Activities with Latent Demand (1=activity with the greatest existing latent demand)
Walking (Recreational)	High	1
Driving for pleasure	Low	18
Use of open grass or turf areas	High	11
General nature wildlife study	High	7
Beach activities (sunning, games)	High	10
Bicycling (on paved surfaces)	Moderate	16
Swimming (in outdoor pools)	Moderate	17
Trail hiking	High	3
Visiting museums, historic sites	High	5
Swimming in lakes, rivers, ocean	High	6
Picnicking in developed sites	High	13
Jogging and running	Low	25
Use of play equipment, tot-lots	Moderate	14
Attending outdoor sports	Low	19
Camping in developed sites	High	2
Visiting zoos and arboretums	High	8
Attending outdoor cultural events	High	4
Fishing – freshwater	High	12
Softball and baseball	Low	34
Basketball	Low	42
Golf	Low	20
Skateboarding and rollerblading	Low	32
Camping in primitive areas	High	9
Power boating	Low	30
Mountain biking (not on paved surfaces)	Low	22
Fishing - saltwater	Low	24
Soccer	Low	33
Horseback riding	Moderate	15
4-wheel drive off paved roads	Low	29
Target shooting (pistol & skeet)	Low	26
Other non-mechanized winter sports	Low	31
Tennis	Low	36
Motorcycles, dirt bikes, ATV's	Low	28
Downhill (Alpine) skiing	Low	27
Kayaking, rowboating, canoeing	Low	21
Water skiing	Low	35
Hunting	Low	23
Mountain climbing	Low	39

Table 4.2-5. Listing of recreation activities in no. of participation days, a characterization of existing latent demand for these activities in California and how each activity ranks among activities studied in the POAOR.		
Activity (Listed in Order of Greatest to Least No. of Participation Days)	**Characterization of Existing Latent Demand (High, Medium or Low)**	**Ranking of Activities with Latent Demand (1=activity with the greatest existing latent demand)**
Surfing	Low	41
Football	Low	43
Cross-country skiing	Low	38
Sailboating and windsurfing	Low	37
Snowmobiling	Low	40

(Source: POAOR 1997)

The report also includes a comparison of the study results between Hispanics and non-Hispanic respondents. This comparison shows some differences in the latent demand for different activities between the two ethnic groups of respondents. This comparison is shown in Table 4.2-6 below.

Table 4.2-6. Comparison of latent demand for recreation activities between Hispanic and non-Hispanic respondents. (SOURCE: POAOR 1997)		
Activity	**Hispanic**	**Non-Hispanic**
Walking (Recreational)	High	High
Trail hiking	Moderate	High
Camping in developed sites	Moderate	High
Camping in primitive areas/backpacking	Moderate	High
General nature study	Moderate	High
Use of open grass or turf areas	High	Moderate
Use of play equipment	High	Moderate
Picnicking in developed sites	Moderate	High
Visiting museums, historic sites	High	High
Visiting zoos and arboretums	High	Moderate

(Source: POAOR 1997)

The POAOR also stated the top five factors that brought Californians to outdoor recreation areas. These were:

1. The opportunity to be outdoors;
2. Relax;
3. Enjoy the beauty of the area;
4. The quality of the natural setting; and,
5. The release or reduction of tension.

The California Department of Parks and Recreation conducted the fourth POAOR survey in 2003. At the time this report was prepared the final report was not yet prepared however SMUD reviewed the preliminary findings of this report that were available on the department's website. The preliminary findings revealed that outdoor recreation continues to be important to Californians. When survey participants were asked to compare how much time they spend in

outdoor activities compared to five years ago, their responses were almost equally split between 'more', 'less' and 'about the same' amount of time. The respondents also felt that governmental agencies should place more emphasis on: 1) protecting natural resources; 2) protecting historic resources; 3) improving existing facilities; 4) educational programs; 5) maintaining recreation areas; 6) purchasing parkland/open space; 7) organized activities/events; and, 8) new facilities. Respondents were also asked how strongly they agreed or disagreed with a series of statements. The statement that most of the respondents (over 95%) strongly or moderately agreed with was, 'Maintain outdoor recreation's natural environment.' The statements that received the lowest agreement (60% to 75% of those surveyed) included, "Need more camping/overnight recreation areas", "Need more developed campgrounds," Outdoor recreation areas and facilities are too crowded," and, "Provide some private services in public recreation areas."

4.2.6 Campers in California: Travel Patterns and Economic Impacts

The publication, Campers in California, Travel Patterns and Economic Impacts (Dean Runyan Assoc. 2000) provides demographic information for camping activity from 1999-2000. Although these findings are specific to camping, this information is presented to provide a context for trends in outdoor recreation. Important findings in this report that relate to the UARP include:

- The majority of camping trips are one week or less.
- Most camping trips are to locations within 300 miles of the visitor's residence.
- Vehicles used to travel to campgrounds are most often trailers or motor-homes/RV's.
- Over half of all campers have no children at home; more than eight out of ten campers have one or two adults.
- Few campers are under thirty years old; nearly two-thirds are over 50.
- About one out of eight campers is non-white.
- Walking/day hiking, sightseeing and picnicking are popular with all campers.
- More than one-third of all public camping expenditures are in the High Sierra and Central Coast regions.
- California campers are predominantly empty nesters and retired people.
- Non-whites in California are relatively less likely to be campers.

Comparative data between non-white and white users are also included in the report. In general, the data show that non-white users tend to have fewer camping trips per year and travel shorter distances to camp than white users. Fifty one percent of non-white users camp using tents whereas only 20 percent of white users camp in this manner; the majority (38.8%) of white users prefer motor-homes/RV's. Although both ethnic groups tend to camp with at least two family members, 48 percent of non-white users and 25 percent of white users camp with three or more adults. Additionally, 15.2 percent of non-white users camp with seven or more adults as compared to 5.5 percent of white users.

The top 12 most popular activities listed in the report by percentage of interview responses are listed below in Table 4.2-7. The most notable comparison is for fresh water fishing which indicates that this activity is more popular with non-white users than white users.

Table 4.2-7. Most popular camping activities, 1999-2000 by ethnic groups. (SOURCE: Dean Runyan and Associates 2000)

Activity	Non-White Users (% of respondents)	White Users (% of respondents)
Walking/Day Hiking	82.4	73.4
Sightseeing	57.7	68.0
Picnicking	55.1	29.2
Photography	39.7	27.9
Museum/Historical Site	23.0	27.5
Swimming	37.4	25.2
Bike Riding	30.9	23.0
Fresh Water Fishing	46.7	18.7
Nature Study	27.0	18.9
Group Outing/Reunion	19.2	19.1
Bird Watching	19.4	15.3
Attend Fair	12.4	12.8

The report concludes that non-white campers are more than twice as likely to travel in an auto, van or truck with a tent than white campers; white users tend to camp in motorhome/RV's. Non-white campers are with family and friends slightly more often and average 5.9 years younger than white campers. Non-white campers are more than twice as likely to participate in fresh water fishing. Conditions that would be necessary to motivate people to take more camping trips were also summarized in the report. Although the most popular response was 'Easier to Reserve Sites', non-white users had more affirmative responses to this question than white users. This seems to indicate that there are more circumstances that would have to change in order to motivate non-white users to take more camping trips. Most notable is that twice as many non-white campers as white campers would take more trips if they had more participation of family/friends in their trips. Two and one-half times as many non-white campers said that 'Safer Campgrounds' would motivate them to take more camping trips.

4.2.7 Regional Demand for Whitewater Boating

As the demand for outdoor recreation increases nationally, the demand for whitewater recreation is also continuing to grow (Cordell 1999). However, within California, the Forest Service reports that whitewater boating use on traditionally popular rivers is stable and in some cases, private boating has been decreasing (USDA 2001). Despite the decreases reported on some rivers, there are other rivers with dramatic increases in private boating use, such as Cherry Creek, considered a Class V run. The Forest Service attributes this increase to a growing demand for more extreme experiences on river reaches that are now accessible because of advances in boating design and paddling techniques. Commercial boating has remained relatively constant in California with variability in use often affected by water year type (USDA 2001).

Commercial businesses in Sacramento and El Dorado counties, including REI, California Canoe & Kayak and The River Store, reported that their sales of whitewater boating equipment have been steady or declining over the past few years. Recently, REI has discontinued selling whitewater boats. Each of these businesses perceived a transition occurring from whitewater boating to touring and recreational boating. They attribute this shift to an aging population that enjoys paddling without the physical demands required for whitewater boating. On the SFAR, one of the most popular whitewater boating runs in the nation (Cordell 1999), both private and commercial boating has decreased over the last 11 years (EDC 2003).

The El Dorado County 2003 Preliminary River Use Summary reports the estimated boating use on the SFAR between Chili Bar Reservoir and Folsom Lake from 1992 to 2003 (preliminary figures for 2003). This information is shown in Table 4.2-8 and Figure 4.2-7.

Table 4.2-8. Estimated annual whitewater boating use on the SFAR, 1992 to 2003.

	Non-commercial Use	Commercial Use
1992	37,100	78,800
1993	47,000	91,500
1994	45,000	73,000
1995	42,500	105,000
1996	48,700	94,450
1997	45,900	90,750
1998	32,000	76,900
1999	38,000	80,900
2000	33,800	89,100
2001	15,200	45,750
2002	26,500	60,100
2003	30,400	58,000

Source: El Dorado County 2003

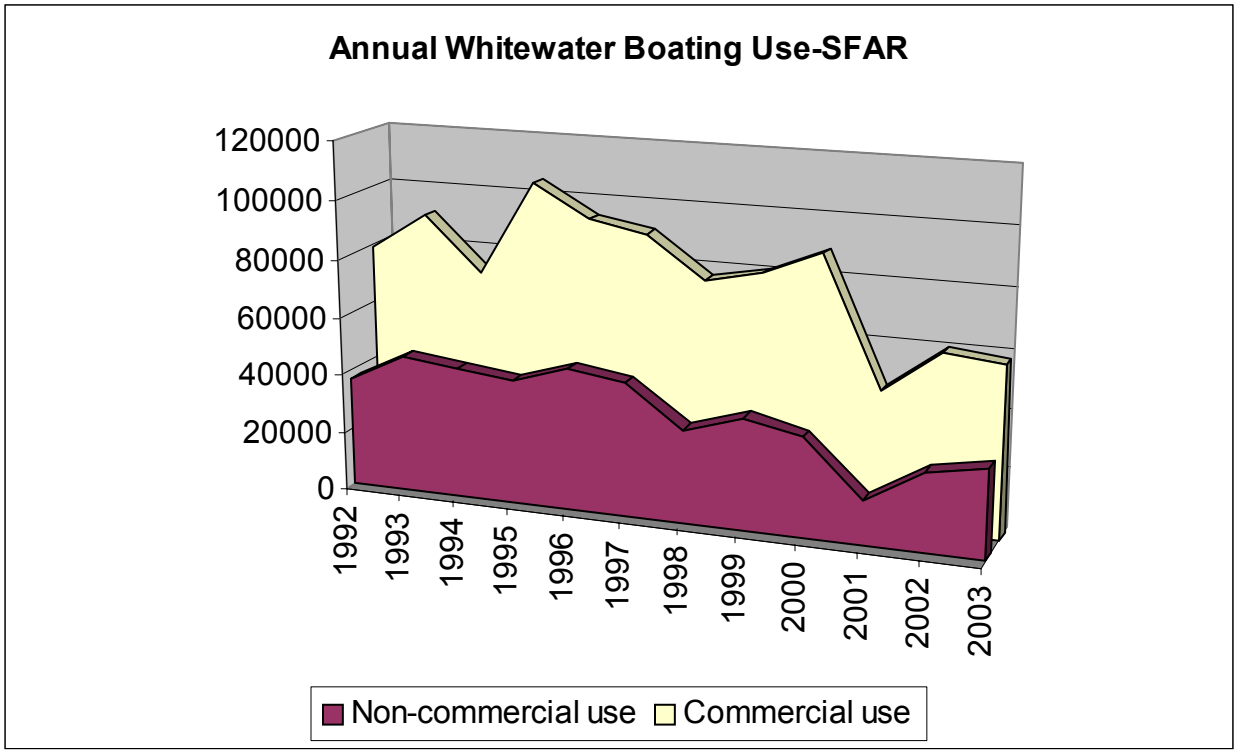

Figure 4.2-7. Estimated annual whitewater boating use on the SFAR, 1992 to 2003 (El Dorado County 2003).

An estimate of commercial and non-commercial whitewater boating use on weekends for 1996, 2000, 2002 and 2003 on the SFAR between Chili Bar Dam and Folsom Reservoir is also included in the report. The figures provided in Table 4.2-9, show the estimated use over the past seven years during weekends has declined. Note that in recent years the Licensee, Pacific Gas and Electric Company and representatives of the boating community have worked together annually to schedule reliable releases of whitewater boating flows from Chili Bar Dam.

Table 4.2-9. Average estimated weekend whitewater boating use on the SFAR-Chili Bar to Folsom. (Source: El Dorado County 2003)

Gorge Run (Saturdays)			
	Commercial	**Non-Commercial**	**Total**
1996	1,752	54	2,296
2000	1,569	433	2,003
2002	1,070	468	1,536
2003	925	424	1,471
% change 1996-2003	47% decrease	22% decrease	37% decrease
Chili Bar Run (Sundays)			
	Commercial	**Non-Commercial**	**Total**
1996	1,015	420	1,435
2000	847	261	1,100
2002	511	223	734
2003	506	263	768
% change 1996-2003	50% decrease	37% decrease	46% decrease

4.3 Recreation Demand At and Near the UARP

Recreation research has shown that demographic factors such as age, race or ethnicity, gender, income, education and previous experience influence recreation behavior. While all these factors play a role in estimating recreation participation the greatest changes taking place in the next 50 years are increases in population and real income (Cordell 1999). To assist in understanding of visitors to the UARP, state and county trends are reported, as well as trends specific to the population above the age of 16, which has been reported on national and regional levels specifically related to recreation.

The State of California Department of Finance reports demographic information at state and county levels. Based on the visitor surveys in 2002-03, and the Project 184 survey data, the majority of people who visit the area were residents of California. Additionally, the survey results indicated that the majority of visitors surveyed (77% for developed sites) reside in El Dorado or Sacramento Counties (see Table 4.3-1). The Project 184 data also support this research, with a majority of visitors reporting their residence El Dorado and Sacramento counties. Therefore, projected population growth for the entire state as well as El Dorado and Sacramento counties is relevant to the discussion of projected recreation demand in the region.

Table 4.3-1. Summary of UARP visitors primary residence 2002-03. (Source: *Visitor Use and Impact Technical Report*, 2004)

Survey Area	County of Primary Residence (by percent)						
	El Dorado County	Sacramento County	Bay Area[2]	Placer County	Yolo County	other / no response	Total
Developed (all four reservoirs)	24	43	15	4	4	10	100%
Developed – Ice House Reservoir	21	46	15	5	4	9	100%
Developed – Union Valley Reservoir	30	38	16	2	3	11	100%
Developed – Gerle Creek Reservoir	11	45	19	4	5	16	100%
Developed – Loon Lake Reservoir	21	46	11	6	4	12	100%
Dispersed (all four reservoirs)	19	40	25	3	2	11	100%
Dispersed – wilderness trailhead	8	36	28	4	12	12	100%
Dispersed – Canyonlands	78	14	5	0	3	0	100%
Winter – Crystal Basin	48	30	10	5	5	2	100%
Winter – Loon Lake Chalet only	33	29	28	0	2	8	100%

These results (Table 4.3-1) are also consistent with ENF data from the National Visitor Use Monitoring surveys conducted at Ice House Road, with results indicating that 68 (32%) of visitors interviewed at Ice House Road, 2003, resided in El Dorado County and 79 (37%) resided

in Sacramento County. (see Table 4.4-1). Together, these two counties account for the majority of visitors surveyed at Ice House Road during 2003, with a total of 69 percent.

4.3.1 Population Projections for Residents of Sacramento and El Dorado Counties

El Dorado and Sacramento counties have been experiencing a steady population growth rate exceeding the State average. Growth projections into the future indicate that this trend will likely continue through 2030. Projected growth rates for El Dorado and Sacramento counties and the State are provided in Table 4.3-2 and shown graphically in Figures 4.3-1 and 4.3-2.

Table 4.3-2. Historical and projected annual average compounded population growth rates. (Source: *Socioeconomic Conditions Technical Report*)

Area	1990-1995	1995-2000	2000-2004	2004-2010	2010-2020	2020-2030
El Dorado County	2.6%	1.8%	1.5%	1.9%	1.6%	1.2%
Sacramento County	1.4%	1.8%	2.2%	2.6%	2.3%	1.7%
California	1.2%	1.4%	1.6%	1.4%	1.1%	0.9%

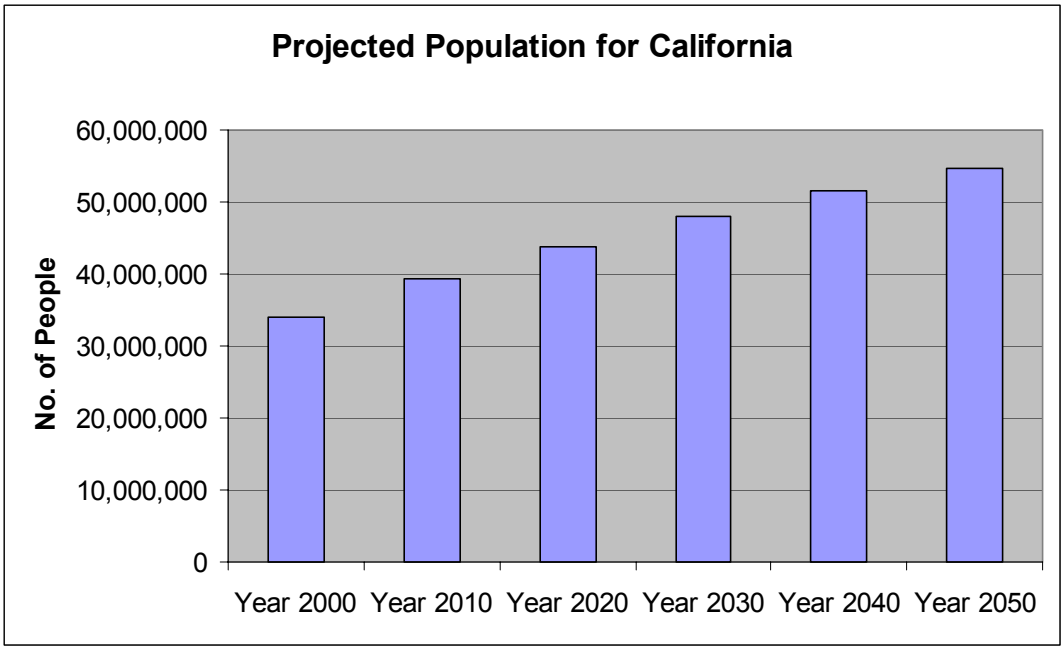

Figure 4.3-1. Projected population growth in the State of California. (SOURCE: State of California, Department of Finance 2004)

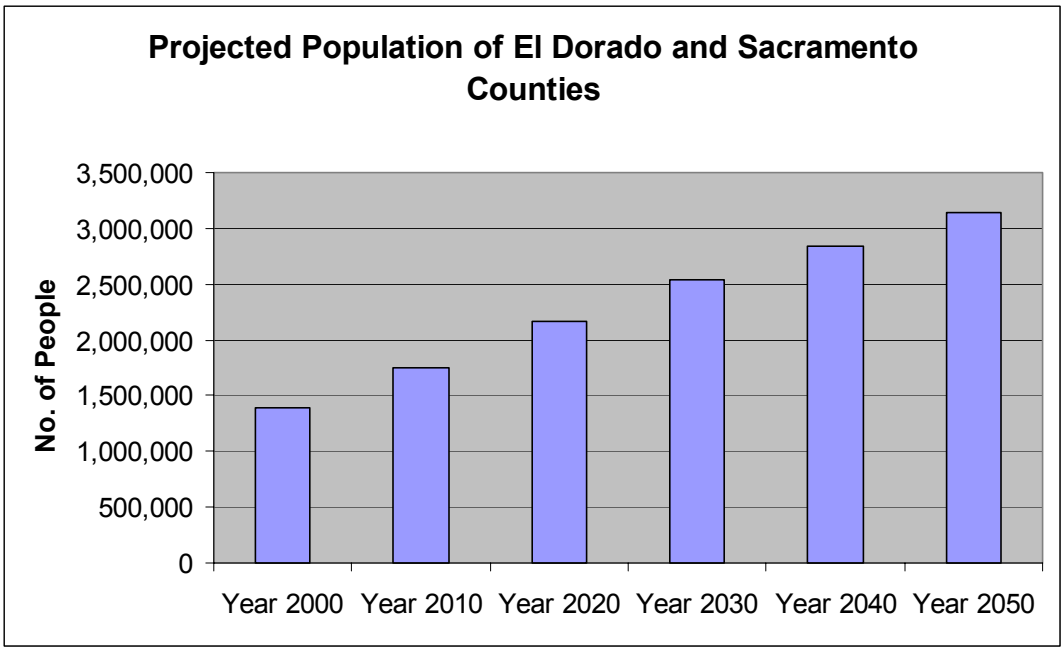

Figure 4.3-2. Projected population growth of El Dorado and Sacramento counties combined. (SOURCE: State of California, Department of Finance 2004)

In addition to reviewing the overall population trends, the trends of county populations age 16 and older was investigated. This information assists in calculating and comparing activity participation trends based on national and regional averages, which used populations 16 and older. This includes those individuals that are not institutionalized.

Estimates developed from the California Department of Finance, shown in Table 4.3-3, indicate that un-incarcerated populations 16 and older will grow at a significantly higher rate in Sacramento County (average of 16% over the next 50 years) than El Dorado (average of 12% over the next 50 years) or the state of California (average of 10% over the next 50 years). The growth rate estimates are utilized in calculations estimated participation in selected activities shown in Tables 4.8-2 to 4.8-7.

Table 4.3-3. Projected population over 16 years of age, un-incarcerated, of El Dorado and Sacramento counties. (Source: State of California, Department of Finance 2004)

Year	El Dorado County	Sacramento County*	California
2000	122,229	921,702	25,759,469
2010	154,102	1,192,514	30,657,165
2020	180,363	1,481,591	34,303,139
2030	203,571	1,762,728	37,764,237
2040	218,338	1,993,598	40,383,297
2050	229,509	2,210,471	42,670,661

*This data represents Dept. of Finance estimates minus California Department of Corrections average 2003 population for Folsom Prison and the California State Prison, Sacramento.

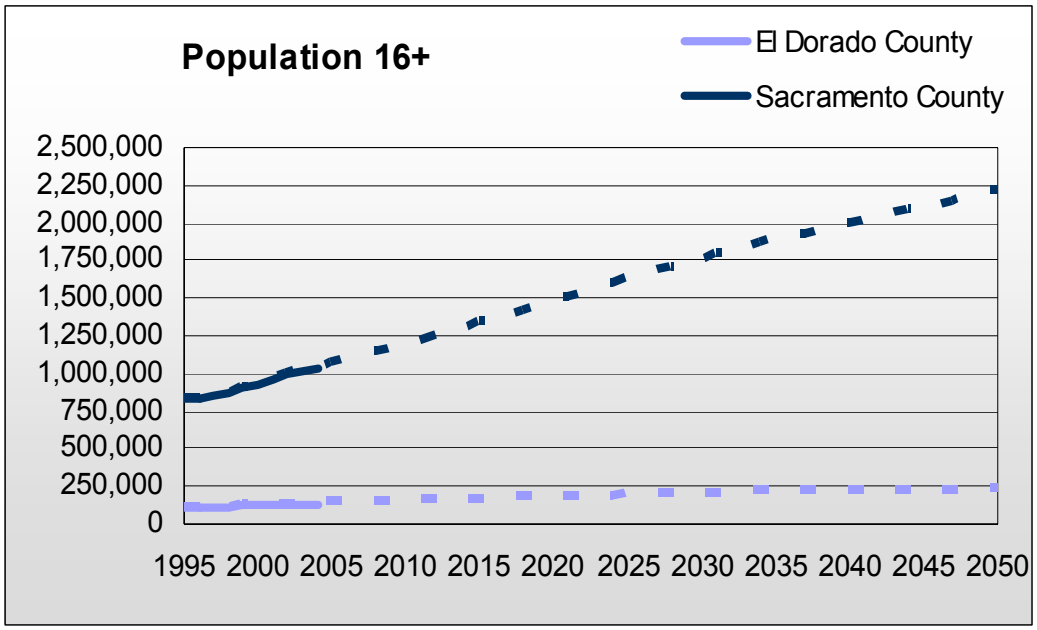

Figure 4.3-3. Projected population growth of individuals age 16 and older in El Dorado and Sacramento counties.

In relation to the state of California, the population of Sacramento will increase as a percentage of the overall population, while projections for El Dorado County remain relatively steady (Figure 4.3-4)

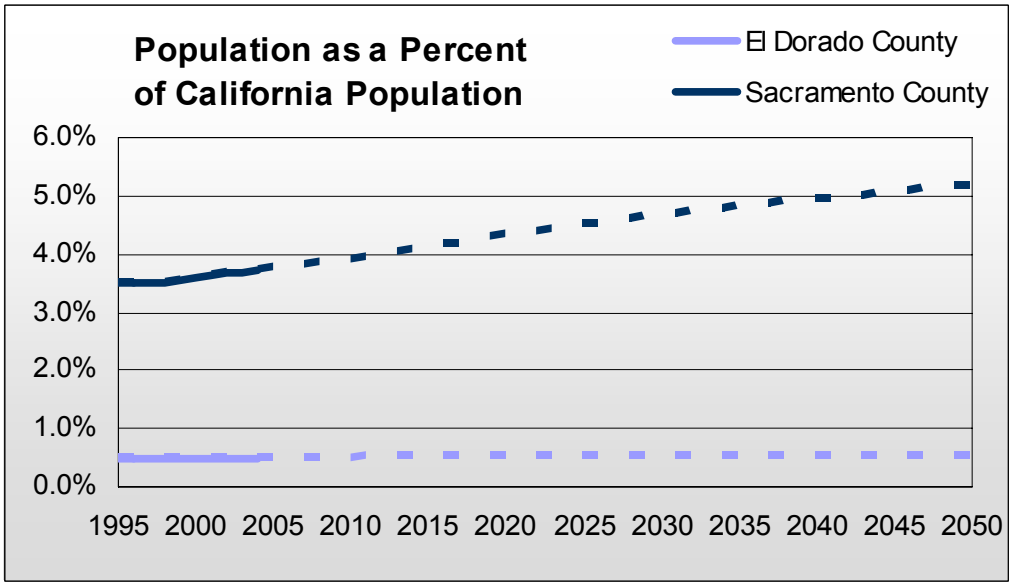

Figure 4.3-4. County Populations as a Percent of California Population.

4.3.1.1 Ethnicity

Generally, the population in El Dorado county will continue to become more diverse, with increasing numbers of Hispanic and Asian populations, with White decreasing over the course of 50 years from approximately 84 to 64 percent. Within Sacramento County, the population of ethnic groups other than White will continue to increase. Hispanic, Asian, and Black ethnic groups will rise considerably over the next 50 years, with White population decreasing to less than half of the overall estimated population (from approximately 58% in 2000 to 24% in 2050). The percent of the population by ethnic groups for the period 1970 to 2004 for El Dorado and Sacramento counties is shown in Tables 4.3-4 and 4.3-5. The projected population growth by ethnic groups for California, El Dorado and Sacramento counties is shown in Table 4.3-6. This information is useful because visitors from different ethnic backgrounds have different preferences for types of recreation facilities, services and opportunities. The population changes of the future, including demographics as well as size, have potential impact on demand for various recreation facilities, services and opportunities.

Table 4.3-4. Population ethnicity trends for El Dorado County. (Source: State of California, Department of Finance 2004)

Year	Total	White	Hispanic	Asian & Pacific Islander	Black	American Indian
1970	100.0%	95.3%	3.2%	0.8%	0.1%	0.5%
1971	100.0%	94.9%	3.5%	0.8%	0.2%	0.5%
1972	100.0%	94.6%	3.7%	0.9%	0.2%	0.6%
1973	100.0%	94.3%	3.9%	0.9%	0.2%	0.6%
1974	100.0%	94.1%	4.0%	1.0%	0.2%	0.6%
1975	100.0%	93.9%	4.2%	1.0%	0.3%	0.7%
1976	100.0%	93.7%	4.3%	1.0%	0.3%	0.7%
1977	100.0%	93.5%	4.4%	1.1%	0.3%	0.7%
1978	100.0%	93.4%	4.5%	1.1%	0.3%	0.7%
1979	100.0%	93.2%	4.6%	1.1%	0.3%	0.8%
1980	100.0%	93.1%	4.7%	1.1%	0.3%	0.8%
1981	100.0%	92.5%	5.0%	1.3%	0.4%	0.8%
1982	100.0%	92.1%	5.3%	1.3%	0.4%	0.8%
1983	100.0%	91.7%	5.6%	1.4%	0.4%	0.8%
1984	100.0%	91.4%	5.8%	1.5%	0.4%	0.9%
1985	100.0%	91.1%	6.1%	1.6%	0.4%	0.9%
1986	100.0%	90.7%	6.3%	1.6%	0.4%	0.9%
1987	100.0%	90.5%	6.5%	1.7%	0.4%	0.9%
1988	100.0%	90.2%	6.7%	1.7%	0.4%	0.9%
1989	100.0%	89.9%	6.8%	1.8%	0.5%	1.0%
1990	100.0%	89.7%	7.0%	1.9%	0.5%	1.0%
1991	100.0%	89.1%	7.3%	2.0%	0.5%	1.1%
1992	100.0%	88.6%	7.6%	2.1%	0.5%	1.2%
1993	100.0%	88.2%	7.8%	2.2%	0.6%	1.2%
1994	100.0%	87.7%	8.1%	2.3%	0.6%	1.3%

Table 4.3-4. Population ethnicity trends for El Dorado County. (Source: State of California, Department of Finance 2004)						
Year	**Total**	**White**	**Hispanic**	**Asian & Pacific Islander**	**Black**	**American Indian**
1995	100.0%	87.2%	8.3%	2.5%	0.6%	1.4%
1996	100.0%	86.8%	8.5%	2.6%	0.6%	1.5%
1997	100.0%	86.4%	8.7%	2.7%	0.7%	1.5%
1998	100.0%	86.0%	9.0%	2.7%	0.7%	1.6%
1999	100.0%	85.6%	9.2%	2.8%	0.7%	1.7%
2000	100.0%	86.5%	9.7%	2.4%	0.5%	0.9%
2001	100.0%	86.0%	9.9%	2.5%	0.6%	1.0%
2002	100.0%	85.6%	10.1%	2.6%	0.6%	1.1%
2003	100.0%	85.3%	10.3%	2.7%	0.6%	1.2%
2004	100.0%	84.8%	10.5%	2.8%	0.6%	1.3%

Table 4.3-5. Population ethnicity trends for Sacramento County. (SOURCE: State of California, Department of Finance 2004)						
Year	**Total**	**White**	**Hispanic**	**Asian & Pacific Islander**	**Black**	**American Indian**
1970	100.0%	83.5%	6.3%	4.1%	5.6%	0.4%
1971	100.0%	82.7%	6.7%	4.2%	5.8%	0.5%
1972	100.0%	82.0%	7.1%	4.3%	6.1%	0.6%
1973	100.0%	81.3%	7.4%	4.4%	6.3%	0.6%
1974	100.0%	80.6%	7.8%	4.5%	6.4%	0.7%
1975	100.0%	80.0%	8.1%	4.6%	6.6%	0.7%
1976	100.0%	79.4%	8.4%	4.7%	6.8%	0.8%
1977	100.0%	78.8%	8.7%	4.7%	7.0%	0.8%
1978	100.0%	78.2%	9.0%	4.8%	7.1%	0.9%
1979	100.0%	77.6%	9.3%	4.9%	7.3%	0.9%
1980	100.0%	77.0%	9.5%	5.1%	7.5%	0.9%
1981	100.0%	76.0%	9.8%	5.6%	7.7%	0.9%
1982	100.0%	75.1%	10.1%	6.0%	7.9%	0.9%
1983	100.0%	74.2%	10.3%	6.5%	8.0%	0.9%
1984	100.0%	73.4%	10.6%	6.9%	8.2%	0.9%
1985	100.0%	72.6%	10.8%	7.3%	8.4%	0.9%
1986	100.0%	71.9%	11.0%	7.6%	8.5%	0.9%
1987	100.0%	71.2%	11.2%	8.0%	8.7%	0.9%
1988	100.0%	70.6%	11.4%	8.3%	8.8%	0.9%
1989	100.0%	70.0%	11.5%	8.6%	8.9%	0.9%
1990	100.0%	69.1%	11.8%	9.0%	9.1%	1.0%
1991	100.0%	67.9%	12.3%	9.5%	9.3%	1.1%
1992	100.0%	66.7%	12.8%	9.9%	9.4%	1.2%
1993	100.0%	65.5%	13.2%	10.4%	9.6%	1.3%
1994	100.0%	64.4%	13.7%	10.8%	9.8%	1.4%

Table 4.3-5. Population ethnicity trends for Sacramento County. (SOURCE: State of California, Department of Finance 2004)						
Year	**Total**	**White**	**Hispanic**	**Asian & Pacific Islander**	**Black**	**American Indian**
1995	100.0%	63.3%	14.1%	11.2%	9.9%	1.5%
1996	100.0%	62.2%	14.6%	11.6%	10.1%	1.6%
1997	100.0%	61.2%	14.9%	12.0%	10.2%	1.6%
1998	100.0%	60.2%	15.3%	12.4%	10.3%	1.7%
1999	100.0%	59.3%	15.7%	12.7%	10.5%	1.8%
2000	100.0%	59.9%	16.8%	12.3%	10.1%	0.8%
2001	100.0%	57.1%	17.9%	13.5%	10.5%	1.1%
2002	100.0%	54.7%	18.8%	14.4%	10.8%	1.3%
2003	100.0%	53.2%	19.7%	14.7%	11.0%	1.5%
2004	100.0%	51.6%	20.5%	15.0%	11.2%	1.7%

Table 4.3-6. Projected population by ethnic groups: County and State 2000-2050 (SOURCE: State of California, Department of Finance 2004).								
AREA	**White**	**Hispanic**	**Asian**	**Pac-Island**	**Black**	**Am. Indian**	**Multi-race**	**TOTAL**
				YEAR 2000				
El Dorado	134,626	15,044	3,507	199	833	1,459	2,902	158,570
Sacramento	713,744	199,516	139,371	7,637	120,820	9,987	39,390	1,230,465
Both Counties	848,370	214,560	142,878	7,836	121,653	11,446	42,292	1,389,035
California	16,047,989	11,082,985	3,746,292	111,200	2,222,816	192,753	639,163	34,043,198
				YEAR 2010				
El Dorado	152,024	21,955	5,945	199	1,445	3,249	3,654	188,471
Sacramento	680,646	349,014	234,917	12,766	187,057	41,354	50,094	1,555,848
Both Counties	832,670	370,969	240,862	12,965	188,502	44,603	53,748	1,744,319
California	15,377,948	15,181,594	4,713,693	151,365	2,628,971	398,048	795,148	39,246,767
				YEAR 2020				
El Dorado	169,678	30,775	8,632	199	2,260	5,356	4,389	221,289
Sacramento	670,563	512,027	332,637	17,685	271,318	82,825	59,624	1,946,678
Both Counties	840,241	542,802	341,269	17,884	273,578	88,181	64,013	2,167,967
California	14,757,146	18,877,590	5,565,651	184,457	2,935,929	615,393	915,575	43,851,741
				YEAR 2030				
El Dorado	182,523	40,602	11,310	199	3,133	7,360	5,046	250,173
Sacramento	656,975	661,199	419,170	21,684	347,006	117,732	69,262	2,293,028
Both Counties	839,498	701,801	430,480	21,883	350,139	125,092	74,308	2,543,201
California	14,182,100	22,520,629	6,158,956	210,409	3,192,662	815,054	1,030,861	48,110,671
				YEAR 2040				
El Dorado	184,300	50,605	13,403	190	3,906	8,872	5,512	266,788
Sacramento	630,975	819,486	474,349	24,052	410,744	143,581	76,533	2,579,720
Both Counties	815,275	870,091	487,752	24,242	414,650	152,453	82,045	2,846,508
California	13,435,378	25,959,527	6,464,398	226,228	3,363,142	982,073	1,107,850	51,538,596

Table 4.3-6.	Projected population by ethnic groups: County and State 2000-2050 (SOURCE: State of California, Department of Finance 2004).							
AREA	**White**	**Hispanic**	**Asian**	**Pac-Island**	**Black**	**Am. Indian**	**Multi-race**	**TOTAL**
				YEAR 2050				
El Dorado	184,491	61,503	15,263	157	4,741	10,178	5,998	282,331
Sacramento	600,593	990,406	521,254	25,938	471,725	166,335	82,176	2,858,427
Both Counties	785,084	1,051,909	536,517	26,095	476,466	176,513	88,174	3,140,758
California	12,755,395	29,386,940	6,617,904	237,190	3,500,358	1,130,654	1,149,259	54,777,700

4.3.1.2 Population: An Aging Society

For the general population of Sacramento and El Dorado counties, the Department of Finance projects that the percentage of those 55 and older will increase steadily. In Sacramento County, the percentage of those 55 years and older is estimated to increase from approximately 19 to 27 percent over the next 50 years. Whereas in El Dorado county, the percentage of the population 55 years and older is projected to increase from approximately 22 to 34 percent over the next 50 years. In both cases, approximately one-third of the population will be in the 55-year and older age group within the next 50 years. (See Figures 4.3-4 and 4.3-5)

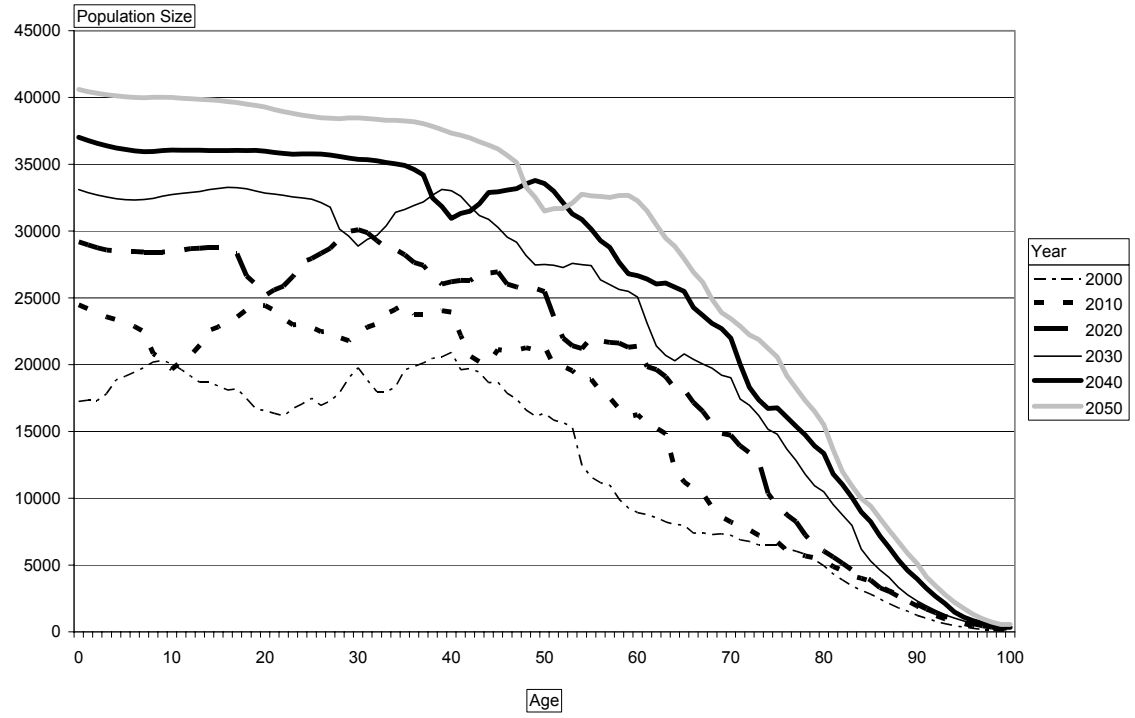

Figure 4.3-5. Population trends by age: Sacramento County

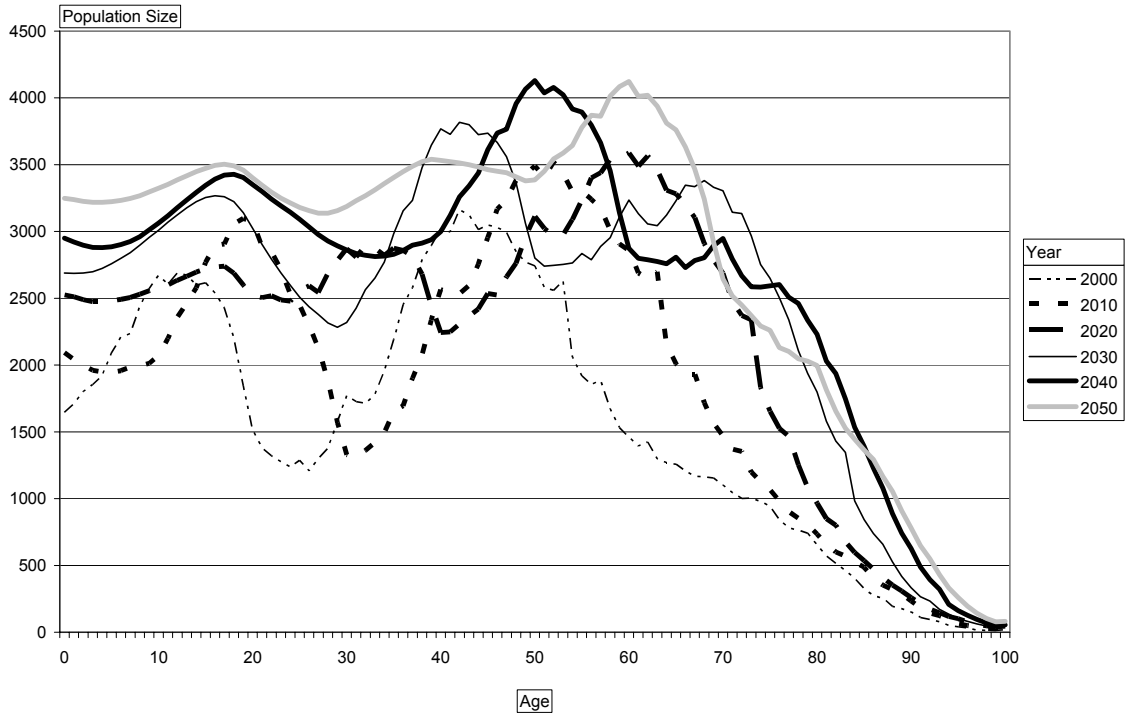

Figure 4.3-6. Population trends by age: El Dorado County

4.3.1.3 Education

According to Kelly and Warnick (1999), higher education levels influence participation in recreation activities. The more highly educated the greater "depth and breadth of skill repertoires for a variety of recreation activities" (Kelly and Warnick, 1999. p. 21). In part, this has to do with opportunities of "more and more people to gain interest and experience with activities previously reserved for the affluent" (Kelly and Warnick, 1999. p. 21). Therefore, educational levels of El Dorado and Sacramento counties are presented. While data over two decades may not provide enough information to determine an educational trend, it does establish a level of education compared to state education levels overall.

In general, El Dorado and Sacramento county residents over the age of 18 are educated with the majority of residents over the age of 18 having had some college or higher. Within El Dorado county, the education level of those with some college or higher went from 56 percent of the population in 1990 to just over 64 percent in 2000 (Tables 4.3-7 and 4.3-8). An indication that more residents 18 years and older are seeking some college, and the majority of residents are educated with some college. This information is also consistent with visitors responses to the Project 184 Recreation Report, demonstrating the majority of the population visiting the region as educated with at least some college, and with over 50% of visitors having college degrees.

Table 4.3-7. El Dorado County population by educational attainment, population 18 and over, 1990. (Source: U.S. Department of Commerce, Bureau of the Census)								
City	**Less than 9th grade**	**9th to 12th grade, no diploma**	**High school Grad**	**Some college, no degree**	**Assoc. degree**	**Bachelor's degree**	**Grad/Prof degree**	**Total**
Cameron Park	134	552	2197	2526	992	1597	712	8,710
Diamond Springs	105	348	680	499	138	208	58	2,036
El Dorado Hills	90	191	1,087	1503	366	979	360	4,576
Georgetown	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pollock Pines	72	439	1,331	790	210	236	107	3,185
Shingle Springs	26	193	384	412	124	133	66	1,338
City of Placerville	349	791	1854	1916	477	698	291	6,376
City of South Lake Tahoe	1,368	2,443	4,591	4,050	1,463	1,957	557	16,429
El Dorado County	3625	10,387	27,136	25,645	8301	12868	4878	92,840
California	2,352,017	3,114,969	5,080,909	5,246,699	1,649,596	3,052,702	1,523,650	22,020,542

Table 4.3-8. El Dorado County population by educational attainment, population 18 and over, 2000. (Source: U.S. Department of Commerce, Bureau of the Census)								
City	**Less than 9th grade**	**9th-12th grade, no diploma**	**High school Grad**	**Some college, no degree**	**Assoc. degree**	**Bachelor's degree**	**Grad/Prof degree**	**Total**
Cameron Park	222	689	2248	3794	982	1923	820	10,678
Diamond Springs	138	595	1,201	1,095	214	265	75	3,583
El Dorado Hills	66	406	1,529	3,186	1,049	3,872	1,991	12,099
Georgetown	14	75	263	275	40	75	49	791
Pollock Pines	45	412	1,197	1,096	229	338	197	3,514
Shingle Springs	33	247	445	644	176	211	177	1,933
City of Placerville	314	999	2,052	2,093	483	750	495	7,186
City of South Lake Tahoe	1,272	2,366	4,306	5,694	1,123	2,207	727	17,695
El Dorado County	3,162	10,993	27,199	36,430	9,633	19,318	8,876	115,611
California	2,687,841	3,235,504	5,192,997	5,981,132	1,657,058	3847,654	2,047,999	24,650,185

With respect to Sacramento County, during 1990, the majority of the population was educated receiving some college or higher at 57 percent. The 2000 figures also suggest the majority of the population achieved some college or higher degrees of educational attainment (see Tables 4.3-9 and 4.3-10).

In both counties, the percent of population educated with some college or higher is higher than the overall state average. California's statewide percent of the population receiving some college or higher degrees of educational attainment was 52 percent in 1990 and 55 percent during 2000, according to the Department of Finance.

Table 4.3-9. Sacramento County population by educational attainment, population 18 and over, 1990. (Source: U.S. Department of Commerce, Bureau of the Census)

City	Less than 9th grade	9th-12th grade, no diploma	High school Grad	Some college, no degree	Assoc. degree	Bachelor's degree	Grad/Prof degree	Total
City of Citrus Heights	2,194	9,151	21,484	24,697	7,679	10,056	3,506	78,767
City of Elk Grove	447	1,156	2,982	3,582	1,309	1,598	688	11,762
City of Folsom	1,065	3,069	6,031	6,168	2,028	3,659	1,574	23,594
City of Galt	922	1,119	1,760	1,548	302	483	98	6,232
City of Isleton	126	92	233	150	25	19	6	651
City of Sacramento	24,960	38,584	61,266	66,372	23,115	39,904	18,024	272,225
Sacramento County	45,765	95,629	187,459	209,073	69,461	111,760	47,561	766,708
California	2,352,017	3,114,969	5,080,909	5,246,699	1,649,596	3,052,702	1,523,650	22,020,542

Table 4.3-10. Sacramento County population by educational attainment, population 18 and over, 2000. (Source: U.S. Department of Commerce, Bureau of the Census)

City	Less than 9th grade	9th-12th grade, no diploma	High school Grad	Some college, no degree	Assoc. degree	Bachelor's degree	Grad/Prof degree	Total
City of Citrus Heights	1,748	6,217	18,472	20,897	6,110	7,389	2,930	63,763
City of Elk Grove	1,965	3,821	9,372	12,581	4,003	6,540	2,248	40,530
City of Folsom	856	4,034	7,757	9,758	3,104	9,498	4,297	39,304
City of Galt	1,566	1,762	3,882	3,086	955	1,315	308	12,874
City of Isleton	85	96	192	149	19	51	17	609
City of Sacramento	28,932	36,234	66,354	73,731	22,840	42,206	21,618	291,915
Sacramento County	56,324	102,610	210,516	245,248	74,721	134,978	62,875	887,272
California	2,687,841	3,235,504	5,192,997	5,981,132	1,657,058	3,847,654	2,047,999	24,650,185

4.3.1.4 Income

As presented in Table 4.3-11, the 1999 per capita income for each county was: El Dorado ($25,560), Sacramento ($21,142). Median family income in 1999 was estimated at $60,250 for El Dorado County, $50,717 for the Sacramento County. The percent of persons below the poverty level in 1999 (US Census 2000) was 7.1 percent, 14.1 percent for El Dorado and

Sacramento counties, respectively. From the estimates shown in Table 4.3-11, the population of El Dorado County on average, enjoy higher income than those in Sacramento County. While the proportion of the population that is below the poverty level in Sacramento (14.1 percent) is about the same as the State average, it is almost double that of El Dorado County (7.1 percent). (Source: Socio-economic Report, 2004).

Table 4.3-11. Comparison of income estimates, 2000 Census. (Source: US Census 2000)

Area	Median Household Income	Median Family Income	Per Capita Income	Percent of Population Below Poverty
El Dorado County	$51,484	$60,250	$25,560	7.1
Sacramento County	$43,816	$50,717	$21,142	14.1
Placer County	$57,535	$65,858	$27,963	5.8
California	$47,493	$53,025	$22,711	14.2

4.3.2 Recreation Trends in UARP Vicinity: General Plans

4.3.2.1 El Dorado County Chamber of Commerce

The mission statement of the El Dorado County Chamber of Commerce (Chamber) is, "…to advocate and promote a strong healthy and diverse business community to preserve the quality of life in El Dorado County." The Chamber supports recreational development that responds to a demand for facilities and services that in turn supports their mission. They have published a Public Policy Handbook and authored many letters of support or opposition to legislation relative in some cases, to recreational facilities and services in the region.

The Chamber has four areas of interest related to recreation 1) designation of additional wilderness; 2) efforts to increase tourism; 3) support for trails and parks; and 4) support for businesses associated with the SFAR. For example, the Chamber is most concerned with proposed legislation that would designate additional land within the county as wilderness. They adamantly oppose this proposed legislation because they feel this action would not serve the demand for recreation activities in the region such as OHV use, mountain biking, and cross country skiing. Another area of their interest is to respond to the demand for activities that can increase tourism. Accordingly, they are supportive of recreation developments such as trails and parks. Their third interest relates to the whitewater boating that occurs on the South Fork of the American River (SFAR). The Chamber recognizes the demand for whitewater boating opportunities in the region and the importance of the SFAR in meeting this demand. They are supportive of the businesses that are associated with this resource and seek ways to make the existing businesses prosper.

4.3.2.2 El Dorado County General Plan

The El Dorado County General Plan (EDC 2004) was developed to identify the types of governmental services, including parks and recreation facilities, which are necessary to meet the needs of residents and businesses. Although this plan does not pertain to NFS lands, the policies

and implementation measures in the plan are responsive to the regional demand for recreational facilities, services and opportunities.

The EDC General Plan recognized the economic importance of tourism to the county. Objectives stated in the EDC General Plan directly related to recreation resources include: 1) development of new and expansion of existing trail systems for hiking, biking, and equestrian use; 2) conservation and promotion of the waterways, particularly the SFAR as recreational and economic assets; 3) protection and maintenance of existing recreational and tourist based assets; 4) protection and preservation of resources that attract tourists; 5) expansion of skiing industry; and 6) expansion and development of additional camping facilities including recreational vehicles and tent camping.

At the time this study was conducted, El Dorado County was preparing a new general plan and subsequently the plan was adopted on July 19, 2004. SMUD acquired two documents from EDC relating to planned trail development: 1) El Dorado County Bicycle Transportation Plan (EDC 2001); and 2) Draft 1997 Revision El Dorado County Trails Master Plan (EDC 1997). Gary Hyden of the EDC Planning Department stated that these plans would go into effect pending the development and approval of the county's General Plan. These documents indicated that the EDC intends to develop many trails within the populated communities and connect them with surrounding cities and counties. Specific proposed trails described in the Draft Trails Master Plan that are in the study area are included in Table 4.3-12:

Table 4.3-12. List of EDC proposed trails in the study area. (Source: Draft 1997 Revision El Dorado County Trails Master Plan)

Name of Proposed Trail	Description of Proposed Trail
Park Creek-Old Highway 50 Trail	Along or near Park Creek Road to link the Cosumnes Trail, the Mormon-Carson Trail, and the Pony Express National Historic Trail. North of the Pone Express Trail it would proceed along Peavine Ridge Road to Old Highway 50 where it would extend easterly to Strawberry.
Divide Trail	A connecting trail between the existing Western States Trail on the MF American River and the Pacific Crest Trail in the Desolation Wilderness area. It would connect to the Parsley Bar Trail at Ellicott Bridge.
Forebay/Stumpy Meadows Trail	Begins at the Pone Express Trail then extend northwesterly approximately 1.5 miles where the trails meets the boundary of the ENF.
SMUD Easement Trail	Start at the proposed Marshall Trail on Cold Springs Rod and extend easterly along the SMUD easement to Junction Reservoir and Union Valley Reservoir.
South Fork-Ice House Road Trail	No description provided.

Note: Since the EDC could not provide the maps with proposed trail locations that accompany this document, the trails listed represent the SMUD's best assessment of the proposed trails that are in the study area.

4.3.3 Recreation Trends in UARP Vicinity: Key Contacts

SMUD obtained information from regional recreation operators and professionals concerning use patterns by contacting staff at the El Dorado Irrigation District, Folsom Lake State Recreation Area, City of South Lake Tahoe, California Land Management, Forest Service and the Pacific

Gas and Electric Company. Information from key contacts with information specific to the Crystal Basin and the regional study area is provided in below.

4.3.3.1 El Dorado Irrigation District (EID), Director of Parks and Recreation

SMUD interviewed the EID Director of Parks and Recreation to acquire information about recreation use occurring at Sly Park which is located north of Highway 50 near Pollock Pines. This recreation site includes Jenkinson Lake (640 acres), paved boat launches, campground, day use facilities, swimming beach, and bicycle and equestrian trails. This area receives snow however at 3,500 feet elevation, the ground is typically not permanently covered with snow through the winter months. This condition allows year-round access for recreation activities. The most popular activities at Sly Park include watersports (i.e., motorized boating), camping, mountain biking, flatwater paddling, equestrian activities, and angling. During the summer when water temperatures are higher, angling opportunities are not as good. However, during the winter, angling use (primarily from local residents) increases as water temperatures drop and the access to the reservoir is not restricted by snow.

The recreation facilities are open year-round, with the highest occupancy occurring April through October. During this season, facilities are filled to capacity on weekends and approximately 40 percent during weekdays. Approximately 80 percent of the visitors to Sly Park are residents from Sacramento County or the San Francisco Bay Area.

Regarding trends in recreation use at Sly Park, EID staff reported that they observed the most significant increase in the demand for equestrian and mountain bike trails. There are some conflicts on trails between these user groups even though currently there are separate trails for each type of use. According to EID, there is an increased demand to accommodate mountain bikers by providing trails with a high degree of difficulty. The EID staff characterized this type of demand as ‘extreme’ mountain biking opportunities. The greatest challenge to accommodating mountain biking and equestrian activities on a year-round basis is to avoid resource damage such as erosion and rutting, resulting from these activities taking place when the trails are wet and/or muddy.

Boating use has been steadily increasing at the reservoir over the last five to ten years. According to the EID staff, a growing proportion of this use can be attributed to day users. They also felt that boaters who are displaced from Folsom Lake when the reservoir level declines may have been the cause some of the additional boating use. PWC use is not allowed on the reservoir and this restriction has likely caused the demand for this activity to shift to the UARP reservoirs where there are currently no restrictions on PWC use. Flatwater paddling was also noted as popular at this reservoir, with EID staff reporting significant growth in the demand for flatwater paddling opportunities at the reservoir.

The staff at EID also observed a growing need to provide day and overnight facilities that can accommodate large families. Currently, individual campsites have an eight-person limit and they are seeing growing numbers of parties coming to Sly Park that exceed this site capacity. EID is responding to this need by converting some of their sites to group sites.

According to EID staff, the visitors to Sly Park seemed to seek and expect more conveniences and comfort during their visit. There been an increase in the numbers of visitors who camp at Sly Park in recreational vehicles (RV) with visitors bringing larger RVs in most recent years, as compared to the typical vehicles that have been observed over the last five to ten years. Consistent with visitors wanting the comforts of larger RVs, EID staff states that visitors have identified desired improvements to the facility including showers, RV hookups, interpretive programs and 24-hour security patrols. EID staff also indicated that visitors have expressed the desire for cabin sites at the reservoir which is also consistent with visitors' expectations for greater amenities to be provided at Sly Park. EID is undergoing a master planning effort for Sly Park which will consider visitor preferences in the context of the environmental and recreational resources.

Project 184 Recreation Survey Information

The recreation visitor surveys conducted by EID in the summer 2002 included questions regarding participation in recreational activities during visitation to the area, including reservoirs included in FERC Project No. 184. The survey effort included responses from 1,264 visitors. Information was collected within approximately 20 miles of the UARP and similar to the UARP, results from the survey effort demonstrated that most of the visitors to this project were residents of Sacramento County. Respondents also indicated six activities with the highest participation included hiking, relaxing, fishing, swimming, picnicking and wildlife observation. Other activities, with greatest to least participation included: sunbathing, landscape photography, camping (primitive), backpacking, kayaking/canoeing, camping (developed), motor boating, other nature study, bicycling, other boating, running/jogging, tubing, sailing, horseback riding, OHV use, and waterskiing. A comparison of these reported activities to the UARP reported activities demonstrated some similarity; however participation levels in these activities differed slightly. It is notable that horseback riding was not reported in any of the visitor surveys for the UARP even though surveys were completed in developed recreation facilities designed specifically for equestrian use. The responses to EID surveys show a lower participation level in OHV use than the responses to the UARP surveys.

During the summer of 1999, TCW Economics conducted a study as a part of the relicensing of the El Dorado Project (FERC Project 184). The project includes four reservoirs: Echo Lake, Lake Aloha, Silver Lake, and Caples Lake. The reservoirs are located within four counties, Alpine, Amador, and El Dorado. The proximity of Project 184 to the current project under study assists in developing an understanding of the demographics of visitors to the region. Therefore, a summary of demographic results of visitors and activities engaged in are summarized. The Final Report on the In-Person Survey of Recreation Visitors at Project 184 Sites (Ebeling and Fletcher, 1999) addressed a demographic profile of visitors and activities engaged in which are summarized to provide understanding of visitors to the UARP region.

Ethnicity

The results of this study demonstrated that the majority of use (80.6%) of visitors to the region reported their ethnicity as "white." The next largest ethnic group reported was Hispanic at 6.4%.

Education

The majority (78.9%) of recreation visitors interviewed at project sites during the summer of 1999 had at least completed some college. A majority (50.3%) also held a college or a graduate/professional degree.

Household income

A majority (52.1%) of the recreation visitors reported annual household incomes of $50,000 or more, and 15.4% reported incomes of $100,000 or more. The median income bracket was $60,000 to $79,999 per year.

Residence

The majority of visitors to the project area are local. Those who responded to the question regarding their place of residence reported the following:

> The majority of visitors reporting their residence reside in Sacramento (41%, 262); Eleven percent reported Placerville as their home; ten percent were from Pollock Pines; 8 percent from S. Lake Tahoe; with Carson City, NV, Gardnerville, Stockton, Woodsfords, Cameron Park, Folsom, San Francisco, San Jose, Davis, Elk Grove, and Shingle Springs with less than 5% visitation.
>
> The majority of visitors who responded to the question of state of origin, reported California (94%), with Nevada capturing the remainder of those responding.

4.3.3.2 Folsom Lake, State of California Department of Parks and Recreation

SMUD interviewed staff at the Folsom Lake State Recreation Area to acquire information about recreation use occurring at this site. Recreation use occurs at Folsom Lake year-round however the highest period of use is between Memorial Day and Labor Day. During this time period the developed facilities at the reservoir are filled to capacity every weekend, with occupancy reaching approximately 50 percent during the weekdays. The majority of visitors to Folsom Lake reside in Sacramento County, with some visitation from residents of the San Francisco Bay Area and Southern California. The majority of overnight visitors stay two to seven days and typical day user stays five or six hours. The staff reported that visitation to the lake drops off as the reservoir level lowers. In general, both day and overnight use has been steadily increasing over the past five to ten years and they attributed this phenomenon to the general population

growth in the Sacramento area. They have also noticed increased demand for group-based facilities.

Although increasing numbers of visitors are coming to Folsom Lake, there has been little proportionate change in the types of recreation activities that take place. Boating and various water sports are the most popular activities. Swimming, fishing, camping, equestrian use, hiking bicycling, and picnicking are also popular at Folsom. According to the Folsom Lake staff, flatwater paddling has noticeably increased at Lake Natoma which is also managed by the State and it is located just downstream of Folsom Lake.

In general, the staff believes that most visitors are satisfied with the quality and type of facilities that are provided. Most of the dissatisfaction expressed by visitors relates to low reservoir levels which typically occur late in the summer and fall. Planning and management efforts for trails and other facilities to support activities adjacent to the reservoir have generally eliminated user conflicts and there has been no indication that visitor's needs for services or facilities to support their desired recreation activities are unmet at Folsom Lake.

4.3.3.3 Pacific Gas and Electric Company

SMUD interviewed Pacific Gas and Electric Company staff responsible for managing recreation developments in the region. Specifically these developments include areas along the Interstate 80 Corridor at and near Lake Spaulding and Lake Valley and along Highway 88 at Blue Lakes. Pacific Gas and Electric Company manages campgrounds, day use facilities, boat launches and trails in these areas. Use patterns at these recreation developments show that most use occurs between Memorial Day and Labor Day, with the highest use periods recorded July through August. Retirees make up the majority of visitors after Labor Day. Overall, recreation use is increasing at these facilities during both weekdays and weekends, with the majority of use on weekends. The length of the typical overnight visitors' stay was approximately three nights, with a decreasing trend in the number of visitors who stay one week or longer. Staff estimates that 60 percent of the visitors to the Blue Lakes area come from Nevada and 40 percent come from California, mostly from communities located within the San Joaquin Valley region. The Interstate 80 corridor developed facilities reach capacity on most summer weekends. Visitors to these sites come mostly from California; approximately 50 percent reside in the Sacramento area and 50 percent visit from the San Francisco Bay Area. Day use areas close to residential communities such as Bear Valley which is near Nevada City receive the highest amount of use. Staff acknowledged an increasing demand for both day and overnight facilities that can accommodate groups. Although institutional-sized groups continue to seek facilities for day and overnight use, a significant proportion of the growth in demand is coming from groups consisting of large families, extended families, and multiple families.

Staff reported activities popular to the developments in the area. Lake Spaulding continues to be the most popular reservoir for high speed motorized watercraft, mostly associated with watersports, while Lake Valley is popular reservoir for flatwater paddling. The level of motorized boating use has been fairly stable over the past five to ten years at Lake Spaulding. The number of flatwater paddlers at Lake Valley has been increasing over the last few years and

many of these visitors enjoy using their watercraft to travel to "roadless" areas of the shoreline for dispersed camping. Lake fishing is most popular at these reservoirs early in the spring when fishing season opens or as soon as snow-melt on the roads allows vehicular access. Although there are seasonal variations in the amount of fishing activity, the overall level of fishing on the reservoirs during the past five to ten years has remained fairly stable, according the staff.

Two years ago the native-surfaced access road in to Blue Lakes was paved. The staff believed that this event led to significant change in recreation use patterns of this area. Since the road was paved, staff observed visitors bringing larger recreation vehicles, boats and PWC to the recreation developments. These trends in activities have caused enforcement problems relative to speed limits on these small reservoirs.

Staff reported that current visitors have indicated a demand for showers, paved access roads, and flush restrooms. This information is based on recent visitor surveys conducted at these facilities.

4.3.3.4 California Land Management

SMUD interviewed staff of California Land Management that manages Forest Service recreation facilities located on the Lake Tahoe Basin Management Unit and Tahoe National Forest. Campgrounds located in the vicinity of Lake Tahoe are generally open from the last week in June through the third week in August. During this period the day and overnight facilities are usually at capacity on weekends and between 70 to 80 percent during the week. Visitors to these facilities come from the Bay Area, Sacramento, Reno, Carson City and Los Angeles area. Most visitors stay two or three nights but CLM staff have a recurrent problem with individuals who try to circumvent the 14-day stay limit by obtaining continuous reservation for a single site under different family member names.

CLM begins closing loops and reducing the number of open campsites consistent with the decline in use that seems to coincide with the beginning of the school year. Shoulder season use largely depends on weather and sites are available through October 15. Between the third week in August and October 15 most of the day and overnight use occurs on weekends.

Activities that visitors to the Lake Tahoe recreation developments run a wide spectrum and CLM staff have not noticed any changes in activity participation or emerging new activities. Staff reported that visitors hike, fish, bicycle, boat, swim, and visit attractions and casinos during their stay. OHV users are noticeably absent at these facilities. Staff also commented that OHV users frequently camp at other sites they manage such as Prosser and Boca and there are often conflicts between OHV users and other users at these facilities.

CLM staff note an increased number of people bringing larger RVs to the campgrounds; camping in tents and travel trailers are decreasing forms of camping. The types of improvements that visitors to these sites would like to see include showers and services such as stores where grocery items can be purchased. Wildlife resistant food storage lockers have been recently installed and this has pleased many visitors.

Into the future CLM staff believe that demand at these facilities will remain high because Lake Tahoe is a recreation destination and because use patterns at Lake Tahoe do not appear to be insulated from other factors such as gasoline prices, economic conditions or threats of terrorism. Shoulder season may increase as baby boomers retire and have more leisure time outside of the normally high use summer months. As people have been bringing longer and bigger RVS to campgrounds in the recent past, CLM staff expects this trend to continue. Additionally, CLM staff anticipates that visitors to these sites will tend to expect more comforts and conveniences provided at developed recreation facilities.

4.3.3.5 City of South Lake Tahoe

SMUD interviewed the recreation superintendent of the Department of Parks and Recreation for the City of South Lake Tahoe. The city operates a variety of developed recreation facilities including an ice arena, golf course, gym, swimming complex, and day use facilities and a campground along the shoreline of Lake Tahoe. The facilities serve both local residents and tourists visiting the area. The staff estimates that most of their visitors reside in California and approximately 15 to 18 percent of the visitors are from other countries. The staff reports that their use is heaviest in the summer when people come to enjoy activities at the lake, hike, bike, and visit casinos and other attractions. Recreation activity during the winter is predominantly skiing however the recreation facilities provided by the city such as the day use facilities at the beaches, indoor swimming complex and ice arena are also popular. Visitation to the area is lowest in May, October and November. Most visitors stay two to three days however this is changing with the development of time-share properties. Since visitors to time-share properties typically stay in multiples of one-week stays, this has increased the average visitors' length of stay at South Lake Tahoe by one to two days.

The staff reported that casinos used to be the main attraction for visitors to South Lake Tahoe but stated that this is no longer the case and that the casino trade has leveled out. The staff perceives that visitors are attracted by the diversity of recreation opportunities available based on observed increases in: (1) visitor participation in outdoor recreation; (2) developed recreation facility occupancy; and (3) visits from younger families with children. Additionally, there is a moratorium on building new casinos and it is unlikely that new casinos will be built at South Lake Tahoe.

The staff believes that the demand for the facilities and services provided by the City of South Lake Tahoe will remain fairly constant into the future during the summer and winter months. The staff observes that despite economic conditions or other external factors, visitation does not seem to be affected. The staff believes that Lake Tahoe can provide a low-cost recreation experience for many people and that a vacation to Lake Tahoe is viewed by some visitors as an inexpensive substitute for a international travel or travel by vehicle to destinations within the country. The local community and commercial interests are seeking ways to attract visitors during the low use periods of May, October and November such as special events, outdoor concerts and development of a conference center. The staff believes that in the future these efforts will result in higher visitation during shoulder season months, particularly October and November.

4.3.3.6 Local Business Operators

Local operators of the recreation facilities in the Crystal Basin were asked what facilities, services and opportunities that their visitors have mentioned that they would like to have provided to improve their recreation experience. Services that were listed by those interviewed included rentals for boats and bicycles and winter overnight accommodations. Facilities that were identified included more trash receptacles, flush toilets and showers. People would also like to see more opportunities to have a lakeside campsite when coming to the area.

Resort owners have planned their growth in response to what they perceive visitors in the area are wanting. At Robb's Valley Resort, the owner plans to increase overnight capacity at the resort by constructing six new cabins in 2003 and possibly more in the future. Additional plans for the resort include new camping facilities and a group site to host children's events such as movies or special programs. The Ice House Resort also has plans in the future to increase overnight capacity with additional campsites for recreational vehicles and motel rooms.

4.3.3.7 Commercial Businesses

Commercial businesses are another source of information for trends in recreation use. The manager of the REI store in Sacramento was interviewed about his perception of recreation trend in the study area (both region and UARP vicinity). He reported that the sales for whitewater kayaks has been flat for the last few years and that they no longer sell these types of watercraft because of this trend. Flatwater kayaking has been a growing activity particularly at Lake Natoma, Folsom Lake and the lower portion of the American River. Snowshoeing has been rapidly expanding over the last three to four years and REI has also seen steady growth in their sales of cross-country ski equipment. Backcountry skiing is growing in popularity with cross-country skiers. Although rock climbing is increasing in popularity, the growth appears to be taking place at indoor rock climbing gyms where people can participate in this activity closer to their homes. Bouldering is another activity that is gaining popularity because people do not have to travel far and it does not require expensive equipment. A growing number of people are buying equipment for 'base' camping where visitors participate in various recreational activities but camp at one location for their base of operations. Backpacking has seen slow growth in the past few years and within the sport, there has been a trend toward ultra-light backpacking where participants carry minimal weight in order to travel greater distances. The store manager believes that some backpackers are transitioning into base campers and that this trend will continue as the population ages. Biking continues to be popular; mountain biking has showed slow growth and the primary area of growth has been in comfort biking (trails and paved paths). The most popular local places for mountain biking are Downieville and the area around Folsom Lake; the American River Trail is popular for comfort biking.

In Coloma, The River Store is a local small business that sells whitewater and flatwater boating equipment and apparel. The owner estimates that only about 10 percent of her business is from local residents and the majority of her sales are to people visiting the area to go whitewater boating on the SFAR. The owner believes that whitewater use on the SFAR has slowed but that its use is still growing. Industry-wide there have been flat or declining trends in the sales of

whitewater kayaks with an increasing trend in the sales of touring and recreational boats. Currently she sells about five whitewater kayaks for every recreational kayak. However, she believes that as the population ages, she is seeing more whitewater boaters transitioning to flatwater paddlers. Popular locations for flatwater paddling include Jenkinson Lake, Ice House, Union Valley, and Loon Lake reservoirs. Her customers have also told her that they like to visit Pleasant Campground at Loon Lake, Silver Lake, Caples Lake and Slab Creek Reservoir.

The California Canoe and Kayak Store is located in Rancho Cordova along Highway 50 and it is a business that sells flatwater paddling and whitewater sports equipment. The store manager reports that their customers are mostly Baby Boomers who, as they age, are showing a preference for recreational paddling. Although the store has seen a steady market for whitewater boating equipment, there is a growing market for equipment used for paddling on calmer water. Most of their customers boat at nearby locations including Lake Natoma and the Lower American River. Their customers also kayak in the ocean, in sloughs and at some foothill lakes although she could not provide the names of any specific lakes. Her assessment of future demand is that whitewater use will continue to be steady. As the population ages, whitewater boaters will transition into recreational paddlers who seek to paddling experiences without the physical demands of whitewater boating. This will lead to an increasing trend for recreational paddling into the future.

The Fisherman's Warehouse is located near Highway 50 in Sacramento and sells equipment primarily for spin angling. The staff reported that their sales have been fairly flat over the last two to five years and speculate that there may be a growing proportion of anglers who fly fish. Most of their customers, approximately 95 percent, are male and include young as well as older individuals. Approximately 60 percent of their customers are boat anglers and the remainder fish from shorelines. Approximately half of their customers reportedly fish at the lakes in the Crystal Basin and the other half fish in the Sacramento Delta and in the ocean. Ice House and Union Valley reservoirs are reportedly the most popular reservoirs in the Crystal Basin for angling. Into the future, the staff believes that sales will remain stable or possibly increase but qualified this opinion as very speculative. The staff believes that angling participation is mostly driven by the amount of leisure time that people have.

4.3.3.8 Forest Service Representatives

SMUD interviewed four Forest Service employees about trends and demand associated with various recreational opportunities. Three ENF employees were interviewed to provide a local perspective and one employee from the Forest Service Regional Office was interviewed to provide a more regional perspective.

On a local level, OHV use has significantly grown over the past four to five years. Although motorcycle use has remained fairly steady there has been growth in the number of people using all-terrain and four-wheel drive vehicles. Over the last ten years as the popularity of sport-utility vehicles have become popular and there is an increasing trend for people to use these vehicles to access areas to camp and recreate in a dispersed manner. They expect this trend to continue and believe there will be increasing demand for dispersed recreation. A more recent phenomenon

off-road use has been the use of heavily modified four-wheel drive vehicles. As the number of people seeking challenging experiences increases, the ENF expects to see increased use of these types of vehicles that have capabilities to access more remote areas of the forest.

Although mountain biking is popular and people participate in this activity on the Forest, the ENF believes there will be a growing demand for bicycling opportunities on paths or paved routes. They expect that mountain biking on dirt or cross-country trails will continue but comfort biking is the activity where there will likely be an increase in demand.

There will be a growing demand for trails especially near campgrounds and developed recreation facilities as growing numbers of visitors seek to participate in multiple activities during their visits. Lakeside trails are very popular and would serve the growing need for visitor experiences near water. The ENF also believes that as more people visit, there will likely be uses that cause conflicts. This may lead visitors to demand that there be trails designated for specific types of uses and they be actively managed for compliance with these designations. The ENF sees a growing demand for both motorized and non-motorized trails that are located near water, located to provide a loop of travel, and provide connections to campgrounds and other developed recreation facilities. Trails located at lower elevations would serve to meet growing demand for year-round trail use.

Cultural and environmental resource interpretations are other dimensions to the visitor experience that are increasing in demand. Consequently there will likely be a demand for recreation facilities that will support these opportunities.

Visitor demand for overnight stays to the ENF will continue to grow and the public demand for overnight camping at a developed campground will persist. In particular, the number of visitors with recreational vehicles (RVs) and tent trailers has increased in recent years and the ENF expects this trend to continue as the population ages. The ENF also observes an increasing trend in the size and quality of RV and trailers that visitors are using. There will also likely be growing numbers of people who will seek to stay at other facilities such as Forest Service look-out towers, yurts or huts. This type of overnight opportunity is growing in popularity with cross-country and backcountry skiers. Waterside overnight camping opportunities have always been sought out by visitors and this attraction will continue into the future. As sensitive areas are managed to restrict this type of use, this demand will be shifted and concentrated at other waterside areas where there are less restrictions. If this occurs in the future, the ENF foresees a growing need to implement control measures and harden sites that receive recurrent high levels of recreational use.

The ENF expects to see a rise in the demand for group recreation facilities. This is largely based on changing demographics in the communities where most of the visitors to the ENF reside. The ENF expects to see increased numbers of multi-family or extended-family visitors. Other requested improvements that the ENF staff says that they hear from the public include: showers at campgrounds, flush toilets and electrical hookups.

Hunting and recreational shooting seems to have decreased in recent years on the ENF. There are fewer deer hunters observed on the ENF however, there may be a slight increase in the number of small-game hunters. The ENF believes this trend is related to the growth of some minority groups in the Sacramento area. Fishing use appears to be stable but there may be a slight increase in the demand for wintertime fishing opportunities.

Power boating use has increased over recent years and there has been an evolution in the culture of watersports. As people seek more challenging activities, waterskiing has declined in popularity and wakeboarding and PWC use has increased. The ENF has seen an increasing trend in the number of larger and faster boats coming to the lakes on the ENF and they expect this trend to continue. Although PWC use may be fairly steady within the state, they believe that growing restrictions on some lakes and reservoirs may shift and concentrate the demand to locations on the ENF. Improvements that are in demand to support boating opportunities include boarding docks at boat launch facilities and marking navigation hazards.

The ENF has observed increasing numbers of people visiting the area with non-motorized recreational or touring kayaks, particularly at Loon and Wrights lakes. The ENF has several suitable locations for this type of boating activity and expects that as a growing number of people participate in this activity, this use will see an increasing trend on the Forest in the future. The Forest expects to see a demand for recreation facilities that would support boat-in camping. The ENF said that they began to notice vehicles with whitewater kayaks coming to the area within the last few years. Although not great in number of participants, this is another activity were the ENF expects to see some growth in demand as people seek more challenging recreational experiences.

The number of people observed wind surfing has declined in recent years. Sail boating is not extremely popular on the ENF however the trend in participation has remained fairly constant in recent years. The ENF expects to see some sail boating continue but does not expect to see much growth in the demand for this activity on the Forest.

There are a few popular areas for rock climbing on the ENF and they are receiving some increased use. Bouldering, a form of rock climbing, has seen some growth and the ENF believes there will be some growth in demand in this activity as people seek more challenging recreation experiences.

Some winter recreation opportunities are expected to see increased demand in the future on the ENF. Although there is a fairly level trend in the demand for downhill skiing, snowboarding, backcountry and cross-country skiing have been growing in popularity. The Forest expects this trend to continue. They do not anticipate that there will be a demand for groomed cross-country trails in the area. Snowshoeing, snow play and snow camping are other winter activities that have seen recent growth and the ENF expects to see participation rise significantly in the future. The ENF often hears requests from the public to open campgrounds for winter use. Snowmobiling is a winter sport that may be slightly increasing within the state but the ENF does not see many people using snowmobiles in the vicinity of the UARP; they do not expect to see any growth in the demand for this activity.

Recently, the ENF has noticed increase numbers of visitors that are coming to the area to enjoy scenic driving. This trend has been most noticeable since the Wentworth Springs Road was reconstructed and paved in 2002. The ENF has observed car clubs and groups of users with similar vehicles traveling in a group along the Ice House Road and Wentworth Springs Road. These visitors appear to be passing through the area rather than staying overnight on the ENF during their visit. The ENF expects this activity to increase as more people participate in this activity and as more people become aware of this particular new scenic driving opportunity on the Forest.

The Forest Service staff at the regional office shared similar views of trends for demand for various recreational opportunities to those trends identified by the ENF staff. Regionally, there is the expectation that as 'Boomers' age that there will be an increased number of shorter half-day or day long trips taken to visit National Forests in California. There will likely be more people visiting with RV's and there will be increased demand for scenic driving, and cultural and environmental interpretation. Recreation facility design for construction and reconstruction will need to respond to increased demand to accommodate multi-family or extended family groups of visitors and persons with disabilities.

4.4 Visitor Profile and Information

Data collected by SMUD in the 2002-03 Visitor Surveys included several questions about where visitors live, their preferences and use patterns. The following section includes several tables summarizing this information. The types of information include place of residence, party size, number of years visiting the UARP, length of stay, gender, and types of improvements that visitors would like to see in the area where they were surveyed. Although this information is included here, the reader is referred to the *Visitor Use and Impact Technical Report* which includes all of the results of the visitor surveys completed by SMUD.

4.4.1 Place of Residence

Based on the survey responses, it appears that during the summer at the developed recreation facilities and areas with dispersed recreation activity most visitors at and near the UARP reside in Sacramento and El Dorado counties and that there are approximately twice as many visitors from Sacramento County than El Dorado County. In the winter, there are a greater proportion of visitors to areas at and near the UARP who reside in El Dorado County than Sacramento County. This same pattern is observed in the data from the surveys conducted in the Canyonlands.

Additionally, the ENF provided survey data collected at the Ice House Road as part of the agency's National Visitor Use and Monitoring (NVUM) program. This survey effort was conducted at approximately 30 locations on the ENF between October 2002 and September 2003. One of these locations was on Ice House Road in the vicinity of Highway 50 where a signed survey station was set up for visitors to voluntarily stop to participate in the survey. Visitors participating in the survey effort provided their zip codes and this information was analyzed to determine the place of residence for visitors to the area. The place of residence for the visitors surveyed in the NVUM effort are also summarized in Table 4.4-1 below. Both the

data collected by SMUD and the ENF indicate that the majority of visitors to the UARP come from El Dorado and Sacramento counties.

Table 4.4-1. Visitors' county of primary residence for survey areas in the vicinity of the UARP. (SOURCE: Visitor Surveys 2002-03 and NVUM data from ENF)

Survey Area[1]	County of Primary Residence (by percent)						
	El Dorado County	Sacramento County	Bay Area[2]	Placer County	Yolo County	other / no response	Total
% SMUD Visitor Surveys 2002-03							
Developed (all four reservoirs)	24	43	15	4	4	10	100%
Developed – Ice House Reservoir	21	46	15	5	4	9	100%
Developed – Union Valley Reservoir	30	38	16	2	3	11	100%
Developed – Gerle Creek Reservoir	11	45	19	4	5	16	100%
Developed – Loon Lake Reservoir	21	46	11	6	4	12	100%
Dispersed (all four reservoirs)	19	40	25	3	2	11	100%
Dispersed – wilderness trailhead	8	36	28	4	12	12	100%
Dispersed – Canyonlands	78	14	5	0	3	0	100%
Winter – Crystal Basin	48	30	10	5	5	2	100%
Winter – Loon Lake Chalet only	33	29	28	0	2	8	100%
% National Visitor Use Monitoring Data							
Surveys completed on Ice House Road	32	37	12	2	4	2	100%

[1]Sample size: Developed, n=698 (weighted data); Developed-IHR, n=167; Developed-UVR, n=171; Developed-GCR, n=175;Developed-LLR, n=184; Dispersed, n=68; Dispersed-wilderness trailhead, n=25; Dispersed-Canyonlands, n=36; Winter-Crystal Basin, n=223; and Winter-Loon Lake Chalet, n=51.
[2]Bay Area=San Francisco, San Mateo, Sonoma, Santa Clara, Alameda, Contra Costa, Solano, Napa, Marin, Salinas, and Fremont Counties.

4.4.2 Party Size

Table 4.4-2 shows the party size reported by the visitors who were surveyed during the summer of 2002. Approximately half of the visitors surveyed in the dispersed recreation areas reported a party size of 1 to 5 and the remainder reported a party size of 6 to 40; the most frequent response, 23.6 percent was for a party size of 7 to 10 persons. Approximately half of the visitors surveyed at the developed recreation facilities reported a party size of 1 to 4 and the remainder reported a party size of 5 to more than 50; the most frequent response, 26.6 percent was for a party size of 2. Sorting the data by the reservoir where the developed recreation facilities are located shows a similar pattern of frequencies when compared to the combined responses for all reservoirs. Approximately half of the visitors surveyed in the dispersed recreation areas in the Canyonlands reported a party size of 2 and the remainder reported a party size of 3 to 10; the most frequent response, 50 percent, was for a party size of two persons. Of the survey areas presented in the

table, summertime visitors to the reservoirs came in larger groups than the visitors to the high country, the Canyonlands or the winter visitors.

Table 4.4-2. Party size of the summer visitors as reported in the visitor surveys 2002-03.

Party Size (No. of Persons)	Percent of Visitors-Dispersed	Percent of Visitors-Crystal Basin					Percent of Visitors-Canyonlands
		Total[1]	Loon Lake Res.	Gerle Cr. Res.	Union Valley Res.	Ice House Res.	
1	2.9	3.0	4.3	5.1	2.9	1.2	0
2	14.7	26.6	33.2	22.9	19.3	32.3	50.0
3	10.3	13.0	14.1	10.3	11.1	15.6	16.7
4	13.2	14.9	11.4	16.0	18.1	13.2	16.7
5	10.3	8.7	8.2	10.9	7.6	10.8	5.6
6	4.4	8.6	6.5	7.4	10.5	7.8	5.6
7-10	23.6	11.9	10.3	13.7	13.5	10.8	5.6
11-15	8.9	6.3	6.5	7.4	7.6	3.6	0
16-20	5.9	2.9	2.7	3.4	2.9	3.0	0
21-30	3.0	1.9	1.1	2.3	3.5	0	0
31-40	3.0	0.5	0	0.6	1.2	0	0
41-50	0	0.8	1.1	0	0.6	1.2	0
51 or more	0	0.8	0.5	0	1.2	0.6	0
Total	100	100	100	100	100	100	100

[1]Weighted data set and excludes Group Sites.

The wintertime surveys indicated that approximately 71 percent of the visitors came to the Crystal Basin in one car and the other 29 percent had multiple cars with their party. The majority, 80 percent, of the visitors traveled with 1 to 3 passengers per vehicle. Of the parties that traveled with multiple vehicles, the percent of visitors by party size is shown in Table 4.4-3. For visitors with multiple vehicles in their group, the most frequent response, 24.6 percent, was a party size of four persons; party sizes of six and seven persons were also common and the combined responses accounted for approximately 34 percent of the visitors in groups with multiple vehicles. A review of the raw data contained in *Visitor Use and Impact Report* reveals that a good portion of the solo winter visitors were anglers intercepted at the boat launch facilities at Ice House Reservoir and Union Valley Reservoir (SMUD snowplows the Ice House and West Point boat launch facilities, allowing for year-round access to these reservoirs).

Table 4.4-3. Party size of wintertime visitors to the Crystal Basin as reported in the visitor surveys 2002-03.

Party size	Percent of Visitors in Multiple-Vehicle Groups
2	1.5
4	24.6
5	7.7
6	16.9
7	16.9
8	3.1
9	3.1
10	7.7
11-15	9.2
16-20	9.2

4.4.3 Number of Years Visiting the Area

The existing summertime visitors include first-time visitors as well as those who have been coming to the area for a number of years. Approximately half of the visitors to the dispersed areas in the Crystal Basin have been coming to area for less than ten years and 13.2 percent said that it was their first visit to the area. Approximately half of the visitors to the developed recreation facilities in the Crystal Basin have been coming to area for less than eight years and 16.7 percent said that it was their first visit to the area. Sorting the data by the reservoir where the developed facilities are located shows a similar pattern with Ice House Reservoir having the highest frequency response for first-time visitors at 21 percent. Approximately half of the visitors to the dispersed areas in the Canyonlands have been coming to area for less than six years and 22.2 percent said that it was their first visit to the area. Among the three categories of surveys, the Canyonlands had the highest frequency (22.2%) of first-time visitors of those surveyed. The summarized survey responses for the number of years the respondents have been visiting the UARP are shown in Table 4.4-4.

Table 4.4-4. Number of years visitors reported that they have been visiting the UARP during the summer as reported in the visitor surveys 2002-03.

No. of years visiting the UARP	Percent of Visitors- Dispersed Areas in the Crystal Basin	Percent of Visitors- Developed Facilities in the Crystal Basin					Percent of Visitors- Canyonlands
		Total[1]	Loon Lake Res.[2]	Gerle Cr. Res.[2]	Union Valley Res.[2]	Ice House Res.[2]	
First Visit	13.2	16.7	18.5	18.9	12.9	21	22.2
1	4.4	3.1	1.1	2.3	4.7	3.0	2.8
2	5.9	6.2	7.1	8.0	5.8	5.4	8.3
3	2.9	6.4	6.5	5.7	7.0	5.4	8.3
4	1.5	2.7	1.6	4.6	2.3	4.2	2.8
5	7.4	6.8	11.4	7.4	4.1	6.0	2.8
6	2.9	4.3	2.2	2.9	6.4	3.6	5.6
7	4.4	1.7	1.6	2.3	2.3	0.6	0
8	0	2.1	2.7	2.3	1.8	1.8	2.8
9	1.5	0.7	1.1	2.3	0	1.2	2.8
10	8.8	7.3	5.4	8.6	7.0	9.6	13.9
11-15	13.2	12.6	12.0	6.9	15.8	9.0	11.1
16-20	8.8	9.5	8.7	6.3	9.4	11.4	11.1
21-30	14.7	10.5	10.3	11.4	9.9	11.4	5.6
31-40	8.8	5.1	3.8	8.6	6.4	3.6	0
41-50	1.5	2.5	2.2	0.6	2.9	2.4	0
51 or more		1.8	3.8	1.1	1.2	0.6	0

[1]Weighted data set
[2]Unweighted data set

The wintertime visitors were also asked about how long they have been coming to the area and the number of visits they had made during the previous winter. Similar to the summer survey responses, a considerable number of those surveyed were first-time visitors to the area (see Table 4.4-5). In fact, it was the most frequent response (27.5%) in the surveys conducted at the Loon Lake Chalet. Additionally, most (56.9%) of those surveyed, at the Loon Lake Chalet had not

visited in the previous year. This is noticeably different from the responses to the windshield surveys where approximately 80 percent of the visitors said they had visited more than one time during the previous winter.

Table 4.4-5. Number of years visitors reported that they have been visiting the UARP during the winter as reported in the winter visitor surveys.

No. of years visiting the UARP	Percent of Visitors-Loon Lake Chalet	Percent of Visitors-Windshield Surveys	No. of visits during the last year	Percent of Visitors-Loon Lake Chalet	Percent of Visitors-Windshield Surveys
First visit	27.5	10.8	0	56.9	20.2
1	7.8	7.2	1	23.5	10.3
2	13.7	7.2	2	7.8	9.0
3	3.9	8.1	3	3.9	9.0
4	7.8	4.9	4	0	8.1
5	3.9	6.3	5	2.0	8.1
6	3.9	4.5	6	2.0	6.3
7	2.0	1.8	7	0	2.2
8	5.9	2.2	8	0	2.7
9	3.9	1.3	9	0	1.3
10	0	9.9	10	2.0	7.2
11-15	15.7	9.0	12	0	3.1
16 or more	3.9	26.9	13-15	0	3.1
			16 or more	2.0	8.1

4.4.4 Overnight and Day Use Visitation

Visitors can be characterized as overnight and day users. The visitor surveys conducted in the summer of 2002 indicate that most of the existing users in the Crystal Basin stay overnight during their visit however most of the existing summertime visitors to the Canyonlands are day users. In the Crystal Basin, the visitors surveyed in developed recreation facilities indicated a length of stay from 1 to 14 nights with a two-night stay being the most frequent response at 31.8 percent. The visitors to the dispersed areas in the Crystal Basin indicated similar lengths of stays with the most frequent response, 45.3 percent, being a two-night stay. In the Canyonlands there were no responses greater than a two-night stay.

Less than one-quarter of those surveyed in the Crystal Basin during the summer were day users and the most frequent response for their length of stay was 4 to 6 hours. The majority of the summertime visitors to the Canyonlands, 83.3 percent, were day users and the most frequent response for their length of stay was also 4 to 6 hours. The summarized survey responses relating to day and overnight use are by reservoir are provided in Table 4.4-6.

Table 4.4-6. Percent of visitor survey responses regarding summertime day and overnight use and length of stay. Responses are sorted by reservoir where developed recreation facilities are located. (SOURCE: Visitor surveys 2002-03)

Overnight or Day Use	Percent of Visitors- Dispersed Areas in the Crystal Basin	Percent of Visitors- Developed Facilities in the Crystal Basin					Percent of Visitors- Canyonlands
		Total[1]	Loon Lake Res.[2]	Gerle Cr. Res.[2]	Union Valley Res.[2]	Ice House Res.[2]	
Overnight Use	77.9	76.0	69.6	94.9	80.1	71.9	16.7
Length of Stay							
1 night	5.7	9.4	14.7	13.9	6.6	7.6	66.7
2 nights	45.3	31.8	36.4	31.3	27.0	36.1	33.3
3 nights	11.3	25.3	21.7	28.3	29.9	19.3	0
4 nights	13.2	15.3	14.0	11.4	16.8	15.1	0
5 nights	5.7	7.5	3.1	6.0	10.2	7.6	0
6 nights	1.9	2.6	2.3	1.8	2.9	2.5	0
7 nights	7.5	2.9	1.6	3.0	2.9	4.2	0
8-14 nights	7.5	3.9	3.9	4.2	2.9	5.9	0
Day Use	22.1	23.7	29.3	5.1	19.9	28.1	83.3
Length of Stay							
3 hours or less		9.3	14.8	0	2.9	10.6	20.0
4-6 hours	53.3	50.3	42.6	44.4	47.1	63.8	63.3
7-9 hours	13.3	25.5	35.2	22.2	26.5	12.8	6.7
10 hours or more	33.3	12.0	3.7	33.3	20.6	10.6	0

[1]Weighted data set
[2]Unweighted data set

4.4.5 Length of Stay

The lengths of stay as indicated by the survey responses sorted by facility were fairly consistent between facilities. Overnight visitors indicated stays of 2 to 3 nights and most day users indicated stays of 4 to 6 hours. Sorting the data by reservoir shows that most of the respondents stayed two nights with one exception. At Union Valley the data indicate a slightly longer length of stay where the most frequent response, 29.9 percent, was a three-night stay. Most wintertime visitors reported a two-night length of stay and the longest stay reported was three nights. These data sorted by facility and the winter survey responses are shown in Table 4.4-7.

Table 4.4-7. Percent of visitor survey responses regarding day and overnight use and length of stay. Summer responses are sorted by developed recreation facility and the winter survey responses are sorted between the surveys collected at the Loon Lake Chalet and those left on the windshields of visitors. (SOURCE: Visitor surveys 2002-03)

Loon Lake Res.	Boat Launch	Loon Lake Chalet	Loon Lake Group CG	Loon Lake Campground	Northshore CG	Red Fir Gr. CG	Pleasant CG
Overnight Use	58.8	100	100	100	100	100	100
Length of Stay							
1 night	14.8	100	25	6.9	20		100

Table 4.4-7.	**Percent of visitor survey responses regarding day and overnight use and length of stay. Summer responses are sorted by developed recreation facility and the winter survey responses are sorted between the surveys collected at the Loon Lake Chalet and those left on the windshields of visitors. (SOURCE: Visitor surveys 2002-03)**						
Loon Lake Res.	Boat Launch	Loon Lake Chalet	Loon Lake Group CG	Loon Lake Campground	Northshore CG	Red Fir Gr. CG	Pleasant CG
2 nights	40.7		25	37.9	10		
3 nights	23.5		25	20.7	20		
4 nights	11.1		25	17.2	20		
5 nights	2.5			6.9	0		
6 nights	0			3.4	10	100	
7 nights	1.2			3.4	0		
8-14 nights	2.5			3.4	20		
Day Use	39.7	0	0	0	0	0	0
Length of Stay							
3 hours or less	14.8						
4-6 hours	42.6						
7-9 hours	35.2						
10 hours or more	3.7						
Gerle Cr. Res.	Gerle CG	Airport CG	Angel Cr. Day Use				
Overnight Use	100	95.3	75.9				
Length of Stay							
1 night	11.7	18.6	13.6				
2 nights	30.1	34.6	27.3				
3 nights	33.0	11.6	36.4				
4 nights	10.7	11.6	13.6				
5 nights	5.8	4.7	9.1				
6 nights	1.9	2.3	0				
7 nights	3.9	2.3	0				
8-14 nights	2.9	9.8	0				
Day Use	0	4.7	24.1				
Length of Stay							
3 hours or less							
4-6 hours			57.1				
7-9 hours		50	14.3				
10 hours or more		50	28.6				
Union Valley Res.	Big Silver Group CG	Camino Cove CG	Jones Fork CG	Azalea Cove/Lone Rock CG	Sunset CG[1]	Wench Cr. CG	Wench Cr. Group CG
Overnight Use	100	100	100	100	100	95	100
Length of Stay							
1 night	0	11.1	33.3	0	0	0	0
2 nights	50.0	0	16.7	50.0	28.2	36.8	0
3 nights	50.0	0	16.7	0	35.9	31.6	33.3
4 nights	0	44.4	33.0	0	7.7	21.1	33.3
5 nights	0	22.2	0	50.0	15.4	5.3	16.7
6 nights	0	11.1	0	0	2.6	0	16.7
7 nights	0	11.1	0	0	2.6	5.3	0
8-14 nights	0	0	0	0	5.1	0	0

Table 4.4-7. Percent of visitor survey responses regarding day and overnight use and length of stay. Summer responses are sorted by developed recreation facility and the winter survey responses are sorted between the surveys collected at the Loon Lake Chalet and those left on the windshields of visitors. (SOURCE: Visitor surveys 2002-03)

Union Valley Res.	Big Silver Group CG	Camino Cove CG	Jones Fork CG	Azalea Cove/Lone Rock CG	Sunset CG[1]	Wench Cr. CG	Wench Cr. Group CG
Day Use	0	0	0	0	0		0
Length of Stay							
3 hours or less							
4-6 hours							
7-9 hours							
10 hours or more							
Union Valley Res. (continued)	Westpoint CG	Wolf Cr. CG	Yellowjacket CG	Yellowjacket BL	Westpoint BL	Sunset BL	
Overnight Use	100	100	100	60	50	50	
Length of Stay							
1 night	33.0	0		33.0	21.4	5.9	
2 nights	33.0	66.7	9.1	33.0	42.9	17.6	
3 nights	33.0	16.7	45.5	33.0	0	52.9	
4 nights	0	16.7	18.2	0	14.3	17.6	
5 nights	0	0	18.2	0	0	5.9	
6 nights	0	0	0	0	7.1	0	
7 nights	0	0	0	0	7.1	0	
8-14 nights	0	0	9.1	0	7.1	0	
Day Use	0	0	0	40	50	50	
Length of Stay							
3 hours or less				0	7.1	0	
4-6 hours				50	57.1	41.2	
7-9 hours				0	21.4	35.3	
10 hours or more				50	14.3	23.5	
Ice House Res.	IH Boat Launch	Ice House CG	Ice House Day Use	Northwind CG	Strawberry CG		
Overnight Use	53.5	100	31.6	85.7	100		
Length of Stay							
1 night	0	6.5	60.0	16.7	12.5		
2 nights	44.7	32.3	20.0	50	25.0		
3 nights	18.4	21.0	0	16.7	37.5		
4 nights	7.9	21.0	20.0	16.7	12.5		
5 nights	10.5	6.5	0	16.7	0		
6 nights	0	4.8	0	0	0		
7 nights	0	6.5	0	0	12.5		
8-14 nights	13.2	1.6	0	0	0		
Day Use	46.5	0	68.4	14.3	0		
Length of Stay							
3 hours or less	12.1		7.7	0			
4-6 hours	68.6		69.2	100			
7-9 hours	18.2		0	0			
10 hours or more	9.1		15.4	0			

Table 4.4-7.	**Percent of visitor survey responses regarding day and overnight use and length of stay. Summer responses are sorted by developed recreation facility and the winter survey responses are sorted between the surveys collected at the Loon Lake Chalet and those left on the windshields of visitors. (SOURCE: Visitor surveys 2002-03)**						
Winter Surveys	Loon Lake Chalet	Windshield-Cryst.Basin					
Overnight Use	64.7	24.7					
Length of Stay							
1 night	27.3	34.5					
2 nights	39.4	49.1					
3 nights	18.2	10.9					
4 nights	6.1	3.6					
5 nights	0	0					
6 nights	0	0					
7 nights	3.0	0					
8-14 nights	0	0					
Day Use	35.3	75.3					
Length of Stay							
3 hours or less	16.7	13.7					
4-6 hours	55.6	58.3					
7-9 hours	16.7	22.0					
10 hours or more	0	4.8					

[1]Includes surveys at Fashoda CG and DU Area

4.4.6 Adequacy of Access to Information

Table 4.4-8 summarizes the results of the survey question related to the adequacy of "access to information" for select topics. Complete results to this survey question can be found in the frequency tables contained in Appendix C of the *Visitor Use and Impact Technical Report*. For each topic identified by the surveyor, respondents were asked to reflect on the adequacy of access to information by responding "adequate," "inadequate" or "never looked for information." Generally across all survey areas and for all topics, the responses were mostly "never look for it" or "adequate."

Table 4.4-8.	**Responses to recreation visitor surveys conducted in 2002 at the UARP about adequacy of "access to information" for select topics (e.g., campsite availability).**				
Question: Please tell me about access to information by responding "adequate," "inadequate" or "never looked for information":		**Percent responses from visitor surveys at:[1]**			
		Developed	**Dispersed**	**Dispersed – wilderness trailhead**	**Dispersed – canyonlands**
Campsite Availability	Adequate	60	32	72	17
	Inadequate	11	12	8	14
	Never looked for information	28	54	20	64
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Improve internet / web		35	25	50	20
Provide more information		15	-	-	-

Table 4.4-8. Responses to recreation visitor surveys conducted in 2002 at the UARP about adequacy of "access to information" for select topics (e.g., campsite availability).					
Question: Please tell me about access to information by responding "adequate," "inadequate" or "never looked for information":		**Percent responses from visitor surveys at:[1]**			
		Developed	**Dispersed**	**Dispersed – wilderness trailhead**	**Dispersed – canyonlands**
Campfire Restrictions	Adequate	67	75	84	33
	Inadequate	6	2	-	8
	Never looked for information	26	22	16	56
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Post at facilities		28	-	-	-
Improve internet / web		7	-	-	-
Reservoir Levels	Adequate	46	46	40	31
	Inadequate	11	7	4	11
	Never looked for information	42	46	56	58
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Improve internet / web		32	60	-	-
Post at facilities		12	-	-	50
Wilderness Permits	Adequate	28	27	84	17
	Inadequate	5	2	8	11
	Never looked for information	66	69	8	69
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Post at facilities		17	-	-	-
Improve internet / web		-	-	-	25
Trail Locations	Adequate	42	41	84	22
	Inadequate	11	16	16	22
	Never looked for information	45	41	-	53
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Post at facilities		9	18	-	13
Provide more trail signs		9	45	25	13
Stream Flow Rate	Adequate	22	25	16	25
	Inadequate	9	4	8	8
	Never looked for information	67	69	76	64
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Improve internet / web		11	33	50	-
Post at facilities		6	-	-	-
Environ-mental Displays	Adequate	33	31	32	17
	Inadequate	10	4	8	14
	Never looked for information	57	63	60	67
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Provide more displays		22	100	-	20
Improve internet / web		8	-	-	-
Fish Stocking	Adequate	25	24	8	14
	Inadequate	11	9	20	14
	Never looked for information	62	66	72	69
Two most common suggestions for improvement, by %, of respondents who said "inadequate":					
Post at facilities		28	17	20	20
Improve internet / web		8	17	20	-

[1] Sample size: Developed, n=698; Dispersed, n=68; Dispersed – wilderness trailhead, n=25; Dispersed – canyonlands, n=36. For each topic, approximately one percent did not provide a response.

4.4.7 Changes and Improvements Identified in Visitor Surveys

4.4.7.1 Changes and Improvements Identified in Visitor Surveys—Crystal Basin

SMUD also asked visitors questions about what changes or improvements are needed to the motorized and non-motorized trail systems, reservoir shorelines, and to the access for stream and rivers. These results are summarized in Table 4.4-9 below. The figures represent the data collected from this study area in the Crystal Basin. The suggested changes listed by those surveyed in developed recreation facilities were fairly consistent with the suggested changes listed by those surveyed in the dispersed recreation areas. Consequently all of the suggested changes listed in both data sets are included in the table and they are not sorted by data set. Across all four of these survey questions relating to changes or improvements to the area, the response frequencies from the responses collected in the dispersed recreation areas were higher than the responses collected from visitors at the developed recreation facilities. Overall, changes or improvements to the motorized trail system and access to the reservoir shorelines had the highest response frequencies. The list of changes to the motorized trail system includes suggestions from visitors to restrict or limit OHV opportunities while some respondents would prefer to have more trails for motorized use. The highest frequency response related to changes in the motorized trails occurred in the survey responses that were collected at Gerle Creek Reservoir and Airport Flat Campground had the highest frequency response at this reservoir. Visitors at both the developed recreation facilities and the dispersed recreation areas stated a desire for more non-motorized trails including bicycle, equestrian, and hiking trails. In addition, visitors would like to see improvements in trail conditions and information. The need for shoreline improvements appears to be the lowest at Gerle Creek Reservoir. The frequencies of response at the other three reservoirs were approximately the same and many of the suggested changes included shoreline development such as trails, day use areas, campgrounds and docks. The need for changes or improvements to access rivers or streams had the lowest frequency response of these four survey questions. Based on the suggestions provided in the survey responses, it appears there are a few visitors who would like to see trails to some of the streams and rivers and the highest response frequency for this survey question occurred at Ice House Reservoir.

Table 4.4-9. Changes or improvements identified by Crystal Basin visitors during the summer. (SOURCE: *Visitor Use and Impact Technical Report* (Dispersed and weighted Developed Data Sets))

Survey Question: 'Would you like to see any changes or improvements to the existing motorized trail system, such as off-highway vehicle trails, in the Crystal Basin?'

% of Visitors Answered 'Yes'- Developed Recreation Facilities		% of Visitors Answered 'Yes'- Dispersed Recreation Areas[3]	Suggested Change/Improvement
All Reservoirs[1]	15.4	29.4	Expanding the motorized trail system
Loon Lake Res.[2]	11.4		Reopening Bassi Falls area
Gerle Cr. Res.[2]	20.0		Reduce regulations or enforcement of OHV use
Union Valley Res.[2]	18.7		Improve trailhead markers

Table 4.4-9. Changes or improvements identified by Crystal Basin visitors during the summer. (SOURCE: *Visitor Use and Impact Technical Report* (Dispersed and weighted Developed Data Sets))			
Ice House Res. [2]	13.2		Reduce or eliminate motorized trail system
			Strengthen regulations or enforcement of OHV use
			More paved or other road improvements
Survey Question: 'Would you like to see any changes or improvements to the existing non-motorized trail system, such as off-highway vehicle trails, in the Crystal Basin?'			
% of Visitors Answered 'Yes'- Developed Recreation Facilities		**% of Visitors Answered 'Yes'- Dispersed Recreation Areas**	**Suggested Change/Improvement**
All Reservoirs[1]	15.2	16.2	Better trail/trailhead marking
Loon Lake Res.[2]	15.8		Increase information /maps
Gerle Cr. Res. [2]	18.3		More bike trails
Union Valley Res. [2]	15.2		More hiking trails
Ice House Res. [2]	13.8		More equestrian trails
			More trails
			Increase trail maintenance
			Increase level of development
			More hike-in or boat-in campgrounds
Survey Question:'Are improvements needed to make access to the shorelines of the reservoirs easier, safer or more enjoyable?			
% of Visitors Answered 'Yes'- Developed Recreation Facilities		**% of Visitors Answered 'Yes'- Dispersed Recreation Areas**	**Suggested Change/Improvement**
All Reservoirs[1]	23.1	30.9	Clearly defined trail to shoreline
Loon Lake Res.[2]	22.8		More docks
Gerle Cr. Res. [2]	12.6		More parking
Union Valley Res. [2]	24.6		Make improvements for seniors or disabled
Ice House Res. [2]	23.4		Keep water levels up
			More sand/less rocks
			Pave trail to shoreline
			More picnic or day use areas
			More fish
			Banks are too steep
			More campground or campsites closer to shoreline
			Greater road access
			More designated swimming areas
			Floating bathrooms
			More boat ramps
			More information about access
Survey Question:'Are improvements needed to make access to the rivers or streams easier, safer or more enjoyable?			
% of Visitors Answered 'Yes'- Developed Recreation Facilities		**% of Visitors Answered 'Yes'- Dispersed Recreation Areas**	**Suggested Change/Improvement**
All Reservoirs[1]	6.8	8.8	Improve road and trail access to river or stream
Loon Lake Res.[2]	5.4		Paved trails or walkways

Table 4.4-9. Changes or improvements identified by Crystal Basin visitors during the summer. (SOURCE: *Visitor Use and Impact Technical Report* (Dispersed and weighted Developed Data Sets))			
Gerle Cr. Res. [2]	8.6		Better parking
Union Valley Res. [2]	5.8		Picnic areas
Ice House Res. [2]	9.6		More information about access
			Remove some of the brush along river or stream
			Improve accessibility for seniors or disabled

[1] Weighted data set (n=698), *Visitor Use and Impact Technical Report*
[2] Unweighted data set (n(LL)=184; n(GC)=175; n(UV)=171;n(IH)=167), *Visitor Use and Impact Technical Report*
[3]Dispersed surveys conducted face-to-face with visitors generally within ¼ mile of the reservoir shoreline (n=68), *Visitor Use and Impact Technical Report*

An additional question asked participants to rate how important various facilities and services were in their decision to visit the area. The results of this question are presented in Table 4.4-10 below and bar graphs of the responses for each facility and service are provided in Figure 4.4-1. Among the facilities and services listed, the most important to the visitors surveyed were picnic facilities, boat launches and developed campgrounds; swimming beaches had the lowest response frequency.

Table 4.4-10. How important services and facilities are in visitors' decision to visit the Crystal Basin. (Developed Data Set).					
Survey Question: Please rate how important these facilities and services are in your decision to visit this area?					
	% of survey responses (n=697)				
	Not at all important	**Somewhat important**	**Moderately important**	**Extremely important**	**No Response**
Boat Launches/Ramps	24.2	18.7	17.6	39.2	.3
Developed Campgrounds	7.2	9.9	29.7	52.9	.3
Developed Swimming/Beach Areas	20.9	22	23.2	33.4	.4
Non-motorized trails	16.4	14.2	31.3	37.9	.3
OHV Trails	42.8	21.1	11.2	24.2	.7
Picnic Facilities	12.8	20.7	31.1	35	.4
Two-lane paved road access	8.3	13.3	29.4	48.6	.3

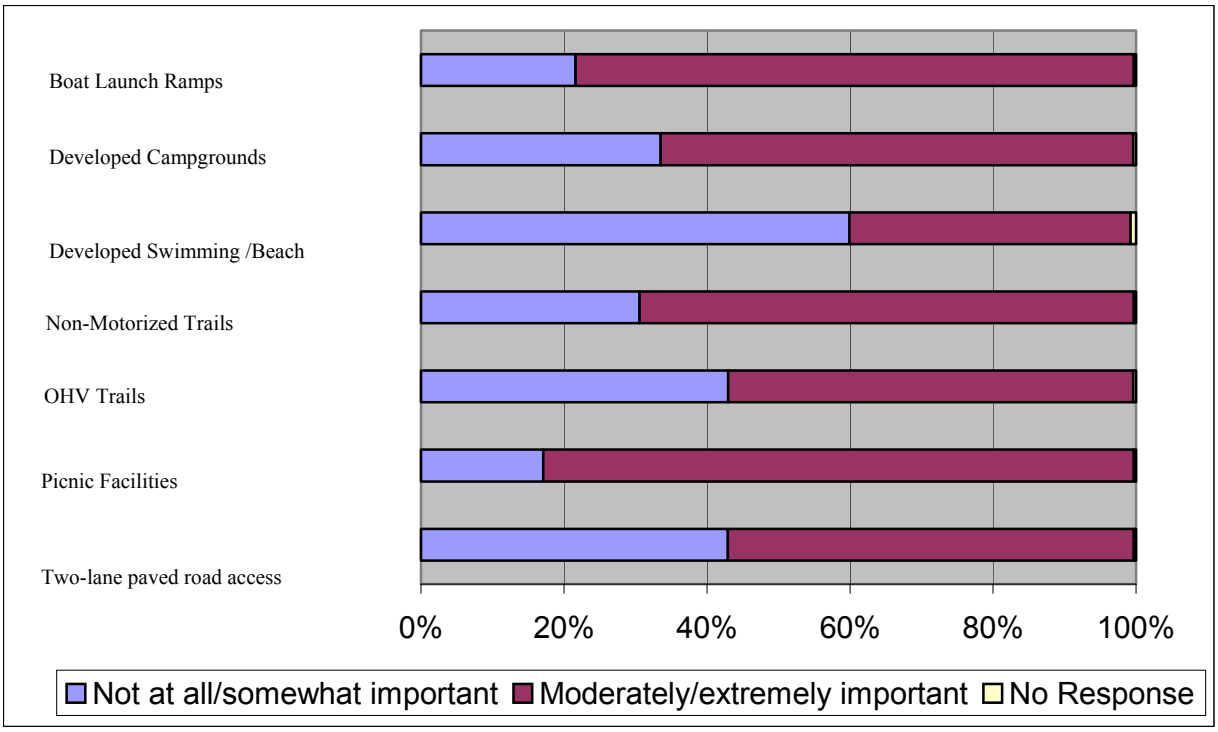

Figure 4.4-1. How important services and facilities are in visitors' decision to visit the Crystal Basin. (SOURCE: Visitor Use and Impact Technical Report (Developed Data Set)).

SMUD also asked visitors questions about needed changes or improvements at UARP recreation facilities. These results are summarized in Table 4.4.11 below. The data are sorted by the reservoir where the facilities are located and by facility. The individual survey responses were recorded verbatim in the field and then common responses were grouped together to further tabulate the responses. The data for the actual improvement or change are listed in the categories of the coded responses. Most of the responses related to restrooms. Visitors often commented that they would like to have flush toilets and showers at the developed facilities. Visitors would also like to see potable water provided in the developed facilities or where potable water is already provided, visitors commented that improvements to these water systems are needed. Improvements for RV access at developed recreation facilities were also identified in the visitor responses. The types of improvements suggested by those surveyed include longer spur lengths and RV hookups at campsites. Visitors also commented on improvements in site management such as picking up litter, more frequent trash collection, cleaner restrooms and enforcing campground rules (e.g. quiet hours).

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Survey Question: 'Are there any changes or improvements that you would like to see at this facility?'		
	Drilldown of Coded Responses	**Percent of Visitors Surveyed at Developed Sites that Answered 'Yes'**
All Reservoirs[1]		**54.4**
Loon Lake Reservoir[1]		**55.4**
Loon Lake Chalet[2] **(n=2)**		**50.0**
		% of affirmative responses
Bathroom or shower related	Shower	100
Loon Lake Campground[2] **(n=29)**		**79.3**
		% of affirmative responses
Bathroom or shower related	Shower	52.2
	Flush toilets	
	Cleaner restrooms	
Potable water related	Potable water for dish/hand washing	8.7
	Potable water to fill up RVs	
	Potable water at campsite	
More first-come/first-serve opportunities		8.7
Install food storage boxes		8.7
Solve the bear problem		8.7
RV related	More access for larger RVs	4.3
	Hookups for RVs	
Other developed facility changes related		4.3
Other		4.3
Loon Lake Group Campground[2] **(n=4)**		**75.0**
		% of affirmative responses
Bathroom or shower related	Shower	66.7
	Bathroom improvements	
Less personal watercraft		33.3
Northshore Campground[2] **(n=10)**		**70.0**
		% of affirmative responses
Bathroom or shower related	Bathroom improvements	42.9
	More bathrooms	
	Cleaner bathrooms	
Potable water related	Provide potable water	28.6
Improve management services related	Enforce quiet hours	28.6
	More trash removal	
Red Fir Campground[2] **(n=1)**		**100**
		% of affirmative responses
No response		100
Pleasant Campground[2] **(n=1)**		**100**
		% of affirmative responses
Other developed facility changes related	Response not provided	100
Loon Lake Boat Launch[2] **(n=136)**		**48.4**
		% of affirmative responses
Bathroom or shower related	Shower	31.3
	Flush toilets	
	Bathroom improvements	

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Boat launch related	Launching improvements	16.4
Solve the bear problem		7.5
Potable water related	Potable water for dish/hand washing	4.5
	Potable water to fill up RVs	
Other developed facility changes	More picnic tables	4.5
	Bigger parking lot	
Fix or improve roads		4.5
Buoy or markers identifying hazards		4.5
Less powerboats		4.5
Improve management services related	Enforce quiet hours	3.0
Install food storage boxes		3.0
More campgrounds or campsites		3.0
Trails related	Increase/improve trails	1.5
More first-come/first-serve opportunities		1.5
RV related	More access for larger RVs	1.5
More beaches		1.5
Less personal water craft		1.5
Other		4.5
Gerle Creek Reservoir[1]		**52.0**
Gerle Creek CG[2] **(n=103)**		**51.5**
		% of affirmative responses
Bathroom or shower related	Shower	56.6
	Flush toilets	
	Bathroom improvements	
	Cleaner restrooms	
Install food storage boxes		7.5
Fix or improve roads		3.8
Other developed facility changes	Bigger parking lot	3.8
Improve management services related	Enforce quiet hours	3.8
	More trash removal	
Solve the bear problem		3.8
Stock more fish		3.8
Potable water related	Potable water for hand washing	1.9
	Potable water at campsite	
Trails related	Increase/improve trails	1.9
More campgrounds or campsites		1.9
Allow electric motors on Gerle Cr. Reservoir		1.9
Better signs along roadway		1.9
Other		3.8

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Airport Flat Campground[2] (n=43)		**58.1**
		% of affirmative responses
Bathroom or shower related	Shower	36.0
	Bathroom improvements	
	Cleaner restrooms	
Potable water related	Provide potable water	28.0
	Potable water for dishes/hands	
RV related	More access for larger RVs	12.0
Install food storage boxes		12.0
Improve management services related		4.0
Other developed facility changes		4.0
Other		4.0
Angel Creek & Gerle Creek Day Use Areas[2] (n=29)		**44.8**
		% of affirmative responses
Other developed facility changes	More picnic tables	23.1
	Bigger parking lot	
Install food storage boxes		15.4
Potable water related	Potable water at campsite	7.7
Bathroom or shower related		7.7
RV related	Hookups for RVs	7.7
Fix or improve roads		7.7
Solve the bear problem		7.7
More campgrounds or campsites		7.7
Other		15.4
Union Valley Reservoir[1]		**54.4**
Big Silver Group Campground[2] (n=2)		**50.0**
		% of affirmative responses
Potable water related	Provide potable water	50.0
No response		50.0
Camino Cove Campground[2] (n=9)		**55.6**
		% of affirmative responses
Potable water related	Provide potable water	40.0
	Do not add potable water	
Other developed facility changes related	More picnic tables	20.0
RV related	More access for larger RVs	20.0
Less OHVs		20.0
Jones Fork Campground[2] (n=6)		**66.7**
		% of affirmative responses
Bathroom or shower related	Cleaner restrooms	50.0
Potable water related	Provide potable water	50.0
Azalea Cove/Lone Rock Campground[2] (n=2)		**100**
		% of affirmative responses
Potable water related	Provide potable water	50
Other		50

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Sunset Campground[2,3] (n=39)		**69.2**
		% of affirmative responses
Bathroom or shower related	Shower	88.9
	Flush toilets	
	Bathroom improvements	
	Cleaner restrooms	
Potable water related	Potable water for dish/hand washing	3.7
Other developed facility changes related		3.7
Improve management services related	Reduce litter	3.7
Wench Creek Campground[2] (n=20)		**65.0**
		% of affirmative responses
Bathroom or shower related	Shower	69.2
	Bathroom improvements	
Potable water related	Potable water for dish/hand washing	15.4
Other developed facility changes related		7.7
More beaches		7.7
Wench Creek Gr. Campground[2] (n=6)		**83.3**
		% of affirmative responses
Bathroom or shower related	Shower	20.0
Potable water related	Improve water pressure/availability	40.0
Other developed facility changes related		20.0
Higher reservoir levels		20.0
Westpoint Campground[2] (n=3)		**66.7**
		% of affirmative responses
Other developed facility changes related	More picnic tables	50.0
RV related	More access for larger RVs	50.0
Wolf Creek Campground[2] (n=6)		**66.7**
		% of affirmative responses
Bathroom or shower related	Shower	25
Potable water related	Improve taste of water	25
Other developed facility changes related		25
More beaches		25
Yellowjacket Campground[2] (n=11)		**81.8**
		% of affirmative responses
Bathroom or shower related	Shower	55.6
Potable water related	Potable water for dish/hand washing	22.2
	Improve water pressure/availability	
RV related	Hookups for RVs	11.1
Boat launch related	Boat launch improvements	11.1
Yellowjacket Boat Launch[2] (n=5)		**60**
		% of affirmative responses
Boat launch related		33.3
More beaches		66.7

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Westpoint Boat Launch[2] (n=28)		**39.3**
		% of affirmative responses
Boat launch related	Launching improvements	27.3
Bathroom or shower related	Shower	18.2
	Cleaner restrooms	
Other developed facility changes related	Bigger parking lot	18.2
RV related	More access for larger RVs	9.1
Potable water related	Provide potable water	9.1
Trails related	Increase/improve trails	9.1
More beaches		9.1
Sunset Boat Launch[2] (n=34)		**20.6**
		% of affirmative responses
Bathroom or shower related	Flush toilets	83.3
	Bathroom improvements	
	More bathrooms	
	Floating bathrooms	
	Cleaner restrooms	
Other developed facility changes related	More picnic tables	16.7
Ice House Reservoir[1]		**53.9**
Ice House Campground[2] (n=62)		**53.2**
		% of affirmative responses
Bathroom or shower related	Shower	57.6
	Flush toilets	
	Bathroom improvements	
Improve management services related	Enforce quiet hours	15.2
	Reduce litter	
	More trash removal	
RV related	More access for larger RVs	9.1
	Hookups for RVs	
Potable water related	Potable water for dish/hand washing	3.0
Other developed facility changes related		3.0
Trails related	Increase/improve trails	3.0
Install food storage boxes		3.0
More campgrounds or campsites		3.0
Less personal watercraft		3.0
Northwind Campground[2] (n=7)		**42.9**
		% of affirmative responses
Potable water related	Provide potable water	50
Unreadable response		50
Strawberry Campground[2] (n=8)		**62.5**
		% of affirmative responses
Bathroom or shower related	More bathrooms	60.0
	Cleaner restrooms	
Potable water related	Provide potable water	20.0
More campgrounds or campsites		20.0

Table 4.4-11. Changes or improvements to the developed recreation facilities listed by summertime visitors in the Crystal Basin.		
Ice House Boat Launch[2] (n=71)		**52.1**
		% of affirmative responses
Bathroom or shower related	Shower	42.1
	Flush toilets	
	Bathroom improvements	
	Cleaner restrooms	
RV related	More access for larger RVs	10.5
	Hookups for RVs	
Boat launch related	Launching improvements	10.5
Potable water related	Potable water for dishes and hand washing	7.9
	Potable water to fill RVs	
	Potable water at campsite	
More campgrounds or campsites		7.9
Other developed facility changes related	More picnic tables	5.3
Trails related	Increase/improve trails	2.6
Less powerboats		2.6
Less personal watercraft		2.6
Buoys or markers identifying hazards		2.6
Stock more fish		2.6
Other		2.6
Ice House Day Use Area[2] (n=19)		**63.2**
		% of affirmative responses
Bathroom or shower related	Flush toilets	33.3
	More bathrooms	
	Cleaner bathrooms	
Other developed facility changes	More picnic tables	33.3
	Bigger parking lot	
Potable water related	Provide potable water	8.3
	Potable water for dish/hand washing	
Bee traps		8.3
Other		8.3

Note: Non-responses not included so totals may not equal 100 percent.
[1]Weighted data set, *Visitor Use and Impact Technical Report*
[2]Unweighted data set, *Visitor Use and Impact Technical Report*
[3]Includes surveys at Fashoda CG and DU Area

4.4.7.2 Changes and Improvements Identified in Visitor Surveys—Canyonlands

SMUD also asked visitors questions about what changes or improvements are needed in the area where they were intercepted for a survey and changes or improvements needed as related to motorized and non-motorized trail systems. Some of the more common responses for changes or improvements to the area related to the need for restrooms and litter removal. At Brush Creek and Slab Creek reservoirs visitors commented about improving the boat launches, parking area and access roads. Visitors to Brush Creek and Slab Creek reservoirs also stated that they would like to see management actions that support slow speed motorized boating and flatwater paddling opportunities. These results are summarized in Table 4.4-12 below.

Table 4.4-12. Changes or improvements to the area listed by summertime visitors in the Canyonlands. (SOURCE: *Visitor Use and Impact Technical Report (Dispersed Data Set.*)		
Survey Question: 'Are there any changes or improvements that you would like to see in this area?'		
Reservoir[1]/Suggested Change or Improvement	**Drilldown of Coded Responses**	**Percent of Visitors Surveyed at Developed Sites that Answered 'Yes'**
Junction Reservoir (n=5)		**80.0**
Improve management services		
Boat launch related		
Trails related		
Other developed facility changes	More picnic tables	
Slab Creek Reservoir (n=27)		**59.0**
Cleaner camping area		
Bathrooms and trash cans		
Cleaner		
Easier access to lower reservoir		
Easier access-not able to launch a boat with a trailer		
Eliminate dams on the river		
Less broken glass and trash		
Less pollution		
Portable toilet at Slab BL at upper end		
Restrict size of motor/speed limit enforcement		
Stock the reservoirs and streams w/ more fish		
Stock with trout		
Stricter rules for alcohol use in power boats		
Trash cans; FS needs to patrol		
Trash picked up		
Under age drinking-people w/guns shooting		
Brush Creek (n=5)		**80.0**
Better parking area		
Better road for boat ramp		
Improve access-continue past strong flow		
More clearly marked OHV trails		
More low-speed motorized areas for canoe&kayak-safety		
One lane road needs signs to honk your horn before entering		
Open gate to SFAR at North Canyon/Slab Creek Rd.		
Survey Question:' Would you like to see any changes or improvements to the existing motorized trail system, such as off-highway vehicle trails?'		
Reservoir[1]/Suggested Change or Improvement	**Drilldown of Coded Responses**	**Percent of Visitors Surveyed at Developed Sites that Answered 'Yes'**
Junction Reservoir (n=5)		**60.0**
Expanded motorized trail system		
Reduce or eliminate motorized trail system		
Slab Creek Reservoir (n=27)		**56.0**
Expanded motorized trail system		
Reduce or eliminate motorized trail system		
Brush Creek Reservoir (n=5)		**40.0**
Expanded motorized trail system		
Improve trailhead markers (not obvious if allowable)		

Table 4.4-12. Changes or improvements to the area listed by summertime visitors in the Canyonlands. (SOURCE: *Visitor Use and Impact Technical Report (Dispersed Data Set.*)		
Survey Question: 'Would you like to see any changes or improvements to the existing non-motorized trail system, such as hiking trails?'		
Reservoir[1]/Suggested Change or Improvement	**Drilldown of Coded Responses**	**Percent of Visitors Surveyed at Developed Sites that Answered 'Yes'**
Junction Reservoir (n=5)		**0**
Slab Creek Reservoir (n=27)		**22.0**
Better trail/trailhead marking		
More hiking trails		
Increased level of development		
Brush Creek Reservoir (n=5)		**0**

[1]Dispersed Data Set includes Slab Creek, Brush Creek and Junction Reservoirs. No visitors were found at Camino Reservoir during the survey effort.

An additional question asked participants to rate how important various facilities and services were in their decision to visit the area. The results of this question are presented in Table 4.4-13 below and bar graphs of the responses for each facility and service are provided in Figure 4.4-2.

Table 4.4-13. How important services and facilities are in visitors' decision to visit the Canyonlands. (Dispersed Data Set)					
	% of survey responses (n=33)				
Please rate how important these facilities and services are in your decision to visit this area?	**Not at all important**	**Somewhat important**	**Moderately important**	**Extremely important**	**No Response**
Boat Launches/Ramps	66.7	12.1	6.1	3	12.1
Developed Campgrounds	36.4	21.2	15.2	18.2	9.1
Developed Swimming/Beach Areas	39.4	30.3	12.1	9.1	9.1
Non-motorized trails	12.1		21.2	63.6	3
OHV Trails	75.8	6.1	9.1	0	9.1
Picnic Facilities	48.5	27.3	15.2	3	6.1
Two-lane paved road access	27.3	24.2	30.3	18.2	0

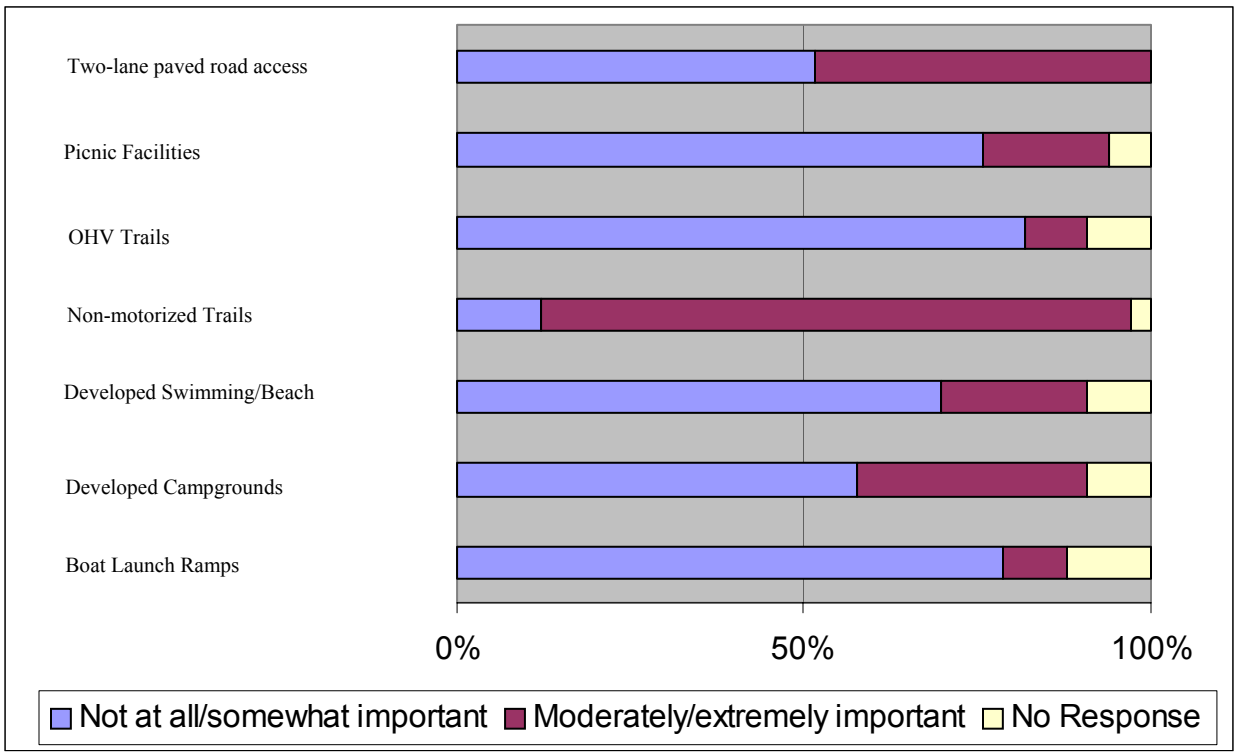

Figure 4.4-2. Percentage of how important services and facilities are in visitors' decision to visit the Canyonlands (n=33). (SOURCE: *Visitor Use and Impact Technical Report* (Dispersed Data Set)).

Visitors were asked about their access to information about campsite availability, campfire restrictions, reservoir levels, wilderness permits, trails, stream flows, education and environmental displays, and fish stocking. Approximately two-thirds of all visitors surveyed in the Canyonlands responded for that they 'had never looked for' each type of information. The remaining one-third of the respondents found the information either 'adequate' or 'inadequate' and the majority of these responses were 'adequate'.

4.4.7.3 Changes and Improvements - Winter

Both types of winter surveys solicited visitor responses regarding changes and improvements. These responses are tabulated in Table 4.4-14 below. Most of the affirmative survey responses relating to changes at the Loon Lake Chalet concerned the restrooms. People commented that they would like cleaner restrooms, flush toilets, indoor restrooms and showers. Other amenities that people said they would like at the Chalet included: mirrors, ceiling fans, telephone/pay phone, electricity, TV/VCR, radio and hot tub. Many visitors commented that they would like to see larger areas plowed for parking, more plowed roads and they would like to have access to campgrounds and boat launches during the winter. The responses included suggestions to improve winter opportunities such as more ski trails, groomed trails, and more huts. Some comments reflected opposing views of activities that should be allowed during winter months. In particular, some visitors want increased access for OHVs and snowmobiles while others would like to see restrictions placed on these recreational activities.

Table 4.4-14. Changes or improvements to the developed recreation facilities listed by wintertime visitors in the Crystal Basin. (SOURCE: *Visitor Use and Impact Technical Report.*)		
Survey Question: 'Are there any changes or improvements that you would like to see at Loon Lake Chalet?'		
	Responses recorded as 'Other'	**Percent of Visitors Surveyed that Answered 'Yes'**
Loon Lake Chalet Surveys (n=51)		**66.7**
		% of affirmative responses
Other	Responses not provided	38.2
Telephone/Pay phone		8.8
Flush Toilets		5.9
Showers		5.9
Ceiling Fans		5.9
Oven		5.9
Electricity/Outlets in Loft		5.9
Radio		5.9
Hot tub		5.9
Indoor Bathrooms		2.9
Cleaner Bathrooms		2.9
Mirror		2.9
TV/VCR		2.9
Crystal Basin Windshield Surveys (n=223)		**12.1**
		% of affirmative responses
Other	Less bears in campgrounds (summer)	37.0
	Public BBQ area	
	Open it to snowmobiling	
	Open to public on holidays	
	Area not available for most of my use	
	Access for disabled	
	Open one day per week	
	Limit commercial use	
	One more bathroom	
Flush Toilets		11.1
Water/sink in bathrooms		11.1
Showers		7.4
Info on renting/day use		7.4
Reduce ice @ entrance/parking lot		7.4
Indoor bathrooms		3.7
Mirror		3.7
Oven		3.7
TV/VCR		3.7
Hot tub		3.7
Survey Question: 'Do you have adequate access to information about reservations and availability of the Loon Lake Chalet?'		
	Suggested Changes or Improvements	**Percent of Visitors Surveyed that Answered 'Adequate'**
Loon Lake Chalet Surveys (n=51)	Website improvements	70.6
	Simplify reservation process	
	More advertisement	
	Improve road signs	

Table 4.4-14. Changes or improvements to the developed recreation facilities listed by wintertime visitors in the Crystal Basin. (SOURCE: *Visitor Use and Impact Technical Report.*)		
Crystal Basin Windshield Surveys (n=223)	Expand chalet	40.4
	Add new huts in other areas	
	Did not know it was available	
	Hard to find available weekend to rent	
	Post info on how to reserve outside chalet or at commercial business in Placerville.	
	Less advertisement	
	Mailers, advertisements, brochures	
	Provide info at Camino FS office	
Survey Question: Are there any changes or improvements that you would like to see[1]:		
	Suggested Changes or Improvements	**Percent of Visitors Surveyed that Answered 'Yes'**
Related to parking		17.9
		% of affirmative responses
	More/enlarge plowed parking areas along route	55.0
	More/enlarge plowed parking areas at a campground	12.5
	More/enlarge plowed parking areas at Ice House Res.	10.0
	Other:	7.5
	Handicap boat spaces needed	
	Signs telling others not to block other vehicles in	
	More/enlarge plowed parking areas at Robbs Hut	5.0
	More/enlarge plowed parking areas at Loon Lake Res.	5.0
	More/enlarge plowed parking areas at Gerle Cr. Dam Rd.	2.5
Related to the access road		20.2
		% of affirmative responses
	Open/plow Sunset Boat Launch	51.1
	More road repairs	13.3
	Open a campground	13.3
	Other:	11.1
	Blocked to 4 wheelers	
	Better access	
	Open restrooms at Cleveland Corral	
	Need bike lanes	
	Close Cheese Camp Rd. after 1st snow (no OHVs)	
	Snow plow more often	8.9
	Open more roads	8.9
	Reduce ice on roads	8.9
	More/enlarge plowed parking areas	8.9
	Expand roads plowed	4.4
	Open/plow Loon Lake Launch	4.4

Table 4.4-14. Changes or improvements to the developed recreation facilities listed by wintertime visitors in the Crystal Basin. (SOURCE: *Visitor Use and Impact Technical Report.*)		
	Better road signs	4.4
Related to the winter sports trails		16.6
		% of affirmative responses
	More trails	24.3
	Improve trail markers	21.6
	Other:	16.2
	Trails to telemark (telemark hill is not steep enough)	
	Signage to unplowed roads that would be good cross country ski trails	
	Add ski area	
	Van Vleck trail-Loon Lake-after campground, needs to be rerouted and improved through chaparral area	
	More warming huts	
	Bathrooms	
	Groomed trails	13.5
	Provide map of trails	8.1
	More OHV opportunities	8.1
	Limit OHV access	5.4
	Improve trailhead signs	2.7
Other improvements related to winter recreation in the Crystal Basin		22.0
		% of affirmative responses
	Other:	32.7
	Boat docks/launch ramps always open	
	Organize parking for snowplay areas	
	Date maps /info so visitor know how current it is	
	Keep boat docks floating year round	
	Stock the lake better	
	Cheaper camping	
	Develop marked trails around Ice House area & low level areas. Signs become covered in deep snow.	
	Provide more snow	
	Safe, designated snow play areas	
	We like the limited snowmobiling	
	More open gates	
	Better boat ramp at Loon Lake	
	Not building more campgrounds	
	Maintain Robbs Hut & Chalet as they are	
	No snowmobiles on Cheese Camp Rd.	
	Open a campground	20.4
	More warming huts	12.2
	Bathroom improvements	6.1
	Trash bins	6.1
	Less OHV opportunities	6.1
	More/enlarge plowed parking areas	4.1

Table 4.4-14. Changes or improvements to the developed recreation facilities listed by wintertime visitors in the Crystal Basin. (SOURCE: *Visitor Use and Impact Technical Report.*)		
	More OHV opportunities	4.1
	Improvements for snowmobiling	2.0
	Groomed trails	2.0
	Expand roads plowed	2.0

[1]Crystal Basin Windshield Winter Surveys only, *Visitor Use and Impact Technical Report*

Other cuff notes on the survey responses to this question included: boat docks/launch ramps should always be open, organize parking for snow play areas, date maps and information so visitors can determine how current it is, keep boat docks floating in water year-round, stock the lake better, lower fees for camping, develop marked trails around Ice House, designate safe snow play areas, enjoy that snowmobile use is restricted, more open gates, better boat ramp at Loon Lake, do not build more campgrounds, maintain Robbs Hut and the Chalet as they are and snowmobiles should not be allowed on Cheese Camp Road.

4.4.8 Other Sources of Information About Visitors

Supplemental information about visitors to the UARP can be inferred from data collected as part of other survey efforts. Recognizing that these other information sources were not developed specifically to provide information about visitors to the UARP, the information does provide a general characterization about visitors who visit forested settings within approximately 20 miles of the UARP reservoirs. One of these sources of demographic information is the NVUM surveys conducted on Ice House Road near Highway 50 where the ENF collected data from 212 respondents. Another source is the visitor surveys completed as part of the relicensing effort for FERC Project No. 184 which includes reservoirs that the visitors to the UARP said that they visit for similar recreation experiences. Visitor data regarding the gender, ethnicity and age from various information sources are presented in Table 4.4-15.

Comparing the information from these surveys shows some areas of consistency. The UARP visitor surveys show a higher percentage of male survey respondents than female respondents. The surveys completed by EID show this same tendency. The NVUM survey responses captured ethnicity data and most (88.6%) of those surveyed identified their ethnic background as white. The EID surveys also showed high percentages (82.7% and 86.7%) of white respondents in the 1999 and 2002. The most frequent age grouping in both the NVUM survey and EID survey responses was 40 to 49 years with the majority of the respondents being between 30 and 59 years.

Table 4.4-15. Demographic information about visitors to the Crystal Basin. (SOURCE: Visitor surveys 2002-03, NVUM Surveys and EID Visitor Surveys)				
		Percent of Respondents		
Gender-		**Visitor Surveys-summer**	**Visitor Surveys-Winter/LLC**	**Visitor Surveys-Winter/Windshield**
	Male	57.5	56.9	68.2
	Female	38.6	43.1	31.8

Table 4.4-15. Demographic information about visitors to the Crystal Basin. (SOURCE: Visitor surveys 2002-03, NVUM Surveys and EID Visitor Surveys)				
			EID Surveys[3]	
			1999	2002
	Male		61.9	61.0
	Female		38.1	39.0
Ethnicity[2]		**NVUM Surveys[2]**		
	Black/African American	3.3	0.7	0.4
	Asian	1.4	4.3	2.7
	Native Hawaiian or Pacific Islander	0.5		
	White	88.6	82.7	86.7
	American Indian/Alaska Native	2.4	2.0	1.7
	Spanish, Hispanic or Latino	3.8	6.5	4.1
	Other		3.8	4.4
Age				
	16-19	3.8		10.9
	20-29	8.0		
	30-39	15.6		25.3
	40-49	27.8		32.7
	50-59	23.1		19.6
	60-69	16.0		11.5
	70 and over	5.7		

[1]Unweighted Developed Data Set, Visitor Surveys 2002-03
[2]NVUM Survey responses collected on Ice House Road 2003
[3]El Dorado Irrigation District Visitor Surveys, FERC Project No. 184

4.5 Existing Recreational Visitor Use

In general, most of the UARP recreational use occurs at the UARP reservoirs in the Crystal Basin at Ice House, Union Valley, Gerle Creek and Loon Lake reservoirs. UARP recreation facilities including campgrounds, day use areas, boat launches, trailheads and scenic overlooks exist at these UARP reservoirs. The following sections include discussions about estimated recreational use, related to UARP recreation facilities and areas at and near the UARP. The sources of information used to develop an estimate of existing recreational use at and near the UARP include SMUD's FERC Form 80, ENF RIM and Fee Demonstration Project data, and various forms of ENF data provided for visitor use at dispersed recreation, huts and developed facility use during the shoulder season.

4.5.1 Licensed Hydropower Development Recreation Report Form (Form 80)

Hydropower licensees are required to report recreational use at their Projects to the FERC every six years. The most recent filing of this information for the UARP was in 2003. The recreational use data to prepare this filing with the FERC was developed using data from the 2002 recreation season that was summarized on the Licensed Hydropower Development Recreation Report Form, which is also known as Form 80. This form was filed with and accepted by the FERC on April 1, 2003. The information on the 2003 FERC Form 80 is another source of information that documents the levels and patterns of recreational use occurring at the UARP. Table 4.5-1 below summarizes this information for the main UARP reservoirs.

Table 4.5-1. Recreational use estimates and occupancy for UARP reservoirs in the Crystal Basin.				
	Ice House	**Union Valley**	**Gerle Creek**	**Loon Lake**
Number of Recreation Days[1]:				
Daytime Annual Total	17,333	20,989	2,905	13,346
Daytime Peak Weekend Average[2]	794	1,257	113	524
Nighttime Annual Total	43,234	79,826	11,057	26,330
Nighttime Peak Weekend Average[2]	1,178	3,744	558	928
Facility Capacity Percent[3]				
Access Areas[4]	50%	50%	50%	50%
Boat Ramps	30%	30%	N/A	20%
Boat Launching Lanes	30%	30%	N/A	20%
Fishing Piers	N/A	N/A	25%	N/A
Trails	N/A	20%	N/A	25%
Swimming Areas	N/A	30%	N/A	N/A
Picnic Areas	30%	30%	35%	25%
Camping Areas	65%	50%	50%	75%
Organization Camps	50%	40%	N/A	100%
Group Camps	50%	50%	N/A	N/A

[1]Each visit by a person to a development for recreational purposes during any portion of a 24-hour period.
[2]Weekends when recreational use is at its peak for the season (July 4th weekend and other holiday weekends).
[3]Amount of weekend use for this season reported compared with the facility's capacity to handle such use.
[4]Unimproved but well-known/popular sites which can be used to reach development waters (including waters below a dam) without trespassing on other property.

4.5.2 Facility Capacity Observations

SMUD made observations at parking areas at the various UARP boat launches, day use areas and trail heads facilities in the Crystal Basin in 2002 and 2003. These observations were only taken at one time of the day during the afternoon in an effort to capture the recreational use during its peak on holidays, weekends and weekdays. Table 4.5-2 below summarizes the observations taken during the summers of 2002 and 2003, the capacity of the individual facilities and their occupancy rates. Typically the highest occupancies were observed on holiday and some weekend days during between and including Memorial Day and Labor Day. Capacity of the parking areas in some cases exceeded 100 percent as vehicles were observed parked along road shoulders and beyond the developed boundaries of the facility.

Table 4.5-2. Observations for parking areas at boat launches, day-use areas and trailheads-Crystal Basin 2002 and 2003.

		No. of Spaces Occupied[1]			Capacity of the Site[1]			% Occupancy (No. Sites Occupied/Site Capacity)		
Location (BL=Boat Launch DU=Day Use TH=Trailhead)	Date/Time/Day of week (H=holiday, WE=weekend, WD=weekday)	Single vehicle or trailer	Vehicle with trailer	Total No. Sites Occupied	Single vehicle	Vehicle with trailer	Total capacity	Single vehicle or trailer	Vehicle with trailer	Total
Ice House										
Ice House DU Area	7/4/02, 3:00pm (H)	37	0	37	12	3	15	308%	0%	260%
	7/5/03, 2:38pm (H)	49	0	49				408%	0%	327%
	8/30/03, 11:05am (H)	4	0	4				33%	0%	27%
	7/26/03, 12:35pm (WE)	37	0	37				308%	0%	247%
	8/9/03, 11:04am (WE)	12	0	12				100%	0%	80%
	8/5/03,1:56pm (WD)	5	0	5				42%	0%	33%
	8/27/03, 1:53pm (WD)	3	0	3				25%	0%	20%
Ice House BL	7/4/02, 10:00am (H)	18	9	27	0	62	62	N/A	15%	44%
	7/4/02, 2:45pm (H)	26	17	43				N/A	27%	69%
	7/5/03, 2:15pm (H)	45	16	61				N/A	26%	98%
	8/30/03, 11:am (H)	14	12	26				N/A	19%	42%
	8/10/02, 5:20pm (WE)	17	0	17				N/A	0%	27%
	7/26/03, 12:15pm (WE)	32	17	49				N/A	27%	79%
	8/9/03,11:00am (WE)	28	11	39				N/A	18%	63%
	8/5/03 1:50pm (WD)	8	6	14				N/A	10%	23%
	8/27/03, 1:46pm (WD)	5	1	6				N/A	2%	10%
Union Valley										
Jones Fk. Bike TH	7/5/03, 2:06pm (H)	18	0	18	13	0	13	138%	N/A	138%
	8/30/03,11:15am (H)	3	0	3				23%	N/A	23%
	7/29/03, 12noon (WE)	1	0	1				8%	N/A	8%
	8/9/03, 11:12am (WE)	3	1	4				23%	N/A	31%
	8/5/03,1:35pm (WD)	0	0	0				0%	N/A	0%
	8/27/03, 1:24pm (WD)	0	0	0				0%	N/A	0%
Westpoint BL	5/26/02, 2:00pm (H)	14	0	14	9	6	15	156%	0%	93%
	7/5/03, 11:38am (H)	16	10	26				178%	167%	173%
	8/30/03, 12:24pm (H)	11	0	11				122%	0%	73%
	7/26/03, 11:15am (WE)	10	4	14				111%	67%	93%
	8/9/03, 2:48pm (WE)	12	5	17				133%	83%	113%
	8/5/03, 10:51am (WD)	3	3	6				33%	50%	40%
	8/27/03, 10:54am (WD)	5	1	6				56%	17%	40%

Table 4.5-2. Observations for parking areas at boat launches, day-use areas and trailheads-Crystal Basin 2002 and 2003.

		No. of Spaces Occupied[1]			Capacity of the Site[1]			% Occupancy (No. Sites Occupied/Site Capacity)		
Location (BL=Boat Launch DU=Day Use TH=Trailhead)	Date/Time/Day of week (H=holiday, WE=weekend, WD=weekday)	Single vehicle or trailer	Vehicle with trailer	Total No. Sites Occupied	Single vehicle	Vehicle with trailer	Total capacity	Single vehicle or trailer	Vehicle with trailer	Total
Sunset BL	7/4/02, 4:00pm (H)	25	18	43	0	92	92	N/A	20%	47%
	7/5/03, 1:55pm (H)	71	51	122				N/A	55%	133%
	8/30/03, 11:38am (H)	31	26	57				N/A	28%	62%
	8/10/02, 4:20pm (WE)	24	25	49				N/A	27%	53%
	7/26/03, 11:50am (WE)	48	45	93				N/A	49%	101%
	8/9/03,11:25am (WE)	23	23	46				N/A	25%	50%
	8/5/03, 1:28pm (WD)	14	9	23				N/A	10%	25%
	8/27/03, 1:18pm, (WD)	2	1	3				N/A	1%	3%
Fashoda DU Area[3]	5/26/02,2:30pm (H)	35	0	35	110	0	110	32%	N/A	32%
	7/4/02, 4:00pm (H)	42	1	43				38%	N/A	39%
	7/5/03, 1:52pm (H)	110	0	110				100%	N/A	100%
	8/30/03, 11:35am (H)	25	2	27				23%	N/A	25%
	7/26/03, 11:52am (WE)	55	0	55				50%	N/A	50%
	8/9/03 11:23am (WE)	62	3	65				56%	N/A	59%
	8/5/03,1:30pm (WD)	6	1	7				5%	N/A	6%
	8/27/03, 1:15pm (WD)	2	0	2				2%	N/A	2%
Big Silver Bike TH	7/5/03, 1:46pm (H)	5	0	5	7	0	7	71%	N/A	71%
	8/30/03, 11:46am (H)	0	0	0				0%	N/A	0%
	7/25/03, 11:45am (WE)	0	0	0				0%	N/A	0%
	8/9/03, 11:32am (WE)	0	0	0				0%	N/A	0%
	8/5/03,1:23pm (WD)	1	0	1				14%	N/A	14%
	8/27/03, 1:11pm (WD)	1	0	1				14%	N/A	14%
Wench Cr. Bike TH	7/5/03, 1:20pm (H)	5	0	5	6	0	6	83%	N/A	83%
	8/30/03, 11:19am (H)	2	0	2				33%	N/A	33%
	7/26/03, 11:40am (WE)	0	0	0				0%	N/A	0%
	8/9/03, 11:35am (WE)	2	0	2				33%	N/A	33%
	8/5/03,1:13pm (WD)	0	0	0				0%	N/A	0%
	8/27/03, 1:01pm (WD)	0	0	0				0%	N/A	0%
Yellowjacket BL[2]	7/5/03, 11:57am (H)	30	5	35	0	18	18	N/A	28%	194%
	8/30/03, 12:07pm (H)	15	6	21				N/A	33%	117%
	7/26/03, 11:30pm (WE)	14	3	17				N/A	17%	94%
	8/9/03, 11:44am (WE)	16	4	20				N/A	22%	111%
	8/5/03, 11:08am (WD)	2	2	4				N/A	11%	22%
	8/27/03, 11:17am (WD)	0	0	0				N/A	0%	0%

Table 4.5-2. Observations for parking areas at boat launches, day-use areas and trailheads-Crystal Basin 2002 and 2003.

		No. of Spaces Occupied[1]			Capacity of the Site[1]			% Occupancy (No. Sites Occupied/Site Capacity)		
Location (BL=Boat Launch DU=Day Use TH=Trailhead)	Date/Time/Day of week (H=holiday, WE=weekend, WD=weekday)	Single vehicle or trailer	Vehicle with trailer	Total No. Sites Occupied	Single vehicle	Vehicle with trailer	Total capacity	Single vehicle or trailer	Vehicle with trailer	Total
Big Hill Overlook	7/5/03, 3:38pm (H)	1	0	1	5	0	5	20%	N/A	20%
	7/26/03 12:45pm (WE)	1	0	1				20%	N/A	20%
	8/5/03,2:24pm (WD)	2	0	2				40%	N/A	40%
	8/27/03, 2:00pm (WD)	1	0	1				20%	N/A	20%
Gerle Creek										
Angel Cr. DU Area[2]	7/5/02, 9:00am (H)	1	0	1	12	0	12	8%	N/A	8%
	7/5/03, 1:04pm, (H)	9	0	9				75%	N/A	75%
	8/30/03, 12:09pm (H)	7	0	7				58%	N/A	58%
	7/26/03, 1:45pm (WE)	2	0	2				17%	N/A	17%
	8/9/03,12:20pm (WE)	7	0	7				58%	N/A	58%
	8/5/03, 11:39 (WD)	2	0	2				17%	N/A	17%
	8/27/03, 11:47am (WD)	0	0	0				0%	N/A	0%
Gerle Cr. DU Area	7/5/02, 10:30am (H)	4	0	4	18	0	18	22%	N/A	22%
	7/5/03, 12:55pm (H)	9	0	9				50%	N/A	50%
	8/30/03, 1:00pm (H)	9	0	9				50%	N/A	50%
	7/26/03, 1:30 (WE)	16	0	16				89%	N/A	89%
	8/9/03,12:08pm (WE)	14	0	14				78%	N/A	78%
	8/5/03, 11:39 (WD)	2	0	2				11%	N/A	11%
	8/27/03, 11:37am (WD)	1	0	1				6%	N/A	6%
Gerle Cr. TH	7/5/03, 12:50pm (H)	10	0	10	15	0	15	67%	N/A	67%
	8/30/03, 12:53pm (H)	0	0	0				0%	N/A	0%
	7/26/03 1:28pm (WE)	2	0	2				13%	N/A	13%
	8/9/03, 12:02pm (WE)	4	0	4				27%	N/A	27%
	8/5/03,11:26am (WD)	0	0	0				0%	N/A	0%
	8/27/03, 11:33am (WD)	0	0	0				0%	N/A	0%

Table 4.5-2. Observations for parking areas at boat launches, day-use areas and trailheads-Crystal Basin 2002 and 2003.

		No. of Spaces Occupied[1]			Capacity of the Site[1]			% Occupancy (No. Sites Occupied/Site Capacity)		
Location (BL=Boat Launch DU=Day Use TH=Trailhead)	Date/Time/Day of week (H=holiday, WE=weekend, WD=weekday)	Single vehicle or trailer	Vehicle with trailer	Total No. Sites Occupied	Single vehicle	Vehicle with trailer	Total capacity	Single vehicle or trailer	Vehicle with trailer	Total
Loon Lake										
Loon Lake TH	7/5/03, 12:20pm (H)	41	0	41	40	0	40	103%	N/A	103%
	8/30/03,1:25pm (H)	9	0	9				23%	N/A	23%
	7/26/03, 1:50pm (WE)	21	0	21				53%	N/A	53%
	8/9/03 12:35am (WE)	38	0	38				95%	N/A	95%
	8/5/03, 11:52am (WD)	9	1	10				23%	N/A	25%
	8/27/03, 12:07pm (WD)	2	0	2				5%	N/A	5%
Loon Lake BL	5/25/02, 3:30pm (H)	11	7	18	13	40	53	85%	18%	34%
	7/5/03, 12:26pm (H)	35	19	54				269%	48%	102%
	8/30/03, 1:34pm (H)	36	10	46				277%	25%	87%
	8/10/02, 2:10pm (WE)	18	14	32				138%	35%	60%
	7/26/03,1:51pm (WE)	48	11	59				369%	28%	111%
	8/9/03, 12:40pm (WE)	35	15	50				269%	38%	94%
	8/5/03, 11:55am (WD)	4	3	7				31%	8%	13%
	8/27/03, 12:21 pm (WD)	3	4	7				23%	10%	13%

[1]Includes the sites that are designated as accessible parking spaces.
[2]Parking area does not have striped parking spaces. Capacity is estimated.
[3]Parking lot was reconstructed between 2002 and 2003 observations. The capacity is based on the reconstructed design.
N/A=Not Applicable

4.5.3 Recreation in Developed Facilities (ENF 1999-2002 USFS RIM Fee and Non-Fee Campgrounds, Boat Launches and Day Use Facilities)

The estimated number of visitors, number of sites occupied and turn-away days (campgrounds only) are displayed in tables in Appendix A. A turn-away day is counted when a visitor arrives at the facility but cannot find a site due to full capacity. However, the information provided by the ENF as turn-away information is actually site occupancy data which indicates the number of days when the facilities are filled to capacity; there is no documentation that visitors were actually turned away when a campground was at capacity. It should be noted that there are some years where no data is provided for some of the campgrounds. Additionally, in analyzing this data, several errors were noted between the daily record sheets and the summary sheets prepared by the ENF. It also appears that there was inconsistent data collection related to sites closed for maintenance and host sites. These sites were not consistently accounted for in recording the occupancy at each campground. Group sites showed higher turnaway because either a site is occupied or not so occupancy is either 0 or 100 percent. Tables in Appendix A also include information tabulated using site occupancy data from: (1) the concessionaire that operates the UARP facilities in the Crystal Basin; (2) visitor use information from the ENF for UARP facilities that the ENF operates under the Fee Demonstration Project; and (3) the visitor use information from the ENF for UARP facilities that the ENF operates and does not charge a user fee. The period of time includes the months of May through October from 1999 to 2002. In addition to the above information, turn-away data was further tabulated by weekday, weekend and holidays so that an understanding of when visitors were being turn-away could be determined. The detailed display of turn-away data is also located in Appendix A. Typically the most frequent times when facilities were at capacity occurred on holidays. Some of the campgrounds occasionally filled to capacity on non-holiday weekends and on a few occasions there were some weekdays when campgrounds were at capacity. It should be noted that this assessment is provided as a general characterization of demand at developed campgrounds however it is based on incomplete and irregular data. In order to properly assess if visitors are being turned away, additional data collection would be advisable under consistent data collection standards.

The ENF RIM data had several gaps in the occupancy data that was provided to SMUD. Recognizing that these data gaps could underestimate use, therefore SMUD developed an estimate of use by making some assumptions and incorporating use information from the FERC Form 80. This use estimate and the underlying assumptions are provided in Table 4.5-3 below.

Table 4.5-3. UARP recreation facility use estimates in Recreation-Days May-Sept. (1999 – 2002).

	Type[1]	1999	2000	2001	2002	Average
CAMPGROUNDS[2]		(R-D)	(R-D)	(R-D)	(R-D)	(R-D)
Ice House Reservoir						
Ice House	C	21,328	28,235	25,492	27,027	26,918
Northwind	FD	2,790	2,623		2,674	2,696
Strawberry Point	FD	2,607	2,659		3,201	2,822
					Total for Ice House Reservoir	***32,436***

Table 4.5-3. UARP recreation facility use estimates in Recreation-Days May-Sept. (1999 – 2002).						
	Type[1]	**1999**	**2000**	**2001**	**2002**	**Average**
CAMPGROUNDS[2]		(R-D)	(R-D)	(R-D)	(R-D)	(R-D)
Union Valley Reservoir						
Azalea Cove	F	n/a	109		1,690	900
Big Silver Group	FD	n/a	881		1,375	1,128
Camino Cove	F	n/a	6,961		8,704	7,833
Fashoda	C	4,049	3,564	3609	n/a	3,741
Jones Fork	FD	2,629	2,696		2,694	2,673
Lone Rock	F	n/a	123		775	449
Sunset	C	26,552	29,524	29,962	29,629	28,917
Wench Creek Family	C	16,622	15,143		13500	15,088
Wench Creek Group 1 & 2	C	5,895	4,785		5,425	5,368
Westpoint	F	1,989	2,051		2,272	2,104
Wolf Creek	C	7,910	3,976		6,849	6,245
Yellow Jacket	C	8,866	7,828		6,190	7,628
					Total for Union Valley Reservoir	***82,074***
Loon Lake Reservoir						
Loon Lake Family	C	8,607	13,256	9,248	11,761	10,718
Loon Lake Equestrian Family	C	725	69	491	2,515	1,244
Loon Lake Group 1 & 2	C	2,123	1,648		5,015	2,929
Loon Lake Equestrian Group	C	671	803		680	718
Northshore	FD	1,757	1,689		2,731	2,059
Pleasant	F					500 [4]
Red Fir Group	FD		513		1385	949
Loon Lake Chalet	FFS				3,000	3,000
					Total for Loon Lake Reservoir	***22,116***
Gerle Reservoir						
Airport Flat	F	2709	2202			2,456
Gerle Creek	C	10177	8757	8767	*11057*	9,690
					Total for Gerle Creek Reservoir	***12,146***
					TOTAL ANNUAL CAMPGROUND USE ESTIMATE	**148,772**

Table 4.5-3. UARP recreation facility use estimates in Recreation Days May-Sept. (1999 – 2002).								
BOAT LAUNCHES[3]	**Type**	**1999**	**2000**	**2001**	**2002**	**Average**	**Estimated Range***	
Ice House (I)	C	19,898	10,479		12,458	14,278	14,278	21,417
Yellow Jacket (U)	C	4,396	3,878		4,036	4,103	4,103	6,155
Sunset (U)	C	8,810	3,675		11,712	10,261	10,261	15,392
Westpoint (U)	F	4,211	2,478		4,938	3,876	3,876	5,814
Loon Lake (L)	C	3,805	7,074		8,176	8,176	8,176	12,264
TOTAL ANNUAL BOAT LAUNCH USE ESTIMATE						40,694	40,694	61,041
DAY USE AREAS/TRAILHEADS	**Type**	**1999**	**2000**	**2001**	**2002**	**Average**	**Estimated Range***	
Fashoda (U)	C	1,021	1,176		1,691	1,296	1,296	1,944
Ice House (I)	C	3,686	1,543		4,875	4,875	4,875	7,313
Angel Creek (G)	F	854	295		n/a	575	575	862
Gerle Creek (G)	C	3,144	3,069		5,223	4,184	4,184	6,275
Loon Lake Picnic (L)	C	934	1,490		1,450	1,291	1,291	1,937
Loon Lake Wilderness Trailhead[3] (L)	--	6,111	4,914		3,017	4,681	4,681	7,021
TOTAL ANNUAL DAY USE ESTIMATE							**16,902**	**25,353**

Source: Forest Service use data sheets unless otherwise noted.
[1] C=Concessionaire; FD=Fee Demo; FFS=Fee to FS; F=Free
[2] Includes use counts for boat launch site camping.
[3]Boat launch day use AND Loon Lake Wilderness Trailhead use were recorded in vehicles. Thus, these estimates incorporate a persons-per-vehicle multiplier of 3.5 (as provided by the Forest Service) to convert to Recreation Days.
[4]This use number uses professional judgment because no use data was provided for any of the 4 years.
Blank/empty cells indicate the Forest Service did not provide any data for the facility for the entire year.
An bold non-total number indicates the Forest Service provided only partial data for the facility for the year.
A non-total italicized number indicates this use estimate was obtained from the estimates used for the FERC Form 80 for 2002, developed by Mr. Bob Logan; these estimates are used (1) where the Forest Service did not provide any data for the facility, or (2) when the Form 80 estimate is substantially greater that the estimate derived from the Forest Service data sheets.
n/a = Facility was not yet constructed and/or open for use that year.
Average column does not include partial data years unless that use estimate represents the largest use estimate of the set.
[+] Recreation Day is defined as a visit by a person during any portion of a 24-hour period.
*Estimated ranges were calculated by utilizing a 1.0-1.5 index multiplied by the average for boat launches and picnic sites (As provided by the ENF).

4.5.4 Other Recreational Use Information

4.5.4.1 ENF 1995-1996 "Shoulder Season" Use Estimates for Developed Facilities

Shoulder season data was submitted by the ENF (see Appendix B). This data was collected over a two-year period during the weeks and months outside of the typically busy which generally between Memorial Day and Labor Day. As noted in Appendix B there are periods of time where counts were not conducted. Therefore visitor use was estimated based on average use estimates. The average number of visitors or Recreation-Days for the shoulder season October 1 1995-Memorial Day 1996; Labor Day 1996-Sept 30 1996 (Est. 270 Days) and October 1 1996-Memorial Day 1997; Labor Day 1997-Sept 30 1997 was estimated at 24,023 Recreation-Days at developed campsites.

4.5.4.2 ENF Huts Reservation Data 2003-2004

The ENF submitted results of reservations for January 1 2003-January 1 2004, and January 2 thru September 2004. This data documents visitor use for Robbs Hut, Loon Lake Chalet, and Van Vlecks Bunkhouse. Once annual reservations were compiled, the average for each season was estimated. A summary of the total data set is located in Appendix C. A summary of results is displayed in Table 4.5-4 below.

Table 4.5-4. ENF Hut visitor use summary. (Source: ENF, September 2004)

LOON LAKE CHALET			
Total Actual Recreation-Days: January 01, 2003-January 01, 2004		2,781	
Total Actual Recreation-Days: January 02, 2004-September 2004[1]		891	
Averages for Total Seasons Represented 2003-04	Average # Persons	# Days	RD
Winter Summary Average	25	59	1475
Spring/Summer Average	32	47	1504
Fall Average	34	13	442
Total Annual Recreation-Days Estimated Average-Loon Lake Chalet			3,421
ROBB'S HUT			
Total Actual Recreation Days: January 01, 2003-January 01, 2004		891	
Total Actual Recreation Days: January 02, 2004-September 2004[2]		650	
Averages for Total Seasons Represented 2003-04	Average # Persons	# Days	RD
Winter Summary Average	9	40	360
Spring/Summer Average	9	47	423
Fall Average	8	18	144
Total Annual Recreation-Days Estimated Average-Robb's Hut			927
VAN VLECK HUT			
Total Actual Recreation Days: January 01, 2003-January 01, 2004		685	
Total Actual Recreation Days: January 02, 2004-September 2004[3]		583	
Averages for Total Seasons Represented 2003-04	Average # Persons	# Days	RD

Table 4.5-4. ENF Hut visitor use summary. (Source: ENF, September 2004)			
VAN VLECK HUT			
Winter Summary Average	10	10	100
Spring/Summer Average	14	43	602
Fall Average	12	10	120
Total Annual Recreation Days Estimated Average-Van Vleck Hut			822

NOTE: For all Huts data, the annual season splits were based on the following seasons:
[1]Spring and Summer - April 1 through September 30, 2002
[2]Fall - October 1 through November 30, 2002
[3]Winter - December 1, 2002, through March 31, 2003
[4]Data was available to mid-September 2004 only.

4.5.4.3 Organization Camps Permitted by the ENF (Mountain Camp, Deer Camp), and SMUDEA

The ENF authorizes two private camps to operate within one-quarter mile of UARP reservoirs. Mountain Camp is located on the north side of Ice House Reservoir and it has a capacity of 100 PAOT. Deer Camp is located on the east side of Loon Lake Reservoir and it has a capacity of 50 PAOT's. Both of these developments are youth camps that operate between June and August. An additional recreation facility, SMUDEA, is a 43-site campground located at Union Valley that is operated by SMUD's employee association. The total use estimate for 2003 was as follows:

Deer Camp:	2,100	Recreation-Days
Mountain Camp:	4,000	Recreation-Days
SMUDEA	7,500	Recreation-Days
Total Estimate:	13,500	Recreation-Days (w/rounding)

4.5.4.4 Reservoir Recreational Use

Hydropower licensees are required to report recreational use at their projects to the FERC every six years. The most recent filing of this information for the UARP was in 2003. The recreational use data to prepare this filing with the FERC was developed using data from the 2002 recreation season that was summarized on the Licensed Hydropower Development Recreation Report Form, which is also known as Form 80. This form was filed with and accepted by the FERC on April 1, 2003. The information on the 2003 FERC Form 80 is another source of information that documents the levels and patterns of recreational use occurring at the UARP. Table 4.5-5 below summarizes this information for the main UARP reservoirs.

Table 4.5-5. FERC 2003: Recreational use estimates for UARP Reservoirs in the Crystal Basin.				
	Ice House	**Union Valley**	**Gerle Creek**	**Loon Lake**
Number of Recreation-Days[1]:				
Daytime Annual Total	17,333	20,989	2,905	13,346
Daytime Peak Weekend Average[2]	794	1,257	113	524
Nighttime Annual Total	43,234	79,826	11,057	26,330
Nighttime Peak Weekend Average[2]	1,178	3,744	558	928

Table 4.5-5. FERC 2003: Recreational use estimates for UARP Reservoirs in the Crystal Basin.				
	Ice House	**Union Valley**	**Gerle Creek**	**Loon Lake**
Number of Recreation-Days[1]:				
Facility Capacity Percent[3]				
Access Areas[4]	50%	50%	50%	50%
Boat Ramps	30%	30%	N/A	20%
Boat Launching Lanes	30%	30%	N/A	20%
Fishing Piers	N/A	N/A	25%	N/A
Trails	N/A	20%	N/A	25%
Swimming Areas	N/A	30%	N/A	N/A
Picnic Areas	30%	30%	35%	25%
Camping Areas	65%	50%	50%	75%
Organization Camps	50%	40%	N/A	100%
Group Camps	50%	50%	N/A	N/A

[1]Rrecreation-Day is each visit by a person to a development for recreational purposes during any portion of a 24-hour period.
[2]Weekends when recreational use is at its peak for the season (July 4th weekend and other holiday weekends).
[3]Amount of weekend use for this season reported compared with the facility's capacity to handle such use.
[4]Unimproved but well-known/popular sites which can be used to reach development waters (including waters below a dam) without trespassing on other property.

4.5.4.5 Reservoir Surface Counts by SMUD 2002-03

The UARP provides boating opportunities on seven of its reservoirs. As part of this study, the number of watercraft and the type of boating activities occurring on the reservoirs were recorded at the three primary storage reservoirs (Ice House, Union Valley and Loon Lake). All three of these reservoirs are located in the Crystal Basin. The weather on survey dates was typical for the summer season with pleasant temperatures and no precipitation. The reservoir elevations were at levels that visitors would normally expect during the course of the summer during a normal type of water year.

Boating use information was not collected at the four other UARP reservoirs because of their remote locations, small sizes and low use. At Gerle Creek Reservoir, there is minimal concern for safety issues related to boat density on the reservoir surface since motorized boating is not allowed at this reservoir. Consequently, information relating to boat density was not collected as this reservoir. The information collected during the summers of 2002 and 2003 is presented in Table 4.5-6.

The observer recorded the types of watercraft observed and estimated the percentage of the watercraft that were near the shoreline floating, with visitors picnicking or otherwise taking a break from boating. At Ice House Reservoir, the percentage of active watercraft along the shoreline varied from 0 to 30 percent. At Union Valley and Loon Lake reservoirs, the percentage of active watercraft along the shoreline varied from 20 to 30 percent and 5 to 20 percent, respectively. Even though these watercraft were not moving on the reservoir surface during the observation, they were counted as active watercraft so that the level of boating use on the reservoir would not be under estimated. It should be noted that this investigation was intended to assess boat density as it relates to boating safety.

Table 4.5-6. Boating activity observations: Ice House, Union Valley and Loon Lake reservoirs, Summers of 2002 and 2003.							
Observation Date/Time	**WD=Weekday WE=Weekend H=Holiday**	**Point of Observation[1]**	**No. of Active Powerboats**	**No. of Active Small Fishing Boats**	**No. of Active Personal Watercraft**	**No. of Active Non-motorized Watercraft**	**Total No. of Active Watercraft on Reservoir**
Ice House							
7/4/02, 10:00am	H (Thursday)	IHBL	4	0	0	13	17
7/4/02, 1:35pm	H (Thursday)	IHBL	7	0	2	4	13
7/4/02, 2:45pm	H (Thursday)	IHBL	13	0	0	12	25
8/30/03, 10:52am	H (Saturday)	Reservoir Surface	6	8	0	1	15
8/10/02, 4:45pm	WE (Saturday)	Reservoir Surface	5	3	3	6	17
7/26/03, 12:18pm	WE (Saturday)	IHBL	7	2	1	2	12
8/9/03,11:15am	WE (Saturday)	Reservoir Surface	6	7	3	0	16
8/5/03, 2:00pm	WD (Tuesday)	IHBL	1	1	0	2	4
8/27/03, 1:52pm	WD (Thursday)	IHBL	1	2	1	0	4
Union Valley							
8/30/03, 11:45am	H (Saturday)	Reservoir Surface	28	8	12	9	57
8/10/02, 2:50pm	WE (Saturday)	Reservoir Surface	17	4	10	13	44
7/26/03, noon	WE (Saturday)	Big Hill	24	6	5	5	40
8/9/03,1:55pm	WE (Saturday)	Reservoir Surface	49	14	14	26	103
8/5/03, 2:30pm	WD (Tuesday)	Big Hill	10	1	1	0	12
8/27/03, 2:00pm	WD (Thursday)	Big Hill	2	1	0	0	3
Loon Lake							
8/30/03, 2:00pm	H (Saturday)	Reservoir Surface	1	4	1	8	14
8/10/02,11:30am	WE (Saturday)	Reservoir Surface	1	7	1	14	23
7/26/03, 2:10pm	WE (Saturday)	Main Dam	1	8	1	12	22
8/9/03,12:32pm	WE (Saturday)	Reservoir Surface	9	9	1	9	28
8/5/03, noon	WD (Tuesday)	Main Dam	1	2	0	9	12
8/27/03,12:08pm	WD (Thursday)	Main Dam	1	3	0	3	7

[1]IHBL=Ice House Boat Launch, Big Hill=Big Hill Overlook, Main Dam=Main Dam at Loon Lake, Reservoir Surface=Observations taken by boat

Based on the highest number of watercraft observed during the study, the boat densities for the three reservoirs with motorized boating are presented in Table 4.5-7 below. On each reservoir, the highest number of watercraft observed were derived from reservoir-based observations.

Table 4.5-7. Average number of acres per vessel on the Ice House, Union Valley and Loon Lake reservoirs based on the highest number of watercraft observed during the study observations.

Reservoir	Reservoir surface acres[1]	Highest no. of watercraft observed	Average no. of acres per vessel
Ice House	678	25	27.1
Union Valley	2,860	103	27.7
Loon Lake	1,450	28	51.8

[1]UARP Initial Information Package, July 2001. Values are at maximum pool elevation.

Boating estimates were also calculated based on the type of watercraft utilized. Table 4.5-8 below breaks out visitor by type of boating use and calculates estimated averages based on peak Summer 2002-2003 boating counts.

Table 4.5-8. Boating use estimates by type of craft on Ice House, Union Valley and Loon Lake reservoirs.

Ice House						
Power Boats	**Range of Boats**		**Range of Visitors (3 Per Boat)**		**Annual Range Estimate**	
Holiday	4	13	12	39	132	429
Weekday	1	1	3	3	261	261
Weekend	5	7	15	21	570	798
Active Small Fishing Boats	**Range of Boats**		**Range of Visitors (3 Per Boat)**		**Annual Range Estimate**	
Holiday	0	8	0	24	0	264
Weekday	1	2	3	6	261	522
Weekend	2	7	6	21	228	798
Personal Water Craft	**Range of Boats**		**Range of Visitors (1 per PWC)**		**Annual Range Estimate**	
Holiday	0	2	0	2	0	22
Weekday	0	1	0	1	0	87
Weekend	1	3	1	3	38	114
Non-motorized Water Craft	**Range of Boats**		**Range of Visitors (1.5 per Boat)**		**Annual Range Estimate**	
Holiday	1	13	1.5	19.5	16.5	214.5
Weekday	1	13	1.5	19.5	130.5	1696.5
Weekend	0	6	0	9	0	342
Union Valley						
Power Boats	**Range of Boats**		**Range of Visitors (3.5 Per Boat)**		**Annual Range Estimate**	
Holiday	28	28	98	98	1078	1078
Weekday	2	10	7	35	609	3045
Weekend	17	49	59.5	171.5	2261	6517

Table 4.5-8. Boating use estimates by type of craft on Ice House, Union Valley and Loon Lake reservoirs.						
Union Valley						
Active Small Fishing Boats	**Range of Boats**		**Range of Visitors (3.5 Per Boat)**		**Annual Range Estimate**	
Holiday	8	8	28	28	308	308
Weekday	1	1	3.5	3.5	304.5	304.5
Weekend	4	14	14	49	532	1862
Personal Water Craft	**Range of Boats**		**Range of Visitors (1 per PWC)**		**Annual Range Estimate**	
Holiday	12	12	12	12	132	132
Weekday	0	1	0	1	0	87
Weekend	5	14	5	14	190	532
Non-motorized Water Craft	**Range of Boats**		**Range of Visitors (1.5 per Boat)**		**Annual Range Estimate**	
Holiday	9	9	13.5	13.5	148.5	148.5
Weekday	0	0	0	0	0	0
Weekend	5	26	7.5	39	285	1482
Loon Lake						
Power Boats	**Range of Boats**		**Range of Visitors (2.3 Per Boat)**		**Annual Range Estimate**	
Holiday	1	1	2.3	2.3	25.3	25.3
Weekday	1	1	2.3	2.3	200.1	200.1
Weekend	1	9	2.3	20.7	87.4	786.6
Active Small Fishing Boats	**Range of Boats**		**Range of Visitors (2.3 Per Boat)**		**Annual Range Estimate**	
Holiday	4	4	9.2	9.2	101.2	101.2
Weekday	2	3	4.6	6.9	400.2	600.3
Weekend	7	9	16.1	20.7	611.8	786.6
Personal Water Craft	**Range of Boats**		**Range of Visitors (1 per PWC)**		**Annual Range Estimate**	
Holiday	1	1	1	1	11	11
Weekday	0	0	0	0	0	0
Weekend	1	1	1	1	38	38
Loon Lake						
Non-motorized Water Craft	**Range of Boats**		**Range of Visitors (1.5 per Boat)**		**Annual Range Estimate**	
Holiday	8	8	12	12	132	132
Weekday	3	9	4.5	13.5	391.5	1174.5
Weekend	9	14	13.5	21	513	798
Reservoir Visitor Use Estimates Range					**9,997**	**25,698**

Total population summer use estimate is based on 50% use for May and September, 100% use June-August.
Loon Lake per person estimates for motorized boats=2.3 persons per boat.
Union Reservoir per person estimates for motorized boats=3.5 persons per boat.
Ice House per person estimates for motorized boats=3 persons per boat.
For all Reservoirs: Personal Water Craft=1 per boat for all boats; Non-Motorized Boats=1.5
Season Estimates are based off of May 15-September 15, with 11 holiday days, 87 non-holiday weekdays, and 28 non-holiday weekend days

4.5.4.6 Dispersed Recreation Areas

Dispersed recreation occurs at the UARP reservoirs in the form of overnight use, fishing, picnicking, swimming, and other day use activities. Although most of the dispersed recreation occurs in the Crystal Basin, the reservoirs in the High Country and the Canyonlands also provide settings for dispersed recreational use. The following sections include the results of this study relative to dispersed recreational use including estimated recreational use, visitor survey responses, key contact interviews and areas where resource damage was observed in the vicinity of dispersed recreation areas.

The dispersed recreation use that occurred generally within one-quarter of a mile of UARP reservoirs in 2002 was estimated by SMUD's observation data and the average party size determined from the visitor surveys conducted at areas with dispersed recreation use. These estimates are included in Table 4.5-9 below. Similar to the use estimates for the UARP recreation facilities, there are limitations associated with these estimates. The main limitation is that these data were only collected in one year, 2002-03. In addition, the data used to prepare this estimate only included the land at and near the four main reservoir shorelines. Based on further investigation by SMUD in 2004, there may be other areas where dispersed recreation use is occurring that is related to the UARP. When these areas are identified, the use estimates should reflect the use that is also occurring in these areas. The estimates were based on observed number of parties at areas around the reservoirs. The estimates were then developed by applying an average party size that was calculated from the responses to the surveys conducted in 2002-03 to the number of parties observed. A more rigorous investigation can be devised to develop more accurate estimates that include all of the areas where dispersed recreation use that is related to the UARP to develop more accurate use estimates. Despite these shortcomings, existing and projected recreation use estimates are provided in this report because they represent the most recent existing use data available at this time and it is reasonable to use this information for the purpose of providing an estimate of recreation use for the license application with the understanding of the limitations for using this information to make decisions about potential PME's for the UARP.

Table 4.5-9. Estimated dispersed recreation use near[1] UARP reservoirs from spring 2002 through winter 2003. (SOURCE: Results of the Visitor Use and Impact Study)

Reservoir/Area	Season	Day Use (R-D[2])	Overnight Use (R-D)	Total (R-D)
Junction Reservoir	Sp, Sum, F, W	1,204	918	2,122
Ice House Reservoir	Sp, Sum, F	2,329	0	2,329
Union Valley Reservoir	Sp, Sum, F	2,760	2,226	4,986
Gerle Creek Reservoir	Sp, Sum, F	377	2,416	2,793
Loon Lake Reservoir	Sp, Sum, F	1,648	15,217	16,865
Crystal Basin	W	11,403	2,908	14,311
Canyonlands	Sp, Sum, F, W	6,036	1,234	7,271
Total				**50,677**

[1]Generally within ¼ mile of the reservoir shoreline
[2]Recreation Day=one person for a day or a portion of a day.

4.5.4.7 ENF Shoreline Dispersed Use for Primary UARP Reservoirs (Loon Lake, Gerle Creek Reservoir, Union Valley Reservoir, and Ice House Reservoir)

The results of the ENF Shoreline Dispersed Use data collection are provided in Table 4.5-10 below. These visitor counts along shorelines were collected between July 4 and September 15, 2002 based on a stratified random sample. Samples were stratified by weekend, holiday weekend, and weekday. Counts were conducted during peak periods between 11 AM-3PM, from the water, with the exception of Gerle Creek, which was counted on from land. Counts for each reservoir were conducted 10-12 times during this period (personal communication with J. Marsolais, September 2004).

Table 4.5-10. ENF shoreline dispersed use estimates, July 4- Sept. 15, 2002. (Source: ENF)

	Weekday	**Weekend**
Number of Days	68	24
Number of sites	4	4
Population Size	272	96
Sample Size	4	11
Total Observed	272	1588
Variance (s^2)	809	6266
Estimated Users	18,496	13859
Standard Error	3,753	2156
80% CI	(12,341, 24,651)	(10,905, 16,813)
90% CI	(9,676, 27,316)	(9,957, 17,761)
95% CI	(6,561, 30,431)	(9,051, 18,667)
Total Estimated Users		
80% CI	(23,246, 41,464)	
90% CI	(19,633, 45,077)	
95% CI	(15,612, 49,098)	

4.5.4.8 Canyonlands

The number of windshield surveys administered in the Canyonlands area is shown in Table 4.5-11. Of the 75 windshield surveys administered in the Canyonlands area, 36 were completed and returned – a response rate of 48 percent.

Table 4.5-11. Canyonlands area surveys-2002 Summer (Source: Dispersed Data Set).

	7/7	**7/13**	**7/28**	**8/9**	**8/23**	**9/2**	
	Sun.	**Sat.**	**Sun.**	**Fri.**	**Fri.**	**Mon.**	**Total**
Silver Creek at Jaybird PH Area	1	0	0	0	0	0	1
Forebay Road at SFAR Area	6	5	10	0	0	2	23
Brush Creek Reservoir Area	4	0	5	0	0	2	11
FS Road 11N96 at Slab Creek Dam	1	1	1	1	0	2	6
FS Road 11N96 at Slab Boat Launch	5	3	6	2	1	8	25

Table 4.5-11. Canyonlands area surveys-2002 Summer (Source: Dispersed Data Set).							
	7/7	7/13	7/28	8/9	8/23	9/2	
	Sun.	Sat.	Sun.	Fri.	Fri.	Mon.	Total
Mosquito Road at SFAR Area	0	4	2	0	0	3	9
Total	17	13	24	3	1	17	75

Table 4.5-12 displays results from Canyonlands observations taken during SMUD's study. The estimated use levels were derived based on low to high observations at each location. These low to high observations were then multiplied by the number of weekend days (76) and weekdays (168) during the spring, summer, and fall seasons, or peak use periods.

Table 4.5-12. Canyonlands dispersed use observations.

Dispersed Use Locations			Month	Day of Month	Day of Week	24-Hr	#Groups	#Vehicles	#People	Total Use Estimate			Total Season	
Silver Creek	1		August	23	Friday	12.15	0	0	0	0	4	WE	0	304
	2		July	7	Sunday	13.36	1	1	0	0	0	WD	0	0
	3		July	13	Saturday	9.12	0	0	0				0	304
	4		September	2	Monday	9.13	0	0	0					
	5		July	28	Sunday	8.44	0	0	0					
	6		August	9	Friday	8.47	0	0	0					
	Total	**N**					**1**	**1**	**0**	**Total Use Estimate**			**Total Season**	
Forebay Rd	1		August	23	Friday	13.32	0	0	0	4	18	WE	304	1368
	2		July	7	Sunday	14.53	6	6	13	0	2	WD	0	180
	3		July	13	Saturday	10.24	4	4	4				304	1548
	4		September	2	Monday	10.45	3	2	2					
	5		July	28	Sunday	10.3	10	10	18					
	6		August	9	Friday	10.16	0	0	0					
	Total	**N**					**23**	**22**	**37**	**Total Use Estimate**			**Total Season**	
Brush Creek Res	1		August	23	Friday	14	0	0	0	0	9	WE	0	684
	2		July	7	Sunday	15.29	4	4	9	0	4	WD	0	672
	3		July	13	Saturday	10.57	0	0	0				0	1356
	4		September	2	Monday	11.27	2	2	4					
	5		July	28	Sunday	11.2	3	3	9					
	6		August	9	Friday	10.49	0	0	0					
	Total	**N**					**9**	**9**	**22**	**Total Use Estimate**			**Total Season**	
FS Rd Slab Dam	1		August	23	Friday	15.38	0	0	0	0	2	WE	0	152
	2		July	7	Sunday	16.51	1	1	0	0	2	W	0	336

Table 4.5-12. Canyonlands dispersed use observations.														
Dispersed Use Locations			**Month**	**Day of Month**	**Day of Week**	**24-Hr**	**#Groups**	**#Vehicles**	**#People**	**Total Use Estimate**			**Total Season**	
												D		
	3		July	13	Saturday	12.58	1	1	2				0	488
	4		September	2	Monday	13.47	2	2	0					
	5		July	28	Sunday	13.08	1	1	0					
	6		August	9	Friday	12.19	1	1	2					
	Total	**N**					**6**	**6**	**4**	**Total Use Estimate**			**Total Season**	
FS Rd Boat Ramp	1		August	23	Friday	15.76	2	2	4	7	9	WE	532	684
	2		July	7	Sunday	17.12	5	5	9	2	14	W D	336	2352
	3		July	13	Saturday	13.15	3	4	7				868	3036
	4		September	2	Monday	13.15	8	8	14					
	5		July	28	Sunday	13.15	6	6	9					
	6		August	9	Friday	12.29	2	2	2					
	Total	**N**					**26**	**27**	**45**	**Total Use Estimate**			**Total Season**	
Mosquito Rd.	1		August	23	Friday	16.39	0	0	0	0	8	WE	0	608
	2		July	7	Sunday	18.05	3	3	6	0	0	W D	0	0
	3		July	13	Saturday	14.1	3	4	8				0	608
	4		September	2	Monday	14.21	3	3	0					
	5		July	28	Sunday	14.1	2	2	0					
	6		August	9	Friday	13.4	0	0	0					
	Total	**N**					**11**	**12**	**14**	**Total Use Estimate**			**Total Season**	
South of Union Valley Dam	1		July	7	Sunday	11.55	0	0	0	0	4	WE	0	304
	2		August	3	Saturday	14.4	0	0	0	0	4	W D	0	672

Table 4.5-12. Canyonlands dispersed use observations.

Dispersed Use Locations			Month	Day of Month	Day of Week	24-Hr	#Groups	#Vehicles	#People	Total Use Estimate			Total Season	
	3		August	10	Saturday	17.41	0	0	0				0	976
	4		August	31	Saturday	14.44	1	2	4					
	5		July	18	Thursday	14.5	1	1	4					
	6		August	19	Monday	12.06	0	0	0					
	Total	**N**					**2**	**3**	**8**				**Total Season**	
SW of Union Valley Dam	1		July	7	Sunday	11.59	0	0	0	0	0	WE	0	0
	2		August	3	Saturday	14.44	0	0	0	0	0	WD	0	0
	3		August	10	Saturday	17.4	0	0	0				0	0
	4		August	31	Saturday	14.31	0	0	0					
	5		July	18	Thursday	14.45	0	0	0					
	6		August	19	Monday	11.59	0	0	0					
	Total	**N**					**0**	**0**	**0**	**Total Use Estimate**			**Total Season**	
Undeveloped Boat Launch	1		July	7	Sunday	12.15	2	2	7	0	7	WE	0	532
	2		August	3	Saturday	15.04	1	1	0	0	2	WD	0	336
	3		August	10	Saturday	17.14	1	3	5				0	868
	4		August	31	Saturday	13.17	0	0	0					
	5		July	18	Thursday	16.37	0	0	0					
	6		August	19	Monday	12.18	1	1	2					
	Total	**N**					**5**	**7**	**14**	**Total Use Estimate**			**Total Season**	
Bryant Springs Rd/SF Silver Creek	1		July	7	Sunday	12	1	1	5	0	5	WE	0	380
	2		August	3	Saturday	14.49	0	0	0	0	0	WD	0	0

Table 4.5-12. Canyonlands dispersed use observations.

Dispersed Use Locations			Month	Day of Month	Day of Week	24-Hr	#Groups	#Vehicles	#People	Total Use Estimate			Total Season	
	3		August	10	Saturday	17.42	0	0	0				0	380
	4		August	31	Saturday	13.23	1	1	3					
	5		July	18	Thursday	14.43	0	0	0					
	6		August	19	Monday	12.04	0	0	0					
	Total	**N**					**0**	**2**	**8**	**Total Use Estimate**			**Total Season**	
Below Junction Dam	1		July	7	Sunday	13	0	0	0	0	1	WE	0	76
	2		August	3	Saturday	15.19	0	0	0	0	0	WD	0	0
	3		August	10	Saturday	16.47	1	1	1				0	76
	4		August	31	Saturday	13.11	0	0	0					
	5		July	18	Thursday	16.43	0	0	0					
	6		August	19	Monday	12.28	0	0	0					
	Total	**N**					**1**	**1**	**1**	**Total Season**		**1172**	**9640**	

Total use estimates based on 76 Weekend (WE) days and 168 Weekdays (WD), as per dispersed use estimates for other data entries.

4.5.4.9 Rubicon OHV Trail Use

Rubicon OHV Trail: The annual Rubicon OHV Trail Use Estimates were reported by the ENF (personal communication, Jeff Marsolais, August 24, 2004) as a range 45,000 to 65,000.

4.5.4.10 Information Centers

Visitor counts were conducted at the Crystal Basin Information Station and the Cleveland Corral Information Center by the ENF. These visitor estimates are reported in Table 4.5-13 below. The data referring to the Cleveland Corral Information Center also provided a breakdown of the types of needs or interests of visitors. A high percentage of visitors stopped for general and OHV related information.

Table 4.5-13. ENF Information Center visitor use estimates 2003 (Source: ENF)

Crystal Basin Information Station						
Month/2003	**Daily Visitors**					
May	no data					
June	1,433					
July	3,039					
August	2,525					
September, 9/1-9/9	282					
Season Total	**7,279**					
Cleveland Corral Information Station						
	Daily Visitors-2003[1]					
Season Total	8,000	**Breakdown of Types of Needs/Information**				
Number of Cars	26,666					
Month/2004	**Actual Daily Visitors**	**Picnic Area**	**General**	**OHV Related**	**Wilderness**	**Phone Calls**
May (5/26-5/31)	1,224	15	801	392	0	16
June	7,253	46	4,400	2,737	48	22
July	3,681	32	2,354	1,262	22	11
August	5,110	24	3,437	1,600	27	22
September, no data available to date.						
Season Total	**17,268**	**117**	**10,992**	**5,991**	**97**	**71**
Combined Total Visitation to Information Centers		**24,547**				

[1]Estimate based on ENF cuff notes

4.6 Annual Recreation Visitor Use Estimate At and Near the UARP

SMUD in collaboration with the ENF, calculated an annual estimated recreation visitor use range and total for areas at and near the UARP. The annual use calculated range was estimated as between 335,000 and 380,000 recreation days, with the mid-range at 357,500 visitors. The calculations are outlined in Table 4.6-1, and based on estimates from several inputs. These inputs include the following components of recreational use:

- UARP Developed facilities (campgrounds, boat ramps and parking areas, and picnic sites);
- ENF shoulder season use estimates for campgrounds (1995 and 1996);
- SMUD dispersed use estimate (Crystal Basin Reservoirs);
- SMUD winter use estimate (dispersed and developed sites including huts and campgrounds);
- ENF Shoreline use estimates (2002);
- Canyonlands Reservoir Use Estimate (including Junction Reservoir); and,
- Rubicon Trail estimates: according to Steve Peterson (2004), the estimated use on the Rubicon Trail is between 45,000 to 65,000 annually. Based on preliminary results of the Zone 3 study, it was estimated that approximately half of Rubicon Trail use is by thru OHV users, the rest remain in the Crystal Basin or High Country areas. To calculate use on the Rubicon Trail for the purposes of an annual total, the following assumptions were created through discussions between the Licensee and the ENF (September 14, 2004):
    a. The estimated total use for the Rubicon Trail is somewhere between 45,000-65,000 annually;
    b. Approximately half of these users are estimated to be "thru trail" users;
    c. Approximately half are using facilities within the High Country and Crystal Basin regions; therefore have most likely been accounted for within the facility and dispersed use counts from items listed above;
    d. Approximately 10% of those traveling through the High Country and Crystal Basin areas could have been counted when starting their journey or stopping to use day-use facilities; and,
    e. The midpoint between 45,000-65,000 would be used to calculate through trail users and area trail users.

*Based on these assumptions, thru-trail users of the Rubicon OHV Trail were estimated based on the following calculation: 55,000 (midpoint)-5,500(10 percent) / 50 percent (thru users) = 24,750.

Table 4.6-1. Estimates for annual recreational use at and near the UARP. (Source: Multiple sources, see above text.)

Components of Recreational Use	**Low Range Estimate**	**High End Estimate**
UARP Developed Facilities	206,368	235,166
Average shoulder season use for developed campgrounds	24,023	24,023
Dispersed use estimate	30,000	40,000
Winter use estimate	16,950	16,950
ENF 2002 Shoreline use estimate	32,555	32,555
Rubicon OHV Trail Use not counted within previous developed and dispersed use estimates	24,750	24,750
Canyonlands use estimate (includes Junction)	2,700	5,600
Total Estimated Annual Visitor Use At And Near UARP	337,347	379,044
Total Estimated Annual Visitor Use At and Near UARP (w/rounding)	**335,000**	**380,000**
Mid-range Total	**357,500**	

4.7 Recreational Activity Participation for the Crystal Basin

4.7.1 Crystal Basin - Summer

SMUD conducted several hundred surveys with Crystal Basin visitors at UARP recreation facilities and at dispersed recreation areas at and near the UARP reservoirs in the summer of 2002. The data collected in the surveys provide information about the recreation activities that the current visitors enjoy as well as indications of latent demand. Question no. 8 asked visitors to, *"...select the recreational activities you have participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping."* The responses to this question are shown in Tables 4.7-1 and 4.7-2 below. The four activities with the most frequent response at both the developed receation facilities and the dispersed recreation areas in the Crystal Basin were: (1) swimming; (2) hiking/walking; (3) fishing (lake or reservoir); and (4) picnicking. The fifth most frequent responses were wildlife viewing and photography at the developed recreation facilities and the dispersed recreation areas, respectively. The frequency of the response for OHV use was higher in the dispersed visitor survey responses than in the developed recreation facilities.

The respondents were also given the opportunity to list other activities that they participated or planned to participate in that did not appear on the list of activities that they were given to respond to this question. The responses collected at the developed recreation facilities included: archery, botanizing, camping, church camp, scouting water levels at the lakes, disabled Sports USA, driving, eating and drinking at Robb's Valley Resort, experiments, geocaching, gold panning, horseback riding, paddle boating, painting, rafting, relaxing, scouting the area, scuba diving, shooting, star gazing, staying away from people, stop-over, sunbathing, and playing. The responses collected at the dispersed recreation areas that did not appear on the list of activities included: beer, gold panning, looking at vegetation, paintball shooting, and target shooting.

Table 4.7-1. All recreation activities of Crystal Basin visitors during the summer. (developed and dispersed data sets)

Survey Question: 'From the activities listed below, please select the recreational activities you participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping.'

Activity	Percent of Visitors- Developed Facilities in the Crystal Basin					Percent of Visitors- Dispersed Areas in the Crystal Basin	
	Total[1]	Loon Lake Res.[2]	Gerle Cr. Res.[2]	Union Valley Res.[2]	Ice House Res.[2]		
						All[3] 4 Reservoirs	Loon Lake TH[4]
Swimming	66.7	57.6	73.1	76.6	58.7	77.9	84.0
Hiking /Walking	60.1	58.7	68.6	65.5	50.3	55.9	92.0
Fishing (Lake or Reservoir)	56.8	54.9	36.0	61.4	55.7	64.7	40.0
Picnicking	51.7	54.9	50.3	50.9	49.7	51.5	20.0
Wildlife viewing	44.2	45.1	54.3	42.1	44.3	41.2	40.0
Photography	32.7	34.8	33.1	32.7	29.9	42.6	52.0
Powerboating	28.3	18.5	2.9	39.8	25.7	23.5	0
Bicycling	17.5	15.8	13.7	19.3	17.4	16.2	4.0
Canoeing/Kayaking	16.5	19.6	20.6	15.2	14.4	7.4	4.0

Table 4.7-1. All recreation activities of Crystal Basin visitors during the summer. (developed and dispersed data sets)

Survey Question: 'From the activities listed below, please select the recreational activities you participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping.'

Activity	Percent of Visitors- Developed Facilities in the Crystal Basin					Percent of Visitors- Dispersed Areas in the Crystal Basin	
	Total[1]	Loon Lake Res.[2]	Gerle Cr. Res.[2]	Union Valley Res.[2]	Ice House Res.[2]		
OHV Use	8.4	8.7	16.0	7.6	7.8	38.2	4.0
Fishing (Stream or River)	7.8	2.2	16.0	7.0	13.8	10.3	24.0
PWC Use	6.3	0	0	8.8	10.8	2.9	0
Backpacking	6.3	7.1	10.3	6.4	4.2	4.4	72.0
Visiting Cultural/Hist. Sites	5.5	6.0	6.9	5.8	4.2	10.3	0
Sailboating	3.4	3.8	0	4.1	2.4	2.9	0
Hunting	1.4	2.2	1.7	0.6	1.8	1.5	0

[1] Weighted data set (n=698), *Visitor Use and Impact Technical Report*
[2] Unweighted data set (n(LL)=184; n(GC)=175; n(UV)=171;n(IH)=167), *Visitor Use and Impact Technical Report*
[3]Dispersed surveys conducted face-to-face with visitors generally within ¼ mile of the reservoir shoreline (n=68), *Visitor Use and Impact Technical Report*
[4] Dispersed surveys left on windshields at the Loon Lake Trailhead.(n=25), *Visitor Use and Impact Technical Report*

Table 4.7-2. All recreation activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (developed data sets)

Survey Question: 'From the activities listed below, please select the recreational activities you participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping.'

	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Loon Lake Res.	Boat Launch	Loon Lake Chalet	Loon Lake Group CG	Loon Lake Campground	Northshore CG	Red Fir Gr. CG	Pleasant CG
	n=136	n=2	n=4	n=29	n=10	n=1	n=1
Swimming	54.4	0	75.0	72.4	70.0	100	100
Hiking /Walking	54.4	0	25.0	86.2	50.0	100	100
Fishing (Lake or Res.)	55.9	0	50.0	58.6	40.0	100	100
Picnicking	52.9	100	50.0	58.6	50.0	100	100
Wildlife viewing	40.4	100	25.0	58.6	50.0	100	100
Photography	30.1	0	50.0	37.9	70.0	100	100
Powerboating	21.3	0	0	10.3	10.0	100	0
Bicycling	13.2	0	0	20.7	40.0	100	0
Canoeing/Kayaking	18.4	0	50.0	24.1	10.0	0	0
OHV Use	4.4	0	50.0	10.3	40.0	100	0
Fishing (Stream or River)	1.5	0	0	6.9	0	0	0
PWC Use	0	0	0	0	0	0	0
Backpacking	6.6	100	0	3.4	0	0	100
Visiting Cultural/Hist. Sites	4.4	50	0	6.9	10.0	100	0
Sailboating	4.4	0	2.5	0	0	0	0
Hunting	2.2	50	0	0	0	0	0
Gerle Cr. Res.	Gerle CG	Airport CG	Angel Cr. Day Use				
	n=103	n=43	n=29				
Swimming	78.6	53.5	82.8				
Hiking /Walking	69.9	62.8	72.4				

Table 4.7-2. All recreation activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (developed data sets)							
Survey Question: 'From the activities listed below, please select the recreational activities you participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping.'							
	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Gerle Cr. Res.	Gerle CG	Airport CG	Angel Cr. Day Use				
Fishing (Lake or Res.)	38.8	27.9	37.9				
Picnicking	52.4	46.5	48.3				
Wildlife viewing	59.2	48.8	44.8				
Photography	38.8	20.9	31.0				
Powerboating	1.9	2.3	6.9				
Bicycling	17.5	9.3	6.9				
Canoeing/Kayaking	28.2	2.3	20.7				
OHV Use	5.8	51.2	0				
Fishing (Stream or River)	14.6	25.6	6.9				
PWC Use	0	0	0				
Backpacking	15.5	2.3	3.4				
Visiting Cultural/Hist. Sites	10.7	2.3	0				
Sailboating	0	0	0				
Hunting	0	4.7	3.4				
Union Valley Res.	Big Silver Group CG	Camino Cove CG	Jones Fork CG	Azalea Cove/Lone Rock CG	Sunset CG	Wench Cr. CG	Wench Cr. Group CG
	n=2	n=9	n=6	n=2	n=39	n=20	n=6
Swimming	100	77.8	50.0	100	87.2	85.0	83.3
Hiking /Walking	100	88.9	83.5	50.0	87.2	80.0	66.7
Fishing (Lake or Res.)	50.0	55.6	83.5	50.0	66.7	40.0	83.3
Picnicking	50.0	44.4	66.7	50.0	53.8	65.0	0
Wildlife viewing	0	44.4	33.3	50.0	48.7	50.0	66.7
Photography	0	33.3	16.7	50.0	41.0	9.0	50.0
Powerboating	0	11.1	0	0	48.7	15.0	33.3
Bicycling	100	11.1	33.3	0	20.5	20.0	50.0
Canoeing/Kayaking	50.0	22.2	16.7	0	2.6	25.0	33.3
OHV Use	0	22.2	0	0	7.7	15.0	0
Fishing (Stream or River)	0	22.2	16.7	50.0	7.7	5.0	16.7
PWC Use	0	0	0	0	10.3	0	16.7
Backpacking	0	22.2	33.3	0	7.7	10.0	0
Visiting Cultural/Hist. Sites	0	0	0	0	2.6	15.0	16.7
Sailboating	0	11.1	0	0	5.1	5	16.7
Hunting	0	0	0	0	0	0	0
Union Valley Res. (continued)	Westpoint CG	Wolf Cr. CG	Yellowjacket CG	Yellowjacket BL	Westpoint BL	Sunset BL	
	n=3	n=6	n=11	n=5	n=28	n=34	
Swimming	66.7	100	81.8	80.0	57.1	70.6	
Hiking /Walking	100	83.3	72.7	40.0	35.7	41.2	
Fishing (Lake or Res.)	66.7	16.7	81.8	40.0	71.4	58.8	
Picnicking	66.7	50.0	45.5	80.0	50.0	44.1	
Wildlife viewing	33.3	50.0	18.2	40.0	46.4	32.4	
Photography	33.3	33.3	9.1	20.0	28.6	29.4	
Powerboating	0	16.7	36.4	40.0	42.9	70.6	

Table 4.7-2. All recreation activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (developed data sets)							
Survey Question: 'From the activities listed below, please select the recreational activities you participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping.'							
	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Union Valley Res. (continued)	Westpoint CG	Wolf Cr. CG	Yellowjacket CG	Yellowjacket BL	Westpoint BL	Sunset BL	
Bicycling	33.3	33.3	18.2	20.0	7.1	14.7	
Canoeing/Kayaking	0	33.3	0	20.0	14.3	17.6	
OHV Use	33.3	0	0	0	14.3	0	
Fishing (Stream or River)	33.3	0	0	0	3.6	2.9	
PWC Use	0	0	18.2	20.0	14.3	5.9	
Backpacking	0	0	0	0	3.6	0	
Visiting Cultural/Hist. Sites	0	33.3	0	0	3.6	2.9	
Sailboating	0	0	9.1	0	3.6	0	
Hunting	0	0	0	0	3.6	0	
Ice House Res.	IH Boat Launch	Ice House CG	Ice House Day Use	Northwind CG	Strawberry CG		
	n=71	n=62	n=19	n=7	n=8		
Swimming	43.7	72.6	63.2	57.1	75.0		
Hiking /Walking	38.0	62.9	52.6	42.9	100.0		
Fishing (Lake or Res.)	62.0	53.2	42.1	42.9	62.5		
Picnicking	40.8	56.5	78.9	14.3	37.5		
Wildlife viewing	39.4	50.0	36.8	42.9	62.5		
Photography	25.4	37.1	21.1	42.9	25.0		
Powerboating	38.0	24.2	0	0	12.5		
Bicycling	9.9	27.4	0	28.6	37.5		
Canoeing/Kayaking	12.7	14.5	10.5	14.3	37.5		
OHV Use	7.0	12.9	0	0	0		
Fishing (Stream or River)	15.5	11.3	10.5	14.3	25.0		
PWC Use	12.7	9.7	15.8	0	0		
Backpacking	1.4	6.5	0	0	12.5		
Visiting Cultural/Hist. Sites	1.4	8.1	5.3	0	0		
Sailboating	1.4	3.2	5.3	0	0		
Hunting	1.4	0	5.3	14.3	0		

Note:non-responses and 'other' responses not included so totals may not equal 100 percent.
[1] Unweighted data set, *Visitor Use and Impact Technical Report*

The visitors were also asked to identify what they considered to be their most important recreational activity during their visit. Comparing the data collected at the developed recreation facilities and in the dispersed areas, the order of the most to least frequent response for each activity were similar however OHV use tended to be listed as the primary activity more frequently by visitors surveyed in dispersed areas of the Crystal Basin. Additionally, canoeing/kayaking tended to be listed as the primary activity less frequently by visitors surveyed in these dispersed areas. Comparing the data between reservoirs, the survey responses show the highest frequency for OHV use at Gerle Reservoir and the highest frequency for powerboating at Union Valley Reservoir. Fishing at a lake or reservoir had the highest frequency response at Loon Lake and Ice House reservoirs. Personal watercraft use had the highest frequency response at Ice House Reservoir. This information is summarized in Tables 4.7-3 and 4.7-4.

Table 4.7-3. Most important recreational activities of Crystal Basin visitors during the summer.

Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)

Activity	Percent of Visitors- Developed Facilities in the Crystal Basin					Percent of Visitors- Dispersed Areas in the Crystal Basin		
	Total[1]	Loon Lake Res.[2]	Gerle Cr. Res.[2]	Union Valley Res.[2]	Ice House Res.[2]	All[3] 4 Reservoirs	Loon Lake TH[4]	
Swimming	14.5	12.0	22.3	14.6	15.6	17.6	0	
Hiking /Walking	9.6	12.0	21.7	8.2	6.6	5.9	32.0	
Fishing (Lake or Reservoir)	29.6	33.7	13.1	28.1	31.1	30.9	0	
Picnicking	5.9	5.4	4.0	6.4	6.0	4.4	0	
Wildlife viewing	4.6	1.6	6.3	5.8	5.4	4.4	4.0	
Photography	1.8	2.2	1.7	2.3	0.6	0	0	
Powerboating	13.9	6.5	0.6	21.6	12.0	7.4	0	
Bicycling	2.0	3.3	0.6	1.8	1.2	0	0	
Canoeing/Kayaking	5.5	9.8	6.9	2.9	4.8	0	0	
OHV Use	3.8	4.3	11.4	2.9	3.0	26.5	0	
Fishing (Stream or River)	0.2	0	1.7	0	0.6	1.5	0	
PWC Use	3.0	0	0	2.9	7.2	0	0	
Backpacking	0.9	1.6	3.4	0	1.2	0	60.0	
Visiting Cultural/Hist. Sites	0.3	0.5	0.6	0	0.6	0	0	
Sailboating	0.5	1.6	0	0	0	0	0	
Hunting	0.7	0.5	1.1	0	1.8	1.5	0	

Note: Non-responses and 'other' responses not included so totals may not equal 100 percent.
[1] Weighted data set (n=698), *Visitor Use and Impact Technical Report*
[2] Unweighted data set (n(LL)=184; n(GC)=175; n(UV)=171;n(IH)=167), *Visitor Use and Impact Technical Report*
[3]Dispersed surveys conducted face-to-face with visitors generally within ¼ mile of the reservoir shoreline (n=68), *Visitor Use and Impact Technical Report*
[4] Dispersed surveys left on windshields at the Loon Lake Trailhead.(n=25), *Visitor Use and Impact Technical Report*.

Table 4.7-4. Most important recreational activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (Developed Data Sets)

Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)

	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Loon Lake Res.	Boat Launch	Loon Lake Chalet	Loon Lake Group CG	Loon Lake Campground	Northshore CG	Red Fir Gr. CG	Pleasant CG
	n=136	n=2	n=4	n=29	n=10	n=1	n=1
Swimming	11.8	0	25.0	17.2	0	0	0
Hiking /Walking	11.0	0	0	17.2	20.0	0	0
Fishing (Lake or Res.)	36.0	0	25.0	37.9	10.0	0	0
Picnicking	5.9	0	0	0	10.0	0	0
Wildlife viewing	2.2	0	0	0	0	0	0
Photography	2.2	0	0	3.4	0	0	0
Powerboating	8.1	0	0	3.4	0	0	0
Bicycling	2.9	0	0	3.4	10.0	0	0
Canoeing/Kayaking	11.8	0	0	6.9	0	0	0
OHV Use	0.7	0	25.0	3.4	40.0	100	0
Fishing (Stream or River)	0	0	0	0	0	0	0

Table 4.7-4. Most important recreational activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (Developed Data Sets)							
Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)							
	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Loon Lake Res.	Boat Launch	Loon Lake Chalet	Loon Lake Group CG	Loon Lake Campground	Northshore CG	Red Fir Gr. CG	Pleasant CG
PWC Use	0	0	0	0	0	0	0
Backpacking	0.7	100	0	0	0	0	0
Visiting Cultural/Hist. Sites	0.7	0	0	0	0	0	0
Sailboating	2.2	0	0	0	0	0	0
Hunting	0.7	0	0	0	0	0	0
Gerle Cr. Res.	Gerle CG	Airport CG	Angel Cr. Day Use				
	n=103	n=43	n=29				
Swimming	22.3	18.6	27.6				
Hiking /Walking	27.2	14.0	13.8				
Fishing (Lake or Res.)	14.6	7.0	17.2				
Picnicking	1.9	4.7	10.3				
Wildlife viewing	5.8	7.0	6.9				
Photography	1.0	0	6.9				
Powerboating	1.0	0	0				
Bicycling	1.0	0	0				
Canoeing/Kayaking	7.8	0	13.8				
OHV Use	3.9	37.2	0				
Fishing (Stream or River)	1.9	2.3	0				
PWC Use	0	0	0				
Backpacking	4.9	2.3	0				
Visiting Cultural/Hist. Sites	1.0	0	0				
Sailboating	0	0	0				
Hunting	0	2.3	3.4				
Union Valley Res.	Big Silver Group CG	Camino Cove CG	Jones Fork CG	Azalea Cove/Lone Rock CG	Sunset CG[1]	Wench Cr. CG	Wench Cr. Group CG
	n=2	n=9	n=6	n=2	n=39	n=20	n=6
Swimming	50.0	33.3	0	0	5.1	20.0	33.3
Hiking /Walking	0	22.2	16.7	0	10.3	15.0	0
Fishing (Lake or Res.)	0	11.1	33.3	50.0	25.6	15.0	33.3
Picnicking	0	22.2	16.7	0	5.1	10.0	0
Wildlife viewing	0	0	0	0	12.8	15.0	0
Photography	0	0	0	50.0	5.1	0	0
Powerboating	0	0	0	0	30.8	0	16.7
Bicycling	0	0	16.7	0	0	5.0	0
Canoeing/Kayaking	50.0	0	16.7	0	0	5.0	0
OHV Use	0	11.0	0	0	0	15.0	0
Fishing (Stream or River)	0	0	0	0	0	0	0
PWC Use	0	0	0	0	5.1	0	0
Backpacking	0	0	0	0	0	0	0
Visiting Cultural/Hist. Sites	0	0	0	0	0	0	0
Sailboating	0	0	0	0	0	0	0
Hunting	0	0	0	0	0	0	0

Table 4.7-4. Most important recreational activities of Crystal Basin visitors to developed recreation facilities during the summer, sorted by facility. (Developed Data Sets)							
Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)							
	% of Visitors Surveyed at Each Developed Recreation Facility[1]						
Union Valley Res. (continued)	Westpoint CG	Wolf Cr. CG	Yellowjacket CG	Yellowjacket BL	Westpoint BL	Sunset BL	
	n=3	n=6	n=11	n=5	n=28	n=34	
Swimming	0	16.7	27.3	20.0	17.9	8.8	
Hiking /Walking	66.7	16.7	9.1	0	0	0	
Fishing (Lake or Res.)	33.3	16.7	27.3	0	50.0	29.4	
Picnicking	0	33.3	0	0	0	5.9	
Wildlife viewing	0	0	0	20.0	3.6	0	
Photography	0	0	0	0	0	2.9	
Powerboating	0	0	18.2	40.0	14.3	47.1	
Bicycling	0	0	0	0	3.6	0	
Canoeing/Kayaking	0	0	0	0	3.6	2.9	
OHV Use	0	0	0	0	3.6	0	
Fishing (Stream or River)	0	0	0	0	0	0	
PWC Use	0	0	9.1	20.0	0	2.9	
Backpacking	0	0	0	0	0	0	
Visiting Cultural/Hist. Sites	0	0	0	0	0	0	
Sailboating	0	0	0	0	0	0	
Hunting	0	0	0	0	0	0	
Ice House Res.	IH Boat Launch	Ice House CG	Ice House Day Use	Northwind CG	Strawberry CG		
	n=71	n=62	n=19	n=7	n=8		
Swimming	7	24.2	15.8	14.3	25.0		
Hiking /Walking	0	14.5	5.3	14.3	0		
Fishing (Lake or Res.)	42.3	22.6	10.5	28.6	50.0		
Picnicking	4.2	0	31.6	0	12.5		
Wildlife viewing	2.8	8.1	5.3	14.3	0		
Photography	0	1.6	5.3	0	0		
Powerboating	19.7	9.7	0	0	0		
Bicycling	2.8	0	0	0	0		
Canoeing/Kayaking	4.2	3.2	5.3	14.3	12.5		
OHV Use	1.4	6.5	0	0	0		
Fishing (Stream or River)	0	0	5.3	0	0		
PWC Use	9.9	6.5	5.3	0	0		
Backpacking	0	3.2	0	0	0		
Visiting Cultural/Hist. Sites	1.4	0	0	0	0		
Sailboating	0	0	0	0	0		
Hunting	1.4	0	5.3	14.3	0		

Note:non-responses and 'other' responses not included so totals may not equal 100 percent.
[1] Unweighted data set, *Visitor Use and Impact Technical Report*

Respondents were also asked if there were recreation activities that they would like to but participate in which they currently cannot. At the developed recreation facilities there were 54 affirmative responses (7.9%) to this question. The most common response was that the lack of

boat rentals prevented visitors from boating. Other desired activities and comments listed by the visitors in dispersed areas included:

- Horseback riding (there is no place to rent horses)
- Horseshoes
- Mountain biking (need trails or not known where this activity is allowed)
- Quieter experience without motorized vehicles

There were 10 affirmative responses (14.7%) to the question from those surveyed in the dispersed areas. These visitors also commented that the lack of boat rentals prevented them from boating. Other desired activities and comments listed by the visitors in dispersed areas included:

- Waterskiing at night
- More OHV trails
- Deer hunting (out of season)
- Trail to bassi Falls
- Ability to have campfires in undeveloped sites (fires restricted to developed sites)

4.7.2 Crystal Basin - Winter

SMUD conducted visitor surveys during the winter 2002-2003. Surveys were collected from visitors staying at the Loon Lake Chalet and windshield surveys were left on visitors' windshields throughout the areas with plowed access. The data collected in the surveys provide information about the recreation activities that the current visitors enjoy as well as indications of latent demand. On the windshield survey Question no. 9 asked visitors to, *"...select the recreational activities you participated in or plan to participate in during this visit."* The responses to this question are shown in Table 4.7-5 below. Most of the verbatim responses listed by respondents as 'Other' could be included under snow play but some of the more unique activities listed as 'Other' included: ATV with snow tracks, bicycling on and off road, boating, canoeing, downhill skiing, hunting, backpacking, kayaking, scuba diving, and viewing the waterfall. There were 40 responses to the 'Other' category, and most of these had only one response for each of them.

Table 4.7-5. All recreational activities of wintertime visitors. (SOURCE: *Visitor Use and Impact Technical Report* (Winter data set)

Activity	Windshield Surveys in the Crystal Basin during the Winter	
	No. of People Interviewed that Participated in the Activity (n=223)	Percent of Visitors
Photography	89	39.9
Snow play	83	37.2
Fishing (lake or reservoir)	81	36.3
Hiking/walking	78	35
Cross-country skiing	72	32.3
Picnicking	71	31.8
Wildlife viewing	66	29.6
Snowshoeing	65	29.1
Camping	60	26.9

Table 4.7-5. All recreational activities of wintertime visitors. (SOURCE: *Visitor Use and Impact Technical Report* (Winter data set)		
Activity	**Windshield Surveys in the Crystal Basin during the Winter**	
	No. of People Interviewed that Participated in the Activity (n=223)	**Percent of Visitors**
Off-Highway Vehicle Use	30	13.5
Fishing (stream or river)	10	4.5
Snowmobiling	9	4
Whitewater Boating	0	0
Other (see list below)	40	18.0

The visitors were also asked to identify what they considered to be their most important recreational activity during their visit (see Table 4.7-6). The most important activities respondents provided in the windshield surveys were: fishing in a lake or reservoir, cross-country skiing, and snowshoeing. The second most important activities were: snow play, camping and photography. The third most popular activities were: photography, hiking/walking and wildlife viewing.

Table 4.7-6. Most important recreational activities of wintertime visitors. (SOURCE: *Visitor Use and Impact Technical Report* (Winter data set)		
Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)		
Activity	**Windshield Surveys in the Crystal Basin during the Winter**	
	No. of People Interviewed that Participated in the Activity (n=223)	**Percent of Visitors**
Photography	0	0
Snow play	18	8.1
Fishing (lake or reservoir)	63	28.3
Hiking/walking	8	3.6
Cross-country skiing	55	24.7
Picnicking	4	1.8
Wildlife viewing	0	0
Snowshoeing	31	13.9
Camping	14	6.3
Off-Highway Vehicle Use	14	6.3
Fishing (stream or river)	0	0
Snowmobiling	5	2.2
Whitewater Boating	0	0
Other	8	3.6

Respondents were also asked if there were recreation activities that they would like to but participate in which they currently cannot. There were 31 affirmative responses (13.9%) to this question. The activities they could not participate in included: camping in a campground because they were closed for the season, snowmobiling, ice skating, hut-to-hut cross country skiing and fishing at Union Valley Reservoir because the ramp was closed. Other cuff notes on the survey responses to this question included: cable sledding, hiking, could not stay at the Chalet because it was already reserved, driving to the main dam at Loon Lake Reservoir because

the road was not plowed and cross-country skiing or snowshoeing on the south side of Union Valley Reservoir.

4.7.3 Canyonlands

SMUD also conducted visitor surveys in the Canyonlands in the summer of 2002. The data collected in the surveys provide information about the recreation activities that the current visitors enjoy as well as indications of latent demand. Question no. 8 asked visitors to, *"...select the recreational activities you have participated in or plan to participate in during this visit to the Crystal Basin, excluding relaxing and camping."* The responses to this question are shown in Table 4.7-7 below.

The respondents were also given the opportunity to list other activities that they participated or planned to participate in that did not appear on the list of activities that they were given to respond to this question. The responses collected in the Canyonlands included: gathering/shooting, hanging out, stress reliever, meeting with friends and reading.

Table 4.7-7. All recreational activities of visitors to the Canyonlands during the summer. (SOURCE: *Visitor Use and Impact Technical Report)* (dispersed Canyonlands data sets)

Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)

	% of Visitors Surveyed at Each Reservoir[1]		
Activity	Junction Res..	Slab Creek Res.	Brush Creek
	n=5	n=27	n=5
Swimming	60.0	63.0	80.0
Hiking /Walking	60.0	44.0	20.0
Fishing (Lake or Res.)	40.0	41.0	20.0
Picnicking	40.0	37.0	20.0
Wildlife viewing	40.0	0	0
Photography	40.0	26.0	0
Powerboating	0	7.0	20.0
Bicycling	0	4.0	0
Canoeing/Kayaking	0	33.0	20.0
OHV Use	20.0	11.0	20.0
Fishing (Stream or River)	0	41.0	20.0
PWC Use	0	4.0	0
Backpacking	0	7.0	0
Visiting Cultural/Hist. Sites	0	0	0
Sailboating	0	0	0
Hunting	0	4.0	0

Note: non-responses and 'other' responses not included so totals may not equal 100 percent.
[1]Dispersed Data Set, *Visitor Use and Impact Technical Report,* includes Slab Creek, Brush Creek and Junction Reservoirs. No visitors were found at Camino Reservoir during the survey effort.

The visitors were also asked to identify what they considered to be their most important recreational activity during their visit (see Table 4.7-8). Compared to the survey responses collected in the Crystal Basin, there are fewer activities in which the visitors to the Canyonlands

participate. The five most frequent responses were swimming, fishing (lake or reservoir), canoeing/kayaking, fishing (stream or river), and wildlife viewing.

Table 4.7-8. Most important recreational activities of visitors to the Canyonlands during the summer (dispersed Canyonlands data set)

Survey Question: 'What are your three most important recreational activities from this list?' (This table provides the frequencies for the respondents' first choice.)

	% of Visitors Surveyed at Each Reservoir[1]		
Activity	Junction Res..	Slab Creek Res.	Brush Creek
	n=5	n=27	n=5
Swimming	40.0	11.0	40.0
Hiking /Walking	20.0	0	20.0
Fishing (Lake or Res.)	40.0	30.0	0
Picnicking	0	0	0
Wildlife viewing	0	7.0	0
Photography	0	0	0
Powerboating	0	0	0
Bicycling	0	0	0
Canoeing/Kayaking	0	26.0	0
OHV Use	0	0	20.0
Fishing (Stream or River)	0	19.0	0
PWC Use	0	0	0
Backpacking	0	0	0
Visiting Cultural/Hist. Sites	0	0	0
Sailboating	0	0	0
Hunting	0	0	0

Note: non-responses and 'other' responses not included so totals may not equal 100 percent.
[1]Dispersed Data Set, *Visitor Use and Impact Technical Report,* includes Slab Creek, Brush Creek and Junction Reservoirs. No visitors were found at Camino Reservoir during the survey effort.

Respondents were also asked if there were recreation activities that they would like to but participate in which they currently cannot. There were only four affirmative responses (11.1%) to this question. One person commented that they could not boat in the area because they do not have a boat and there is no place to rent a boat. The second respondent at the upstream end of Slab Creek Reservoir said he/she could not swim because the water is too cold and runs too fast. The third responded said that they could not boat because the road at the informal boat launch site at Slab Creek Reservoir was too narrow to launch a boat transported by a trailer. The fourth respondent said they could not kayak on Slab Creek Reservoir because the water was flowing too fast at the upstream end of Slab Creek Reservoir.

4.8 Future Recreation Use Estimates

The projected recreation participation and use estimates within the Project are discussed in two parts. The first section discusses participation in activities from a regional then county perspective. The second part of this section includes projections of how many visitors may likely participate in various recreation activities during visits to areas at and near the UARP. The projections for future estimated use at the UARP are based on several assumptions about

population growth, trends in participation in various recreation activities and local factors that may influence these trends.

Cordell (1999) provided projected regional participation for various activities. These projection indices were developed for regions across the United States, and specifically for the Pacific region which is based on data from California, Oregon, Washington, Alaska and Hawaii. Although there may be limitations for applying these projected indices which were compiled for five states to estimating future use at the UARP, it is a reasonable approach considering the data provided in table 4.8-1 below which shows fairly consistent existing participation percentages between California and the Pacific Region as defined above.

Table 4.8-1. Comparison of the percent participation in various recreation activities between the population of California and the Pacific Region (SOURCE: Cordell 2004).

Activity	CA	Pacific Region	Activity	CA	Pacific Region
Walking for pleasure	80.1	81.3	Basketball outdoors	12.4	13.0
Family gathering	72.5	73.0	Tennis outdoors	13.4	12.0
Viewing/photographing nat. scenery	60.6	63.7	Soccer outdoors	13.4	11.4
Visiting nature centers	56.2	58.1	Warm-water fishing	11.4	10.9
Gardening/landscaping for pleasure	50.3	57.4	Sledding	6.2	9.6
Picnicking	52.5	56.2	Snorkeling	7.6	9.6
Sightseeing	46.1	49.7	Softball	9.2	9.5
Visiting a beach	46.2	49.2	Horseback riding (general)	9.7	9.4
View/photo wildflowers, trees	45.6	47.9	Jetskiing	10.2	9.2
Driving for pleasure	42.9	46.3	Downhill skiing	8.6	9.2
Attending outdoor sports events	43.5	45.5	Volleyball outdoors	8.9	9.0
Day hiking	44.6	45.2	Anadromous fishing	5.7	8.9
Visiting historic sites	41.0	43.3	Snowboarding	9.2	8.7
Bicycling	41.0	41.6	Football	9.2	8.5
Swimming in lakes, streams	37.9	40.8	Rafting	7.0	8.2
Attending outdoor concerts, plays	42.5	40.8	Mountain climbing	6.9	7.8
View/photo other wildlife	36.5	40.5	Horseback riding on trails	7.1	7.1
Running or jogging	39.9	40.0	Waterskiing	6.8	6.9
Swimming in lakes, streams	41.8	37.5	Caving	6.3	6.5
Visiting wilderness/primitive area	32.8	36.4	Hand/racquetball outdoors	8.5	6.4
Yard games (e.g. horseshoes)	30.5	33.0	Canoeing	4.3	6.3
Developed camping	28.5	31.7	Sailing	5.4	5.6
View/photo birds	28.3	30.2	Kayaking	4.4	5.3
Visiting other waterside	24.5	26.9	Ice skating outdoors	5.0	4.9
View/photo fish	22.1	26.2	Big game hunting	1.9	4.7
Gathering mushrooms, berries	20.7	25.7	Baseball	4.5	4.7
Inline skating or rollerblading	28.5	24.0	Surfing	3.8	4.6
Visiting a farm/agricultural setting	21.5	23.4	Snowmobiling	2.3	4.0
Boat tours or excursions	20.1	22.8	Small game hunting	2.6	3.9
Mountain biking	21.1	22.4	Cross-country skiing	2.4	3.9
Visiting prehistoric/arch sites	21.3	21.5	Rowing	3.6	3.8
Motorboating	17.6	19.7	Rock climbing	4.6	3.6
Primitive camping	14.6	18.9	Orienteering	3.2	2.9
Golfing	15.2	17.3	Scuba diving	1.9	2.5
Driving off-road	15.1	16.8	Ice fishing	0.1	2.0

Table 4.8-1. Comparison of the percent participation in various recreation activities between the population of California and the Pacific Region (SOURCE: Cordell 2004).					
Activity	**CA**	**Pacific Region**	**Activity**	**CA**	**Pacific Region**
Coldwater fishing	13.8	16.4	Migratory bird hunting	1.2	1.8
Backbacking	12.9	15.1	Snowshoeing	1.2	1.4
Saltwater fishing	11.3	14.1	Windsurfing	0.7	0.9

Recognizing that the UARP draws a majority of visitors from El Dorado and Sacramento counties, which are projected to grow at a faster rate than the State of California (see Table 4.4-1), it is reasonable to believe that using projection indices developed for the region (Cordell 1999) would provide a conservative estimate of the recreational use at and near the UARP that could be expected in the future. This concept is considered below in the development of the projected recreation use estimates.

4.8.1 Activity Participation for Sacramento and El Dorado Populations (16 years and older)

The calculation of participation estimates are based on the projection indices created from Bowker, English, and Cordell, 1999) who utilized the National Survey on Recreation and the Environment (NSRE) descriptive findings for populations 16 years and older, not institutionalized (Cordell, McDonald, Lewis, Miles, Martin, and 1996) to develop participation by millions 2000-2050 on ten year increments.

The county projections are presented in a range derived from national and regional participation projection estimates. These are calculated based on the indices created for the nation and region, utilizing the same rate of increase index created by Bowker et. al, (1999). To obtain the county level estimated activity participation rates the following individuals were contacted and the following methodology was applied:

a. Dr. Bricker consulted Dr. Rodney Warnick, professor at the University of Massachusetts, and co-author of Recreation Trends and Markets: The 21st Century (1999) for a procedure to estimate local participation in selected activities.
b. To obtain population information and index information, Dr. Bricker consulted with Carter J. Betz, of the USDA Forest Service, Southern Research Station, 320 Green St., Athens, GA 30602-2044 with regard to the NSRE population numbers and process for estimating use and participation rates.
c. From the above discussions and correspondence, Dr. Bricker employed the following steps to develop county participation in selected activities:

    1. By county, the indexes from national and regional participation rates were multiplied by the base number of participants (represented in millions) then divided by the base population used in national and regional calculations (Bowker et.al, 1999, pp. 323-349). This yielded a national and regional participation rate for each activity by decade.

2. Next, the national and regional participation rates were multiplied by the estimated county populations of individuals non-institutionalize and over the age of 16, consistent with the estimate parameters developed by Bowker et al.. The population estimates came from the Department of Finance, extracting estimates of institutionalized individuals from the Department of Corrections (Table 4.3-3).
3. This calculation resulted in a range of participation by activity for Sacramento and El Dorado Counties, as well as a combination of the two counties together.

The following tables are representative of these calculations in an attempt to relate regional and national trends to the population of counties that constitute most of the use at and near the UARP Tables 4.8-2 to 4.8-7).

Table 4.8-2. Participation activity estimates for Sacramento and El Dorado Counties: 2000

Selected Activities	NPR 2000	RPR 2000	Participation Estimates Sacramento County-2000			Participation Estimates El Dorado County-2000			Combined County Participation Estimates-2000		
Cross Country Skiing	3.4%	3.7%	31,076	to	34,336	575	to	576	35,197	to	38,889
Downhill Skiing	8.6%	12.2%	79,547	to	112,371	589	to	584	90,096	to	127,273
Snowmobiling	3.5%	2.4%	32,639	to	22,468	574	to	576	36,967	to	25,448
Canoeing	7.2%	4.1%	66,114	to	37,457	576	to	581	74,882	to	42,424
Motor-boating	24.1%	21.5%	222,542	to	198,505	604	to	608	252,053	to	224,829
Non-pool Swimming	40.1%	39.3%	369,798	to	362,085	632	to	633	418,838	to	410,101
Rafting/Floating	1.2%	3.7%	11,102	to	33,688	576	to	572	12,574	to	38,155
Visit Beach or Waterside	65.1%	71.4%	600,462	to	658,325	673	to	683	680,091	to	745,627
Fishing	29.7%	25.2%	274,152	to	231,898	610	to	617	310,508	to	262,650
Hunting	9.0%	5.1%	82,939	to	47,057	578	to	584	93,938	to	53,297
Non-Consumptive Wildlife Activities	60.5%	57.6%	557,931	to	531,112	661	to	666	631,919	to	601,544
Backpacking	7.6%	12.7%	69,875	to	117,495	582	to	590	79,141	to	133,076
Hiking	24.6%	37.6%	226,330	to	346,654	609	to	629	256,344	to	392,625
Horseback Riding	7.3%	8.1%	67,052	to	74,207	581	to	583	75,944	to	84,048
Off-Road Driving	13.9%	15.6%	128,257	to	143,939	592	to	595	145,265	to	163,027
Primitive Camping	14.0%	18.8%	128,716	to	173,150	592	to	600	145,786	to	196,112
Developed Camping	21.1%	29.8%	194,592	to	274,685	603	to	617	220,397	to	311,111
Rock Climbing	3.9%	5.6%	35,512	to	51,562	576	to	579	40,221	to	58,400
Biking	29.8%	33.2%	274,424	to	305,899	617	to	622	310,815	to	346,465
Family Gathering	64.2%	66.0%	591,875	to	608,117	674	to	671	670,365	to	688,761
Picnicking	51.0%	54.0%	469,962	to	497,837	651	to	655	532,285	to	563,856
Sightseeing	59.4%	64.4%	547,367	to	593,806	664	to	672	619,954	to	672,552
Visiting Historic Places	46.7%	47.6%	430,759	to	438,883	644	to	645	487,883	to	497,085
Walking	68.7%	72.8%	633,060	to	671,046	679	to	685	717,011	to	760,035

Table 4.8-3. Participation activity estimates for Sacramento and El Dorado Counties: 2010

Selected Activities	NPR 2010	RPR 2010	Participation Estimates Sacramento-2010			Participation Estimates El Dorado-2010			Combined County Estimates-2010		
Cross Country Skiing	3.8%	4.3%	45,619	to	51,549	576	to	577	51,514	to	58,210
Downhill Skiing	9.5%	13.9%	112,911	to	165,961	592	to	585	127,502	to	187,408
Snowmobiling	3.7%	3.2%	43,918	to	37,871	575	to	576	49,593	to	42,765
Canoeing	7.6%	4.6%	90,572	to	55,320	577	to	582	102,276	to	62,469
Motor-boating	26.0%	24.6%	310,292	to	292,833	609	to	611	350,389	to	330,674
Non-pool Swimming	43.6%	44.1%	520,257	to	525,925	640	to	639	587,487	to	593,888
Rafting/Floating	0.0%	4.2%	0	to	50,291	577	to	570	0	to	56,790
Visit Beach or Waterside	71.4%	80.0%	850,878	to	954,278	683	to	696	960,832	to	1,077,594
Fishing	31.5%	26.8%	375,365	to	320,036	612	to	620	423,872	to	361,392
Hunting	8.6%	4.6%	102,883	to	55,054	577	to	584	116,178	to	62,168
Non-Consumptive Wildlife Activities	67.5%	65.6%	805,152	to	782,602	674	to	677	909,198	to	883,733
Backpacking	7.9%	13.6%	94,021	to	162,151	582	to	591	106,171	to	183,105
Hiking	26.9%	42.8%	321,259	to	510,800	613	to	638	362,774	to	576,808
Horseback Riding	8.0%	9.0%	95,258	to	107,898	583	to	584	107,568	to	121,841
Off-Road Driving	14.2%	16.5%	169,260	to	196,974	592	to	596	191,132	to	222,428
Primitive Camping	14.1%	20.2%	168,201	to	241,094	592	to	602	189,937	to	272,249
Developed Camping	23.2%	33.5%	276,449	to	398,978	607	to	623	312,173	to	450,536
Rock Climbing	4.1%	5.8%	49,069	to	68,655	577	to	579	55,409	to	77,527
Biking	32.9%	37.3%	392,608	to	444,316	622	to	629	443,342	to	501,733
Family Gathering	70.4%	74.0%	839,411	to	882,384	687	to	681	947,883	to	996,410
Picnicking	55.9%	60.6%	666,511	to	722,366	658	to	666	752,641	to	815,714
Sightseeing	66.7%	74.5%	795,874	to	888,099	675	to	688	898,720	to	1,002,863
Visiting Historic Places	52.5%	53.8%	625,674	to	641,443	653	to	655	706,527	to	724,333
Walking	74.7%	82.9%	890,633	to	988,796	688	to	701	1,005,724	to	1,116,573

Table 4.8-4. Participation activity estimates for Sacramento and El Dorado Counties: 2020

Selected Activities	NPR 2020	RPR 2020	Participation Estimates Sacramento-2020			Participation Estimates El Dorado-2020			Combined County Estimates-2020		
Cross Country Skiing	4.1%	4.7%	60,520	to	69,251	576	to	577	67,887	to	77,682
Downhill Skiing	10.2%	15.1%	151,455	to	223,233	594	to	586	169,892	to	250,408
Snowmobiling	3.9%	3.4%	57,187	to	51,027	575	to	576	64,149	to	57,239
Canoeing	8.1%	5.0%	119,820	to	73,843	578	to	583	134,407	to	82,832
Motor-boating	28.4%	26.6%	420,240	to	393,639	612	to	615	471,398	to	441,559
Non-pool Swimming	47.1%	47.8%	698,313	to	708,324	646	to	644	783,323	to	794,552
Rafting/Floating	0.0%	4.4%	0	to	64,613	577	to	570	0	to	72,478
Visit Beach or Waterside	76.9%	88.0%	1,139,872	to	1,303,185	692	to	709	1,278,635	to	1,461,829
Fishing	33.8%	28.8%	500,586	to	426,017	615	to	623	561,525	to	477,878
Hunting	8.4%	4.3%	125,074	to	63,571	577	to	583	140,300	to	71,310
Non-Consumptive Wildlife Activities	75.1%	73.1%	1,112,435	to	1,082,981	685	to	689	1,247,858	to	1,214,819
Backpacking	8.4%	14.9%	124,675	to	221,245	583	to	594	139,853	to	248,178
Hiking	29.3%	46.7%	434,457	to	691,378	616	to	644	487,346	to	775,543
Horseback Riding	8.8%	9.9%	129,974	to	146,550	584	to	586	145,796	to	164,390
Off-Road Driving	14.6%	18.0%	216,475	to	266,970	593	to	598	242,828	to	299,470
Primitive Camping	14.5%	22.0%	215,182	to	326,045	593	to	605	241,377	to	365,736
Developed Camping	24.6%	37.1%	364,930	to	549,845	609	to	629	409,355	to	616,781
Rock Climbing	4.5%	6.3%	67,060	to	93,345	577	to	580	75,223	to	104,708
Biking	36.6%	40.4%	542,920	to	598,411	628	to	634	609,013	to	671,260
Family Gathering	76.6%	80.2%	1,134,374	to	1,187,640	697	to	691	1,272,468	to	1,332,218
Picnicking	61.3%	66.1%	907,983	to	979,743	667	to	674	1,018,517	to	1,099,014
Sightseeing	74.7%	83.9%	1,106,117	to	1,243,495	688	to	703	1,240,771	to	1,394,873
Visiting Historic Places	58.2%	58.6%	862,264	to	868,790	662	to	663	967,232	to	974,553
Walking	80.7%	90.3%	1,195,448	to	1,338,355	697	to	713	1,340,977	to	1,501,281

Table 4.8-5. Participation activity estimates for Sacramento and El Dorado Counties: 2030

Selected Activities	NPR 2030	RPR2030	Participation Estimates Sacramento-2030			Participation Estimates El Dorado-2030			Combined County Estimates-2030		
Cross Country Skiing	5.0%	5.5%	88,005	to	97,260	578	to	579	98,168	to	108,492
Downhill Skiing	12.0%	17.8%	211,211	to	314,250	598	to	589	235,603	to	350,541
Snowmobiling	4.2%	5.2%	73,657	to	91,853	578	to	577	82,163	to	102,461
Canoeing	8.7%	5.8%	153,713	to	102,047	579	to	584	171,465	to	113,832
Motor-boating	30.7%	30.6%	541,303	to	539,293	618	to	619	603,816	to	601,574
Non-pool Swimming	51.8%	53.0%	913,216	to	934,190	654	to	652	1,018,680	to	1,042,076
Rafting/Floating	0.0%	5.1%	0	to	89,882	578	to	570	0	to	100,262
Visit Beach or Waterside	85.6%	96.6%	1,509,282	to	1,702,018	705	to	723	1,683,583	to	1,898,578
Fishing	35.5%	29.5%	626,116	to	519,526	617	to	626	698,424	to	579,524
Hunting	8.3%	4.0%	145,537	to	69,890	576	to	583	162,345	to	77,961
Non-Consumptive Wildlife Activities	82.1%	81.1%	1,446,641	to	1,429,556	698	to	700	1,613,709	to	1,594,650
Backpacking	8.5%	15.1%	149,669	to	265,367	583	to	594	166,954	to	296,013
Hiking	31.9%	53.3%	563,123	to	939,202	620	to	654	628,157	to	1,047,667
Horseback Riding	9.6%	11.2%	169,723	to	197,335	585	to	588	189,324	to	220,125
Off-Road Driving	14.8%	18.0%	260,005	to	317,629	593	to	598	290,032	to	354,311
Primitive Camping	14.7%	22.7%	258,475	to	400,528	593	to	606	288,325	to	446,783
Developed Camping	26.9%	40.8%	474,310	to	718,607	613	to	634	529,086	to	801,597
Rock Climbing	4.7%	6.1%	83,081	to	107,228	577	to	580	92,676	to	119,611
Biking	40.4%	44.1%	711,544	to	778,191	634	to	640	793,718	to	868,061
Family Gathering	84.0%	87.6%	1,480,234	to	1,543,429	708	to	703	1,651,181	to	1,721,674
Picnicking	67.2%	72.7%	1,183,982	to	1,281,329	676	to	685	1,320,715	to	1,429,305
Sightseeing	83.1%	93.4%	1,465,552	to	1,646,151	701	to	718	1,634,804	to	1,836,259
Visiting Historic Places	65.7%	64.4%	1,158,002	to	1,134,679	674	to	672	1,291,736	to	1,265,719
Walking	86.7%	100.4%	1,528,079	to	1,770,556	707	to	729	1,704,551	to	1,975,031

Table 4.8-6. Participation activity estimates for Sacramento and El Dorado Counties: 2040

Selected Activities	NPR 2040	RPR2040	Participation Estimates Sacramento-2040			Participation Estimates El Dorado-2040			Combined County Estimates-2040		
Cross Country Skiing	5.6%	6.1%	111,811	to	121,909	579	to	580	124,056	to	135,260
Downhill Skiing	13.7%	20.7%	272,283	to	412,732	603	to	592	302,103	to	457,934
Snowmobiling	4.5%	6.5%	89,657	to	129,743	580	to	577	99,476	to	143,953
Canoeing	9.4%	6.5%	186,464	to	129,170	580	to	585	206,885	to	143,316
Motor-boating	33.3%	34.0%	663,605	to	678,142	624	to	623	736,282	to	752,412
Non-pool Swimming	56.5%	58.2%	1,126,010	to	1,159,981	662	to	659	1,249,330	to	1,287,022
Rafting/Floating	0.0%	5.8%	0	to	115,699	579	to	570	0	to	128,370
Visit Beach or Waterside	92.4%	106.5%	1,843,019	to	2,122,704	716	to	738	2,044,866	to	2,355,182
Fishing	37.3%	31.2%	742,662	to	621,009	619	to	629	823,999	to	689,022
Hunting	8.2%	3.6%	162,749	to	72,547	576	to	583	180,573	to	80,492
Non-Consumptive Wildlife Activities	87.9%	89.1%	1,752,149	to	1,776,340	711	to	709	1,944,044	to	1,970,884
Backpacking	8.9%	16.3%	178,340	to	324,326	584	to	596	197,872	to	359,846
Hiking	34.6%	58.9%	689,158	to	1,173,293	625	to	663	764,635	to	1,301,791
Horseback Riding	10.6%	12.3%	211,858	to	246,111	587	to	590	235,061	to	273,065
Off-Road Driving	15.3%	18.9%	305,155	to	377,191	594	to	600	338,575	to	418,501
Primitive Camping	14.9%	19.7%	297,896	to	392,350	594	to	601	330,522	to	435,320
Developed Camping	28.8%	44.7%	573,570	to	891,196	615	to	641	636,387	to	988,799
Rock Climbing	5.1%	6.6%	101,420	to	131,017	578	to	580	112,527	to	145,366
Biking	44.1%	47.9%	878,933	to	955,016	640	to	646	975,193	to	1,059,609
Family Gathering	90.1%	95.0%	1,797,201	to	1,893,090	720	to	712	1,994,030	to	2,100,421
Picnicking	71.1%	77.7%	1,417,244	to	1,549,784	682	to	693	1,572,460	to	1,719,515
Sightseeing	89.9%	102.8%	1,792,806	to	2,050,285	712	to	732	1,989,154	to	2,274,831
Visiting Historic Places	71.9%	69.7%	1,432,726	to	1,388,767	684	to	680	1,589,637	to	1,540,864
Walking	92.7%	109.2%	1,847,862	to	2,177,162	716	to	743	2,050,239	to	2,415,604

Table 4.8-7. Participation activity estimates for Sacramento and El Dorado Counties: 2050												
Selected Activities	**NPR 2050**	**RPR2050**	**Participation Estimates Sacramento-2050**			**Participation Estimates El Dorado-2050**			**Combined County Estimates-2050**			
Cross Country Skiing	6.3%	6.7%	139,739	to	147,600	580	to	581	154,248	to	162,925	
Downhill Skiing	16.2%	24.3%	357,468	to	536,445	608	to	596	394,583	to	592,143	
Snowmobiling	5.0%	8.1%	109,586	to	177,968	583	to	578	120,965	to	196,446	
Canoeing	10.3%	7.2%	226,956	to	160,171	581	to	586	250,521	to	176,801	
Motor-boating	36.3%	37.8%	803,156	to	836,448	630	to	627	886,546	to	923,295	
Non-pool Swimming	61.5%	63.7%	1,360,437	to	1,409,052	671	to	667	1,501,689	to	1,555,351	
Rafting/Floating	0.0%	6.6%	0	to	146,082	580	to	570	0	to	161,249	
Visit Beach or Waterside	99.9%	113.8%	2,208,090	to	2,514,428	728	to	750	2,437,351	to	2,775,497	
Fishing	39.3%	33.1%	868,136	to	730,938	622	to	632	958,273	to	806,830	
Hunting	8.3%	3.5%	182,504	to	76,837	575	to	583	201,454	to	84,815	
Non-Consumptive Wildlife Activities	93.7%	94.4%	2,071,415	to	2,087,518	719	to	718	2,286,486	to	2,304,261	
Backpacking	9.6%	17.7%	211,147	to	391,811	585	to	598	233,070	to	432,492	
Hiking	37.4%	64.4%	827,367	to	1,424,094	629	to	672	913,271	to	1,571,955	
Horseback Riding	11.8%	13.6%	261,707	to	300,003	589	to	591	288,879	to	331,151	
Off-Road Driving	16.1%	20.0%	356,806	to	441,459	596	to	602	393,853	to	487,294	
Primitive Camping	15.4%	25.8%	339,564	to	569,496	594	to	611	374,820	to	628,626	
Developed Camping	30.8%	48.6%	681,718	to	1,075,150	619	to	647	752,500	to	1,186,781	
Rock Climbing	5.6%	7.3%	124,029	to	160,877	579	to	581	136,907	to	177,581	
Biking	48.7%	51.7%	1,075,799	to	1,141,959	647	to	652	1,187,497	to	1,260,526	
Family Gathering	96.9%	101.7%	2,142,845	to	2,248,960	731	to	723	2,365,332	to	2,482,465	
Picnicking	75.5%	82.3%	1,668,955	to	1,818,801	689	to	700	1,842,240	to	2,007,644	
Sightseeing	96.7%	110.5%	2,137,862	to	2,443,171	723	to	745	2,359,832	to	2,696,841	
Visiting Historic Places	77.6%	74.1%	1,715,281	to	1,637,302	693	to	687	1,893,376	to	1,807,300	
Walking	97.4%	116.6%	2,152,062	to	2,577,918	724	to	754	2,375,506	to	2,845,578	

Table 4.8-8 provides estimated average participation as percentages of the population of Sacramento and El Dorado counties over the next 50 years. In addition to participation rates per decade, an average activity growth rate was also calculated. In summary, hunting is the only activity estimated as negative participation growth. Rafting/floating, rock climbing, cross-country skiing, canoeing, off-road driving, backpacking, snowmobiling, primitive camping and horseback riding are estimated to increase, but only slightly, at 5 percent or less. Participation in fishing and downhill skiing show a slightly higher participation increase estimate, with an average of 8.7 and 9.8 respectively. Developed camping and motor-boating are nearly tied, with an estimated increase of 14% over 50 years. Biking, hiking, and non-pool swimming show a slightly higher overall increase at nearly 20 percent over the next 50 years. Picnicking and visiting historic places demonstrated not only high average participation rates, but also an estimated 26-29 percent increase over the next 50 years. The top five with respect to largest increases in participation include family gathering (34%), non-consumptive wildlife activities (35%), walking (36%), visiting beach or waterside (39%), and sightseeing (42%). While these figures demonstrate only estimates, they are reflective of demographic trends in Sacramento and El Dorado counties.

Table 4.8-8. Average participation as a percentage of the combined populations of Sacramento and El Dorado Counties.

Selected Activities	Average Percent of Population Participation						50 Year % Change
	2000	2010	2020	2030	2040	2050	
Hunting	7.10%	6.60%	6.40%	6.10%	5.90%	5.90%	-1.20%
Rafting/Floating	2.40%	2.10%	2.20%	2.50%	2.90%	3.30%	0.90%
Rock Climbing	4.70%	4.90%	5.40%	5.40%	5.80%	6.40%	1.70%
Cross Country Skiing	3.50%	4.10%	4.40%	5.30%	5.90%	6.50%	3.00%
Canoeing	5.60%	6.10%	6.50%	7.30%	7.90%	8.80%	3.20%
Off-Road Driving	14.80%	15.40%	16.30%	16.40%	17.10%	18.10%	3.30%
Backpacking	10.20%	10.70%	11.70%	11.80%	12.60%	13.60%	3.40%
Snowmobiling	3.00%	3.40%	3.70%	4.70%	5.50%	6.50%	3.50%
Primitive Camping	16.40%	17.20%	18.30%	18.70%	17.30%	20.60%	4.20%
Horseback Riding	7.70%	8.50%	9.30%	10.40%	11.50%	12.70%	5.00%
Fishing	27.50%	29.20%	31.30%	32.50%	34.20%	36.20%	8.70%
Downhill Skiing	10.40%	11.70%	12.60%	14.90%	17.20%	20.20%	9.80%
Developed Camping	25.50%	28.30%	30.90%	33.80%	36.70%	39.70%	14.20%
Motor-boating	22.80%	25.30%	27.50%	30.70%	33.70%	37.10%	14.30%
Biking	31.50%	35.10%	38.50%	42.30%	46.00%	50.20%	18.70%
Hiking	31.10%	34.90%	38.00%	42.60%	46.70%	50.90%	19.80%
Non-pool Swimming	39.70%	43.90%	47.50%	52.40%	57.30%	62.60%	22.90%

Table 4.8-8. Average participation as a percentage of the combined populations of Sacramento and El Dorado Counties.							
Selected Activities	**Average Percent of Population Participation**						**50 Year % Change**
	2000	**2010**	**2020**	**2030**	**2040**	**2050**	
Picnicking	52.50%	58.20%	63.70%	69.90%	74.40%	78.90%	26.40%
Visiting Historic Places	47.20%	53.10%	58.40%	65.00%	70.80%	75.80%	28.60%
Family Gathering	65.10%	72.20%	78.40%	85.80%	92.60%	99.30%	34.20%
Non-Consumptive Wildlife Activities	59.10%	66.60%	74.10%	81.60%	88.50%	94.10%	35.00%
Walking	70.70%	78.80%	85.50%	93.60%	100.90%	107.00%	36.30%
Visit Beach or Waterside	68.30%	75.70%	82.40%	91.10%	99.50%	106.80%	38.50%
Sightseeing	61.90%	70.60%	79.30%	88.30%	96.40%	103.60%	41.70%

4.8.2 Future Recreation Use Estimates in the UARP Area

In general, visitors to the UARP are either overnight or day users who visit one of the developed UARP recreation facilities or an undeveloped area at or near one of the UARP reservoirs. Most of the visitation to the UARP occurs in the summer and the winter use levels are considerably lower than what occurs in the summer. Between these two main periods of use, visitors continue to visit the UARP but much more infrequently. Visitation between summer and winter tends to be influenced by weather and road conditions which are unpredictable.

The assumptions for developing the projected use estimates (see Table 4.8-9) for developed recreation facilities and dispersed areas include:

- Population has been, is and will be the major driver of outdoor recreation participation growth (Cordell et al 2004).
- Increasing trends in percentage of the population participating in various recreation activities will also contribute to a projected increase in recreation use at the UARP.
- The majority of the visitors to the UARP will continue to come from El Dorado and Sacramento counties proportionate to the expected rate of growth of each of the counties.
- The existing recreation opportunities available at and near the UARP will continue to be available in the future and will not be constrained (e.g. dispersed camping will continue to be a permitted activity on NFS lands).
- The estimates of existing use at the UARP (see Section 4.5 and 4.6) are used as the basis for the projected estimated use at the UARP.

Table 4.8-9. Projected estimated annual recreation use at and near the UARP through 2050.						
	Existing Use Estimate (R-D)[1]	**2000-2010**	**2011-2020**	**2021-2030**	**2031-2040**	**2041-2050**
Non-winter Use						
Projection Indices for Developed Camping[2]		1.19	1.29	1.41	1.53	1.65
Use Estimate (R-D)	172,795	177,039	222,906	243,641	264,376	285,112
Projection Indices for Picnic and Trailheads[2]		1.2	1.31	1.44	1.54	1.63
Use Estimate (R-D)	21,127	25,352	27,676	30,423	32,536	34,437
Projection Indices for Boating (includes Canyonlands)[2]		1.22	1.32	1.52	1.69	1.88
Use Estimate (R-D)	55,017	67,121	72,622	83,626	92,979	103,432
Projection Indices for Dispersed Camping Use[2]		1.13	1.23	1.27	1.35	1.44
Use Estimate (R-D)	67,555	76,337	83,093	85,795	91,199	97,279
Projection Indices for OHV Use[2]		1.10	1.20	1.20	1.26	1.33
Rubicon Trail-OHV	24,750	27,225	29,700	29,700	31,185	32,918
Total Non-Winter Use Estimate (R-D)	341,244	373,074	435,997	473,185	512,275	553,177
Winter Use						
Projection Indices[3]		1.23	1.33	1.57	1.74	1.9
Use Estimate[4] (R-D)	16,950	20,849	27,729	43,534	75,749	143,923
Total Estimated Projected Annual Recreation Use at the UARP (R-D)	358,194	393,923	463,726	516,719	588,024	697,100

[1]Recreation Day= one person for a day or a portion of a day. See Tables 4.5-3, 4.5-4, 4.5-8, 4.5-9, 4.5-10 and section 4.5.4.1 and section 4.6.
[2]Cordell 1999
[3]Cordell 1999. Indices for cross-country skiing.
[4]Winter use estimates included are for the Crystal Basin only. Winter use in the Canyonlands was incidental and a separate winter use estimate was not prepared. Existing winter use estimates for the Canyonlands were included in the non-winter dispersed recreation use estimate.

4.9 Site Observations and Operations Staff Consultation

In the spring of 2003, SMUD's staff observed that the owner of the land that is located along the SFAR, south of the intersection of Ice House Road and Highway 50, constructed fences and installed gates to restrict public access. This management action taken by the private landowner has effectively eliminated the public from accessing this site. The area where visitors were still observed in this vicinity was at the paved pullout on the north side of Highway 50, adjacent to the SFAR. At this site, travelers pull off Highway 50 to read an historical interpretive display or take a break. Based on SMUD's staff observation, most of the people who stop in this area of Highway 50 are en route to another destination (e.g., Lake Tahoe, Bay Area), and are not entering or exiting the Crystal Basin via Ice House Road.

The Wentworth Springs Road received major reconstruction from 2001 to 2002. With realignment and paving, this county road is now a major travel way into and out of the Crystal Basin for travelers from Georgetown and other Placer County communities. Previously a rough dirt road, the segment of Wentworth Springs Road from near Stumpy Meadows Reservoir to the intersection with Ice House Road is now paved and very accessible except for the winter months because the snow is not plowed. SMUD is not aware of any potentially UARP-related recreation that occurs along this segment of Wentworth Springs Road.

ENF staff notes that there are localized areas in the Crystal Basin where there is a high demand for dispersed recreation opportunities. The resulting high dispersed recreation use levels have caused environmental damage in some areas of the Crystal Basin. ENF staff observes that as management actions are taken to control dispersed recreation activities in one area, the activity often shifts to another location. Consequently, actions taken by the agency to reduce impacts in one area may result in relocating resource impacts related to dispersed recreation to another area. Currently, the ENF is addressing resource impacts related to areas with high demand for dispersed recreation along Jones Fork Silver Creek, Big Silver Creek, Spider Lake and the north side of Union Valley Reservoir. The impacts include soil compaction, vegetation damage, lack of vegetative cover and pollution and these impacts are mainly related to motorized dispersed use.

Although it may be possible to locate trails in the powerline corridor for recreational uses, several issues and constraints must be seriously considered. Nearly all of the lands within Project power line corridors in the Crystal Basin are either owned by SPI or are federal lands managed by the ENF. Thus, a primary consideration, and possible constraint, is consistency with their policies and management objectives for these lands. Secondly, the fact that these corridors are generally linear within a mountainous setting, (i.e., they do not follow the contours of the land like a road or a railroad right-of-way), limits their conduciveness for recreational trails both from a cost and a demand perspective. Other constraints that would need to be overcome include, safety, increased fire risk, as well as an increased potential for vandalism to UARP equipment or facilities. In order to minimize these concerns, SMUD discourages use of the transmission line corridors by purposely not clearing vegetation along the right-of-way where the corridor crosses roads.

5.0 FINDINGS

The following section presents broad statements of findings followed by a general characterization of the expected demand at each of the four main reservoirs which primarily relate to the issue questions developed for the relicensing effort that are addressed by the Recreation Demand Study Plan. These issue questions are listed in Section 2.1 of this report.

5.1 General Findings

By reviewing the many sources of information described in this report there are some commonalities in projections about recreational use that are applicable to areas at and near the UARP. These are presented below as brief statements.

5.1.1 Population and Demographic Findings

- Areas with the highest growth rates in California include communities in the Sierra Nevada Foothills and the Central Valley.
- The two most influential population centers for the UARP include Sacramento and El Dorado Counties.
- Projected population growth in Sacramento and El Dorado Counties will increase the overall demand for recreational experiences at and near the UARP.
- Baby boomers will account for much of this growth. This demographic change may cause an increased demand for: (1) developed recreation facilities for RVs and large vehicles; (2) recreational use during the shoulder seasons; (3) interpretive and educational programs; (4) wildlife viewing/nature study opportunities; (5) flatwater paddling opportunities; and (6) angling, including winter opportunities.
- The population of El Dorado and Sacramento counties will become more diverse. There will be a growing percentage of Hispanic and minorities in Sacramento and El Dorado counties as well as in the overall state of California. This demographic change may cause and increased demand for: (1) developed recreation facilities that can accommodate large families and groups; and (2) wildlife viewing/nature study opportunities.
- There will likely be an increase in the typical party size of visitors.
- Successive generations will have an increasing level of education. This may cause successive generations of recreation visitors to be more concerned about protecting natural resources. This shift could translate into: (1) increased demand for recreation activities that have a low impact on the environment; (2) public demand for instituting management actions to restrict or otherwise manage recreational activities that have the potential to damage natural resources such as unmanaged OHV use on public land; and (3) a decline in the demand for consumptive recreational uses such as fishing and hunting.

5.1.2 Activity Trends

- Summer activities projected to have the greatest growth that can be accommodated at and near the UARP include, in order of greatest to least: hiking/walking, flatwater paddling,

developed and dispersed camping and day use, motorized boating, OHV use, biking, environmental/cultural education and angling.

- Winter activities including back country skiing, cross country skiing, snowshoeing and snow play will likely increase at and near the UARP. The demand for snowmobiling will not likely increase at or near the UARP.
- Shoulder season use at developed recreation facilities and winter angling at the reservoirs may increase as a greater proportion of the population will consist of retirees.
- Whitewater use will likely remain fairly steady with users seeking more unique reaches with high degree of difficulty and areas suitable for 'play boating'.
- Motorized boating use will likely show some increase however this trend may be accelerated by external factors such as seasonal low lake levels at Folsom Lake or future restrictions in the region that may be instituted (i.e. prohibiting PWC use) that shift demand at other lakes in the region to the Crystal Basin.
- The demand for recreational experiences for large families and institutional groups such as churches will likely increase.
- Day use will likely increase as more people are expected to take more but shorter trips.
- Recreation activities with the greatest latent demand that relate to the UARP would likely include hiking/walking, camping in developed sites, general nature study, and beach activities.
- Although OHV use is may decrease regionally, the area at and near the UARP is known world-wide for this activity and it is likely that the demand for this activity will continue to grow at and near the UARP, particularly near Loon Lake.

5.1.3 Facilities

- Currently the developed UARP recreation facilities, similar to other recreation facilities in the region, are at capacity on holiday weekends during the summer. The UARP recreation facilities with the shortest and easiest access from Highway 50 are typically the first to reach capacity.
- Visitors seek additional comfort and conveniences which may or may not be appropriate for including in future recreation developments based on management direction for public land where the UARP is located.
- Based on visitor responses, there does not appear to be a demand for improving access to rivers or streams at or near the UARP.
- Specific improvements desired by visitors include flush toilets, electricity, showers, stores, marinas, rental outlets, campgrounds that can accommodate larger RV's.
- There appears to be a decreasing trend in visitors who camp in tents and trailers at developed campgrounds.
- Visitors want improved management services at developed facilities such as cleaner restrooms and more frequent trash pickup.
- The demand for interpretive and educational facilities and services will likely increase.
- Wintertime visitors would like to see groomed trails, more trails and more opportunities to stay at huts.
- There will likely be a growing demand for group recreational facilities.

- There are areas where visitors want to maintain the current level of access and development to keep the character of the area as it currently exists.
- There appears to be agreement among various agencies and counties to plan recreational developments that will complement each other and provide connectivity such as trail development for biking and hiking.

5.2 Expected Demand at Reservoirs and Geographic Areas

An assessment of the expected recreational demand can be attained by applying the multiple findings listed above to the existing recreational resources at and near the UARP. This assessment is certainly subjective considering the sometimes differing expectations relating to projections about recreational use that are cited in the report and a variety of unknown circumstances that may evolve in the next 50 years.

Since the most controlling factor for recreation demand is population growth and the two closest population centers are projected to grow faster than the state of California, it is certain that the areas at and near the UARP will see overall increased use into the future. Because the UARP has different settings, some of the reservoirs and areas will see varying degrees of increased use specific to the types of opportunities that are available. The following is an attempt to project the types of changes in demand that will occur at the various reservoirs and geographic areas.

The High Country will likely continue to see high demand for backpacking and hiking. This area has a high profile because of its proximity to Lake Tahoe and the Forest Service has limited access through a quota system. Even though demand may increase, the summer opportunities for backpacking and hiking will likely be controlled by the ENF management guidelines. Consequently, unless the ENF management changes, use levels will likely remain about the same. With increased popularity of backcountry skiing and cross country skiing, there will likely be a greater demand for winter opportunities near Loon Lake.

Loon Lake will likely see increased demand for flatwater paddling opportunities including overnight stays along the shoreline. Motorized boating on the reservoir will probably remain about the same or increase slightly however most of the boating use will continue to be anglers. There will be continuing demand for developed and dispersed camping at the reservoir. There will be a demand for facilities that accommodate larger vehicles and RVs at the developed overnight facilities. Since much of the dispersed overnight use is associated with OHV use, which is likely to increase in popularity, there will be an increased demand for camping in undeveloped areas at and near the reservoir. Additionally, there will be increased demand for areas where visitors can operate OHV's. Since there are transmission lines near Loon Lake Reservoir where this use is already occurring, it is likely that there will be increased use of the powerline corridors by OHV's in the future. There will be a demand for additional motorized and non-motorized trails and in particular, mountain biking trails will likely be needed to address potential conflicts with hiking, equestrian and OHV trail use.

At Union Valley Reservoir, its suitability for high speed motorized boating places this reservoir in high demand for water sports and PWC use into the future. The large number of developed

campsites at the reservoir favor group use and its proximity to Highway 50 makes it area where demand for boating, overnight and day use will be high in the future. There will be a demand for facilities that accommodate larger vehicles and RVs at the developed overnight facilities. The bicycle trail serves the existing and potential growing demand for comfort biking and it is also attractive for walking. With most of the developed UARP recreation facilities located at this reservoir, this is the reservoir where there would be the greatest demand for educational and interpretive opportunities. Similarly, connecting the recreational resources at Union Valley by trails to other interesting locations or trails outside of the area would contribute to meeting visitor demand for trails as well as meeting land managing agencies' recreation management objectives. This reservoir also is also known for its quality fishery so demand for angling here will continue and it may show an increase from current levels. In particular, the wintertime access to this reservoir and visitor survey responses indicate that that there could be some increased demand for winter angling opportunities at this reservoir. Visitors will continue to be drawn to shorelines for day and overnight use. Since recreation facilities have been developed on almost all of the suitable shoreline around Union Valley Reservoir, the remaining area available for dispersed use is mainly located on the north shoreline and these areas will see heavy and recurrent use.

Ice House Reservoir is similar to Union Valley in that it is close to Highway 50 and it is suitable for high speed boating and PWC use. The future demand for boating at Ice House Reservoir will be similar to Union Valley in that it can be expected to increase in the future. The majority of the boating use will continue to be high speed motorized boating with a minority of the motorized boating use consisting of anglers. Flatwater paddling will likely occur at this reservoir however it will not likely constitute a significant type of boating use at this reservoir as this user group will likely choose other waterbodies in the region to avoid conflicts with high speed motorized boating use. The demand for day use will likely be the highest at Ice House Reservoir because of its location and accessible northern shoreline. Although the demand for dispersed overnight use will increase within the region, at Ice House Reservoir this activity will be curtailed by existing ENF restrictions. The large number of campsites at Ice House Reservoir and proximity to Highway 50 which provides easy access for day use activities also make it likely that this would be a reservoir where there will be an increased a demand for interpretive and educational opportunities. There will be a demand for facilities that accommodate larger vehicles and RVs at the developed overnight facilities. Additionally, this is an area where trail development would serve to meet the demand for trails that connect visitors to other destinations and points of interest. The demand for winter angling opportunities will likely increase at Ice House Reservoir because of its proximity to Highway 50, quality fishery and visitor survey response frequencies.

Gerle Creek Reservoir is a small reservoir where motorized boating is not allowed. Consequently, as flatwater paddling increases regionally, this is a reservoir will likely see increased use. Since overnight dispersed use is not currently allowed at this reservoir, any increased demand for this type of use will not be met at this reservoir. Increased demand for developed overnight use will likely occur at the Gerle Creek Campground. There will be a demand for facilities that accommodate larger vehicles and RVs at the developed overnight facilities. There is a high level of OHV use associated with visitors at Airport Flat Campground, which is located about one mile from the Gerle Creek Reservoir. Consequently, as OHV use

increases in the area, this campground as well as sites used for dispersed overnight use in the vicinity, will likely see increased use levels.

The reservoirs in the Canyonlands - Slab Creek, Brush Creek and Junction reservoirs - have a majority of the current visitors coming from El Dorado County who mostly visit the area for day use activities. As the population of El Dorado County increases, these reservoirs will see increased use particularly for flatwater paddling and angling. Since topography limits the space available for parking, visitor use will likely exceed the existing capacity at these locations over the next 50 years. Since these reservoirs are located at an elevation near the snowline, these areas will also receive recreational use during the winter months, particularly for angling, flatwater paddling and other day use activities. Slab Creek has the potential to attract motorized boating and PWC use however limited turnaround space, narrow and rough surfaced roads and steep shorelines will probably continue to discourage these uses. Brush Creek and Junction reservoirs are small with similar access to Slab Creek and will not likely attract this type of use. As the demand for dispersed overnight opportunities increases, it is likely that this use will increase, particularly in the spring when higher elevations are snowed-in and before the air temperatures are uncomfortably high.

Throughout the region the demand for whitewater boating will likely remain fairly steady with a growing proportion of the boating population seeking more challenging experiences and locations for play boating. Proximity of the UARP to Coloma, which is located adjacent to one of the most popular rivers for whitewater boating in the state, will probably cause an increase in the demand for whitewater boating on the stream and river reaches at and near the UARP.

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APPENDIX A

CAMPGROUND OCCUPANCY DATA (ENF DATA)

Summarized RIM Data for UARP Concessionaire Facilities

		Ice House CG			Ice House DU		Ice House Boat Launch						Fashoda CG			Fashoda DU		Sunset CG			Sunset Boat Launch					
							Day Use			Overnight Camping											Day Use			Overnight Camping		
		# People	# Sites	Turn-away Days	# People	# Sites	# Vehicles	Group Size (3.5 people per vehicle)	# People	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	# People	# Sites	Turn-away Days	# Vehicles	Group Size (3.5 people per vehicle)	# People	# People	# Sites	Turn-away Days
1999	May	1768	506	0	648	124	552	3.5	1932	16	8	3	285	58		10	2	826	193			3.5	0			
	June	5089	1348	0	1438	233	1871	3.5	6549				594	140		76	28	3561	893		407	3.5	1425			
	July	4020	1789	1	1600	260	1950	3.5	6825			6	1836	396		490	82	10124	2129		1085	3.5	3798			
	August	6559	1749	0			1312	3.5	4592	65	33	10	1153	257		445	82	8908	1827		715	3.5	2503			
	September	3811	1156	0				3.5	0				181	45		0	0	3133	736		310	3.5	1085			
	October							3.5	0				0	0		0	0					3.5	0			
	Sub-Total	**21247**	**6548**	**1**	**3686**	**617**	**5685**	**3.5**	**19898**	**81**	**41**	**19**	**4049**	**896**	**0**	**1021**	**194**	**26552**	**5778**	**0**	**2517**	**3.5**	**8810**	**0**	**0**	**0**
2000	May	1473	309	0	238	37	129	3.5	452	10		0	364	82	2	96	16	1352	421	0		3.5	0	24	4	0
	June	7425	1740	10	835	212	526	3.5	1841	30		0	803	184	0	438	64	5553	1358	3		3.5	0			
	July	9079	1966	28			1631	3.5	5709	46		0	1375	292	5	337	87	11074	2332	0	681	3.5	2384	125	44	0
	August	6763	1498	3	456	82	541	3.5	1894	46	21	0	1022	274	3	305	82	9211	1991	15	268	3.5	938	57	60	0
	September	3195	763	0	14	6	167	3.5	585	168			0	0	0	0	0	2128	574	0	101	3.5	354			
	October							3.5	0													3.5	0			
	Sub-Total	**27935**	**6276**	**41**	**1543**	**337**	**2994**	**3.5**	**10479**	**300**	**21**	**0**	**3564**	**832**	**10**	**1176**	**249**	**29318**	**6676**	**18**	**1050**	**3.5**	**3675**	**206**	**108**	**0**
2001	May	1473	309					3.5	0				368	82				1977	424			3.5	0			
	June	5921	1422					3.5	0				803	184				5671	1309			3.5	0			
	July	8025	1776					3.5	0				1369	292				11074	2332			3.5	0			
	August	6750	1500					3.5	0				1069	276				9126	1994			3.5	0			
	September	3323	820					3.5	0				0	0				2114	578			3.5	0			
	October							3.5	0													3.5	0			
	Sub-Total	**25492**	**5827**	**0**	**0**	**0**	**0**	**3.5**	**0**	**0**	**0**	**0**	**3609**	**834**	**0**	**0**	**0**	**29962**	**6637**	**0**	**0**	**3.5**	**0**	**0**	**0**	**0**
2002	May	2846	693	0	291		267	3.5	935	16	12	0	199	37	0	30	22	1467	384	0	135	3.5	473	0	0	0
	June	4878	1241	1	1187	158	404	3.5	1414	150	12	0	388	95	0	317	85	4741	1088	0	1155	3.5	4043	14	5	0
	July	7447	1658	8	1163	168	848	3.5	2968	238	46	0	801	173	1	821	103	9794	2196	8	364	3.5	1274	694	32	0
	August	8020	1693	4	1215	203	965	3.5	3378	199	57	0	0	0	0	523	93	9479	2146	7	530	3.5	1855	1503	34	0
	September	2909	891	0	343	81	674	3.5	2359	324	21	0	0	0	0	0	0	1890	520	0	419	3.5	1467	47	11	0
	October							3.5	0													3.5	0			
	Sub-Total	**26100**	**6176**	**13**	**4199**	**610**	**3158**	**3.5**	**11053**	**927**	**148**	**0**	**1388**	**305**	**1**	**1691**	**303**	**27371**	**6334**	**15**	**2603**	**3.5**	**9111**	**2258**	**82**	**0**

Summarized RIM Data for UARP Concessionaire Facilities

		Wench Creek CG			Wench Creek Group 1			Wench Creek Group 2			Wolf Creek CG			Yellow Jacket CG			Yellow Jacket Boat Launch			Gerle Creek CG			Gerle Creek DU		Loon Lake CG		
		# People	# Sites	Turn-away Days	# People	# Days	Turn-away Days	# People	# Days	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	Day Use # Vehicles	Day Use Group Size (3.5 people per vehicle)	Day Use # People	# People	# Sites	Turn-away Days	# People	# Sites	# People	# Sites	Turn-away Days
1999	May	1380	327	1	30	1	0	200	4	4	715	169	0	782	189	2	82	3.5	287	532	127	0	148	8			
	June	2070	481	0	580	14	0	640	16	0	1139	231	0	1027	268	0	191	3.5	669	1356	374	0	612	29	482	157	0
	July	6889	1479	10	1200	24	0	724	19	7	3242	662	9	3391	725	9	574	3.5	2009	3703	845	8	983	57	3233	927	11
	August	5250	1202	0	991	26	0	1070	22	0	2286	494	4	2398	539	6	318	3.5	1113	3366	774	4	1052	43	2328	779	2
	September	1033	234	0	460	11	0				528	101	0	1268	323	3	91	3.5	319	1220	308	1	349	34	1621	460	0
	October																	3.5	0								
	Sub-Total	**16622**	**3723**	**11**	**3261**	**76**	**0**	**2634**	**61**	**11**	**7910**	**1657**	**13**	**8866**	**2044**	**20**	**1256**	**3.5**	**4396**	**10177**	**2428**	**13**	**3144**	**171**	**7664**	**2323**	**13**
2000	May	1793	362	0							337	141	0	619	125	1	56	3.5	196	571	147	1	187	12	574	135	1
	June	2816	689	0	529	12	0	290	7	0	830	235	0	1362	298	0	304	3.5	1064	1446	402	0	643	26	1307	383	2
	July	6159	1383	3	796	21	0	695	16	0	1882	418	8	3083	671	10	610	3.5	2135	3447	788	8	1238	45	3824	926	0
	August	4195	1012	1	1025	16	0	700	12	0	855	268	1	1910	445	0	118	3.5	413	3293	747	8	1001	39	2812	721	0
	September	180	41	0	250	7	0	500	10	0	72	20	0	854	215	0	20	3.5	70						3754	921	0
	October																	3.5	0								
	Sub-Total	**15143**	**3487**	**4**	**2600**	**56**	**0**	**2185**	**45**	**0**	**3976**	**1082**	**9**	**7828**	**1754**	**11**	**1108**	**3.5**	**3878**	**8757**	**2084**	**17**	**3069**	**122**	**12271**	**3086**	**3**
2001	May																	3.5	0	577	149				574	135	
	June																	3.5	0	1449	396				1261	364	
	July																	3.5	0	3441	790				3824	926	
	August																	3.5	0	3300	746				3589	828	
	September																	3.5	0	0	0				0	0	
	October																	3.5	0								
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3.5**	**0**	**8767**	**2081**	**0**	**0**	**0**	**9248**	**2253**	**0**
2002	May	531	165	0	190	4	0	105	3	0	127	34	0	481	98	0	55	3.5	193	699	184	1	421	21	0	0	0
	June	992	260	0	479	14	0	532	9	0	1010	207	0	964	242	0	151	3.5	529	1755	472	2	703	8	2015	498	0
	July	5526	1223	2	817	57	0	524	49	0	1959	439	6	2514	564	3	472	3.5	1652	3486	772	7	1490	55	3081	793	8
	August	5215	1195	4	635	19	0	645	15	0	1968	457	4	2048	454	0	475	3.5	1663	3871	839	8	1637	52	4445	986	7
	September	1236	293	0	260	11	0	197	8	0	312	87	0	183	34	0	0	3.5	0	614	181	0	972	39	1093	391	0
	October																	3.5	0								
	Sub-Total	**13500**	**3136**	**6**	**2381**	**105**	**0**	**2003**	**84**	**0**	**5376**	**1224**	**10**	**6190**	**1392**	**3**	**1153**	**3.5**	**4036**	**10425**	**2448**	**18**	**5223**	**175**	**10634**	**2668**	**15**

Summarized RIM Data for UARP Concessionaire Facilities

		Loon Lake Equestrian Family CG			Loon Lake Equestrian Group CG			Loon Lake Group #1 CG			Loon Lake Group #2 CG			Loon Lake DU		Loon Lake Boat Launch						Loon Wilderness Trailhead		
																Day Use			Overnight Camping					
		# People	# Sites	Turn-away Days	# People	# Days	Turn-away Days	# People	# Days	Turn-away Days	# People	# Days	Turn-away Days	# People	# Sites	# Vehicles	Group Size (3.5 people per vehicle)	# People	# People	# Sites	Turn-away Days	# Vehicles	Group Size (3.5 people per vehicle)	# People
1999	May																3.5						3.5	0
	June	69	15	0				25	4	4				16	11	206	3.5	721	178	87	0	250	3.5	875
	July	265	53	2	266	15	15	765	20	20	223	10	7	314	53	434	3.5	1519	372	183	1	699	3.5	2447
	August	291	81	0	280	13	13	600	13	13	250	9	9	445	114	447	3.5	1565	301	125	0	515	3.5	1803
	September	100	19	0	125	5	0	150	3	0	110	5	5	159	36		3.5	0	92	46	0	282	3.5	987
	October																3.5	0					3.5	0
	Sub-Total	**725**	**168**	**2**	**671**	**33**	**28**	**1540**	**40**	**37**	**583**	**24**	**21**	**934**	**214**	**1087**	**3.5**	**3805**	**943**	**441**	**1**	**1746**	**3.5**	**6111**
2000	May	69	16	3										256	26	120	3.5	420	55	17	0	157	3.5	550
	June				110	5	0	156	5	0	107	5	0	449	100	656	3.5	2296	201	112	0	448	3.5	1568
	July				415	20	0	682	19	0	295	15	0	425		722	3.5	2527	419		0	446	3.5	1561
	August				278	12	0	222	9	0	186	9	0	360		523	3.5	1831	310			353	3.5	1236
	September																3.5	0					3.5	0
	October																3.5	0					3.5	0
	Sub-Total	**69**	**16**	**3**	**803**	**37**	**0**	**1060**	**33**	**0**	**588**	**29**	**0**	**1490**	**126**	**2021**	**3.5**	**7074**	**985**	**129**	**0**	**1404**	**3.5**	**4914**
2001	May	69	16														3.5	0					3.5	0
	June	90	28														3.5	0					3.5	0
	July	332	80														3.5	0					3.5	0
	August	0	0														3.5	0					3.5	0
	September	0	0														3.5	0					3.5	0
	October																3.5	0					3.5	0
	Sub-Total	**491**	**124**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3.5**	**0**	**0**	**0**	**0**	**0**	**3.5**	**0**
2002	May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	0	0	0	0		3.5	0
	June	173	53	0	60	8	0	400	9	0	207	9	0	222	74	221	3.5	774	158	61	0	255	3.5	893
	July	413	125	0	91	13	0	145	16	0	232	11	0	265	78	111	3.5	389	413	113	0	186	3.5	651
	August	480	120	0	135	17	0	494	15	0	200	10	0	399	86	436	3.5	1526	380	162	0	288	3.5	1008
	September	98	24	0	85	8	0	320	6	0	65	3	0	202	62	289	3.5	1012	176	87	0	133	3.5	466
	October																3.5	0					3.5	0
	Sub-Total	**1164**	**322**	**0**	**371**	**46**	**0**	**1359**	**46**	**0**	**704**	**33**	**0**	**1088**	**300**	**1057**	**3.5**	**3700**	**1127**	**423**	**0**	**862**	**3.5**	**3017**

Summarized RIM Data for UARP Concessionaire Facilities

		GRAND TOTALS							
		Day Use Totals				Campground Totals			Total Visitors
		Boat Launch Day Use		Picnic Areas/Trailheads		Overnight Camping			(DU + Overnight)
		# Vehicles	# People	# People	# Sites	# People	# Sites	Turn-away Days	# People
1999	May	634	2219	806	134	6534	1582	10	9559
	June	2675	8820	3017	301	16810	4028	4	28647
	July	4043	13004	5834	452	40253	9276	106	59090
	August	2792	8509	3745	239	36096	7943	61	48349
	September	401	1496	1495	70	13832	3452	9	16823
	October	0	0	0	0	0	0	0	0
	Sub-Total	**10545**	**34046**	**14896**	**1196**	**113525**	**26281**	**190**	**162467**
2000	May	305	703	1327	91	7241	1759	8	9270
	June	1486	3106	3933	402	22965	5435	15	30004
	July	3644	10646	3561	132	43396	8911	62	57603
	August	1450	3555	3358	203	32885	7095	31	39797
	September	288	1008	14	6	11101	2551	0	12123
	October	0	0	0	0	0	0	0	0
	Sub-Total	**7173**	**19017**	**12192**	**834**	**117588**	**25751**	**116**	**148797**
2001	May	0	0	0	0	5038	1115	0	5038
	June	0	0	0	0	15195	3703	0	15195
	July	0	0	0	0	28065	6196	0	28065
	August	0	0	0	0	23834	5344	0	23834
	September	0	0	0	0	5437	1398	0	5437
	October	0	0	0	0	0	0	0	0
	Sub-Total	**0**	**0**	**0**	**0**	**77569**	**17756**	**0**	**77569**
2002	May	457	1600	742	43	6661	1614	1	9003
	June	1931	6143	3322	325	18916	4283	3	28381
	July	1795	6307	4390	404	38175	8280	43	48872
	August	2406	7275	4782	434	39717	8219	34	51774
	September	1382	4002	1983	182	9809	2576	0	15793
	October	0	0	0	0	0	0	0	0
	Sub-Total	**7971**	**25326**	**15218**	**1388**	**113278**	**24972**	**81**	**153822**

Summarized RIM Data for UARP Fee Demo Facilities

		Northwind CG			Strawberry Point CG			Big Silver Group CG			Jones Fork CG			Northshore CG			Red Fir CG			GRAND TOTALS		
																				Overnight Camping		
		# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days
1999	May	195	42	3	260	85	4				216	67	2	103	39	0				774	233	9
	June	438	166	2	377	140	3				424	142	3	353	162	2				1592	610	10
	July	848	226	13	735	239	5				788	210	9	627	213	1				2998	888	28
	August	675	206	8	749	203	11				698	184	6	548	165	0				2670	758	25
	September	634	189	9	486	171	7				503	173	4	126	33	0				1749	566	20
	October																			0	0	0
	Sub-Total	**2790**	**829**	**35**	**2607**	**838**	**30**	**0**	**0**	**0**	**2629**	**776**	**24**	**1757**	**612**	**3**	**0**	**0**	**0**	**9783**	**3055**	**92**
2000	May	146	54	5	202	53	4	14	2	0	201	49	3	96	29	0	0	0	0	659	187	12
	June	564	193	8	539	149	4	180	11	0	692	181	7	294	119	1	80	4	0	2349	657	20
	July	802	216	13	893	225	12	399	15	0	732	201	9	506	184	0	82	9	0	3414	850	34
	August	692	195	11	783	224	7	288	16	0	772	218	13	574	206	4	351	16	0	3460	875	35
	September	419	127	0	242	97	0	0	0	0	299	94	2	219	88	0	0	0	0	1179	406	2
	October																			0	0	0
	Sub-Total	**2623**	**785**	**37**	**2659**	**748**	**27**	**881**	**44**	**0**	**2696**	**743**	**34**	**1689**	**626**	**5**	**513**	**29**	**0**	**11061**	**2975**	**103**
2001	May																			0	0	0
	June																			0	0	0
	July																			0	0	0
	August																			0	0	0
	September																			0	0	0
	October																			0	0	0
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2002	May	0	0		0	0					0	0		0	0					0	0	0
	June	433	114		583	135					458	126		397	116					1871	491	0
	July	823	236		869	200					662	179		620	209					2974	824	0
	August	626	181		749	206					842	206		625	188					2842	781	0
	September	337	114		265	96					214	77		381	133					1197	420	0
	October																			0	0	0
	Sub-Total	**2219**	**645**	**0**	**2466**	**637**	**0**	**0**	**0**	**0**	**2176**	**588**	**0**	**2023**	**646**	**0**	**0**	**0**	**0**	**8884**	**2516**	**0**

Summarized RIM Data for UARP Free Facilities

		Azalea Cove CG			Westpoint CG			Westpoint Boat Launch						Camino Cove CG			Lone Rock CG			Airport Flat CG		
								Day Use			Overnight Camping											
		# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# Vehicles	Group Size (3.5 people per vehicle)	# People	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days	# People	# Sites	Turn-away Days
1999	May							32	3.5	112	48	20	0							436	48	2
	June							211	3.5	739	198	69	5							297	75	0
	July							389	3.5	1362	524	148	13							882	173	0
	August							327	3.5	1145	583	204	8							579	152	0
	September							244	3.5	854	636	110	2							515	108	0
	October								3.5	0												
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**1203**	**3.5**	**4211**	**1989**	**551**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**2709**	**556**	**2**
2000	May	9	3	0	117	20	0	81	3.5	284				344	96	2	4	1	0	204	37	0
	June	21	9	0	287	69	6	220	3.5	770	180	18	5	1732	377	4	24	7	0	370	100	1
	July	51	14	0	422	103	7	249	3.5	872	321	90	4	2645	562	7	46	16	0	673	211	10
	August	26	11	0	301	72	2	115	3.5	403	193	55	0	1815	396	2	49	16	2	578	162	6
	September	2	1	0	124	42	0	43	3.5	151	106	48	0	425	123	0	0	0	0	377	109	3
	October								3.5	0												
	Sub-Total	**109**	**38**	**0**	**1251**	**306**	**15**	**708**	**3.5**	**2478**	**800**	**211**	**9**	**6961**	**1554**	**15**	**123**	**40**	**2**	**2202**	**619**	**20**
2001	May								3.5	0												
	June								3.5	0												
	July								3.5	0												
	August								3.5	0												
	September								3.5	0												
	October								3.5	0												
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3.5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2002	May								3.5	0												
	June								3.5	0												
	July								3.5	0												
	August								3.5	0												
	September								3.5	0												
	October								3.5	0												
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3.5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Summarized RIM Data for UARP Free Facilities

		Pleasant CG			Angel Creek Picnic		TOTALS							
							Boat Lanch Day Use		Picnic Areas		Overnight Camping			DU + Overnight
		# People	# Sites	Turn-away Days	# People	# Sites	# Vehicles	# People	# People	# Sites	# People	# Sites	Turn-away Days	# People
1999	May				38	4	32	112	38	4	484	68	2	522
	June				242	45	211	739	242	45	495	144	5	737
	July				232	66	389	1362	232	66	1406	321	13	1638
	August				266	68	327	1145	266	68	1162	356	8	1428
	September				76	23	244	854	76	23	1151	218	2	1227
	October						0	0	0	0	0	0	0	0
	Sub-Total	**0**	**0**	**0**	**854**	**206**	**1203**	**4211**	**854**	**206**	**4698**	**1107**	**30**	**5552**
2000	May				12	2	81	284	12	2	678	157	2	690
	June				40	9	220	770	40	9	2614	580	16	2654
	July				152	18	249	872	152	18	4158	996	28	4310
	August				76	11	115	403	76	11	2962	712	12	3038
	September				15	1	43	151	15	1	1034	323	3	1049
	October						0	0	0	0	0	0	0	0
	Sub-Total	**0**	**0**	**0**	**295**	**41**	**708**	**2478**	**295**	**41**	**11446**	**2768**	**61**	**11741**
2001	May						0	0	0	0	0	0	0	0
	June						0	0	0	0	0	0	0	0
	July						0	0	0	0	0	0	0	0
	August						0	0	0	0	0	0	0	0
	September						0	0	0	0	0	0	0	0
	October						0	0	0	0	0	0	0	0
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2002	May						0	0	0	0	0	0	0	0
	June						0	0	0	0	0	0	0	0
	July						0	0	0	0	0	0	0	0
	August						0	0	0	0	0	0	0	0
	September						0	0	0	0	0	0	0	0
	October						0	0	0	0	0	0	0	0
	Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TABLE A-1.
Total Annual Use at Concessionaire Facilities based on FS RIM data, 1999 - 2002.

	FACILITY	1999	2000	2001	2002
Overnight Use (Persons)	**CAMPGROUND**				
	Ice House	21247	27935	25492	26100
	Sunset		29318	29962	27371
	Fashoda		3564	3609	1388
	Wench Creek	16622	15143		13500
	Yellow Jacket	8866	7828		6190
	Wolf Creek	7910	3976		5376
	Gerle	10177	8757	8767	10425
	Loon Family	7664	12271	9248	10634
	Loon Equestrian	725	69		1164
	*Minimal data for 2000				
	GROUP				
	Wench 1	3261	2600		2381
	Wench 2	2634	2185		2003
	Loon 1	1540	1060		1359
	Loon 2	583	588		704
	Loon Equestrian	671	803		371
	BOAT LAUNCH				
	Ice House-min data for 1999	81	300		927
	Sunset-min data for 2000		206		2258
	Loon	943	985		1127
	Total Overnight Use	**82924**	**117588**	**77078**	**113278**

	FACILITY	1999	2000	2001	2002
Day Use (persons)	**PICNIC/DAY USE**				
	Ice House	3686	1543		4199
	Fashoda		1176		1691
	Gerle	3144	3069		5223
	Loon	934	1490		1088
	Total Day Use	**7764**	**7278**	**0**	**12201**

	FACILITY	1999	2000	2001	2002
Day Use (vehicles)	**DAY USE AREAS**				
	Ice House Boat Launch	19898	10479		11053
	Sunset Boat Launch		3675		9111
	Yellow Jckt Boat Launch	4396	3878		4036
	Loon Lake Boat Launch	3805	7074		3700
	Loon Wilderness Trlhd	6111	4914		3017
	Total Vehicle Use	34210	30020	0	30917

TABLE A-2.
Total Annual Use for Free Facilities based on FS RIM data, 1999 - 2002.

	FACILITY	1999	2000	2001	2002
Overnight Use (persons)					
	CAMPGROUND				
	Azalea Cove		109		
	Westpoint		1251		
	Camino Cove		6961		
	Lone Rock		123		
	Airport Flat	2709	2202		
	Pleasant				
	Angel Creek	854	295		
	BOAT LAUNCH				
	Westpoint	1989	800		
	Total Overnight Use	**5552**	**11741**	**0**	**0**

	FACILITY	1999	2000	2001	2002
Day Use (vehicles)	**DAY USE AREAS**				
	Westpoint Boat Launch	4211	2478		
	Total Vehicle Use	4211	2478	0	0

TABLE A-3.
Total Annual Use for Fee Demo Facilities based on FS RIM data, 1999 - 2002.

	FACILITY	1999	2000	2001	2002
Overnight Use (persons)					
	CAMPGROUND				
	Northwind	2790	2623		2219
	Strawberry Point	2607	2659		2466
	Jones Fork	2629	2696		2176
	Northshore	1757	1689		2023
	Red Fir		513		
	GROUP				
	Big Silver		881		
	Total Overnight Use	**9783**	**11061**	**0**	**8884**

Table A-4.
Total Annual Use by UARP Facility Type based on FS RIM data, 1999 - 2002.

Overnight Camping (People Days)

FACILITY	1999	2000	2001	2002
CAMPGROUND	86557	129982	77078	111032
GROUP CG	8689	8117	0	6818
BOAT LAUNCH	3013	2291	0	4312
Total Overnight Use	**98259**	**140390**	**77078**	**122162**

Day Use (People Days)

FACILITY	1999	2000	2001	2002
TOTAL DAY USE	**7764**	**7278**	**0**	**12201**

FACILITY	1999	2000	2001	2002
TOTAL VEHICLE DAY USE	**36199**	**30820**	**0**	**30917**

Table 5.
Total Annual Use for the UARP based on FS RIM data, 1999 - 2002.

	1999	2000	2001	2002
TOTAL USE	**142,222**	**178,488**	**77,078**	**165,280**

Table A-6. Developed Facility Use Estimates Including Shoulder Season Use

	Type[1]	1999	2000	2001	2002	Average
CAMPGROUNDS[2]						
Ice House	C	**21328**	28235	25492	27027	26,918
Northwind	FD	2790	2623		*2674*	2,696
Strawberry Point	FD	2607	2659		*3201*	2,822
					Total for Ice House Reservoir	***32,436***
Azalea Cove	F	n/a	109		*1690*	900
Big Silver Group	FD	n/a	881		*1375*	1,128
Camino Cove	F	n/a	6961		*8704*	7,833
Fashoda	C	4049	3564	3609	n/a	3,741
Jones Fork	FD	2629	2696		*2694*	2,673
Lone Rock	F	n/a	123		*775*	449
Sunset	C	26552	29524	29962	29629	28,917
Wench Creek Family	C	16622	15143		13500	15,088
Wench Creek Group 1 & 2	C	5895	4785		*5425*	5,368
Westpoint	F	1989	2051		*2272*	2,104
Wolf Creek	C	7910	3976		*6849*	6,245
Yellow Jacket	C	8866	7828		6190	7,628
					Total for Union Valley Reservoir	***82,073***

Table A-6. Developed Facility Use Estimates Including Shoulder Season Use

Loon Lake Family	C	8607	13256	9248	11761	10,718
Loon Lake Equestrian Family	C	725	**69**	491	*2515*	1,244
Loon Lake Group 1 & 2	C	2123	1648		*5015*	2,929
Loon Lake Equestrian Group	C	671	803		*680*	718
Northshore	FD	1757	1689		*2731*	2,059
Pleasant	F					500
Red Fir Group	FD		513		*1385*	949
Loon Lake Chalet	FFS				***3000***	3,000
					Total for Loon Lake Reservoir	***22,116***
Airport Flat	F	2709	2202			2,456
Gerle Creek	C	10177	8757	8767	*11057*	9,690
					Total for Gerle Creek Reservoir	***12,145***
					TOTAL CAMPGROUND USE ESTIMATE	***148,770***

Table A-6. Developed Facility Use Estimates Including Shoulder Season Use

BOAT LAUNCHES[3]	Type	1999	2000	2001	2002	Average	Estimated Range*	
Ice House (I)	C	**19898**	10479		*12458*	14,278	14,278	21,417
Yellow Jacket (U)	C	4396	3878		4036	4,103	4,103	6,155
Sunset (U)	C	8810	**3675**		*11712*	10,261	10,261	15,392
Westpoint (U)	F	4211	2478		*4938*	3,876	3,876	5,814
Loon Lake (L)	C	**3805**	**7074**		*8176*	8,176	8,176	12,264
					TOTAL BOAT LAUNCH USE ESTIMATE	***40,694***	***40,694***	***61,041***
PICNIC AREAS/TRAILHEADS	**Type**	**1999**	**2000**	**2001**	**2002**	**Average**	**Estimated Range***	
Fashoda (U)	C	1021	1176		1691	1,296	1,296	1,944
Ice House (I)	C	**3686**	**1543**		*4875*	4,875	4,875	7,313
Angel Creek (G)	F	854	295		n/a	575	575	862
Gerle Creek (G)	C	3144	**3069**		5223	4,184	4,184	6,275
Loon Lake Picnic (L)	C	934	**1490**		*1450*	1,291	1,291	1,937
Loon Lake Wilderness Trailhead[3] (L)	--	6111	4914		3017	4,681	4,681	7,021
					TOTAL PICNIC USE ESTIMATE		***16,902***	***25,353***

Source: Forest Service use data sheets unless otherwise noted.

[1] C=Concessionaire; FD=Fee Demo; FFS=Fee to FS; F=Free

[2] Includes use counts for boat launch site camping.

[3]Boat launch day use AND Loon Lake Wilderness Trailhead use were recorded in vehicles. Thus, these estimates incorporate a persons-per-vehicle multiplier of 3.5 (as provided by the

[4]This use number uses professional judgment because no use data was provided for any of the 4 years.

Blank/empty cells indicate the Forest Service did not provide any data for the facility for the entire year.

An bold non-total number indicates the Forest Service provided only partial data for the facility for the year.

where the Forest Service did not provide any data for the facility, or (2) when the Form 80 estimate is substantially greater that the estimate derived from the Forest Service data sheets.

n/a = Facility was not yet constructed and/or open for use that year.

Average column does not include partial data years unless that use estimate represents the largest use estimate of the set.

[+] Recreation Day is defined as a visit by a person during any portion of a 24-hour period.

*Estimated ranges were calculated by utilizing a 1.0-1.5 index multiplied by the average for boat launches and picnic sites.

Table A-6. Developed Facility Use Estimates Including Shoulder Season Use

Developed Campground Visitor Use: October 1 1995-Memorial Day 1996; Labor Day 1996-Sept 30 1996 (Est. 270 Days)	# Visitors	Site Occupied-Auto	Site Occupied-Trailer	Site Occupied-Tent	Total Occupancy	Total # Days Counts Missed	Estimated Occupancy Rate	Avg Visitor Per Day	Estimated Visitor Per Season
Airport Flat	0	0	0	0	0	0	0.0%	0.00	0
Fashoda Tent Campground	368	0	0	99	99	0	37.0%	1.36	368
Gerle Creek Campground	1188	76	72	177	325	0	20.0%	4.40	1,188
Icehouse Campground	4687	411	435	658	1504	90	35.0%	26.04	7,031
Jones Fork Campground	400	62	7	91	160	32	47.0%	1.68	454
Loon Lake Campground	751	40	54	172	266	15	23.0%	2.95	795
Loon Lake Equestrian Family Campground	0	0	0	0	0	0	0.0%	0.00	0
Northshore R.V.	398	62	23	59	144	82	27.0%	2.12	572
Northwind Campground	381	91	60	101	252	32	70.0%	1.60	432
Pleasant Campground	na	na	na	na	na	na	na	0.00	0
Silver Creek Campground	316	0	0	39	39	106	16.0%	1.93	520
South Fork Campground	132	9	16	27	52	122	14.0%	0.89	241
Strawberry Campground	562	115	39	78	232	81	66.0%	2.97	803
Sunset Campground	3938	153	294	560	1007	0	23.0%	14.59	3,938
Wench Creek Campground	1294	44	69	208	321	0	29.0%	4.79	1,294
Wentworth Springs Campground	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.00	0
Wolf Creek Campground	0	0	0	0	0	0	0.0%	0.00	0
Wrights Lake Campground	1552	56	121	302	479	82	32.0%	8.26	2,229
Wrights Equestrian Campground	36	1	17	0	18	82	7.0%	0.19	52
Yellow Jacket Campground	929	54	18	148	220	0	18.0%	3.44	929
Total Estimated Visitor Use per Shoulder Season 1995-1996									**20,845**

Table A-6. Developed Facility Use Estimates Including Shoulder Season Use

October 1 1996-Memorial Day 1997; Labor Day 1997-Sept 30 1997	# Visitors	Site Occupied-Auto	Site Occupied-Trailer	Site Occupied-Tent	Total Occupancy	Total # Days Counts Missed	Estimated Occupancy Rate	Avg Visitor Per Day	Estimated Visitor Per Season
Airport Flat	858	93	31	100	224	117	37.0%	5.61	1,514
Fashoda Tent Campground	158	0	0	35	35	0	17.0%	0.59	158
Gerle Creek Campground	1488	34	81	279	394	15	32.0%	5.84	1,576
Icehouse Campground	5588	353	431	772	1556	116	36.0%	36.29	9,797
Jones Fork Campground	745	78	26	125	229	46	62.0%	3.33	898
Loon Lake Campground	1573	35	93	301	429	15	23.0%	6.17	1,666
Loon Lake Equestrian Family Campground	36	0	0	9	9	0	14.0%	0.13	36
Northshore R.V.	606	100	68	84	252	99	36.0%	3.54	957
Northwind Campground	381	91	60	101	252	46	66.0%	1.70	459
Pleasant Campground	na	na	na	na	na	na	na	na	0
Silver Creek Campground	378	0	0	53	53	132	21.0%	2.74	740
South Fork Campground	365	6	24	62	92	103	26.0%	2.19	590
Strawberry Campground	1035	110	26	188	324	81	61.0%	5.48	1,479
Sunset Campground	4629	250	269	661	1180	0	21.0%	17.14	4,629
Wench Creek Campground	1760	52	101	238	391	0	22.0%	6.52	1,760
Wentworth Springs Campground	na	na	na	na	na	na	na	na	0
Wolf Creek Campground	164	4	18	16	38	0	3.0%	0.61	164
Wrights Lake Campground	0	0	0	0	0	39	17.0%	0.00	0
Wrights Equestrian Campground	0	0	0	0	0	39	17.0%	0.00	0
Yellow Jacket Campground	780	15	22	174	211	0	23.0%	2.89	780
Total Estimated Visitor Use per Shoulder Season 1996-1997									**27,202**
Average Shoulder Season Estimate Total									**24,023**

APPENDIX B

SHOULDER SEASON USE DATA AT DEVELOPED FACILITIES (ENF DATA)

Table B1-1. ENF Shoulder Season Use Estimates for Developed Campgrounds 1995-1996									
Developed Campground Visitor Use: October 1 1995-Memorial Day 1996; Labor Day 1996-Sept 30 1996 (Est. 270 Days)	**# Visitors**	**Site Occupied-Auto**	**Site Occupied-Trailer**	**Site Occupied-Tent**	**Total Occupancy**	**Total # Days Counts Missed**	**Estimated Occupancy Rate**	**Average Recreation Day**	**Estimated Visitor Per Season**
Airport Flat	0	0	0	0	0	0	0.0%	0.00	0
Fashoda Tent Campground	368	0	0	99	99	0	37.0%	1.36	368
Gerle Creek Campground	1188	76	72	177	325	0	20.0%	4.40	1,188
Icehouse Campground	4687	411	435	658	1504	90	35.0%	26.04	7,031
Jones Fork Campground	400	62	7	91	160	32	47.0%	1.68	454
Loon Lake Campground	751	40	54	172	266	15	23.0%	2.95	795
Loon Lake Equestrian Family Campground	0	0	0	0	0	0	0.0%	0.00	0
Northshore R.V.	398	62	23	59	144	82	27.0%	2.12	572
Northwind Campground	381	91	60	101	252	32	70.0%	1.60	432
Pleasant Campground	na	na	na	na	na	na	na	0.00	0
Silver Creek Campground	316	0	0	39	39	106	16.0%	1.93	520
South Fork Campground	132	9	16	27	52	122	14.0%	0.89	241
Strawberry Campground	562	115	39	78	232	81	66.0%	2.97	803
Sunset Campground	3938	153	294	560	1007	0	23.0%	14.59	3,938
Wench Creek Campground	1294	44	69	208	321	0	29.0%	4.79	1,294
Wentworth Springs Campground	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.00	0
Wolf Creek Campground	0	0	0	0	0	0	0.0%	0.00	0
Wrights Lake Campground	1552	56	121	302	479	82	32.0%	8.26	2,229
Wrights Equestrian Campground	36	1	17	0	18	82	7.0%	0.19	52
Yellow Jacket Campground	929	54	18	148	220	0	18.0%	3.44	929
Total Estimated Visitor Use per Shoulder Season 1995-1996									**20,845**

Table B1-1. ENF Shoulder Season Use Estimates for Developed Campgrounds 1995-1996									
October 1 1996-Memorial Day 1997; Labor Day 1997-Sept 30 1997	**# Visitors**	**Site Occupied-Auto**	**Site Occupied-Trailer**	**Site Occupied-Tent**	**Total Occupancy**	**Total # Days Counts Missed**	**Estimated Occupancy Rate**	**Average Recreation Day**	**Estimated Visitor Per Season**
Airport Flat	858	93	31	100	224	117	37.0%	5.61	1,514
Fashoda Tent Campground	158	0	0	35	35	0	17.0%	0.59	158
Gerle Creek Campground	1488	34	81	279	394	15	32.0%	5.84	1,576
Icehouse Campground	5588	353	431	772	1556	116	36.0%	36.29	9,797
Jones Fork Campground	745	78	26	125	229	46	62.0%	3.33	898
Loon Lake Campground	1573	35	93	301	429	15	23.0%	6.17	1,666
Loon Lake Equestrian Family Campground	36	0	0	9	9	0	14.0%	0.13	36
Northshore R.V.	606	100	68	84	252	99	36.0%	3.54	957
Northwind Campground	381	91	60	101	252	46	66.0%	1.70	459
Pleasant Campground	na	na	na	na	na	na	na	na	0
Silver Creek Campground	378	0	0	53	53	132	21.0%	2.74	740
South Fork Campground	365	6	24	62	92	103	26.0%	2.19	590
Strawberry Campground	1035	110	26	188	324	81	61.0%	5.48	1,479
Sunset Campground	4629	250	269	661	1180	0	21.0%	17.14	4,629
Wench Creek Campground	1760	52	101	238	391	0	22.0%	6.52	1,760
Wentworth Springs Campground	na	na	na	na	na	na	na	na	0
Wolf Creek Campground	164	4	18	16	38	0	3.0%	0.61	164
Wrights Lake Campground	0	0	0	0	0	39	17.0%	0.00	0
Wrights Equestrian Campground	0	0	0	0	0	39	17.0%	0.00	0
Yellow Jacket Campground	780	15	22	174	211	0	23.0%	2.89	780
							Total 1996-97	**27,202**	

APPENDIX C

WINTER HUT USE DATA
(ENF DATA)

Table C-1. Loon Lake Chalet Summary of Use			
Total Actual Recreation Days: January 01, 2003-January 01, 2004			**2781**
Total Actual Recreation Days: January 02, 2004-September 2004			**891**
Averages for Total Seasons Represented 2003-04	**Average # Persons**	**# Days**	**RD**
Winter Summary Average	25	59	1475
Spring/Summer Average	32	47	1504
Fall Average	34	13	442
Total Annual Recreation Days Estimated Average			**3421**

Table C1-2. Van Vlecks Bunkhouse Summary of Use			
Total Actual Recreation Days: January 01, 2003-January 01, 2004			**685**
Total Actual Recreation Days: January 02, 2004-September 2004			**583**
Averages for Total Seasons Represented 2003-04	**Average # Persons**	**# Days**	**RD**
Winter Summary Average	10	10	100
Spring/Summer Average	14	43	602
Fall Average	12	10	120
Total Annual Recreation Days Estimated Average			**822**

NOTE: For all Huts data, annual season splits were based on the following seasons:

Spring and Summer - April 1 through September 30, 2002

Fall - October 1 through November 30, 2002

Winter - December 1, 2002, through March 31, 2003

Table C-3. Robbs Hut Summary of Use			
Total Actual Recreation Days: January 01, 2003-January 01, 2004			**891**
Total Actual Recreation Days: January 02, 2004-September 2004			**650**
Averages for Total Seasons Represented 2003-04	**Average # Persons**	**# Days**	**RD**
Winter Summary Average	9	40	360
Spring/Summer Average	9	47	423
Fall Average	8	18	144
Total Annual Recreation Days Estimated Average			**927**