RECREATIONAL WATER USE ISSUES AND REGIONAL PLANNING ON UTAH'S LAKES AND RESERVOIRS

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The Institute for Outdoor Recreation and Tourism (IORT) conducts a program of research, extension, and teaching for the benefit of the people of Utah, our country, and the world, directed at improving our understanding of the relationships between outdoor recreation and tourism, natural resources management, community economic vitality, and quality of life.

Through statewide collaboration and cooperation, IORT will be a source for the creation, communication, and transfer of knowledge on resource-based recreation and tourism issues affecting social, economic, and environmental systems, in order to assist Utah's citizens in making decisions that enhance both community and resource sustainability.

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EXECUTIVE SUMMARY

In 2005 and 2006, Institute for Outdoor Recreation and Tourism (IORT) researchers at Utah State University in cooperation with the Utah Department of Natural Resources Division of Parks and Recreation (State Parks) conducted a multi-phase planning process and subsequent report. Information obtained from the respondents and contributors along with subsequent analyses and management recommendations are contained in this report. The number of boats registered in Utah in 2006 was over 76,000, an increase of about 800 from the previous year. While the user population is on a historic increase, the amount of water available for recreational use in Utah is likely to remain relatively constant. There has also been an increase in perceived crowding, accidents, site impacts, and compromised user experiences. The purpose of this project is to analyze data collected during the aforementioned research phases, along with previously collected data, and provide State Parks' planners with management considerations. Recommendations for the implementation of these objectives on both a statewide and regional level are based on the goals and suggestions of Utah State Park lake/reservoir managers, users (phone survey of boat owners), and previous studies.

Utah State Parks manages 25 parks characterized as providing some type of water-based recreation activities and opportunities for cruising in motorboats, fishing, sightseeing, picnicking on boats, waterskiing (that would also include tubing, wakeboarding, knee-boarding, and riding an air-chair), sailing, canoeing, kayaking, swimming, sail-boarding, and riding on personal watercraft (PWC). The water recreation parks (the parks where water-based recreation is a primary activity) are scattered throughout the state. State Parks is charged with addressing use issues and user concerns associated with water-based recreation as well as enforcing boating regulations on all navigable waters in Utah.

In general, the state of Utah provides a wide variety of natural resource based recreation opportunities. Residents in the state, generally, have greater access to recreation opportunities compared to residents of the United States at large. However, this is not the case for water-based opportunities as the state is arid and landlocked and most of the water-based recreation opportunities are provided by reservoirs built for other purposes, including irrigation.

In general, a major goal of recreation management is to provide opportunities that allow for a range of recreation experiences. A unique aspect of this project is the incorporation of multiple data collection techniques and the consideration of managing recreational water bodies regionally. Regional management provides an alternative to site-specific management where water bodies are managed specifically to address issues at particular sites. A regional approach implies that administrators of multiple recreation areas in a defined geographic region work and plan together to provide recreation experiences that match pre-determined goals and objectives and inherent characteristics of the resources and agency administrative capacity.

Four research phases were completed for this project: (1) in-depth interviews of managers of recreational water bodies; (2) regional meetings with state and federal employees who are knowledgeable about recreational water use in Utah; (3) a telephone survey of a sample of registered boat owners in Utah; and (4) a short online survey for state park managers. Data were analyzed and the results are included in the report. All State Park reservoir and lake based managers were interviewed during the fall of 2005. The second phase was regional meetings including representatives of agencies familiar with water-based recreation issues in Utah. Functional boating regions were developed different from existing State Park regions.

The third phase of the planning process was a survey of registered boat owners in Utah. The survey questionnaire (See Appendices) contained questions designed to gather boating data beneficial to the management and policy needs of the Division. Finally, an on-line survey was conducted to examine manager attitudes on registration funding priorities, management problems, and potential management actions. Several questions in this survey mirrored questions on the statewide boater survey in order to compare managers and boaters opinions.

Major issues on Utah water bodies include user conflict, PWC use, crowding, and addressing population growth. Site specific management strategies will likely have limited success in addressing all of these issues while still providing diverse recreation opportunities. A regional approach to managing Utah water bodies can assist in addressing many management issues and problems, including conflict and crowding, while maintaining an array of opportunities. A regional approach can also assist in preventing a homogenization of opportunities. The following are statewide recommendations (specific regional recommendations are included at the end of the report) to assist in managing water-based opportunities in Utah regionally:

- **There should be a clear identification of visitor boating experiences to be offered at each lake and reservoir –** It was beyond the purpose of this study to identify exactly what those opportunities are, but managers know the primary locations, management preferences, and sources of conflict, which can serve as the foundation for a regional delineation of opportunities and some initial standards and indicators for success.
- **Setting use limits should be the management action of last resort after others have failed –** Setting a use limit should only occur after other management strategies including expanded education, increased enforcement, and zoning have not met desired management goals.
- **Consider impact of displaced users before setting use limits** – Most users stated they would still boat and stay in the same region if they were not allowed to boat at their lake of first choice. If a use limitation must be set, it is possible that the "problem" will move to the closest park or water body.
- **Protect current unique opportunities for solitude and fishing –** Use appropriate management actions to preserve solitude and quality fishing at Utah water bodies.
- **Increase management consideration of non-motorized users** – These opportunities do not necessarily need to be provided at state managed facilities but continued consideration for their provision is important.
- **Park revenue should not be based on use level alone –** An issue related to managing a site for lower use levels is that revenue may be lower or use level targets may not be met. If a water body is targeted for lower use or to provide solitude, financial support for managing that water body effectively and efficiently should still be provided.
- **Differential pricing –** Differential pricing is one tool that can potentially be used as an incentive to increase or decrease use at various sites.
- **Continue and expand use of web cams –** Web cams can provide users with information about conditions at heavily used parks or water bodies. The web cams would focus on the parking lot and conditions at the boat ramps.

- **Separate conflicting uses using indirect management strategies (where possible)** – Indirect management strategies include education or non-regulatory encouragement, such as developing a boat ramp solely for a specific craft, whereas direct management strategies include area closures, and use limits. We suggest that conflicting uses (e.g., PWC and many groups, anglers and motorized users) be segmented using indirect methods, where possible. Also, segmenting users between lakes is still a possibility, but again, only if planning takes place in a regional context.
- **Continue and expand boater education programs –** Expanding educational programs with an emphasis on estimating speed and proximity, PWC etiquette, and emphasizing regional opportunities alternatives is suggested. Requiring a boater education course could be considered. Related to this is the need for improving information dissemination, especially through the internet, for issues like lake use restrictions, lake levels, and alternative opportunities.
- **Develop plan for patrolling outlying water bodies** – If enforcing registration violations is a priority, it is suggested increasing patrols at these areas be considered. Collaborating with other state agencies, in particular the Division of Wildlife Resources, who patrol outlying water bodies may provide one method of patrolling these water bodies.
- **Consider increased specialization for some staff roles** – The challenge of balancing many tasks could be addressed by increasing specialization is some roles.
- **Additional staffing may be necessary at parks targeted for increased use –** Parks or water bodies targeted for increased use should also see an increase in staff to address related use issues, including frequency of patrols.
- **Consider the role of Off Highway Vehicle (OHV) management when planning for water-based recreation –** OHV management is a major issue for state parks staff. Given the dispersed character of OHV recreation and the need for infrastructure, inter-jurisdictional trails, and dispersed management, maintenance, and enforcement, the provision of OHV activities and management in a geographic context requires regional coordination, perhaps even more so than water based recreation.
- **Develop guidelines for expanding park revenues that may be used for facilities and permanent and/or temporary staff –** Expand the use of fees for specialized uses and access (e.g. launching fees at high use parks), and develop guidelines for sharing fees across parks statewide and within the region.
- **Conduct a managerial regional meeting periodically** – The regional meeting presents an excellent opportunity for staff to address problems regionally
- **Consider intercept surveys focusing on different regions each year** – On-site surveys provide unique information for recreation planning. Conducting on-site surveys focusing on different regions each season would allow for more comprehensive planning. Data collected from these surveys provide key information about experiential opportunities and management preferences for parks.
- **Continue longitudinal (long-term) phone survey of registered boaters** – It is suggested the statewide survey of registered boaters be conducted again in five years to continue collecting the longitudinal (long-term) data.

1.0 INTRODUCTION

In 2005 and 2006, Institute for Outdoor Recreation and Tourism (IORT) researchers at Utah State University in cooperation with the Utah Department of Natural Resources Division of Parks and Recreation (State Parks) conducted a multi-phase planning process that included four data collection phases. The four data collection phases were as follows: (1) in-depth interviews with managers of Utah recreational water bodies; (2) regional meetings with state and federal representatives who are knowledgeable about recreational water use in Utah; (3) telephone survey of Utah registered boat owners; and (4) online survey of water-based State Park managers. The purpose of this report is to report the results of the four data collection phases and provide management recommendations. Information obtained from the respondents and contributors along with subsequent analyses and management recommendations are contained in the this report.

As identified in the *State of Utah: Strategic Boating Plan* (April 2000), the number of registered watercraft in Utah has increased substantially since 1959, when the State Boating Act was passed. The number of boats registered in Utah in 2006 was over 76,000, an increase of about 800 from the previous year. While the user population is on a historic increase, the amount of water available for recreational use in Utah is likely to remain relatively constant. There has also been an increase in crowding, accidents, site impacts, and compromised user experiences. The purpose of this project is to analyze data collected during the aforementioned research phases, along with previously collected data, and provide State Parks' planners with management considerations. Recommendations for the implementation of these objectives on both a statewide and regional level are based on the goals and suggestions of Utah State Park lake/reservoir managers, users (phone survey of boat owners), and previous studies.

This section of the report (1.0 Introduction), contains background information about the report and an introduction to the regional perspective of management. It also presents a policy overview of the Division as well as the research objectives. The next section (2.0 Methods), describes the research methods and survey response rate. The third section (3.0 Results) presents the results from all four data collection phases. First, results from managerial interviews are provided followed by a summary of the regional meetings conducted throughout the state. Then, results from the statewide survey of registered boaters, and the short on-line manager survey are presented. This section concludes with a brief comparison between manager and user responses. The fourth section (4.0 Discussion) discusses various management issues and concerns and incorporates data from the four research phases into the discussion. The final section (5.0 Management Recommendations) provides options related to improving management of recreational water bodies in Utah and implementing a regional perspective to management. Another report has been produced as a part of this planning process, *2006 Utah State Park Boating Survey: Comparison with Previous Studies*, compares the results of the 2006 statewide boater survey with comparable surveys conducted in 1995 and 1999.

The authors wish to acknowledge the Division of Parks and Recreation for providing the support and funding for this project. We would like to thank the Institute for Outdoor Recreation and Tourism at Utah State University for providing support facilities and computers for transcriptions, coding, and analysis. We would also like to thank the IORT research technicians and graduate students (Elliott Hinckley, Scott Hoffman, Joshua Marquit, Adam Neidig, Jordan

Smith, and Jascha Zeitlen) whose dedication to collecting, recording, and presenting accurate and useful information made this report possible.

1.1 Background

Utah State Parks manages 25 parks characterized as providing some type of water-based recreation activities and opportunities for cruising in motorboats, fishing, sightseeing, picnicking on boats, waterskiing (that would also include tubing, wakeboarding, knee-boarding, and riding an air-chair), sailing, canoeing, kayaking, swimming, sail-boarding, and riding on personal watercraft (PWC). The water recreation parks (the parks where water-based recreation is a primary activity) are scattered throughout the state. State Parks is charged with addressing use issues and user concerns associated with water-based recreation as well as enforcing boating regulations. This report is primarily concerned with lake and reservoir based state parks and not with river-based facilities. Further, the statewide boater survey focused primarily on motorized recreation as the vast majority of registered boats in the state are motorized.

To help guide park policy and management decision-making processes, State Parks (2000) completed a futuring document, *State of Utah: Strategic Boating Plan*. The plan is intended as a guide to assist the Division's Boating Program in meeting its legislative mandate as the boating authority for the state of Utah. The plan identifies "nine primary vision elements" that will guide future management of boating on the state's managed reservoirs. These elements are intended to ensure: 1) quality boating facilities; 2) improved educational opportunities; 3) regulation enforcement uniformity; 4) appropriate equipment and training for boating law enforcement officers; and 5) productive cooperative partnerships. The Strategic Plan also identifies the need for "researching and making recommendations for: 6) boating opportunities; 7) operator licensing; 8) capacity limits; and 9) appropriate and effective boater operation and rules. In order for the elements identified in the Strategic Plan to be successfully applied to management policy, State Parks undertakes periodic research designed to identify current issues of concern to the boating public.

One of the research projects is a longitudinal study of registered boat owners conducted about every five years. Prior to the study discussed in this report, three previous research projects have been completed: the first in 1989, the next one in 1994, and the last one in 1999. In 2006, a fourth telephone survey was conducted to track changes in boater behavior and attitudes over time. Data comparing the 2006 study with previous years is found in *2006 Utah State Boating Survey: Comparison with previous studies*. Comparing data collected in previous years allows tracking of boaters': (1) activities; (2) demographics; (3) behavior patterns; and (4) attitudes. Tracking changes over time can assist in both long and short term planning as issues may arise due to new activities, technologies, or recent facility development; also, long term planning can be assisted by, for example, tracking demographic changes or conflict patterns.

1.2 Study Area

The study area is the entire state of Utah. The state is divided into three physiographic provinces: (1) Basin and Range; (2) Rocky Mountain; and (3) Colorado Plateau. The Basin and Range (Great Basin) comprises the western third of the state. This province is made up of mountain ranges with broad basins between them. Geologic faulting formed the mountains in this region and the basins are filled with alluvium caused by eroding mountains. The Rocky

Mountain region of Utah includes the Wasatch and Uinta Mountains in the central and northern portion of the state. This region includes various forest types including maple-oak, spruce-fir, and even alpine. The Colorado Plateau is a geologically diverse region that includes the Uinta Basin, Canyonlands, and High Plateaus with extensive canyons, cliffs, plateaus and mountains. The state of Utah is generally very dry with much of the state receiving less than 16 inches of precipitation annually. However, a substantial portion of the Rocky Mountain province receives greater than 40 inches of precipitation (Johnson 1989). As a result, the highest concentration of water bodies occurs in this region. The primary purpose of most of the reservoirs in the state is to provide irrigation or culinary water to local communities.

The population of Utah is about 2.5 million people with nearly three-quarters of the population living in the Greater Salt Lake City region. The state is over 80% white and the population is increasing rapidly (about 2% annually). Hispanics make up the largest minority group in the state representing about 10% of the population (US Census Bureau). Overall, the vast majority of the population lives right at the boundary between the Rocky Mountain and Basin and Range provinces. Settlement of this region was chosen as water is available throughout the year as snowmelt and springs feed rivers and creeks that flow into the Basin and Range. Recreational boating takes place in all of these physiographic regions.

In general, the state of Utah provides a wide variety of natural resource based recreation opportunities. About 70 percent of the state is publicly owned and managed, and much of this land provides various recreation opportunities, including five National Parks, USFS lands, and BLM-managed lands. Most of these opportunities are land based providing access for hiking, mountain biking, and OHV-use, among many other activities. Therefore, residents in the state, generally, have greater access to recreation opportunities compared to residents of the United States at large. However, this is not the case for water-based opportunities as the state is dry and most of the water-based recreation opportunities are provided by reservoirs built for other purposes, including irrigation.

1.3 Regional Approach

A unique aspect of this project is the incorporation of multiple data collection techniques and the consideration of managing recreational water bodies regionally. Regional management provides an alternative to site-specific management where water bodies are managed specifically to address issues at particular sites. A regional approach implies that administrators of multiple recreation areas in a defined geographic region work and plan together to provide recreation experiences that match pre-determined goals and objectives and inherent characteristics of the resources and agency capacity. The regional approach to management requires managers to consider the implications of specific management actions or policies at a larger scale. For example, in order to implement use limits at one site, consideration for users displaced by the management action must be made. Where would boaters go if they were no longer able to visit their favorite lake because capacity limits have been reached? Will the alternative lake offer the same boating opportunities? In addition, regional management allows for different recreation areas to meet different objectives. For example, one site could be managed to allow for quality fishing experiences with few encounters with fast moving motorized craft, while another site could provide a place for boaters to waterski and know they could put their boat on the water. In addition, certain areas could be identified as providing large group activities with beach areas

and picnic grounds, along with opportunities for interaction between groups. In short, a regional approach is necessary to offer a spectrum of recreational opportunities.

In general, a major goal of recreation management is to provide opportunities that allow for a range of recreation experiences. A regional management approach provides an alternative to site-specific management. Regional approaches have been considered in wildland recreation management since the 1960s and even have been formalized to some extent in the Recreation Opportunity Spectrum (ROS), developed by the U.S. Forest Service (Clark & Stankey 1979). A regional approach also gives managers an alternative planning method to offering all opportunities at one site and thus reduces the potential for inter-activity conflict. For example, if motorized uses and angling opportunities were provided at different water bodies, the likelihood of conflict decreases and the management resources necessary at each water body is reduced. And finally, there are many interrelationships between boating parks. For these and other reasons, we recommend Utah State Parks plan for providing water based recreational opportunities on a "regional" basis. For example, management actions like closure or use restrictions at Jordanelle are likely to impact other boating parks in the region (e.g., Rockport and Deer Creek). Under this approach, each park in a region identifies their respective and collective problems, collects comparable data and stakeholder input, and collaborates to address their interrelated problems.

McCool and Cole (2001) provide a framework for considering regional management and planning: (1) define the region; (2) define the desired range of experiences and scarce opportunities; and (3) allocate experiences in a prescriptive manner. They argue that, without consideration of regional implications, implicit decisions made at a specific site or area can lead to the homogenization of recreational opportunities and subsequent suboptimal provision of opportunities. They believe by applying the same management tool to all of the recreation areas in a region, users experience the same social conditions.

Blahna and Reiter (2001) applied a regional approach to management of river boating in Utah. They discovered users at certain water bodies sought social interaction more than solitude, and suggested that different river segments be managed for different, specific opportunities, and that management implement objectives and actions that directly address those opportunities. So, for example, they recommended against setting use limitations on rivers where solitude was not a primary objectives, because site-specific capacities could have the effect displacing visitors from high use rivers to low use rivers, where solitude was a greater concern of recreationists. Another potential problem with displacing boaters is they may not be as satisfied at the lake or river they view as their second or third choice. Robertson and Regula (1994) found displaced reservoir boaters in Iowa were less satisfied than those who were not displaced.

While displacement is a difficult phenomenon to track, several studies of water based recreation suggest the potential for boater displacement is substantial. Reiter, Blahna, and Zimmerman (2002) asked river boaters on the South Fork of the Snake River (a river that does not have use restrictions) what they would do if they were not allowed on the river because of use restrictions. About 45% of the respondents stated they would boat somewhere else in the region and 30% of the respondents were unsure. In addition, if campsites were closed along the river, 90% of the river campers said they would move to other areas along the South Fork or to the nearby Henry's Fork, which has much lower use levels.

In northern Utah, boaters at eight different lakes were asked what they would do if they could not get on the lake due to use restrictions, and over 60% (higher at some reservoirs) of the respondents said they would definitely or probably still go boating, and most listed nearby State Park water bodies as alternatives (Reiter et al. 2000, 2002). This indicates setting a capacity at one site may exacerbate problems at a nearby site. Further, motor boaters may be displaced to an area that is relatively quiet and popular with anglers and increase conflict at that lake or reservoir. These studies also showed that proximity to home was an important reason individuals chose to boat on the study reservoirs. Social interaction was also important, while avoiding crowds was not as important. Finally, these studies showed that while many boaters perceived the need for use limits, most of the reasons given for this opinion were user conflicts, not crowding or the perception there were too many boaters on the water (Reiter et al. 2000, Reiter et al. 2002a, 2002b). There is a large body of literature that indicates use limits are just one of many management tools for addressing recreation conflicts, and indirect management measures should be the focus rather than more direct management strategies like closures, limits, and regulatory approaches (Clark and Stankey 1979; Lucas 1982; Manning 1999, Hendee et al. 1990). Regional management strategies may also be important for addressing visitor conflicts.

1.4 Summary

The purpose of this report is to utilize primary and secondary data to develop recommendations for management related to implementing a regional perspective on managing Utah lakes and reservoirs. A regional perspective provides an alternative to site-specific management by considering issues or problems regionally and developing strategies that take into account other recreation opportunities in the region. A regional perspective provides managers with additional tools to address management issues and provide a diversity of recreational opportunities.

2.0 METHODS

Four research phases were completed for this project: (1) in-depth interviews of managers of recreational water bodies; (2) regional meetings with state and federal employees who are knowledgeable about recreational water use in Utah; (3) a telephone survey of a sample of registered boat owners in Utah; and (4) a short online survey for state park managers.

2.1 Management Interviews (Phase 1)

All State Park reservoir and lake based managers were interviewed during the fall of 2005. This phase included site-specific interviews with 18 state park managers. Managers were initially contacted to schedule the interview and form of contact (telephone or face-to-face interviews). Fourteen of the interviews were conducted onsite while four were conducted over the telephone for logistical reasons. The interviews were semi-structured (interviewees were asked the same questions with leeway for elaboration) lasting between 50 minutes and two hours (See Appendices). In addition, four representatives of federally and locally managed water bodies were interviewed by telephone. The interview given to federally and locally managed water bodies took slightly less time as some of the state park specific questions were not included.

State Park managers were asked questions related to the following topics:

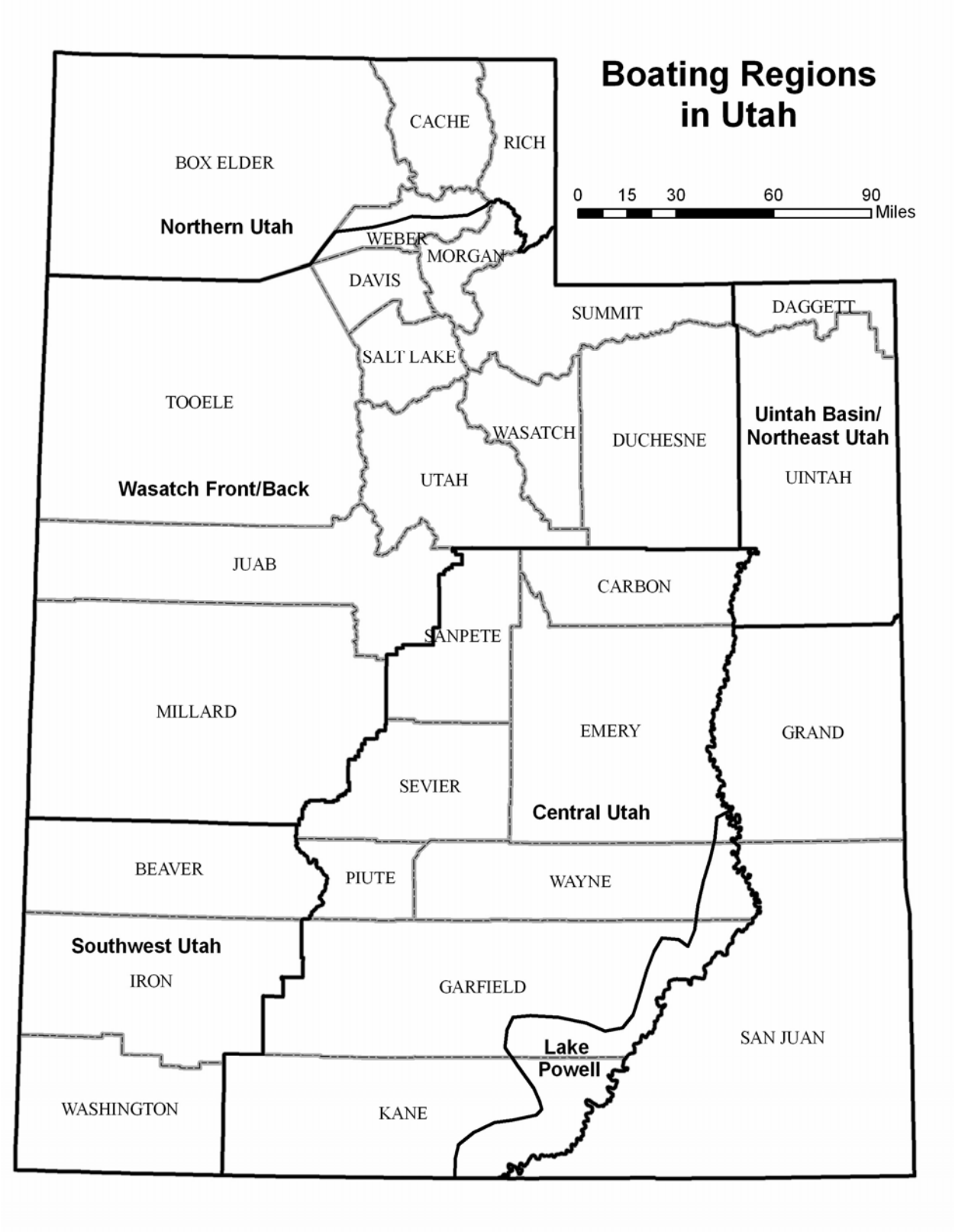
- Background Information
- Management Policies
- Visitor Behavior
- Management Challenges
- Recreational Use Issues
- Accident / Incident History

2.2 Regional Meetings (Phase 2)

The second phase was regional meetings including representatives of agencies familiar with water-based recreation issues in Utah. Functional boating regions were developed different from existing state park regions. Boating regions were developed using the following criteria:

- Managerial Interviews
- Personal Judgment
- Logical Day Trips
- Unique Opportunities
- State Park Staff, Administrator and Manager Input (An exercise at a statewide boating meeting elicited input by having participants draw maps of how they believe boating regions should be drawn. This information was synthesized and considered when the regions were created).
- Data from Previous Intercept Surveys Conducted at Several State Parks

Six regional meetings (See Map) were conducted throughout the State to discuss regional and statewide management issues. Meeting attendees (not including USU researchers, ranged from one to nine depending on the meeting) included park managers, field staff,


Boating Regions in Utah
0 15 30 60 90
Miles
CACHE
RICH
BOX ELDER
Northern Utah
WEBER
MORGAN
DAVIS
SUMMIT
DAGGETT
SALT LAKE
TOOELE
Uintah Basin/
Northeast Utah
WASATCH
DUCHESNE
UTAH
UINTAH
Wasatch Front/Back
JUAB
CARBON
SANPETE
MILLARD
EMERY
GRAND
SEVIER
Central Utah
BEAVER
PIUTE
WAYNE
Southwest Utah
IRON
GARFIELD
SAN JUAN
Lake
Powell
WASHINGTON
KANE

conservation officers, and federal land managers and staff. First, preliminary results from Phase 1 (Managerial Interviews) were presented to the attendees. Then, IORT staff facilitated an open discussion of regional and statewide issues. Meeting participants provided additional information about management challenges and then proposed recommendations to address these challenges and issues. The meetings were between two and four hours in length.

The meetings took place at the following places:

- Southwest Utah (Sand Hollow SP)
- Unitah Basin / Northeast Utah (Unitah County Building – Vernal)
- Wasatch Front / Back (Natural Resource Bldg.)
- Northern Utah (Hyrum SP)
- Central Utah (Palisades SP)
- Lake Powell (Lake Powell / Page AZ)

The following lists the counties that are considered part of the regions developed for this study. Individuals who live close to a regional boundary may view boating options in multiple regions or individuals who live in the north will consider boating in the south in the spring and the fall.

- Southwest Utah – Beaver, Iron and Washington Counties
- Unitah Basin / Northeast Utah – Daggett and Uintah Counties
- Wasatch Front / Back - Salt Lake, Davis, Morgan, Summit, Wasatch, Utah, Juab and Millard Counties along with the southern portion of Weber County
- Northern Utah - Box Elder, Cache, and Rich Counties, along with a portion of northern Weber County
- Central Utah – San Pete, Carbon, Emery, Sevier, Piute, Wayne, Kane, and Garfield Counties
- Lake Powell - Glen Canyon National Recreation Area

Note: Grand and San Juan Counties did not have any reservoir or lake based State Parks and were not addressed in the regions.

2.3 Telephone Survey of Registered Boat Owners in Utah (Phase 3)

The third phase of the planning process was a survey of registered boat owners in Utah. The survey questionnaire (See Appendices) contained questions designed to gather boating data beneficial to the management and policy needs of the Division. The purpose of the survey was two-fold: (1) to compare data collected in 2006 with previous surveys; and (2) to obtain information pertinent to managing with a regional perspective. Most of the questions replicated those from previous surveys to allow for comparison. The questionnaire contained items addressing boater demographics; boat ownership and trip activity patterns; and preferences for boating fees, favorite and least favorite boating areas, and management actions. There were also questions designed to assess sources of boater education and safety information; acceptability of mandatory boat operator licensing; crowding problems on Utah's lakes and reservoirs; and problems or concerns on those water bodies.

State Parks provided USU researchers with an electronic file of all boats registered in Utah during 2005. That list included the boat owner's name and address. Duplicate names were removed to provide a list of the population of Utah boat owners, and to provide a single, equal opportunity for each registered boat owner to be randomly selected for participation in the survey. A sample was drawn using a computer random sampling program. In order to obtain a 95% confidence level with a +/- 5% confidence interval, it was calculated a random sample of 385 respondents was needed to complete the survey.

A simple random sample was drawn and businesses and individuals without listed phone numbers were removed. The original sample selected for the survey was 1140 people who had listed telephone numbers. Due to disconnected and phones that went unanswered, 485 of these people were listed as non-contactable. The remaining 655 people were called up to 11 times until they either completed a survey or declined to participate. The number of completed surveys was 397 for a 60.6% response rate; the others were considered non-responses. The relatively high number of respondents with no phones or with unlisted numbers may indicate that non-permanent, seasonal residents and those that rely primarily on cell phones are likely underrepresented in the survey results.

Discovery Research Group Inc. was contracted to conduct the telephone survey. The survey was conducted during the off-season (Fall 2006 / Winter 2007) utilizing a CATI program. The average survey took a little less than 18 minutes and the response rate was about 60%. Discovery Research Group entered the data and sent to IORT researchers at Utah State University. Statistical package for the Social Sciences (SPSS) was used to analyze the data. Descriptive data was produced for all of the variables obtained in the study.

2.4 On-line Park Manager Survey (Phase 4)

An on-line survey was conducted to examine manager attitudes on registration funding priorities, management problems, and potential management actions (See Appendices). Several questions in this survey mirrored questions on the statewide boater survey in order to compare managers and boaters opinions. We also asked managers to predict boaters preferences for potential management actions. Seventeen lake based state park managers filled out the survey (Note: Great Salt Lake State Park was left out of the survey, as the park is so unique and the survey did not apply well to that water body).

3.0 RESULTS

The results of the various phases of the project will be provided in this section. The first section (3.1) provides the results of the interviews with park managers; the second section (3.2) summarizes the regional meetings; the third section (3.3) contains descriptive data from the survey of registered boat owners; the fourth section (3.4) highlights the results of the on-line managerial survey; and the last section (3.5) compares managerial and user responses to the respective surveys.

3.1 Key-informant Interviews

All 18 lake and reservoir based state park managers were interviewed for this project. The following is a summary of responses provided by the managers. Managerial interviews were recorded, transcribed, and coded using content analysis of the key themes. The recording quality of one interview was poor and subsequently not transcribed, but notes taken at the interview by IORT staff provide information on that park where possible. The data collected in this phase can be classified as qualitative, however, since a census of managers was obtained quantitative presentations of the data are also acceptable. The results presented below are provided in the same order as the survey questions. Quantitative results are provided where appropriate and qualitative responses are presented with quotes to summarize or illustrate key themes. This section will present a combination of quantitative and qualitative data that best represent the responses provided by the managers.

3.1.1 Manager Background Information

The interview began with a brief discussion about the managers' background. Overall, park managers have a lot of experience, with every manager except one having worked for the agency more than ten years (Table 3-1); one manager was interim and their years of service are not listed. Most of the managers (13) were responsible for managing just one water-based state park; four managers were responsible for managing two water-based parks, while one managed three. Most managers also have the obligation of periodically patrolling water bodies managed by federal or local entities. Half of the managers have held their current position for more than 5 years, and half of the managers have spent time working for other natural resource agencies (Table 3-2). Generally, these were seasonal positions with federal agencies including the NPS, USFS, and the BLM. Some managers had worked for state agencies outside of Utah, including agencies in Montana, Washington state, and South Dakota, before working at Utah State Parks.

Table 3-1 Managerial employment history

	0-5	6-10	11-20	More than 20
Years Employed at Utah State Parks* (n=17)	0	1	8	8
Years at Current Position (n=16)**	8	5	3	0

*No response from one manager
**No response from one manager and another was interim

3-2 Managers working for other agencies

	Yes	No
Have worked for another natural resource agency* (n=14)	7	7
*No information for 4 managers		

3.1.2 Management policies

This section provides background on managers' views of management policy at the sites they manage. Managers were asked about agency and park mission and purpose, their role within the agency, and on-site management objectives. These policies relate to those implemented at a state level or even on-site.

3.1.2.1 Primary mission or purpose

In general, there is a great deal of agreement on the mission or purpose of state parks. Providing recreation opportunities to the public was a common aspect of the mission or purpose. In addition, the importance of safety was mentioned frequently. Several managers mentioned the importance of preserving the resources or protecting them for future generations. One manager stated:

> *"We are to provide recreation for the State of Utah. We…protect the …environment as well as the visitors that come to the state park."*

Managers were asked how the parks they manage contribute to the agency mission or if their park had a distinct mission or purpose. Generally, park managers viewed their mission or purpose as similar or the same as the purpose of the whole division. Some managers viewed their role more philosophically while others discussed day-to-day applications. A few of the managers discussed broader goals including local economic development. One manager from the Central Region answered:

> *"Our mission is still the same to serve the public and preserve what is here and to help the general public understand what they have here…"*

Another answered:

> *"…to provide access to the lake and to provide an enjoyable time. In turn, that has the multi-fold effect in that we can bring people in from the outside communities and they are spending money that can help local businesses…"*

3.1.2.2 Manager Role

Managers were asked about how they perceive their role within the organization (Table 3-3). The role of the manager is broadly perceived and interpreted; most managers mentioned more than one topic or duty. Eight managers viewed their role as managing and supervising staff.

One manager described their role as "middle management" within the organization. A common response was related to the wide variety of tasks managers have to balance. It also provided the first opportunity for some managers to describe the challenge of balancing multiple duties. Moreover, it highlighted the challenge of prioritizing tasks particularly in the high use season. Three managers each mentioned interagency cooperation, law enforcement/providing for safety and meeting park/agency mission or goals as a component of their role as park manager.

Table 3-3 Managers' view on their role with State Parks*

Manager role	Number of Responses
Managerial / Supervisory	8
Balancing duties / wide array of tasks	3
Interagency cooperation	3
Law Enforcement / Provide for safety	3
Meet mission / goals	3
To host public	1
Revenue generation	1
*Managers could provide more than one response.	

One manager provided the following response:

> *"…We are park managers. Whatever that encompasses. It is a pretty broad job. I am also a certified peace officer. Number one, I provide the mechanism to get seasonals or rangers and schedule to make sure our parks are up and functioning and in good shape… My philosophy has always been if you can prevent something before it happens. So in the springtime when our PWC come in, we check them right at the booth: do you have your insurance, are you old enough to operate, have you been to our classes…We do preventive maintenance. I make sure that my staff knows the policies of the state. I make sure that they are trained properly...I do law enforcement. Yesterday was like a slice out of the life of a park ranger. I started the day talking to a camper about fossils and about birds and about plants. We had a great conversation. Then, I met with…(a) trails committee…It is multiple use trails with the major emphasis on OHVs because it is a huge problem…Then, I went to (another park) and somebody had failed to pay a fee so I checked in on that. I actually arrested the guy and took him to jail on a warrant. Then, I came back here and met with campers where we had double booked a couple of sites so we spent some time and made everybody happy and got everybody rearranged in the campground. That was a typical slice out of a whole career. That is what you end up doing. You go from one thing to another. The only thing that I didn't do yesterday was maintenance."*

3.1.2.3 On-site recreation management objectives

Managers were asked if there were specific management objectives on-site and if they varied spatially on the water or within the park (Table 3-4). First, the importance of formal and informal managerial objectives is important. Once again, the responses to the question were varied and point to the uniqueness of the park and the personality of the manager. Many of the management objectives are not written down but are readily apparent, such as managing developed areas more intensively.

Six managers mentioned user safety as a management objective. Safety was brought up as part of multiple questions. It is clearly a major issue at water-based State Parks. Four managers referred to maintaining slow wakeless speed areas as a part of their recreation objectives. These areas are typically maintained for safety reasons rather than to protect visitor experiences. One more manager mentioned the importance of keeping the area near the dam free of boaters. This has become especially pronounced since the September 11 attacks. Two managers discussed enforcing the state's boating laws as management objectives at their site. Two managers discussed fee collection and revenue generation. There were several responses mentioned by just one manager.

Table 3-4 On-site management objectives*

Attracts Visitors	Number of Responses
Provide for safety	6
Manage for slow wakeless speed	4
Enforce boating laws	2
Fee collection / revenue generation	2
Manage various on-site facilities meet different objectives	1
Manage facility-based capacity	1
Manage a wide array of recreation opportunities	1
Closures for wildlife protection	1
Integrate recreation with other uses	1
Maintain access to water	1
Manage a large water body	1
*Managers could provide more than one response.	

One manager cited the importance of managing for the specific traditions:

"We follow the traditions, guidelines, and policies of the department."

3.1.3 Visitor Behavior

This section provides a summary of manager responses to their view of how visitors behave at their site when they visit. Managers responded to questions about seasonality and time of use, opportunities for solitude and socialization, activity use and limitations, and visitor attributes.

3.1.3.1 Time of Use / Seasonality

Not surprisingly, boating use in the vast majority of parks peaks in the summer. Parks in the Southwest region (Sand Hollow, Quail Creek) have longer boating seasons beginning as early as February and lasting until November in some cases. Additionally, some parks in the north or at high elevation may see a drop-off in visitation before Labor Day weekend. Fishing occurs year round with ice fishing in the winter at most parks. One representative response follows:

> *"Primarily from mid-May to the end of September when we have the good weather. We have a few crazies that when the ice is off they put their dry suits on wanting to be the first to waterski. Generally, we have ice fishing in the wintertime. When the ice is off early on, our main use early on is fishing. Then, as the water warms up, we get into the warm water sports. It is usually early to mid May, we are really slowing down by the first of October."*

There appears to be natural time zoning that occurs on many water bodies in the summer. Anglers come out to many of the water bodies early and depart mid-morning; they will often return in the evening and even overnight. This does prevent some of the conflict that occurs between anglers and motorized boaters, especially in the middle of the day when both types of visitors may be present. One manager provided the following response:

> "*During the week, Monday through Friday, we have activities in the morning-fisherman coming in between seven and nine, then things taper off. In the evenings…after work, we will pick up again. You see the retired people in the morning that have free time for fishing. In the afternoons, we see people getting off work and we see the water-skiing and the water sports activities pick up Monday through Friday. On the weekends, we are pretty much straight…from seven o'clock in the morning till sunset...You had better get here early because they know that by mid-morning we are going to be filled with jet skis and wake boarders."*

3.1.3.2 Opportunities for Solitude and Socialization

Manager's perceptions about the availability of solitude vary. There is no doubt that opportunities exist at every park – however not at all times. For example, a busy park may have no opportunities for solitude on busy summer weekends, but has ample opportunities in the fall or spring or even in the summer evenings. Physical aspects of the water body contribute to the availability of solitude. In general, most large water bodies have opportunities for solitude at all

times. In addition, complex shorelines (meaning those with many coves or canyons) contribute to the availability of solitude. Large round bodies where you can see the entire lake or reservoir from any spot tend to limit the availability of solitude. Other areas that may provide opportunities for solitude include areas that do not allow motorized access including areas near dams, where the water flows into the reservoir, areas with downed wood, and shallow areas. Managers state that many anglers (not all) seek solitude, or at least quiet, and many of these anglers experience conflict with motorized users.

Opportunities for group socialization abound at Utah water bodies with people generally congregating at developed facilities and along beach areas. Managers perceive many of the activities that occur at state parks to be consistent with group socialization including swimming, boating, PWC use, and picnicking. A few managers mentioned many PWC users seek out people to show off and actually prefer areas with people.

3.1.3.3 Primary Lake Activities and Limitations

Managers were asked if there was a particular activity their water body was especially well-suited for as a result of the lake's physical features or climatic factors. In general, most water bodies were purported to be well suited for motorized craft or not suited for anything in particular. The Great Salt Lake and Bear Lake were both cited as being good for sailing, while Deer Creek provided opportunities for sailboarding with reliable wind. Water bodies with more shoreline complexity (more coves) generally have more opportunities for solitude.

Absolute limits on activities at Utah water bodies are rare. However, there are slow wakeless speed areas and areas closed due to dam operations and safety concerns. Some parks do not allow parasailing due to the size of the water body and there are some concerns with the use of snowmobiles on the frozen water bodies. Nevertheless, park managers consider the vast majority of recreational uses as appropriate.

3.1.3.4 Visitor Attributes

Managers were asked where they believed most of their visitors lived (Table 3-5). This, along other information helped to identify boating regions in the state. The majority of managers (15 out of 17) stated the water bodies that they manage receive most of their use from people who live locally, although, most managers throughout the state identify at least some of their visitation coming from the Wasatch Front. Also, managers of water bodies in the southern part of the state indicated some of their use comes from the Las Vegas area. In addition, water bodies in the southwest part of the state see users from the northern part of the state when the water bodies up north are too cold to boat.

Table 3-5 Managers' view on where their visitors live

Majority of visitor from…	Number of Responses
Within region	7
Significant portion from within region (1/2 or more)	8
Mostly from out of region (still Utah)	1
Out of state	1

Table 3-6 lists the most common responses managers gave when asked what attracts visitors to the water bodies they manage; (more than one response was allowed). It is interesting to note the ability to use Off-highway vehicles (OHVs) was mentioned even at water-based parks. In addition, four managers mentioned proximity to users' homes and three managers each mentioned facilities and fishing. Two managers each cited the following as what draws people to the areas they manage: size of the water body, scenery, relative quiet, and golfing facilities in the area. There were several responses cited by only one manager including special events, the beach, limited law enforcement patrols among many others.

Table 3-6 Managers' view on what attracts visitors*

Attracts Visitors	Number of Responses
Proximity to home	4
OHV – use	4
Facilities	3
Fishing	3
Size of water body	2
Scenery	2
Relative quiet	2
Golfing	2
Lifestyle	1
The park itself / not the water	1
Sailing	1
Kayaking	1
Special events	1
Park provides water-based recreation in area with little water	1
Beach	1
Limited law enforcement patrols	1
Park is new	1
Emotional attachment	1
Less crowded	1
Managers could provide more than one response.*	

Managers were also asked if anything might keep boaters from visiting their lakes; again, managers were allowed multiple responses to this question (Table 3-7). Five managers mentioned solitude seekers may avoid the lakes they manage, three managers mentioned gas

prices, and three mentioned facility limitations (no RV hook-ups and limited campground or day use facilities). A wide variety of issues were mentioned by one manager including but not limited to lack of water due to drawdown, limited number of things to do, cold water, mosquitoes, and perceptions of polluted water.

Table 3-7 Managers' view on what keeps visitors from coming to the parks they manage*

Keeps visitors away	Number of Responses
Lack of solitude / quiet	5
Gas prices	3
Lack of facilities	3
Behavior of other visitors / Safety	2
Winter road closure	1
Reservoir drawdown	1
Limited activities on-site	1
Fees	1
Perception of pollution	1
Water temperature	1
Mosquitoes	1
Far from population	1
Image as rowdy place	1
Managers could provide more than one response.*	

Next managers were asked to identify changes in uses or activities they have seen since they have worked at State Parks (Table 3-8). Three managers said they noticed no changes, but most managers focused on motorized activities, especially increases in PWC (4 responses) and OHV (3 responses) use. Two managers each mentioned the increase in fuel cost, a wider variety of activities occurring at the site, and an increase in visitation. Several items were mentioned by one manager, including a decline in the number of sailboats and more specialized craft on the water.

Table 3-8 Managers' view on change at parks over time*

Keeps visitors away	Number of Responses
Increase in PWC	5
Increase in OHV	3
Increase in gas prices	2
Wider variety of activities	2
Increase in visitation	2
Decline of sailing	1
More specialized craft	1
More sculling	1
Increase in horsepower	1
Managers could provide more than one response.*	

One manager responded:

> *"If you are looking for a trend, you see it from a lake that you used to go fishing. Now, we have water-skiing, then PWCs became huge, and they are building boats for wake boarding. The trend has gone towards increased horsepower or something on the water. They kind of go to a mountain lake for peace and solitude. Now it is a lot of go fast boats, a lot of PWCs, a lot of adrenaline based activity…"*

3.1.4 Management Challenges

The fourth section of the interview related to management challenges. First, managers were asked about the most challenging aspect of managing their park(s) (Table 3-9). The most common response was staffing issues (8 responses) followed by meeting recreation demand/providing access (3 responses), visitor and conflict management (3 responses), issues with facilities (3 responses) and balancing tasks/managing multiple sites (3 responses). Staffing issues related primarily to not having enough staff to meet management goals and duties along with training seasonal staff. Other responses included law enforcement and interagency cooperation.

Table 3-9 Management challenges*

Management Challenge	Number of Responses
Staffing Issues	8
Meeting demand / Providing access	3
Balancing tasks / Managing multiple sites	3
Facility issues	3
Visitor / Conflict Management	3
Law enforcement	2
Interagency cooperation	1
Managers could provide more than one response.*	

One manager responded:

> *"It is finding and keeping good summertime employees. It is getting harder and harder to find people that are interested in a career and future in outdoor recreation and so our pool of people from the colleges seems to be dwindling. I really like to try to get college age students to come work here, especially those interested in the field so that they can get a taste of what it is like. That is probably my biggest point as a manager here is personnel issues."*

Another replied:

> *"I think a variety of the many hats we have to wear is probably the biggest challenge. With minimal staff, we have to handle them. We have to do law enforcement, manage budgets, do maintenance...All those things require skills and training that is difficult for just a couple of guys that are full-time to keep up on…It's getting to where we have to be certified to spray for weed control and that kind of stuff…they just came up in the last couple of years with a preventative maintenance system we have to keep up with on the computer, and record all our maintenance things, which has been a good tool, but it does require time. Then we have different equipment we have to operate. We have backhoes, ATVs, snowcats, and grooming for snowmobiles, OHVs, PWCs, boats…that's…some of the stuff that's hard to keep up with. We have to wear a lot of different hats. Of course we have to negotiate with public entities, and with our legislators, and community leaders, and keep in touch with them. Local police, sheriff's department. It sometimes gets overwhelming, trying professional job in all those areas. Sometimes it gets to be pretty difficult when you're asked to do such a variety of different things with such a small, full-time staff."*

Managers were then asked if there were other natural resource issues at the water bodies they manage that may or may not be related to recreation use (Table 3-10). Once again, there

were many different responses with only two managers saying there were no issues. The most common response (6) related to water quality including up-stream pollution or sedimentation. No other response was cited by more than three managers. Some of the other responses included impacts from reservoir drawdown, noxious weeds, private property/development, and avian cholera.

Table 3-10 Other natural resource issues*

Natural resource issue	Number of Responses
Water quality	6
Impacts from reservoir drawdown	3
Noxious weeds	2
Vegetation damage	2
Private property / development	2
Avian cholera	1
Impacts from primitive camping	1
Impacts from	1
Managers could provide more than one response.*	

3.1.5 Recreational Use Issues

The fifth part of the interview related to specific recreation use issues including use limitations, fluctuating water levels, unique aspects of the water bodies, and similarities and differences between sites. A key component of this project is addressing issues related to use capacity and managers were asked if there was an official policy that limits use. Overwhelmingly, parks do not have formal use limits, but several parks are limited by facility capacity (Table 3-11). Eleven managers stated facility limitations (parking lots) put a cap on use (a few of these sites rarely reach capacity). Five of the managers stated use limitations were not issues at all because their water bodies are large and there is ample parking or access. Two managers stated one of the water bodies they manage had formal use limits.

Table 3-11 Use limitations

Use limits	Number of Responses
Use limited by facility	11
Not an issue	5
Formal capacity	2

Managers were asked if other water uses impacted recreation use, and 14 said yes; these impacts were primarily due to irrigation. The level of the reservoir drops as water is diverted from the reservoir for irrigation (or municipal) purposes. The impacts are most pronounced

during drought years. In some years, the water level remains high throughout the entire boating season, whereas some managers have noted years when boat ramps have been inoperable shortly after the 4th of July. The most common impact relates to having the water level drop in the summer as irrigators call the water. As the water level drops, the boatable area decreases, the area may become less scenic as mud along the shore is exposed, and features such as boat ramps may become inoperable as the water drops below the bottom of the ramp. In one case, lowering the water level exposed state-owned lands which increased access to the shore for users. In another case, impacts from upstream irrigation practices were noted including nutrient loading from effluent and fertilizer. The following response reflects issues with drawdown due to irrigational issues:

> *"They control the level of the lake. We have absolutely no control over that. If we have a hot dry summer like we have had the last couple of years, they can draw the lake down to where you can't use it or it is where it significantly impacts our use. That is one of our downsides. As long as we have good winters and normal summers, it is not an issue. Over the six-seven year drought that we had, yeah it was a pretty big issue for us. Last season we were pretty much done by early August. They had drawn it down below our ramps and people were still using it, but not nearly what there should have been if we would have had water. That is a big impact for us."*

Another response related to drawdown:

> *"This is mainly used for agricultural water out of here. Yes...Last year for instance we never got full. Last year being a drought, but they needed that water for irrigation and crops. You couldn't launch a boat here after July 10. So the drawdowns can adversely affect it during drought years…Agricultural use can really have a big impact on our boating season."*

One manager spoke about the purpose of the reservoir and how it impacted recreation use:

> *"The reservoir was built for a purpose, and it was to provide irrigation water. For mitigation for that type of use, they created a recreational area. That is probably the number one, the irrigation use. The fact that we get drawn down and are a high fluctuating type of reservoir. Real great at the beginning of the year, but things are usually timed pretty effectively to coordinate with our season, but I have no control over that."*

Questions were also asked about unique aspects of the sites they manage. Multiple responses were allowed to the question. Table 3-12 highlights the responses to the question about how the sites they manage are unique. Scenic qualities to a site, including the presence of slickrock and mountains in the background, were cited most often (6 responses), four managers

cited the large size of their water body, and three each cited the availability of solitude and OHV-access.

Table 3-12 Unique features at Utah water bodies*

Unique feature	Number of Responses
Scenic qualities	6
Large water body	4
Availability of solitude	3
OHV access	3
Wildlife / biodiversity	2
Site managed privately	1
Extreme water fluctuation	1
Quality fishing	1
Golfing	1
Managers could provide more than one response.*	

3.1.6 Accident and Incident History

State Parks has law enforcement jurisdiction in their parks. There are varying levels of collaboration with other agencies including county sheriffs, local police, Utah Highway Patrol, and even other state agencies including the Division of Wildlife Resources. Although local sheriff departments take the lead in search and rescue operations, state park staff does the vast majority of law enforcement on-site. In this section, responses to questions about law enforcement at water-based state parks are summarized. Questions were asked about the most common infractions, the most challenging aspects of law enforcement, and boater safety education.

First, questions were asked about the most common boating infractions (Table 3-13). Multiple responses were allowed for this question. The most frequently cited common infraction was speed and proximity (9 responses - when a boat is closer than 150 feet to another boat), the second most frequent response was personal floatation device (PFD) violations (8 responses), and six managers cited boats not being registered as a common violation. No other infraction was cited by more than two managers. Two managers each mentioned flag violations (when there is a water-skier down and no one in the boat raises a flag) and underage operators. Managers were then asked why boaters were committing these common infractions, and they thought in many cases that they were not aware of the regulation, or in the case of speed and proximity, they could not judge 150 feet.

Table 3-13 Managers view on most common infractions*

Infraction	Number of responses
Speed and Proximity	9
PFD violations	8
Registration violations	6
Flag violations	2
Underage operators	2
Too many people on boat	1
Fishing without license	1
Helmet violations	1
Problems with boat renters	1
Managers could provide more than one response.*	

Next, managers were asked what the most challenging aspect of law enforcement was. There were a wide array of answers to the question, but only two responses were cited more than once. Seven managers cited the challenge of balancing two sets of potentially conflicting roles: law enforcement vs. being a good host, and balancing when education was appropriate with when a citation should be issued (Table 3-14). Two managers cited inconsistencies in enforcement between State Park sites with one site strictly enforcing a particular infraction while a nearby site may let it slide. This can be confusing to visitors and make it harder to write a ticket to change a behavior because the user did not think they were doing something wrong.

Table 3-14 Challenging aspect of law enforcement*

Challenge	Number of responses
Balancing host with enforcement duties	7
Inconsistencies in enforcement between units	2
Keeping track of regulation changes	1
Education	1
Fee compliance	1
Targeting times to be on water for enforcement	1
Alcohol enforcement	1
Staffing limitations	1
Selling tickets (explaining why a visitor deserved a ticket)	1
Managers could provide more than one response.*	

The following three responses elaborate on balancing duties:

"Balancing between being a host to the public and inviting the public to come here and participate in recreation and then to come around and give them a citation or arrest them. That is tough. You have to find that balance. We came into this business to serve the people and to serve the resource. You want people to come and have fun. If you are not a people person in this position, you shouldn't be in this job. On the same hand to really like people and want people here and to be the cop that goes out and slaps their hand is sometimes contradictory in your mind."

"The thing that I look at as most difficult is hosting and providing law enforcement at the same time. It's a delicate balancing act between the two. Very delicate…To me, that's the hardest part. Sometimes, you don't know if you are accomplishing enough to provide for the boating safety. You want to give the education and sometimes you don't know if you should have pushed it a little harder to make sure…"

"Some of that is that balance between education and enforcement. This guy deserves a ticket. This guy over here deserves an education. Agreed it is the same violation, but you weigh it. That discretion is challenging."

Finally, managers were asked about boater safety education and every manager said they supported it and thought it was important. Then they were asked if a boater safety course should be required and all but one manager agreed that it should be required in some form. One manager said the course should be required only for PWC users, while another said the course should be required for those under 18. Many managers went so far as to support a boating license and suggesting it could be similar to a motorcycle endorsement on a driver's license. Managers who supported safety courses were asked how they could be delivered and many different ideas were provided including by the Department of Motor Vehicles, on the internet, at the park, or in a classroom.

3.1.7 Summary of Managerial Interviews

Several of the topics discussed in the managerial interviews are important to a regional approach to management. First, managers discussed balancing many duties including law enforcement, staffing issues, and duties such as budgeting throughout various parts of the interview. Secondly, the importance of interagency cooperation is apparent as many local, state, and federal agencies are involved in the management of Utah water bodies. Another important issue is that there is a wide variety of recreation opportunities available at Utah water bodies including opportunities for socialization and solitude, as well as excellent fishing opportunities; opportunities for non-motorized boating are not as widespread. Another widespread emerging issue is the importance of safety with special attention to speed and proximity, problems with individuals renting boats, and boaters not aware of specific safety regulations.

3.2 Regional Meetings

Six regional meetings were conducted throughout Utah to discuss water-based recreation issues at a regional and statewide level. Meeting attendees primarily included park managers, but there were also some rangers and conservation officers in attendance. Issues varied by region, although certain themes were consistent throughout all of the meetings. The following is a summary of the issues, problems, and management considerations discussed at each meeting (Table 3-15). Rather than including every issue, however, we focused primarily on topics that are most important for regional level management. The themes are discussed in greater detail following Table 3-15.

3.2.1 Southwest Utah

The southwest region is unique due to its relatively long boating season, and proximity to Las Vegas and rapidly growing areas in Utah. There are few water bodies in the region; however, Lake Powell and Lake Mead are both within 2 hours of much of the population living in the region. The recent development at Sand Hollow State Park has changed the water-based opportunities in this region by roughly doubling the surface acreage for boating in Washington County. The continuing development at Sand Hollow provides a unique opportunity for management. Sand Hollow and Quail Creek State Parks are in close proximity to rapidly suburbanizing neighborhoods and provide primarily developed opportunities; Gunlock State Park is somewhat less developed and is quieter on busy weekends.

Representatives of the following water bodies were present at this meeting:

- Quail Creek State Park
- Sand Hollow State Park
- Gunlock State Park

The following is a list of issues discussed at the meeting:

- **Long boating season** – An important issue in this region is that the boating season is much longer than in other potions of the state. Washington County has a much longer "summer-type" season due to its low elevation and southerly location. Individuals may boat at Sand Hollow and Quail Creek at the same time reservoirs in the north are frozen. The season can last from February to November with even light boating use in December and January.
- **Population growth –** Southwest Utah is one of the fastest growing regions in the country. As the population increases, it is likely that there will be an increase in the number of registered boaters living in the region. Also, growth in the Las Vegas area will impact boating in the region.
- **Limited water bodies versus relative population size –** Another issue of concern was the relatively limited number of water bodies in comparison to the population size. However, Lake Powell and Lake Mead can provide opportunities for those that are willing to drive a couple of hours.

Table 3-15 Primary topics discussed at regional meetings

Region	Issues / Problems	Regional Management Considerations
Southwest Utah	• Long boating season • Population growth • Limited water bodies versus relative population size • Development at Sand Hollow • Lack of opportunities for solitude • Funding and staffing shortages • Management of both boating and OHV	• Complete Facility Development at Sand Hollow • Consider future population growth in funding and planning • Protect solitude at Gunlock • Consider activity segmentation at Quail Creek and Sand Hollow through indirect management
Northeastern Utah	• Manager specialization vs. generalization in training and skills • Not enough staff to cover large area of land and water • Water level • OHV enforcement inadequate • PWC issues and conflict	• Explore new funding sources • Increase collaboration with other resource agencies • Address PWC use issues • Develop a Department of Natural Resource Law Enforcement Officer – could be trained for various natural resource challenges
Wasatch Front and Back	• Population growth • Water resources are in demand for uses other than recreation • Dealing with 'capacity', particularly on weekends • Yuba and Starvation State Parks • Staffing / Funding • Specialization vs. generalization • User conflict • Gasoline prices • Increase in wakeboarding • Marketing and promotion as a major goal of Utah State Parks and Recreation	• Use of webcams that show parking lot and ramp conditions at parks • Flexible fee structures / differential pricing / discount coupons • Launching fee • Day use reservations • Promotion of Yuba and Starvation • Increase cooperation with other agencies • Consider specialization for some positions • Marketing and promotion • Explore 'indirect' zoning
Northern Utah	• Off-Highway Vehicle patrols • Gas prices • Generalization vs. specialization • Staffing / Funding • Movement away from non-motorized boating • Crowding • Hyrum could be site to increase use • Conflicts • PWC rentals are increasing • Water pollution • Boat licensing • Water bodies work as system	• Hyrum could tolerate additional use • Boater Education • Facility upgrades / improvements • Increase staffing and cooperation with other resource agencies • Require fueling on shore • Consider differential pricing
Central Utah	• Irrigational water uses impacts water level • Competition with private providers • Non-motorized vs. motorized use conflict • Providing non-motorized opportunities may be less cost effective • Users without registration appear to use less-patrolled water bodies	• Working with concessionaires • Collaborate with irrigation agencies on projects of mutual interest
Lake Powell	• Varying goals and objectives for Bullfrog / Wahweap • Working and collaborating with the National Park Service (NPS) • Importance of tourism (especially to Page, AZ) • Lower water levels have decreased visitation • Lots of solitude • Law enforcement coverage on large water body	• Expand education programs

- **Development at Sand Hollow –** An issue important to Sand Hollow especially, but to the region as a whole, is that the park is operating while many facilities are still being built. This has been a challenge for staff at this park and in the region.
- **Lack of opportunities for solitude –** The limited number of water bodies in the region do not provide extensive opportunities for solitude. However, the relative abundance of land based solitude opportunities in the region, the potential for solitude at Lake Powell and Lake Mead, and the potential for solitude at Gunlock, should be important considerations in region-based planning.
- **Funding and staffing shortages –** The need for additional funding to meet challenges was discussed. The issue of maintaining a full staff was discussed at this meeting as well as replacing staff that transfer to another unit may take several months.
- **Management of both boating and OHV opportunities –** Managing both boating and OHV issues at the same sites can be challenging as patrolling an OHV-use area can lead to less time concentrating on the boating program. Managing both may lead to trade-offs as responding to an OHV-incident may take away from time patrolling the water and vice-versa.

The following were management recommendations provided by meeting attendees:

- **Complete Facility Development at Sand Hollow** –Completing facility developments at Sand Hollow should be the top priority.
- **Consider future population growth in funding and planning –** The importance of rapid regional population growth should be considered in park planning in this region.
- **Protect solitude at Gunlock –** Although opportunities for water-based solitude in his region are limited, Gunlock provides a relatively unique experience in that it is more "laid-back" than Sand Hollow and Quail Creek. It was suggested future development be limited here in order to preserve a unique regional experience.
- **Consider activity segmentation or zoning at Quail Creek and Sand Hollow through indirect management actions –** Zoning potentially conflicting uses could be accomplished by indirectly encouraging certain uses at one reservoir and not the other.

3.2.2 Northeastern Utah

Northeastern Utah is one of the more remote regions in the state. In general, the availability of lake and reservoir based recreation opportunities were not cited as an issue at this meeting. There are few State Park managed water bodies in the region, but there are several other water bodies, most notably, Flaming Gorge. Steineker State Park provides opportunity for socialization with swimming areas and picnic areas, Red Fleet State Park has a scenic water body that provides some opportunity for relative solitude, and both are close to Vernal (the largest city in the region). An issue in this region is it is very large, with several small outlying water bodies and OHV trails that require patrols.

Representatives of the following water bodies were present at this meeting:

- Steinaker State Park
- Red Fleet State Park

- Flaming Gorge National Recreation Area (U.S. Forest Service)

The following is a list of issues and topics discussed at the meeting:

- **Specialization vs. generalization –**Resource and recreation management requires broad expertise, ranging from managing biophysical resources to budgeting and staffing. The issue of being a specialist or a generalist was discussed at this meeting. It was suggested specialization be considered for some tasks. As a counterpoint, it was also mentioned the variety in the job is an appealing aspect.
- **Not enough staff to cover large areas of land and water –** There are concerns about limited enforcement at outlying water bodies in this region. State Park staff spend a large portion of their time at Steinaker, Red Fleet, and Flaming Gorge, leaving small outlying water bodies with limited enforcement.
- **Water level –** The impact of lower water levels on recreation use was briefly discussed. The reservoirs in this region serve both irrigation and culinary needs. The lower water levels are more pronounced during the drought years.
- **OHV enforcement inadequate –** The relatively large area in this region compared to the number of state park facilities has led to outlying OHV trails receiving limited enforcement.
- **PWC issues and conflict –** Concerns with PWC use were also discussed at this meeting. It was suggested PWCs were disproportionately involved with incidents and conflicts at water bodies in this region.

The following were management recommendations provided by meeting attendees:

- **Explore new funding sources –** Additional on-site fees or state level funding sources should be considered to build facilities or increase enforcement. Providing more RV sites could enhance park revenue.
- **Increase collaboration with other resource agencies –** Collaborate with other agencies, including DWR, on boating and fishing enforcement. For example, State Parks could assist DWR with enforcement of fishing regulations at state park areas while DWR could check boat registrations at outlying water bodies. Sharing equipment for boating and OHV enforcement was also suggested.
- **Address PWC use issues** - There was strong support for continuing PWC courses for youth. Requiring PWC licenses or endorsements could also be explored.
- **Department of Natural Resource Law Enforcement Officer –** Developing specialized DNR officers to address the wide array of natural resource related law enforcement issues in the area. These include boating and OHV enforcement, fishing and hunting issues, and enforcement related to the increase in oil and gas exploration in the region.

3.2.3 Wasatch Front and Back

The Wasatch Front and Back has the largest population of any region in the state by a substantial amount (over 70%). The region is continuing to experience rapid population growth, along with rising housing values indicating continued economic growth. The region also has the most reservoir- and lake-based state parks (nine) of all the regions. Most of the parks receive

heavy boating use and do communicate with one another on busy weekends and holidays regarding filling parking lots and park capacity. Strawberry Reservoir is a top notch fishery with cold water year round that discourages the use of PWCs and waterskiing. Other reservoirs, including Jordanelle, Deer Creek, and Rockport, receive heavy use throughout the summer. However, the two large outlying water bodies, Starvation and Yuba, receive less use and provide opportunities to escape the heavy use areas Projected future population growth and the perception of increasing water-based recreation use suggest short and long term planning in his region is vital.

Parks / water bodies represented at Meeting:

- Starvation State Park
- East Canyon State Park
- Deer Creek State Park
- Rockport State Park
- Yuba State Park

The following is a list of issues and topics discussed at the meeting:

- **Population growth –** This region is experiencing rapid population growth; this growth is further pronounced by the fact this is already the most populous region in the state. Future planning must consider the role of increasing population and associated demand.
- **Water resources are in demand for uses other than recreation –** Other water uses may negatively impact recreation use, as water levels may drop during the peak season as demands for culinary and irrigation water are met. This is a challenge, as water levels being drawn down too low may disable a ramp and render the reservoir unusable for most boaters; droughts compound the issue.
- **Dealing with "capacity", particularly on weekends –** Use is high in this region and many of the parks may shut the gates as facility capacity is reached on weekends or holidays. However, use on weekdays and during the shoulder season is relatively light.
- **Yuba and Starvation State Parks –** Yuba and Starvation State Parks are both in the outer reaches of the region and receive substantially less use than many of the other water bodies in the region. Increasing use at these two parks has been identified as a mandate for both units.
- **Funding /Staffing –** Both the need for additional funding and hiring qualified staff in a timely manner were discussed. It could take seven or eight months to replace staff who had been promoted or transferred to other units.
- **Specialization vs. generalization –** The issue of being a specialist versus a generalist was also discussed at his meeting. Resource and recreation management positions require a wide range of expertise from knowledge about biophysical resources, budgeting, staffing, etc.
- **User conflict –** User conflicts were mentioned as an issue in the region. Common conflicts mentioned included anglers and motorized boat users, and PWC users and motor boaters.

- **Gasoline prices –** It was suggested the increase in gas prices had impacted user behavior. Some users have chosen not to use their boat as much while others have chosen to boat on lakes closer to home. Increasing gas prices could actually increase use in some of the water bodies close to large population bases.
- **Increase in wakeboarding –** A noticeable (although not troubling) trend has been the increase in wakeboarding over the past several years.
- **Marketing and promotion as a major goal of Utah State Parks and Recreation –** There has been increasing pressure to generate revenue on-site to address the fiscal situation at the various parks. This has suggested to managers that there need to be efforts made to increase use and thus generate additional funds from entrance fees and on-site concessions.

The following were management recommendations provided by meeting attendees:

- **Use of webcams that show conditions at certain parks -** Webcams could be set up to show boat ramp activity and parking lot conditions. This would allow boaters to access this information and decide where they may want to boat that day. The webcams could also free up staff as many users currently phone parks to find out about parking lot conditions. Webcams are currently being used at a couple of facilities.
- **Flexible fee structures / differential pricing / discount coupons -** One consideration to alleviate weekend and holiday pressure is to either charge more on those dates or charge less on non-peak dates. The impact of these fees could be to both discourage peak use and encourage non-peak use. It was also suggested an increased portion of fee collected could be kept on-site.
- **Launching fee –** Currently, a day-use group pays the same entry fee as a boating group, even if the boating group utilizes more facilities and potentially has a greater impact. One consideration would be to implement a separate launching fee to assist in upkeep directly related to boating such as the boat ramps or on-water patrols.
- **Day use reservations –** The implementation of additional day use reservations both to generate revenue and guarantee day-use areas to groups who plan ahead.
- **Promotion of Yuba and Starvation –** Yuba and Starvation State Parks both have mandates to increase use. Currently, both water bodies receive substantially less use than the other water bodies in the region, especially compared to their size. It was suggested use be directed to these water bodies from some of the heavier use areas in the region.
- **Increase cooperation with other agencies** – A few possibilities to collaborate with other agencies were suggested:
    1) Cross train with DWR and assist in enforcing each other's mandates;
    2) Pool law enforcement officers in areas with multiple state parks;
    3) Cooperate with county travel bureaus to promote opportunities; and
    4) Explore partnerships with the Bureau of Reclamation, the agency operates most of the dams in the region. Currently, this agency is not heavily involved with recreation management at these parks.
- **Consider specialization for some positions –** It was suggested there could be increased specialization for both maintenance and law enforcement staff. Park rangers would

continue law enforcement or maintenance duties; some specialized staff could concentrate on certain aspects of park management.

- **Marketing and promotion –** It was suggested approaches to marketing and promoting certain parks or State Parks as a whole be explored.
- **Explore "indirect" zoning –** Indirect management actions are those not directly regulating behavior, but rather encouraging certain types of behavior by, for example, education or interpretation. Other indirect techniques include designing parking lots to certain specifications or building certain facilities (such as PWC-only ramps) that encourage certain uses. The presence of several water bodies near Heber City and Park City presents an opportunity to "indirectly" zone. Indirect zoning does not disallow certain uses on the water; it simply provides facilities amenable to particular activities at different water bodies. For example, a PWC only ramp could be provided at one lake and non-motorized boating facilities could be provided at another.

3.2.4 Northern Utah

Northern Utah is typified by a broad array of water-based recreation opportunities. Bear Lake is a large lake that provides excellent opportunities for sailing and other opportunities. Typically, the summer boating season is shorter in this region – especially at Bear Lake. Both Willard Bay and Hyrum receive substantial weekday use. There are a few small water bodies in this region, including Cutler, Newton, and Porcupine Reservoirs, which receive some boating use.

Parks / water bodies represented at Meeting:

- Bear Lake State Park
- Hyrum State Park
- Willard Bay State Park

The following is a list of issues and topics discussed at the meeting:

- **Off-Highway Vehicle patrols** – Additional time is being spent on OHV-patrols compared to the past. The increase in time spent patrolling off-road can affect the amount of time spent working with the boating program.
- **Gas prices –** Higher gas prices have influenced visitation. Higher gas prices might have decreased visitation to Bear Lake while not affecting visitation to Willard Bay and Hyrum as much. Managers stated individuals who own large boats are not at all affected by increasing fuel costs.
- **Generalization vs. specialization -** There is tension between balancing many duties (generalizing) and having staff that specialize with certain skills. Specialization can lead to increased efficiency; however, doing a variety of tasks can also increase interest in the job.
- **Staffing / Funding –** More staffing and funding would increase the region's ability to address the various management issues and problems. It was further suggested that Cache Valley, in particular, needs additional staff for boating patrols.

- **Movement away from non-motorized boating –** The amount of non-motorized boating use appears to be decreasing in this region.
- **Crowding –** Crowding is generally a land based issue at "congestion points" such as boat ramps. It was mentioned that crowding was a bigger issue in Southern Utah near St. George.
- **Hyrum could be site to absorb increased use –** Hyrum could potentially be a site to direct use to if demand increases in region. However, additional site hardening and staff would be necessary to manage the increased use.
- **Conflicts –** Conflicts are seen as inconsistent and complex depending on both recreation site and season. Angler – water skier conflicts are pronounced at Willard Bay.
- **PWC rentals are increasing –** The number of PWCs that are being rented appears to be increasing. The key issue here is there is a tendency for renters to be less knowledgeable about rules and regulations. They are also likely not as experienced as those who own PWCs..
- **Water pollution –** Two potential recreation-related causes of water pollution were discussed. The first was human waste due to improper dumping at Bear Lake and the second was from fuel spills. Fuel spills are especially a concern when boaters are filling up their boat.
- **Boat licensing –** Requiring boat licenses or endorsements would guarantee users have been acquainted with boating laws, regulations, and etiquette. Currently, it is feasible that users truly do not know the laws or are confused. This is confounded at Bear Lake where part of the lake is in Idaho and subject to different boating laws.
- **Water bodies work as system –** Many weekday Hyrum boaters visit Bear Lake on the weekend.

The following were management recommendations provided by meeting attendees:

- **Hyrum could tolerate additional use –** Increasing use at Hyrum could be possible. Additional site hardening, including expanding the parking lot, and increasing staff would be necessary. Increasing use at Hyrum could alleviate demand at other Cache Valley water bodies such as Cutler, Newton, and Porcupine Reservoirs. Currently, Cutler Reservoir offers solitude for hunters and bird watchers. Increasing boating use at Cutler could be detrimental to these existing opportunities.
- **Boater Education –** Increase the number of boater education programs. These programs could be done in cooperation with local schools. Further, these education sessions could be reinforced with tests. It was also suggested to seek legislative support to increase these programs.
- **Facility upgrades / improvements –** Certain facility upgrades were suggested for this region. First, it was suggested a permanent slalom course could be developed at one of the sites. In addition, facility upgrades were suggested at Bear Lake to address population growth in the area. This includes increasing the number of places to dump human waste from the boat. Additional operational funds would be needed to maintain these facilities. Concessionaires could provide some opportunities.

- **Increase staffing and cooperation with other resource agencies –** Additional law enforcement is needed in this region. Also cross training officers in boating and wildlife law enforcement should be considered. Also, the creation of a DNR law enforcement division could be explored.
- **Require fueling on shore –** Fueling a boat on the water increases the probability of on-water fuel spills. It was suggested to encourage or require fueling on-shore.
- **Consider differential pricing –** Increasing weekend or decreasing weekday fees could be a tool to manage use during peak periods.

3.2.5 Central Utah

Central Utah has smaller towns along with water bodies that receive less use, in general, compared to other regions. The region provides a wide array of water-based recreation opportunities from small electric motor only facilities, such as Palisade State Park to large higher elevation facilities such as Scofield State Park and Fish Lake State Park. Angling opportunities are abundant, while some parks, such as Escalante, experience international visitation. In this region, much of the water in the reservoirs is targeted for irrigation, which is used primarily in the summer. This can lead to conflicts as the water may be drawn down, negatively impacting boaters and facilities, such as the boat ramps that may become unusable.

Parks / water bodies represented at Meeting:

- Palisade State Park
- Escalante State Park
- Otter Creek State Park
- Piute State Park
- Scofield State Park
- Huntington State Park
- Fish Lake (U.S. Forest Service)
- Piute State Park

The following is a list of issues and topics discussed at the meeting:

- **Impacts from irrigational water uses impacts water level –** Demands for irrigation water during the summer may lower the reservoir to a point where boating is impacted. This is especially pronounced in drought years.
- **Competition w/ private providers –** Developing on-site concessions can be tricky in this region. Private providers of fishing and boating equipment in this region may view this as unfair competition.
- **Non-motorized vs. motorized use conflict –** Conflict between non-motorized and motorized boaters was cited as a concern in this region.
- **Providing non-motorized opportunities may be less cost effective** – Providing access for non-motorized opportunities is difficult as funding is not as accessible as it is for motorized opportunities. Motorized opportunities can be funded by fuel taxes, among other funding mechanisms.

- **Users without registration appear to use less-patrolled water bodies –** Patrols at some non-state park sites appear to have a higher proportion of users who do not have boater registration. It seems obvious these individuals are trying to avoid enforcement and subsequent fines.

The following were management recommendations provided by meeting attendees:

- **Working with concessionaires –** Provide clear direction on developing revenue generators and working with concessionaires. Guidelines should consider issue of public-private competition and impact to local businesses.
- **Collaborate with irrigation agencies on projects of mutual interest** - Consider purchasing water shares to increase the amount of water available for recreational use. Collaborating on silt control and removal projects could also be considered.

3.2.6 Lake Powell

Lake Powell is not a region per se; it is an extremely large reservoir with visitors from all around the world. The National Park Service manages the area as Glen Canyon National Recreation Area. Utah State Parks is charged with enforcing the boating laws on the 95% of the reservoir that lies in Utah. Utah State Parks maintains staff in both the Wahweap and Bullfrog areas adjacent to the reservoir. As a note, the access at Hite has been inaccessible due to low water levels over the past few years. This water body provides world-class boating opportunities, but the future management of the Colorado River creates much uncertainty, as western states continue to tap the water for a variety of uses.

Parks / water bodies represented at Meeting:

- Lake Powell (NPS / Utah State Parks)

The following is a list of issues and topics discussed at the meeting:

- **Bullfrog / Wahweap are two major access points for boating use –** Wahweap and Bullfrog are the two major developed recreation areas on Lake Powell. State Park staff with enforcement duties are at both of these sites.
- **Working and collaborating with the National Park Service (NPS) –** The NPS manages the recreation use areas at Lake Powell. It is important to understand the NPS role and position when planning at Lake Powell.
- **Importance of tourism (especially to Page, AZ) –** Lake Powell brings in a significant amount of tourists. Tourism is a major component of the economy in the area, especially in Page, Arizona. Tourists visit Lake Powell from all over the world.
- **Lower water levels have decreased visitation –** The recent drought in the West has resulted in low water levels at Lake Powell. Subsequently, the number of visitors has decreased
- **Lots of solitude –** Opportunities for solitude abound at Lake Powell, where boaters can access remote side canyons and have the possibility of not encountering other users.
- **Law enforcement coverage on large water body –** Covering and responding to distress calls on such a large water body is a challenge.

The following were management recommendations provided by meeting attendees:

- **Expand education programs** – Education programs could further expand through additional safety fairs, trainings, and signage.

3.2.7 Summary of Regional Meetings

Population growth is an important issue throughout the state, but it is especially pronounced along the I-15 corridor. It is also apparent some regions (Wasatch Front and Back, and the Southwest) generally have water bodies that receive more use and have more recreation use issues. It is also apparent opportunities for solitude are not well distributed throughout the state; some regions have many opportunities while many residents may have to drive a couple of hours. Even though many state parks are rather busy in the summer (especially on the weekends), there are opportunities for relative quiet at many parks and at most parks (at least for some part of the year). Overall, however, the state's large water bodies (Lake Powell and Flaming Gorge, along with Lake Mead in Nevada) offer unique boating opportunities with many side canyons and inlets that provide solitude. Issues with appropriate staffing levels and funding were also discussed; this was paired with the challenge of balancing tasks that could be addressed by specialists compared to generalists.

3.3 Survey of Registered Boaters

Telephone interviews were conducted with a random sample of registered boaters. These results are based on 397 (~60% response) completed interviews. The first part (3.3.1 Demographic Characteristics) provides information about boat owners' demographics including age and income. The second section (3.3.2 Boating Practices) provides information about boat owners' behavior, such as the lakes they visited and the activities in which they participated. The third section (3.3.3 Boater Attitudes) provides information about boat owner attitudes toward management issues. The last section (3.3.4) provides comparisons between registered boaters who live a long the Wasatch Front with those that live in the rest of the state.

3.3.1 Demographic Characteristics

Respondents were asked three personal demographic questions at the end of the survey: age, annual household income, and educational attainment. Ages ranged from 18 to 85 years; the mean age was 53.7, the median was 53, and the modal category (26.5%) was between 40- 49 years old (Table 3-16). Regarding annual household income, the modal category (26.0%) was between $45,000 and $65,000 per year; ninety-five percent of the respondents made more than $25,000 per year, and only 3.6% of those surveyed earned less then $20,000 annually. Twenty-four percent of the respondents made more that $105,000 while about 6% made more than $200,000. Finally, ninety-eight percent of those interviewed have at least a high school diploma or GED. The majority (73.1%) have completed at least some college or vocational school. Thirty-three percent have a college degree and 15.5% said they have either done some graduate work or have received their graduate degree.

Table 3-16 Boater demographics

Characteristic		Percentage (n)
Age (n = 395) *(Mean = 53.7) (Median = 53)*	**18 – 29 years old**	3.0% (12)
	30 – 39	10.9% (43)
	40 – 49	26.5% (105)
	50 – 59	24.6% (97)
	60 – 69	20.2% (80)
	70 and older (84)	14.6% (58)
Income: (n = 340) Median: $65,000-$85,000	**< $25,000**	5.3% (18)
	$25,000-45,000	13.2% (45)
	$45,000-65,000	26.0% (77)
	$65,000-85,000	22.6% (66)
	$85,000-105,000	15.6% (53)
	$105,000-125,000	6.2% (21)
	$125,000-150,000	6.5% (22)
	$150,000-200,000	5.8% (19)
	> $200,000	5.8% (19)
Education: (n = 392)	**8th grade or less**	0.3% (1)
	Some High School	1.3% (5)
	HS Graduate or GED	25.3% (99)
	Some College or Vocational School	27.0% (106)
	Associates, Technical or Vocational Degree	3.1% (12)
	Bachelor's/4 Year College Degree	27.6% (108)
	Some Graduate Courses	1.5% (6)
	Graduate / Professional Degree	14.0% (55)

The other demographic questions on the survey related to household characteristics: the total number of people and number of minors in each household, and the number of boat operators per household. The majority (56.2%) of respondents live with three or more people in their households, 43.8% live with two or fewer people, and 23% said they have five or more people in their households (Table 3-17). The mean is 3.4 people per household and the range is between one and eleven people in a household.

Over two-thirds of those surveyed (71.7%) have one or no minors living in their household. The range is from one to six minors per household. The mean is 1.0 minor per household, and only 14.4% said they have more then three minors in their household. Over two-thirds of those surveyed (70.0%) have one or two people in the household that operate boats and 17.4% said they have four or more boat operators in their household. The range of answers is from one to nine people in the household that operate boats and the mean is 2.3 people operating boats per household.

Table 3-17 Boater household characteristics

Characteristic		Percentage (n)
Number of people in household (n=395) (Mean = 3.4)	**1**	2.5% (10)
	2	41.3% (164)
	3	15.9% (63)
	4	17.5% (69)
	5	9.4% (37)
	6 or more	13.2% (52)
Minors in household (n=382) (Mean = 1.0)	**0**	56.5% (216)
	1	15.2% (58)
	2	13.9% (53)
	3	6.0% (23)
	4 or more	8.4% (32)
Number of people in household who operate boats (n=397) (Mean = 2.3)	**1**	31.7% (126)
	2	38.3% (152)
	3	12.6% (50)
	4	11.1% (44)
	5 or more	6.3% (25)

3.3.2 Boating Practices

This section describes respondents' boating related behaviors, such as the number and types of boats they own, use history, and boating and trip related activities in 2006. Respondents were also asked about their most and least favorite water body.

About three-quarters of the registered boat owners in Utah own one boat, while less than eight percent own more than two boats (Table 3-18). Overall, the 397 respondents owned 562

boats; the majority of those boats were open motorboats (68.0%). A little less than 10% of the boats owned were PWCs; about 7% of the boats were either kayaks, canoes or sailboats.

Table 3-18 Registered boats in Utah.

Characteristic		Percentage (n)
Number of boats owned by respondent (n = 397) (mean = 1.4)	**1 boat**	75.3% (299)
	2 boats	17.4% (69)
	3 or more boats	7.3% (29)
Types of boats (n=562)	**Open motorboat**	68.0% (382)
	Personal watercraft	9.4% (53)
	Cabin motorboat	6.8% (38)
	Kayak / Row Boat	4.3% (24)
	Sailboat	3.0% (17)
	Other boats	8.5% (48)

The majority of boat owners have operated boats for 10 years or more. The average number of years experience operating a boat was about 18 years with a median of 16 (Table 3-19). About one-third of the respondents have more than 25 years experience operating a boat. Interestingly, about 14% of the respondents did not take a boating trip in 2006, while about five percent of the respondents went more than 30 times. The average number of boating trips was about nine for the year. Respondents were asked how long their typical trip would be; a little less than half of the respondents stated their typical trip was about one day. About 12 percent of the respondents stated their typical trip was more than 10 days long.

Table 3-20 shows both the percentage of respondents who visited various water bodies in 2006. The results do not include respondents who stated they did not visit Utah water bodies in 2006. Twenty-nine percent (n=99) said they visited Lake Powell in the past 12 months and they averaged nearly three visits (2.8). After Lake Powell, the four most commonly visited water bodies were Strawberry Reservoir, Willard Bay, Jordanelle, and Bear Lake that were all visited by more than 15% of the respondents.

Table 3-19 Boat operator history and use

Characteristics		Percentage (n)
Years operating a boat (n = 397) ***(Mean = 18.4)*** ***(Median = 16)***	**0 to 5 years**	17.6% (60)
	6 to 10 years	14.4% (57)
	11 to 15 years	11.8% (47)
	16 to 20 years	15.6% (62)
	21to 25 years	6.0% (24)
	26 to 30 year	12.1% (48)
	31 to 35 years	4.3% (17)
	36 to 40 year	9.6% (38)
	> 40 years	8.6% (34)
Boat outings in the last 12 months (n = 396) ***(Mean = 8.8)*** ***(Median = 6)***	**0 – Did not go boating**	14.1% (56)
	1 to 3	22.7% (90)
	4 to 6	19.2% (76)
	7 to 10	15.9% (63)
	11 to 15	12.4% (49)
	16 to 20	7.6% (30)
	21-30	5.8% (23)
	More than 30	2.2% (9)
Typical length of boat outing (n=341) ***(Mean = 5.1)*** ***(Median = 2)***	**l day or less**	46.0% (157)
	2 days	11.4% (39)
	3 days	13.2% (45)
	4 days	3.8% (13)
	5-10 days	13.8% (47)
	More than 10	11.7% (40)

Participants were also asked what activities they engage in while boating. Fifty-seven percent said they either always or often go fishing from their boat, and 50% said they always or often water-ski, tube, or knee-board (Table 3-21). About one-quarter of the respondents stated they always wakeboard. Most of the registered boaters (about 94%) say that they never or rarely sail. And similarly, about 92% state they never or rarely canoe or kayak.

Table 3-20 Lake and reservoir visits

Boating Areas	Boaters using lake or reservoir (past 12 months) (n=341)
Lake Powell	29.0% (99)
Strawberry	19.9% (68)
Willard Bay	19.6% (67)
Jordanelle	17.6% (60)
Bear Lake	17.6% (60)
Utah Lake	16.7% (57)
Pineview	13.5% (46)
Flaming Gorge	12.0% (41)
Scofield	6.7% (23)
Deer Creek	6.7% (23)
Rockport	5.3% (18)
Sand Hollow	4.7% (16)
Hyrum	3.5% (12)
East Canyon	3.2% (11)
Quail Creek	2.6% (9)
Fish Lake	2.6% (9)
Echo	2.3% (8)
Piute	1.8% (6)
Starvation	1.8% (6)
Yuba	1.5% (5)
Current Creek	1.5% (5)
Otter Creek	1.5% (5)
Mantua	1.5% (5)
All Others	15.0% (51)

Table 3-21 Activity participation at Utah water bodies

Activity	No/Never	Rarely	Sometimes	Often	Always
Water-ski, tube, or knee board (n = 397)	30.0% (*119*)	7.8% *(31)*	12.6% *(50)*	15.4% *(61)*	34.3% *(136)*
Wakeboard (n = 397)	48.1% (*191*)	10.6% *(42)*	10.6% *(42)*	7.3% *(29)*	23.4% *(93)*
Swim from a boat (n = 397)	21.9% *(87)*	10.8% *(43)*	19.4% *(77)*	15.1% *(60)*	32.7% *(130)*
Sail (n = 397)	89.2% *(354)*	5.0% *(20)*	3.5% *(14)*	0.8% *(3)*	1.5% *(6)*
Go sightseeing on the lake (n = 397)	11.6% *(46)*	11.1% *(44)*	32.5% *(129)*	20.9% *(83)*	23.9% *(95)*
Canoe or kayak (n = 397)	72.0% *(286)*	10.3% *(41)*	13.1% *(52)*	4.0% *(16)*	0.5% *(2)*
Fish from a boat (n = 397)	15.1% *(60)*	8.8% *(35)*	19.1% *(76)*	18.6% *(74)*	38.3% *(152)*
Just drive the boat around for fun (n = 397)	13.6% (54)	10.8% (43)	28.7% (114)	20.9% (83)	25.9% (103)

Table 3-22 Primary activity at Utah water bodies

Primary Activity	Percent (n) (n = 397)
Fish from a boat	43.8% (174)
Water-ski, tube, or knee board	23.7% (94)
Wakeboard	11.1% (44)
Go sightseeing on the lake	8.3% (33)
Just drive the boat around for fun	7.8% (31)
Swim from a boat	3.3% (13)
Sail	1.8% (7)
Canoe or kayak	0.3% (1)

Boat owners were asked what their primary activity was while at Utah water bodies (Table 3-22). The largest percentage (43.8%) of respondents cited "fishing from the boat," while 23.7% stated waterskiing, tubing, or kneeboarding. The relatively new activity of wakeboarding was cited by about 11% of the respondents. Sightseeing and driving the boat around for fun, collectively, were cited by about 16% of the respondents. Few respondents cited non-motorized activities as their primary activity (It should be noted that most non-motorized craft do not need to be registered, so many owners of these craft were likely not included in the survey).

In general, large water bodies are Utah boaters' favorite lakes (Table 3-23). Lake Powell was mentioned by 28.2% of the respondents, while there was a tie for the second favorite with 11.8% mentioning Strawberry Reservoir and Bear Lake. Scenic beauty was the most common reason Lake Powell and Bear Lake were mentioned, while those who stated Strawberry Reservoir and Flaming Gorge cited fishing. Less than 6% cited either Jordanelle, Willard Bay, or Pineview – the top reason these areas were mentioned was their proximity to people's homes.

Table 3-23 Favorite boating area

Boating Area	Percent (n) (n = 397)	Most Common Reason Why Favorite
Lake Powell	28.2% (112)	Scenic Beauty
Strawberry Reservoir	11.8% (47)	Fishing
Bear Lake	11.8% (47)	Scenic Beauty
Flaming Gorge	8.6% (34)	Fishing
Jordanelle	5.5% (22)	Proximity to Home
Willard Bay	4.0% (16)	Proximity to Home
Pineview	3.3% (13)	Proximity to Home
Scofield	3.3% (13)	Fishing
Other	23.5% (93)	-

Respondents were also asked for their least favorite boating areas, and many respondents (19.6%) stated they did not have a least favorite (Table 3-24). Utah Lake was cited by 21.4% of the respondents with many perceiving the lake as dirty or polluted. About 12% of the respondents indicated Willard Bay (too many bugs), and of those who mentioned Pineview, Deer Creek, and Jordanelle, most felt these were too crowded.

Boat owners were also asked what was their favorite state park – this question is different than their favorite water body as respondents were limited to water bodies managed as state parks. Bear Lake was cited by about one-fifth of the respondents, and over 10% cited Jordanelle and Willard Bay (Table 3-25).

Table 3-24 Least favorite boating area

Boating Area	Percent (n) (n = 397)	Most Common Reason Why Least Favorite
Utah Lake	21.4% (85)	Dirty / Polluted
No Least Favorite	19.6% (78)	-
Willard Bay	11.8% (47)	Too many bugs
Pineview	10.1% (40)	Crowded
Deer Creek	4.7% (19)	Crowded
Jordanelle	4.0% (16)	Crowded
Other Lakes / Reservoirs	28.2% (112)	-

Table 3-25 Favorite state park

State Park	Percent (n) (n = 397)
Bear Lake	20.9% (83)
Jordanelle	12.6% (50)
Willard Bay	11.1% (44)
Utah Lake	8.1% (32)
Deer Creek	7.6% (30)
Scofield	6.0% (24)
Yuba	4.5% (18)
East Canyon	4.0% (16)
Starvation	3.8% (15)
Other State Parks	21.4% (85)

3.3.3 Boater Attitudes

This section reports on questions dealing with boaters' attitudes toward issues such as where to spend registration funds, boating safety and education, PWCs, use limits, potential problems that occur on lakes, and potential management actions.

First, respondents given a list of possible ways boater registration funds could be spent and then asked if each was not important, slightly important, moderately important, or very important. Approximately 90% said restrooms and launching facilities are moderately or very

important (Table 3-26). Alternatively, a relatively large portion (over 40%) of respondents said each of the following were not important expenditures for registration funds: pump-out facilities, non-motorized boating facilities, and printed facility guides.

Regarding boating safety information, the most *common* sources of information were experience/common sense (23.9%), pamphlets (18.4%), and a course or class (14.9%) (Table 3-27), and their most *recent* sources of information were a pamphlet or handout (26.7%), and television (13.1%) (Table 3-28). Over 20% of the respondents had not recently heard or seen any form of boating safety information. It is interesting to note that the internet was not among the nine most mentioned *recent* sources of information.

Table 3-26 Registered boater preference for use of boater registration funds

Possible use of funds	Not Important	Slightly Important	Moderately Important	Very Important	Mean[1]
Launching facilities (n = 397)	6.0% *(24)*	3.5% *(14)*	19.4% *(77)*	71.0% *(282)*	3.6
Restrooms (n = 397)	5.0% *(17)*	5.2% *(18)*	27.1% *(93)*	62.7% *(215)*	3.4
Parking (n = 397)	6.8% *(27)*	7.1% *(28)*	36.8% *(146)*	49.4% *(196)*	3.3
Picnic areas and campsites (n = 397)	9.8% *(39)*	6.0% *(24)*	34.0% *(135)*	50.1% *(199)*	3.2
Law enforcement (n = 397)	5.2% *(18)*	9.3% *(32)*	35.3% *(121)*	50.1% *(172)*	3.1
Safety patrols (n = 397)	13.4% *(53)*	5.5% *(22)*	39.0% *(155)*	42.1% *(167)*	3.1
Boating education programs (n = 397)	12.3% *(49)*	9.8% *(39)*	34.0% *(135)*	50.1% *(199)*	3.0
Pump-out facilities (n = 397)	46.1% *(183)*	8.6% *(34)*	23.9% *(95)*	21.4% *(85)*	2.2
Non-motorized boating facilities (n = 397)	40.8% *(162)*	14.4% *(57)*	30.7% *(122)*	14.1% *(56)*	2.2
Printed facility guides (n = 397)	48.9% *(194)*	13.6% *(54)*	30.5% *(121)*	7.1% *(28)*	2.0

[1] Mean based on a scale where 1= Not important, 2= Slightly important, 3= Moderately important, and 4= Very Important.

Table 3-27 Primary source of boater safety information

Source	Primary source of boating safety knowledge (n = 397)
Experience/Common Sense	23.9% (95)
Pamphlet/Handout	18.4% (73)
Course/Class	14.9% (59)
Parents/Family	14.6% (58)
Book	8.8% (35)
Friends	8.6% (34)
Internet	3.0% (12)
Park Ranger	2.3% (9)
Other Source	5.5% (22)

Table 3-28 Most recent source of boating safety information

Source	Most recent source of safety information (n = 397)
Pamphlet/Handout	26.7% (106)
Have not recently heard or seen	22.1% (88)
TV	13.1% (52)
Park Ranger	6.3% (25)
At Park / Lake / Reservoir	4.5% (18)
Billboard	4.3% (17)
Boat Shows	3.3% (13)
Newspaper / Magazine	3.3% (13)
Course/Class	3.0% (12)
Other Source	13.4% (53)

Participants were asked a series of questions dealing with their attitudes toward boating education courses (Tables 3-29 and 3-30). While barely one-fifth said they had completed a

boating education course, close to 90% either somewhat or strongly agreed these courses were important. A smaller percentage (56.9%) agreed these courses should be mandatory, while still a smaller percentage (45.1%) agreed a license should be required to operate a boat.

Table 3-29 Percent of registered boaters who have completed a boater education course

	Yes	No
Have you completed a boater education course?* (n=397)	21.2% (84)	78.3% (311)
*2 (0.5%) respondents stated that they did not know		

Table 3-30 Boater education and licensing

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Mean[1]
Boater education courses are important* (n = 397)	58.2% (231)	30.7% (122)	7.6% (30)	2.0% (8)	1.0% (4)	4.4
Boater education courses should be mandatory (n = 397)**	30.7% (122)	26.2% (104)	10.8% (43)	17.1% (68)	14.9% (59)	3.4
All boat operators should be licensed to operate a boat* (n = 397)**	21.9% (87)	23.2% (92)	8.3% (33)	17.4% (69)	28.5% (113)	2.9

[1] Mean is based on Strongly Agree=5, Somewhat Agree = 4, Neutral=3, Somewhat Disagree = 2, and Strongly Disagree = 1.
* 2 respondents stated that they did not know
** 1 respondents stated that they did not know
*** 3 respondents stated that they did not know

PWC use is generally supported on Utah water bodies, as over 70% of the respondents indicated they support their use. In fact, half of the respondents strongly support their use (Table 3-31). Only 8.8% stated they strongly disagree with PWC use on Utah water bodies.

The 60 people who said they somewhat or strongly disagreed with PWC use on Utah lakes where also asked why they felt that way. Safety and fishing impacts were cited most often (Table 3-32). Comparing responses of those who own PWCs and those who do not, it is not surprising to find a far greater proportion of PWC owners (61.9% compared to 30.3%) feel PWCs should not be regulated differently than other boats (Table 3-33). Chi square analysis (a common statistical used in the social sciences) was used to assess if the differences were statistical significant.

Table 3-31 Support for use of personal watercraft in Utah

Response	Support for PWC use in Utah Percentage (n) (n = 397)
Strongly Agree	50.1% (199)
Somewhat Agree	21.4% (85)
Neutral	12.8% (51)
Somewhat Disagree	6.3% (25)
Strongly Disagree	8.8% (35)
Don't know	0.5% (2)

The 239 individuals who stated PWC use should be regulated differently than other boats where also asked how they felt they should be regulated. The four most common responses are listed in Table 3-34; 80 said a special license or course should be required and 34 respondents cited either a minimum age or requiring youth to ride with an adult. Another 34 respondents stated PWC use should be limited as to where these can go on the water, and 23 felt they should have to stay a certain distance away from other boats.

Table 3-32 Reasons PWC should not be allowed in Utah

Reason PWC should not be allowed on Utah lakes	Number of responses (n=60)
Safety / Too dangerous	28.3% (17)
Bad for fishing	20.0% (12)
Unqualified operators	13.3% (8)
They operate too close to other boats	10.0% (6)
Impolite / too loud	10.0% (6)
Other responses	18.3% (11)

To investigate perceptions of conflict, respondents were asked if other users detracted from their enjoyment while boating. Two-thirds (66.0%) responded "yes" and 20.4% said "possibly" (Table 3-35). These 343 respondents were then asked how frequently this occurred, and over half (63.2%) said that it occurred "rarely" or "infrequently," and only 11.7% (or 10.1% of the entire sample) said the actions of others "often" or "very often" detracted from their boating enjoyment.

Table 3-33 Registered boaters who believe PWC should be regulated differently

"Do you believe personal water craft should be regulated differently than other boats?"	Yes	No	Don't Know
Entire sample (n = 397)	60.2% (239)	36.3% (144)	3.5% (14)
PWC owners (n=42) [1]	38.1% (16)	61.9% (26)	0
Non-owners (n = 355) [1]	64.6% (223)	30.3% (118)	4.1% (14)

[1]Chi square = 11.87, p # 0.001

Table 3-34 How PWC should be regulated differently

How PWC should be regulated differently?	Number of Responses N=239
Require License or Course	33.4% (80)
Age restriction / Require riding with adult	14.2% (34)
Limit where they can go on the water	14.2% (34)
Enforce Proximity to other boats	9.6% (23)
Other	28.5% (68)

Table 3-35 Conflict at Utah Water Bodies

Do other lake users detract from your enjoyment while boating in Utah? (n = 397)	Percentage (n)
Yes	66.0% (262)
Possibly	20.4% (81)
No	13.6% (54)
If "yes" or "possibly" (n= 343), then:	
Frequency of reduced enjoyment:	**Percentage (n)**
Rarely (on some outings, but not every outing)	43.4% (149)
Infrequently (1 per outing)	19.8% (68)
Sometimes (2-3 times per outing)	25.1% (86)
Often (4-5 times per outing)	8.2% (28)
Very Often (5+ times per outing)	3.5% (12)

PWC activity (n=105), others boating too close (n=72), and reckless and speeding boaters (n=43) were the three most frequently cited behaviors (Table 3-36). Conflict perceptions were somewhat higher for respondents who primarily fish from a boat, especially compared to those who primarily wakeboard, water ski, tube, or kneeboard (Table 3-37).

Table 3-36 Aspects leading to conflict

How others detracted from respondents experience	Number of Responses n=343
PWC activity	30.6% (105)
Others boating too close	20.9% (72)
Reckless / Speeding	12.5% (43)
Lack of Respect or Courtesy	12.2% (42)
Drinking	8.7% (30)
Other Comment	14.9% (51)

Table 3-37 Conflict at Utah water bodies by primary activity

Do other lake users detract from your enjoyment while boating in Utah?	Primary Activity		
	Fishing from boat (n=174)	Wakeboarding (n=44)	Water-ski, tube, and knee board (n=94)
Yes	71%	64%	65%
Possibly	15%	25%	23%
No	14%	11%	13%

The next questions dealt with respondents' attitudes toward limits on the number of watercraft on lakes. Respondents were asked if there is a need to put a limit on the number of boats that can use Utah lakes at one time. Sixty-five percent said definitely yes or probably yes, and 29.7% said definitely or probably no (Table 3-38). If respondents stated use limits were necessary (n=258), they were asked why and where these were needed. By far, safety reasons were most cited, followed by crowding, congestion, and too many boats. Some respondents mentioned that smaller water bodies necessitate use limits (Table 3-39). Pineview Reservoir was cited the most often by 34.1% of those who stated use limits were needed, and it currently does have a use limit. About one-quarter stated Jordanelle could set use limits while Deer Creek was mentioned by 18.2%. Willard Bay, Quail Creek, East Canyon, Sand Hollow, and Hyrum were cited by at least three percent of those who stated use limits were necessary (Table 3-40). Note: For this question, respondents could list up to six lakes or reservoirs.

Table 3-38 Use limits at Utah water bodies

Is there a need to put a limit on the number of boats that use a lake at one time?	Percentage (n) (n=397)
Definitely yes	29.5% (117)
Probably yes	35.5% (141)
Probably no	17.4% (69)
Definitely no	12.3% (49)
Don't know	5.3% (21)

Table 3-39 Reasons registered boaters support use limits

Why use limits are necessary	Percentage (n) (n=258)
Safety Reasons	41.1% (106)
Crowding / Congestion / Too many boats	32.2% (83)
Necessary on small water bodies	14.7% (38)
Other comments	12.0% (31)

Table 3-40 Reservoirs where registered boaters support use limits*

Reservoir	Percentage (n) (n=258)
Pineview	34.1% (88)
Jordanelle	24.8% (64)
Deer Creek	18.2% (47)
Willard Bay	9.3% (24)
Quail Creek	5.8% (15)
East Canyon	5.0% (13)
*Respondents could list up to six water bodies	

Respondents who mentioned use limits were needed were then asked why these were needed at that particular site, and where they would go instead if they were not able to get onto the lake or reservoir because of use limits. Table 3-41 lists what users would do if they were not able to get on to the first lake or reservoir they stated needed use limits due to use restrictions.

Most respondents (59.7%) stated they would go to another water body, while about 15 percent would do something totally different.

Table 3-41 User displacement at Utah water bodies

If you were not able to get on the lake or reservoir due to restrictions, what would you do? (n = 397)	Percentage (n)
Go somewhere else	59.7% (154)
Do something totally different	15.5% (40)
Wait for an opening at the same site	12.8% (33)
Unsure	12.0% (31)

Respondents were asked to rate potential boating problems at Utah lakes and reservoirs (Table 3-42). A list of items was provided and users stated whether they thought the item was "not a problem," a "small problem," a "moderate problem," or a "major problem." The questions are organized from the highest to lowest mean, with not a problem equal to one and a major problem equal to a four. About 80% cited reckless PWC operators and about 55% cited reckless motorboat operators as moderate or major problems. Crowding at launch ramps and parking areas was cited as a major or moderate problem more often than "too many boats on the water." With the exception of "fluctuating water levels," almost half of the sample or more cited all potential problems as moderate or major problems.

Respondents were asked how they felt about various potential management actions at their favorite state park (Table 3-43). Limiting PWC to certain portions of the water had the highest proportion (36.3%) of respondents strongly agreeing. Almost one-half (48.9%) strongly disagreed with liming motorized activity during two weekdays and limiting motorized use early in the morning and in the evening. Respondents favor expanding the boat ramp to increase ramp capacity (over 50% strongly or somewhat agree) compared to expanding parking lots (about 40% strongly or somewhat agreeing). About 40% agree with increasing law enforcement, while about 60% disagree with decreasing law enforcement patrols. Over one-third support increasing fees to improve infrastructure, while about half support use limitations on heavy use days.

Table 3-42 Registered boater perception on problems at Utah water bodies

Boating Problem	Not a problem	Small problem	Moderate problem	Major problem	Mean[1]
Reckless personal watercraft operators? (n = 397)	7.1% *(28)*	13.6% *(54)*	40.3% *(160)*	39.0% *(155)*	3.1
Crowding at launch ramps & parking areas? (n = 397)	14.9% *(59)*	20.7% *(82)*	40.3% *(160)*	24.2% *(96)*	2.7
Reckless motorboat operators? (n = 397)	13.1% *(52)*	31.2% *(124)*	37.5% *(143)*	18.1% *(72)*	2.5
Drug or alcohol abuse by boaters? (n = 397)	20.4% *(81)*	28.2% *(112)*	36.0% *(143)*	15.4% *(61)*	2.5
Too many boats on the water at one time? (n = 397)	21.4% *(85)*	24.9% *(99)*	37.8% *(150)*	15.9% *(63)*	2.5
Safety problems on the water? (n = 397)	15.6% *(51)*	27.5% *(90)*	45.0% *(147)*	11.9% *(39)*	2.4
Fluctuating water levels? (n = 397)	29.7% *(118)*	22.4% *(89)*	32.7% *(130)*	15.1% *(60)*	2.3
Crowding at beaches and facilities? (n = 397)	31.5% *(125)*	18.9% *(75)*	38.5% *(153)*	11.1% *(44)*	2.3

[1] Mean is based on a scale where 1 = Not a problem, 2 = Small problem, 3 = Moderate problem, and 4 = Major problem.

Data is provided below regarding state parks that were mentioned as a favorite by more than 30 of the respondents. Table 3-44 shows the means for boaters views of appropriate management actions at five Utah State Parks; results for these five parks are provided as 30 or more respondents cited it as a favorite state park. The results provide insight into the users' view of appropriate management actions at specific water bodies. In general, there is some variability between parks; the results are listed in rank order based on the statewide results to the questions. Respondents whose favorite state park is Deer Creek appear less willing to accept PWC use limitations while respondents who cited Bear Lake as their favorite see less of a need to limit use on heavy use days. Support for increasing fees and expanding the parking lot appears stronger at Bear Lake compared to the other parks. See the Appendix for more detailed results of boaters view towards management actions at Bear Lake, Jordanelle, Willard Bay, Utah Lake, and Deer Creek State Parks.

Table 3-43 Registered boater view of potential management actions at Utah water bodies

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Mean
Increase number of boater education programs (n = 397)	22.2% *(88)*	32.7% *(130)*	23.4% *(93)*	13.6% *(54)*	8.1% *(32)*	3.5
Expand the boat ramp to increase the number of boats that could be launched at one time (n = 397)	26.2% (104)	27.0% *(107)*	15.9% *(63)*	17.4% *(69)*	13.6% *(54)*	3.4
Limit PWC to certain areas on the water (n = 397)	36.3% (144)	19.6% *(78)*	12.1% *(48)*	14.1% *(56)*	17.9% *(71)*	3.4
Reduce the number of boats allowed on the water on some of the heavier use days (n = 397)	22.7% (90)	28.7% *(114)*	14.1% *(56)*	14.9% *(59)*	19.6% *(78)*	3.2
Separate motor boats from PWC (n = 397)	27.5% (109)	17.6% *(70)*	13.4% *(53)*	18.9% *(75)*	22.7% *(90)*	3.1
Expand parking lot to allow more boats on the water (n = 397)	17.6% *(70)*	22.7% *(90)*	18.4% *(73)*	24.2% *(96)*	17.1% *(68)*	3.0
Increase the number of law enforcement patrols on water (n = 397)	15.9% (63)	25.2% *(100)*	23.2% *(92)*	16.4% *(65)*	19.4% *(77)*	3.0
Add additional or create no wake zones (n = 397)	21.4% (85)	19.6% (78)	19.6% (78)	17.9% (71)	21.4% (85)	3.0
Increase fees to improve infrastructure (n = 397)	11.1% *(44)*	26.4% *(105)*	13.9% *(55)*	16.1% *(64)*	32.5% *(129)*	2.7
Decrease the number of law enforcement patrols on water (n = 397)	7.6% (30)	4.8% *(19)*	27.5% *(109)*	25.2% *(100)*	35.0% *(139)*	2.3
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening (n = 397)	15.1% (60)	8.3% (33)	9.8% (39)	19.1% (76)	47.6% (189)	2.2
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week (n = 397)	9.8% (39)	12.1% (48)	9.6% (38)	19.6% (78)	48.9% (194)	2.1

[1] Mean is based on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree.

Table 3-44 Attitudes towards potential management actions by state park

Potential Management Action	Bear Lake (n=83)	Jordanelle (n=50)	Willard Bay (n=44)	Utah Lake (n=32)	Deer Creek (n=30)
Increase number of boater education programs	3.5	3.7	3.9	3.3	3.5
Expand the boat ramp to increase the number of boats that could be launched at one time	3.7	3.3	3.3	3.6	3.1
Limit PWC to certain areas on the water	3.8	3.8	3.9	3.6	2.9
Reduce the number of boats allowed on the water on some of the heavier use days	2.7	3.7	3.6	3.0	3.4
Separate motor boats from PWC	2.6	3.4	3.3	3.3	2.8
Expand parking lot to allow more boats on the water	3.6	2.6	2.5	3.4	2.8
Increase the number of law enforcement patrols on water	3.1	3.0	3.2	3.1	2.6
Add additional or create no wake zones	2.9	3.1	3.0	2.6	2.7
Increase fees to improve infrastructure	3.2	2.5	2.3	2.7	2.1
Decrease the number of law enforcement patrols on water	2.3	2.2	2.2	2.2	2.2
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	1.7	2.1	2.5	1.6	2.3
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	1.7	2.4	2.2	1.7	2.2

[1] Mean is based on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree.

3.3.4 Comparison of Wasatch Front and Rest of State

Analysis was conducted to compare two subgroups of respondents: residents of the Wasatch Front and those in the rest of the state. The first group includes residents of Salt Lake, Davis, Utah, and Weber counties (n = 276), the other group consists of residents in the rest of the counties (n = 114). Seven respondents were not from Utah and were omitted from this analysis. The results presented below include only those where there were statistically significant

differences between the two groups. This comparison focused on attitudinal questions. Two of the possible uses of boater registration funds were found to be more important to Wasatch Front boaters (law enforcement, and safety patrols) compared to boaters in the rest of the state. (Table 3-45). Both items are related to safety on the water and indicates that safety problems may be a bigger issue in this region.

Table 3-45 Registered boater preference for use of boater registration funds by region

Possible use of funds	Percent Stating Moderately Or Very Important	
	Wasatch Front (n-276)	Rest of State (n=114)
Law enforcement[1]	83.7%	72.0%
Safety patrols[2]	85.9%	71.9%

[1]Chi square = 21.80, $p = 0.001$
[2]Chi square = 12.98, $p = 0.005$

Table 3-46 lists the proportion of respondents who strongly agreed with the statements listed in the table. In general, support for boater education and licensing was stronger in the Wasatch Front region compared to other parts of the state. Interestingly, a larger proportion of respondents outside of the Wasatch Front cited crowding as a moderate or major problem (Table 3-47). In fact, crowding at developed facilities and too many boats on the water were cited as a problem by a higher proportion of users outside of the Wasatch Front.

Table 3-46 Boater education, licensing and PWC use by region

	Percent Stating Strongly Agree	
	Wasatch Front (n-276)	Rest of State (n=114)
Boater education courses are important[1]	62.7%	48.2%
Boater education courses should be mandatory[2]	33.7%	24.6%

[1]Chi square = 13.03, $p = 0.023$
[2]Chi square = 11.90, $p = 0.036$

Table 3-47 Registered boater perception of boating problems by region

Boating Problem	Percent stating Moderate Or Major problem	
	Wasatch Front (n-276)	Rest of State (n=114)
Crowding at launch ramps & parking areas?	31.2%	45.9%
Too many boats on the water at one time?	42.8%	54.3%

[1]Chi square = 9.11, $p = 0.028$
[2]Chi square = 7.44, $p = 0.059$

Four management actions showed statistically significant differences in preferences for management actions; all four were more highly preferred by boaters from the Wasatch Front than respondents in the rest of the state (Table 3-48). Increasing fees to improve infrastructure had a difference of 19 percent while other management actions showed differences between 15 and 20 percent. Managers of water bodies closer to the Wasatch Front may find boaters more likely to accept new management actions compared to the rest of the state.

Table 3-48 Registered boater view of potential management actions by region

Potential Management Action	Percent Stating Somewhat and Strongly Agree	
	Wasatch Front (n-276)	Rest of State (n=114)
Expand parking lot to allow more boats on the water[1]	43.2%	32.4%
Expand the boat ramp to increase the number of boats that could be launched at one time[2]	57.6%	42.1%
Increase fees to improve infrastructure[3]	43.5%	24.5%
Increase the number of law enforcement patrols on water[4]	44.6%	34.2%

[1]Chi square = 8.66, $p = 0.070$
[2]Chi square = 10.74, $p = 0.030$
[3]Chi square = 12.97, $p = 0.011$
[4]Chi square = 9.42, $p = 0.051$

3.4 On-line Survey of Managers

The final phase of data collection was an on-line survey of 17 managers of water-based state parks. The only park represented is Great Salt Lake State Park, because the issues there are so unique the survey was not very relevant to managing sailing and the adjacent marina. The survey included questions about management problems and preferences towards management

actions and spending boater registration funds. Questions were worded to be comparable with the statewide boater survey, and for the management action questions, managers were also asked to predict the boater responses.

Managers were given a list of several possible ways boat registration funds could be spent, and for each they were asked to say if it was not important, slightly important, moderately important, or very important. Almost 90% cited restrooms as either moderately or very important and all of the managers responded that launching facilities were either moderately or very important (Table 3-49). Almost all of the managers cited safety patrols as being a very important use of boater registration funds. There were no potential uses of registration funds that more than one manager cited as not important, but less than half of the managers cited pump-out facilities as moderately or very important.

Table 3-49 Managers preferences for use of boater registration funds.

Possible use of funds	Not Important	Somewhat Important	Moderately Important	Very Important	Mean
Launching facilities (n=17)	0	0	6% (1)	94% (16)	3.9
Safety patrols (n=17)	0	6% (1)	0	94% (16)	3.9
Restrooms (n=17)	6% (1)	6% (1)	47% (8)	41% (7)	3.7
Boating education programs (n=17)	0	6% (1)	18% (3)	76% (13)	3.7
Law enforcement (n=17)	0	6% (1)	24% (4)	71% (12)	3.7
Parking (n=17)	0	6% (1)	41% (7)	53% (9)	3.5
Picnic areas and campsites (n=16)	6% (1)	6% (1)	69% (11)	19% (3)	3.0
Printed facility guides (n=17)	0	53% (9)	24% (4)	24% (4)	2.7
Pump-out facilities (n=17)	18% (3)	41% (7)	24% (4)	18% (3)	2.4
Non-motorized boating facilities (n=17)	24% (4)	41% (7)	12% (2)	24% (4)	2.4

[1] Mean based on a scale where 1= Not important, 2= Slightly important, 3= Moderately important, and 4= Very Important.

The next group of questions was potential problems that could occur on lakes and reservoirs. Managers were asked if they thought each item was not a problem, a small problem, a moderate problem, or a major problem (Table 3-50). Responses are ordered from the highest to the lowest mean with 1 = not a problem, 2 = a small problem, 3 = a moderate problem, and 4= a major problem. Nine of the managers (53%) cited fluctuating water levels as a major problem, while only one said it was not a problem. All of the managers agreed that reckless PWC operators are at least a small problem. Only one manager cited too many boats on the water as a major problem. Two managers cited drug or alcohol abuse as a major problem, while only one said it was not a problem. Only two managers cited crowding at beaches and facilities as a major problem.

Table 3-50 Managers views of boating problems

Boating Problem	Not a problem	Small problem	Moderate problem	Major problem	Mean[1]
Fluctuating water levels? (n=17)	6% (1)	18% (3)	24% (4)	53% (9)	3.2
Reckless personal watercraft operators? (n=17)	0	24% (4)	53% (9)	24% (4)	3.0
Crowding at launch ramps & parking areas? (n=17)	6% (1)	24% (4)	47% (8)	24% (4)	2.9
Drug or alcohol abuse by boaters? (n=17)	6% (1)	29% (5)	53% (9)	12% (2)	2.7
Safety problems on the water? (n=17)	0	47% (8)	29% (5)	12% (2)	2.6
Reckless motorboat operators? (n=17)	6% (1)	41% (7)	47% (8)	6% (1)	2.5
Crowding at beaches and facilities? (n=17)	12% (2)	47% (8)	29% (5)	12% (2)	2.4
Too many boats on the water at one time? (n=17)	41% (7)	24% (4)	29% (5)	6% (1)	2.0

[1] Mean is based on a scale where 1 = Not a problem, 2 = Small problem, 3 = Moderate problem, and 4 = Major problem.

Next managers were asked about their preference for various management actions at the water bodies they manage (Table 3-51). Overall, there was strong support for facility improvements, such as expanding parking lots or boat ramps, and for increasing patrols on the water. The use of additional fees to improve facilities had mixed support among managers, and both temporal and spatial zoning received little support from managers – the difficulty in enforcing these strategies may be one reason.

Table 3-51 Managers attitudes towards potential management actions.

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Mean[1]
Increase the number of law enforcement patrols on water (n=17)	41% (7)	41% (7)	18% (3)	0	0	4.2
Expand the boat ramp to increase the number of boats that could be launched at one time (n=17)	29% (5)	47% (8)	18% (3)	6% (1)	0	4.0
Increase number of boater education programs (n=17)	12% (2)	47% (8)	35% (6)	6% (1)	0	3.7
Expand parking lot to allow more boats on the water (n=17)	29% (5)	35% (6)	6% (1)	29% (5)	0	3.7.
Increase fees to improve infrastructure (n=17)	18% (3)	24% (4)	24% (4)	29% (5)	6% (1)	3.2
Add additional or create no wake zones (n=17)	12% (2)	29% (5)	29% (5)	18% (3)	12% (2)	3.1
Reduce the number of boats allowed on the water on some of the heavier use days (n=17)	18% (3)	12% (2)	35% (6)	18% (3)	18% (3)	2.9
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening (n=17)	12% (2)	6% (1)	6% (1)	24% (4)	53% (9)	2.0
Limit PWC to certain areas on the water (n=17)	6% (1)	0	18% (3)	24% (4)	53% (9)	1.8
Separate motor boats from PWC (n=17)	6% (1)	0	6% (1)	41% (7)	47% (8)	1.8
Decrease the number of law enforcement patrols on water (n=17)	0	0	18% (3)	29% (5)	53% (9)	1.7
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week (n=17)	6% (1)	0	6% (1)	18% (3)	71% (12)	1.4

[1] Mean is based on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree.

Managers were also asked to predict registered boaters attitudes towards these potential management actions. In general, they believed boaters would agree with educational programs and facilities expansion, but not agree with zoning strategies (Table 3-52).

Table 3-52 Managers predictions of registered boaters attitudes towards potential management actions.

Potential Management Action (n=17)	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Mean[1]
Expand parking lot to allow more boats on the water	53% (9)	47% (8)	0	0	0	4.5
Expand the boat ramp to increase the number of boats that could be launched at one time	59% (10)	29% (5)	12% (2)	0	0	4.5
Increase the number of law enforcement patrols on water	12% (2)	53% (9)	24% (4)	12% (2)	0	3.7
Increase number of boater education programs	6% (1)	59% (10)	29% (5)	6% (1)	0	3.7
Add additional or create no wake zones	6% (1)	24% (4)	41% (7)	24% (4)	6% (1)	3.0
Reduce the number of boats allowed on the water on some of the heavier use days	6% (1)	41% (7)	18% (3)	0	35% (6)	2.8
Limit PWC to certain areas on the water	6% (1)	35% (6)	6% (1)	29% (5)	24% (4)	2.7
Separate motor boats from PWC	6% (1)	29% (5)	6% (1)	41% (7)	18% (3)	2.7
Decrease the number of law enforcement patrols on water	6% (1)	12% (2)	29% (5)	41% (7)	12% (2)	2.6
Increase fees to improve infrastructure	0	24% (4)	24% (4)	29% (5)	24% (4)	2.5
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	6% (1)	18% (3)	0	47% (8)	29% (5)	2.2
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	6% (1)	12% (2)	6% (1)	41% (7)	35% (6)	2.1

[1] Mean is based on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree.

The last question on the managers' on-line survey related to how often they closed the gates to their park in the past year (2006) because the parking lot was full (Table 3-53). Eleven managers had to close entry to one of the parks they manage at least once in the year, including three who closed between 11 and 20 times, and one manager did so more than 20 times. Managers were asked where users would go if they where not able to get on the lake or reservoir that they manage. Out of the ten responses provided, eight of the managers mentioned water bodies all in the same region; one manager mentioned both water bodies in their region and Lake Powell; and one manager said boaters would just wait until there was a spot available.

Table 3-53 Facility capacity at Utah water bodies

	0	1-5 days	6-10 days	11-20 days	More than 20 days
Number of days parking lot was full in 2006 (n=17)	31.2% (5)	25.0% (4)	18.8% (3)	18.8% (3)	6.2% (1)

3.5 Comparison of Boaters and Managers

Table 3-54 compares managers' and boaters' views of boating problems at Utah lakes and reservoirs. There is agreement on reckless PWCs being a problem. Managers viewed fluctuating water levels, crowding at launch ramps and parking areas, and drug and alcohol abuse as bigger problems than boaters, while boaters cited too many boats on the water at one time, safety problems, and crowding at beaches and facilities as bigger issues. Tests for statistical significance were not provided as the managers represent a completed census and subsequently inferential statistics are not necessary.

Table 3-54 Comparison of boater and manager view of problems at Utah water bodies

Boating Problem	Percent Stating Moderate or Major problem		Means[1]	
	Boaters	Managers	Boaters	Managers
Reckless personal watercraft operators?	79%	77%	3.1	3.0
Fluctuating water levels?	42%	77%	2.3	3.2
Crowding at launch ramps & parking areas?	64%	81%	2.7	2.9
Reckless motorboat operators?	56%	53%	2.5	2.5
Drug or alcohol abuse by boaters?	51%	65%	2.5	2.7
Too many boats on the water at one time?	53%	35%	2.5	2.0
Safety problems on the water?	57%	41%	2.4	2.6
Crowding at beaches and facilities?	50%	41%	2.3	2.4

[1] Mean is based on a scale where 1 = Not a problem, 2 = Small problem, 3 = Moderate problem, and 4 = Major problem.

Table 3-55 compares registered boaters with managers' views and predictions of boaters' views of potential management actions at reservoir and lake based state parks in Utah. The results show the percentage who agreed and strongly agreed with management actions. There was general agreement on the expansion of boater education programs, decreasing law enforcement patrols, and adding or creating additional no-wake zones. Interestingly, all of the managers predicted that users would agree with expanding parking lots, while in fact only 40% of the users did. Also, most of the managers (88%) predicted users would support expanding the boat ramps, while only about half did. Increasing fees had tepid support from both managers and users. Managers supported increasing law enforcement patrols much more than registered boaters. Many boaters agreed with limiting PWCs to certain parts of the water (56%) and separating PWC from motor boats (45%); only one manager (6%) supported such actions.

Table 3-55 Comparison of boater and manager attitudes toward potential management actions, and manager predictions of boaters' responses to these actions

Potential Management Action	Percent Who Agree or Strongly Agree		
	Boaters	Manager	Manager Predictions
Increase number of boater education programs	55%	59%	65%
Expand parking lot to allow more boats on the water	40%	64%.	100%
Expand the boat ramp to increase the number of boats that could be launched at one time	53%	76%	88%
Increase fees to improve infrastructure	38%	42%	24%
Increase the number of law enforcement patrols on water	41%	82%	65%
Decrease the number of law enforcement patrols on water	12%	0	18%
Limit PWC to certain areas on the water	56%	6%	41%
Separate motor boats from PWC	45%	6%	35%
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	22%	6%	18%
Add additional or create no wake zones	41%	41%	30%
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	23%	18%	24%
Reduce the number of boats allowed on the water on some of the heavier use days	51%	30%	47%

4.0 SUMMARY, DISCUSSION AND MANAGEMENT RECOMENDATIONS

This is the final section of the report and provides a summary of key themes and problems along with management recommendations pertinent to implementing a regional approach to managing recreational water bodies in Utah. The organization of this section is as follows: Sections 4.1 discusses the themes and problems pertinent to a regional approach, while Sections 4.2 and 4.3 provide management recommendations.

4.1 Key Themes and Management Problems

Utah is a notoriously dry state with limited opportunities for water-based recreation. Betz et al. (1999) suggests Utah has below average availability of boating opportunities compared to other parts of the country due to its arid and semi-arid conditions. In spite of being rather dry with limited opportunities, there are some of the highest quality opportunities in the country for both river boating (Green and Colorado Rivers) and flat water boating (Lake Powell and Flaming Gorge). It is also important to note the majority of the population lives close to water based recreation opportunities in the Wasatch Mountains. In addition, while boating opportunities in Utah may be limited, opportunities for solitude or backcountry recreation abound. The number of trips taken annually by registered boaters has decreased from 12 to nine trips since the 1999 survey, while the average length of a typical trip has increased from two days to five days. There has been little change in the types of activities boaters participate in while they are boating, although there was a small increase in number who swim from the boat or use a canoe or kayak.

Registered boaters in Utah tend to be older (40 to 70 years old) and wealthier (over half household incomes greater than 65,000 dollars annually) than state averages. In addition, over 40 percent of the respondents have a college degree. Not surprisingly, boating is a family activity for many with more than half of the respondents stating there are at least two boat operators in the household.

The comparison report notes an increase in the average age of registered boater in Utah. This demographic change may be due, in part, to sampling error attributed to younger residents relying on cell phones as their only phone – although this is likely not the only explanation. One manager suggested many younger visitors are more interested in riding OHVs than motorboats or PWCs. The manager further described how local motorized recreation salesrooms have switched their inventory from water-based to land-based. It is also possible the drought of the first part of the decade discouraged young residents from purchasing boats and other watercraft. Overall, the number of registered boats in Utah has not changed substantially in the past eight years.

The average number of trips per year has decreased while the typical length of trip has increased. This is actually different than the national trend of shorter more frequent trips. It is possible the recent increase in gas prices has discouraged shorter day trips while encouraging users to camp and boat for multiple days.

In general, there appears to be two types of boating opportunities in Utah. First, there are the very popular, large water bodies often managed by a federal agency (Lake Powell, Flaming Gorge, and Strawberry). Boaters throughout the state consider these prime boating opportunities and many are willing to travel further to visit these. Secondly, numerous local opportunities offer shorter, more frequent boating outings near home. Few Cache Valley residents travel to Steineker or Red Fleet for every day boating, and Vernal residents do not consider Hyrum.

However, most will consider Lake Powell or Strawberry when making decisions about boating areas. An exception may be southwest Utah where smaller water bodies get visitors from other regions because they provide boating opportunities in the spring and fall.

Reflecting the large lake boating opportunity, the three largest freshwater lakes, Lake Powell, Flaming Gorge, and Bear Lake, were among the four most commonly mentioned "favorite" Utah water bodies in all three statewide surveys. It should be noted, however, the number of respondents who stated Lake Powell was their favorite has decreased from 41% in 1999 to 28% in 2006. It is possible lower lake levels caused by drought have decreased Lake Powell's popularity as well as increased fuel costs. Strawberry Reservoir remains a favorite due to its high elevation and quality fishing.

Although many of the large water bodies above are visited by Utah boaters and are their favorites, other water bodies closer to population centers receive significant use too. These include Willard Bay, Jordanelle, and Utah Lake. These water bodies are frequented by at least 14 percent of the registered boaters in 2006, and are also among the five least favorite water bodies in the state. This appears contradictory, but their popularity is due in large part to their proximity to relatively large population along the Wasatch Front. This popularity along with environmental conditions (e.g. mosquitoes at Willard Bay, perceptions of pollution at Utah Lake) have led some boaters to cite these areas as their least favorite.

Several confounding factors make the future of boating use levels in Utah unclear. First, few (if any) additional boating areas will be developed in the state, although the development of Sand Hollow has increased boating opportunities in southwestern Utah and it has quickly become a popular site. However, the addition of new sites is the exception and not the rule – so the amount of boatable acres is unlikely to increase significantly. Population growth in Utah will continue; however the effect on state park managed lands in unclear. The US Census Bureau projects an increase of about one million residents in the next 25 years. Most of this increase is projected to be along the Interstate 15 (I-15) corridor. Parks along the I-15 corridor, particularly in the northern and southern parts of the state, will likely see the effects of increased population the most. Cordell et al. (1999, 2004) suggest population growth is and will continue to be the primary factor determining the level of recreation use. Increasing gas prices along with increasing land based motorized activities may dampen demand, particularly at water bodies.

National recreation trends are tracked as a part of the National Survey of Recreation and the Environment. The researchers (Cordell et al. 2004) evaluated the changes in participation of a variety of outdoor recreation activities and the Mountain region, of which Utah is a part, saw the greatest increase in boating from 1994 – 2001, and "jetskiing" participation more than doubled. The researchers then compared recreation participation by state, and Utah had the highest proportion (36.7%) of respondents in all of the western states who went motor boating in the previous year. The average for the Mountain region was 24.1% and 19.7% for the Pacific region.

Comparing registered boaters who live on the Wasatch Front to those who live in the rest of the state, few differences were found in boating participation, but there were a few attitudinal differences. There was slightly more support for a few uses of boater registration funds including law enforcement, safety patrols, and boater education programs in the Wasatch front. Although use is generally higher at water bodies in the Wasatch Front region, more users from outside of the Wasatch Front cite crowding as a problem. It should be noted this analysis was made by where respondents live, not where they boat, although many tend to boat close to home. In

addition, a higher proportion of registered boaters in the Wasatch Front agree with the use of four (expanding the parking lot to allow more boats, expanding the boat ramp to increase the number of boats that can be launched at one time, increase fees to improve infrastructure, and increasing the number of law enforcement) out of twelve of the potential management actions while no action had stronger support in the rest of the state. The results may indicate slightly less opposition to these management actions in closer proximity to the Salt Lake City metro area. An explanation may be these areas receive more use and subsequently more users see a need for a wider variety of management actions. While statistically significant, these differences are small and probably not particularly important for management.

Fishing from the boat was cited by over 40 percent of the respondents as being their primary activity. Also, those who said fishing was their primary activity are more likely to perceive conflict with other users than those who participated in other primary activities. The quality of fishing was cited as the main reason three out of the eight most popular water bodies were listed as a favorite. Intercept surveys have shown fishing as a primary activity at certain launches (Reiter et al. 2000, 2002), and given the results in the telephone survey that fishing is important to Utah boaters, protecting fishing opportunities is a primary management concern for the future. This may also indicate increasing importance in collaborating with the Division of Wildlife Resources.

Although boater education is clearly seen as important by boaters and managers, legal requirements for licenses were not strongly supported by registered boaters, while managers strongly supported both boater education and licensing. Based on interviews and discussion during regional meetings, managers see boater education as effective and one of the most important tools in promoting safe boating; the managers also feel if users know the rules and regulations and then violate them, it is easier to issue a ticket. And while boaters strongly supported voluntary educational efforts, course or license requirements were not as well supported – over half agreed with requiring boater education but less than half supported requiring a license. Managers, on the other hand, supported requiring a boater endorsement similar to what is required for motorcyclists. Open-ended comments from the 1999 survey suggest some users view the licensing requirement as a way for the state to get more money. There would be strong support for using education courses to help address some of the problems boaters identified, especially related to PWC use and boat safety, and for reducing violations in general.

Increasing fuel costs suggest that parks and water bodies away from population centers may see a decrease in the number of visitors, especially boaters, at more remote lakes, but an increase at lakes closer to urban areas. Fuel costs have increased substantially since the 1999 survey. Some managers suggested this could have impacted use at their site. Other managers suggested the impact may only affect lower income groups and well-to-do boaters would not change their behavior. It was out of the scope of this report to analyze the impact of fuel cost on visitation patterns – clearly, this may be an issue with increasing importance if fuel costs continue to rise.

4.1.1 Discussion of Management Issues and Actions

Management issues and actions are discussed in this section. First, a brief discussion about direct and indirect management actions is provided. Second, various management issues related to a regional management perspective are discussed including conflict, boating safety, crowding, carrying

capacity, displacement, PWC-use, specialization versus generalization, fluctuating water levels, and OHV-use. Finally, a discussion on both boaters' and managers' views on potential management actions is provided.

Management tools generally fall into two categories: direct and indirect. Direct tools include legal, regulatory means, such as boating safety and use limitations, and formal enforcement of behavior. Indirect management tools attempt to influence behavior through educational and voluntary approaches, such as use of signs, interpretation, and informal social control. While direct measures tend to be more effective, indirect measures are preferred because they are generally less expensive, less heavy-handed, and retain greater visitor freedom. And while direct measures seem easier to implement, that is rarely the case – good visitor management requires direct measures to be accompanied with effective educational or participatory measures so visitors understand what is expected, why, and what alternatives exists. For example, use limits should never be implemented without park staff trained to politely explain the reasons for closure and give directions to alternative boating sites. Ideally, this should be done before boaters arrive, perhaps by way of the internet, which would require general infrastructural changes.

4.1.1.1 Conflict

Conflict continues to be an issue at Utah water bodies with about two-thirds of Utah boaters surveyed stating others detracted from their enjoyment while at Utah water bodies, although only a small portion of them (about 12%) stated it happened often or very often. There are clearly some issues related to PWC use, as it was most frequently mentioned as the reason contributing to conflict. Another often cited reason for conflict was others were boating too close. In interviews, managers agreed one of the most common infractions is speed and proximity (the regulation states boaters within 150 feet of one another must be going at a wakeless speed), and most violators either did not know about the rule or could not estimate the distance. Further addressing speed and proximity through both enforcement and education may be an effective conflict management tool.

Managers indicated conflicts between motorized and non-motorized boaters were the majority of conflicts they faced. Managers at regional meetings discussed anglers either along the shore or in a boat being impacted by motorized craft. Although conflicts are apparent, support for certain use limitations or zoning, including not allowing motorized use during some mornings or on certain weekdays, is weak, but should still be considered for certain circumstances. The survey numbers may have been low due to the relatively small number of anglers in the sample, but it is an important group, since they are sensitive to conflicting uses and there are relatively few places they can go. In general, the key to conflict management is to apply the regional perspective and issue specific management actions. For example, one site may cater to PWCs while another nearby may cater to anglers, while not limiting both activities formally at either place.

4.1.1.2 Boating Safety

Boating safety is an important issue at Utah water bodies, as over 80 percent of the registered boaters and 90 percent of the managers state it was moderately or very important that registration funds be spent on law enforcement and safety patrols. Also, over half of the respondents cited safety problems on the water as a major or moderate problem. The most commonly cited source of boater safety information was experience and common sense, while the fourth most common source was family and

friends. This indicates the importance of developing boating norms sensitive to important safety issues, including speed and proximity and PWC craft-use. Although, the percent of boaters who have completed a boater education class has increased slightly since 1994 (from 17% to 21%), there is still widespread support for boater education programs.

It is important to note that individuals who only rent watercraft are not included in the sample, as they are not registered boat owners. However, a few managers noted renters are often involved in on-water conflicts and safety violations, and may not be aware of water safety regulations or on-water behavioral norms. This was also found to be true at Cherry Creek Reservoir, near Denver, CO. Initially, use limits were imposed, thinking an increase in boating accidents was the result of too many boaters on the water. Later, investigators found inexperienced boaters and PWC users caused many accidents. Lake managers worked with private providers to provide safety and etiquette information and required a short training session, which was much more effective in reducing accidents than limiting use. In Utah, more information is needed about boating knowledge and skills, especially for those who rent equipment. In order to interview renters, on-site surveys are necessary, as well as working with local outfitters/concessionaires to address major issues related to boat rentals.

4.1.1.3 Crowding

Crowding is a subjective judgment of encountering too many people, in this case, while boating. Certainly, users at Utah water bodies consider crowding an issue, as about 65% of the registered boater survey respondents stated that use limits were probably or definitely needed, and next to safety reasons, crowding was the second most frequently mentioned reason why use limits are needed. A few managers stated that crowding was a reason users may avoid the sites they manage and a couple of managers outside of the Wasatch Front said a lack of crowds my be a reason boaters could be attracted to the parks they manage. In addition, Deer Creek, Pineview, and Jordanelle were cited as the least favorite water body by between four and ten percent of the telephone survey respondents, with crowding being the most common response why it was their least favorite. Although the percentage who listed “too many boats” did not increase appreciably between 1999 and 2006, it was the fifth most commonly mentioned problem. Overall, it appears that other issues should be addressed before crowding. For example, more people on the most recent survey cited crowding at launch ramps and parking areas as a moderate or major problem then those that indicated too many boats on the water.

However, interpreting responses related to perceptions of crowding and managing crowding at every site is very challenging. Evidence has shown users state they are crowded yet are still satisfied with their experience (Manning 1999; Reiter et al. 2000, 2002a, 2002b; Blahna and Reiter 2001). Additionally, setting capacities based on crowding is difficult because many users are often not concerned with the number of encounters they have. Also, some users may want use limits but others may not, and setting a capacity may be politically unfeasible. Further, it is often not only the number of encounters that lead to crowding but also often the quality of the encounters. A PWC riding too close to a water-skier may lead one to feel crowded even if they were the only two craft on the water. Moreover, conflicts may lead to perceptions of crowding, as Reiter et al. (2000, 2002) found on eight reservoirs in northern Utah. One approach to managing crowding is maintaining a wide array of opportunities, including those opportunities that provide for solitude. Users may visit Strawberry to fish while not encountering PWCs – displacing PWC use to Strawberry is not desirable for example. This would mean not allowing PWCs at Deer Creek could potentially detract from solitude at Strawberry.

Reiter et al. (2000) evaluated perceptions of crowding and use density at Utah boating areas as a part of the previous statewide boating survey. Overall, the researchers concluded crowding was not directly related to level of use as calculated on an annual basis. Further, they found too many boats on the water was the seventh most commonly cited problem in 1999. This was also supported in studies of eight reservoirs in northern Utah, and two in South Dakota, where boaters were likely to say the lakes where they were boating needed use limits; the reasons given were related to boating conflicts or crowding in parking lots or ramps (Reiter et al. 2000, 2002). In most cases, the researchers recommended using conflict management strategies and law enforcement to address the sources of conflict, because use limits will only reduce a small percent of the problems and may displace the problems to other lakes.

4.1.1.4 Carrying Capacity

Interest in carrying capacity (or visitor capacity) was a driving factor in conducting this study and the proposal for planning in a regional context. Conceptually, exceeding carrying capacity denigrates social and ecological conditions to the point that is either unacceptable to the user or deteriorates the environment. Typically, use limits at reservoirs are determined by facility limits such as by parking lot size, or when a use level is determined to cause "crowding." Originally, it was assumed that something akin to a "magic number" of appropriate users could be determined. Although the concept may be appealing or even intuitive, the concept has been troubling to both researchers and managers; determining a "magic number" of use has proved impossible, as many users do not agree on what is an appropriate level of use, and as noted above, high visitor satisfaction results even in high visitation areas. As a result, this concept has been more of a source of debate than agreement (Manning 1999, Roggenbuck et al.1991). Many analysts have argued visitor use level is only one of many site indicators that may be relevant for a given area, and this is often not as important indicator of recreation satisfaction. And more likely to be contingent on management objectives than current visitor perceptions and mathematic formulas to determine optimal use levels (Blahna and Reiter 2001 McCool and Lime 2001, Borrie et al. 1998). In 1999, Pineview, Jordanelle, Deer Creek, and Willard Bay reservoirs were still the most frequently mentioned lakes needing use limits, but the proportion of respondents identifying these recreation areas for use limits has decreased since 1999.

For both social and ecological reasons, recreation carrying capacity tends to make more sense in low use, pristine areas than in high use, high impact areas where research and management applications dominate. A few problems with setting on-site use limits include potentially displacing users to lesser-used sites and potentially changing the social environment at that site, determining what an appropriate use level is, and potentially not addressing the most important management issues. First, setting a capacity or use limit at one site without considering the regional context may simply send the "problem" to another site with the possibility of homogenizing the recreation opportunities at both sites. Second, it is difficult to determine what an appropriate level of use is (or even appropriate type of use) without clear management objectives. Finally, users may support setting a capacity for reasons unrelated to use density and other management actions may be more appropriate. In fact, registered boaters cited safety as the most frequently mentioned reason to limit use. In addition, intercept studies conducted at eight Utah reservoirs suggest conflicts caused by PWC use, reckless boating, and facilities crowding were the major reasons boaters felt use limits were needed (Reiter et al. 2000, 2002). Lake use capacity limits will have little impact on the majority of behavioral problems listed by boaters, except to reduce the number of occurrences of such behavior by a similar percent as the reduction in the number of boaters, and may

simply displace behavioral problems to other areas or lakes. And facility crowding can be addressed by simply expanding facilities.

Results of recent research in both recreation ecology and social science indicate this displacement may actually exacerbate both physical and social impacts of recreation use and reduce the diversity of recreational experiences (Hammitt and Cole 1997, Borrie et al. 1998, Blahna and Reiter 2001). Use limits are most appropriate in areas of relatively low use where experiences are solitude dependent or resources have not been heavily impacted, not high use areas where they are typically applied. Therefore, increased enforcement and/or expanding education programs may be more appropriate management tools to address many management issues.

4.1.1.5 Displacement

There are two primary forms of displacement when planning water based recreation in a regional context: visitors may change their recreation destinations due to use limitations or visitor conflicts. The key point about displacement related to setting a capacity at one site is that it can change the conditions at other sites. In fact, based on both the registered boater survey and past intercept surveys at northern Utah lakes and reservoirs (Reiter et al. 2000, 2002), about 60% of those who could not get on the lake or reservoir as their first choice would just go somewhere else. In general, managers agreed users would go to another park or water body in the region. A regional perspective is appropriate when considering user displacement due to setting a capacity or use limitation. Research on recreation boaters in Iowa found displaced users were less satisfied than those who boated at their first choice (Robertson and Regula 1994). And in order to reduce displacement due to visitor conflicts, managers need to set specific recreation experience objectives and be sure to protect experience characteristics that are particularly sensitive to changing conditions, such as fishing or solitude experiences.

4.1.1.6 Personal Water Craft

Registered boaters in Utah support PWC use, but they see a need to regulate them differently than other boats. This finding reflects the 1999 statewide boater survey as well as boater intercept surveys (Reiter et al. 2000, 2002). Almost 80 percent of the survey respondents cited reckless PWC use as a moderate or major problem. PWC management is seen as a major issue that is disproportionately represented in conflicts. While PWC use has leveled off, the level of concern about these has not dissipated. A few managers also suggested PWC user motives may be different than others. They suggest many of the users want to be seen and seek out crowds, while anglers in particular may try to avoid loud and congested areas.

Providing PWC facilities, use zones, or even encouraging commercial activities (e.g., rentals) at selected sites and focusing PWC management strategies at these sites should be considered. Despite relatively low support of both mangers and boaters, this should include zoning for PWC use areas on lakes where PWC use is high and lake geography or temporal use patterns are appropriate. For example, providing PWC facilities and “play areas” at water bodies having high use bays or relatively limited opportunities for solitude may be appropriate. Regional recommendations are needed to identify existing patterns and opportunities, as well as future potential for providing the activity and simultaneously minimizing conflict.

4.1.1.7 Specialization v. Generalization

A challenge for many managers is balancing the many duties their job requires. At times, some managers find this balance difficult to address. It should be pointed out some managers also like the diversity of tasks this adds interest to the job. However, three specific tasks appear to provide opportunities for increased specialization: enforcement, maintenance, and selected administrative tasks. Managers, in general, cited staffing as an issue related to managing their parks. The issues are not with the quality of staff, but with the number. Balancing duties can become even more challenging when the number of staff is limited. From a regional perspective, providing some assistance with specific duties could free up on-site staff to conduct patrols, for example. Virtually all managers feel the need for increasing funding for staff and maintenance. Other approaches include increasing inter- and intra-agency collaborative efforts (as discussed in the section above) and even with local agencies and private stakeholders through grants and cooperative agreements. Such arrangements may be best organized at the regional or even state level.

Administrative tasks ranging from fee collection to redundant office procedures and record keeping, and even writing grants and cooperative proposals, can be coordinated between multiple lakes within a geographic region. Federal land management agencies have implemented similar cost cutting strategies, and State Parks could review these experiences to identify what works best for designing regionally based strategies for sharing administrative duties.

Enforcement includes time on the water and patrolling OHV trails, while support with maintenance (particularly at parks without specific maintenance staff) could free up other staff for other tasks including on the water patrols. Some maintenance tasks are technical and time intensive, and can compromise other necessary tasks. Given the specialized nature of both the training, skills, and certifications need for these tasks, these can be shared between multiple parks within geographic proximity, like administrative duties discussed above. Enforcement and maintenance, however, can also be shared with other state and federal agencies. Formal agreements and memoranda of understanding are needed in order to ensure quality and consistency in the sharing these services.

4.1.1.8 Fluctuating Water Levels

Local irrigators control water levels at Utah water bodies. Over three-quarters of the managers cited fluctuating water levels as a moderate or major problem. Water levels may drop mid-summer (especially during droughts) and in some cases put a boat ramp out of use. Also, water bodies having stable water levels may see increased use at these times. A regional perspective of lake water levels can help lake planning and management. While there is nothing state park managers can do about drought or water levels, they can play a role in improving visitor satisfaction by increasing information and education related to water levels. If recreationists are aware of lake water levels, and the recreational implications at several lakes in a region, they can better predict conditions and select the experience they want.

4.1.1.9 Off Road Vehicles / Off Highway Vehicles

Although this study focuses on boating, managers often discussed OHV issues. Some suggested more time is spent on OHV patrols compared to the past and it may negatively affect time spent on the boating program. It is evident managing boating cannot be totally separated from other recreational activities. Given the dispersed character of the OHV recreation, and the need for infrastructure, inter-jurisdictional trails, dispersed management, maintenance, and enforcement, the provision of OHV

activities and management in a geographic context requires regional coordination, perhaps even more so than water based recreation. OHV management appears to be especially dependent on inter and intra-agency cooperation like those discussed above, including funding, trail and facilities provision, enforcement, and management.

4.1.2 Attitudes towards various potential management actions

Both managers and registered boaters were asked to rate potential boating problems and management actions. Managers were also asked to predict users' views of management actions. Table 4-1 shows what problems a greater proportion of boaters or mangers view as being a moderate or major problem. (If the difference is less than 5 percent points, the problem is put in the category of "about the same proportion.") Compared to boaters, a higher proportion of managers view fluctuating water levels, crowding at launch ramps and parking areas, along with drug or alcohol abuse by boaters, as a moderate or major problem. About the same proportion of managers and boaters view both reckless PWC and motorboat operators as a problem, while a higher proportion of boaters view too many boats on the water at one time, safety problems on the water, and crowding at beaches and facilities as moderate or major problems. In general, it appears issues that more directly affect each group is viewed as a bigger problem. Managers spend more time at launches and are on-site and often on-call whenever there are related problem. Boaters, on the other hand, only experience these problems when they are personally affected, which is relatively rare. Additionally, intoxicated users can be a problem for managers when they are placed under arrest. Managers are more aware of issues related to fluctuating water levels as they see the water body everyday are aware of irrigation uses, and may even be alerted when water is to be drawn from the reservoir.

Table 4-1 Comparison of user and manager view of potential management problems

	Potential Management Problems
Higher proportion of managers believe it is moderate or major problem	Fluctuating water levels Crowding at launch ramps & parking areas Drug or alcohol abuse by boaters
About the same proportion*	Reckless personal watercraft operators Reckless motorboat operators
Higher proportion of users say it is a moderate or major problem	Too many boats on the water at one time Safety problems on the water Crowding at beaches and facilities
*Less than 5% difference in ranking as moderate or major problem	

Determining what actions are acceptable to both boaters and managers is important for understanding potential conflict and educational needs. In order to help illustrate the use of the results of the boater and managers survey, we arrayed the 12 management actions included in the survey according to the level of support of each group. Figure 4-1 shows the conceptual basis for the analysis and Figure 4-2 show what management actions are favored and opposed by managers and registered boaters. It should be made clear these results are not meant to suggest that certain actions should be avoided; it just indicates which management and planning decisions could generate resistance and where an educational campaign may be necessary.

Further, if it is determined a management action that has high acceptability and an action that has low acceptability can meet the same management goal – choosing the action with high acceptability should be desirable.

Managers and boaters agreed on five of the 12 potential management actions; this includes increasing boater education programs and expanding the boat ramp, while both groups agreed in opposing decreasing law enforcement, prohibiting motorized activities in the early morning or evening, and prohibiting motorized activities two days a week. Managers supported increasing fees for infrastructure while users generally opposed the fees; managers opposed separating PWC from other craft and limiting PWC to certain areas on the water, while boaters supported these two actions (although the support for separating PWC and other craft was not very strong). Boaters supported expanding the parking lot, creating or adding no-wake zones, and reducing the number of boats on high use days while managers were neutral on these actions.

In general, managers accurately predicted user preference towards seven of the twelve potential management actions presented on both surveys (Table 4-2). Managers overestimated support for expanding boat ramps, but a majority of registered boaters still supported the action. Managers appear to be somewhat successful in predicting users' view towards various management actions.

Table 4-2 Managers predictions of user preference towards potential management actions

Managers Accurately predicted Users Preference	Managers Inaccurately Predicted Users Preference
• Increase number of boater education programs • Decrease the number of law enforcement patrols on water • Separate motor boats from PWC • Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week • Add additional or create no wake zones • Prohibit PWC, waterskiing, or similar activity in the early morning or late evening • Reduce the number of boats allowed on the water on some of the heavier use days • Expand the boat ramp to increase the number of boats that could be launched at one time	• Expand parking lot to allow more boats on the water • Increase fees to improve infrastructure • Increase the number of law enforcement patrols on water • Limit PWC to certain areas on the water

Figure 4-1 Potential Outcome for Various Management Actions

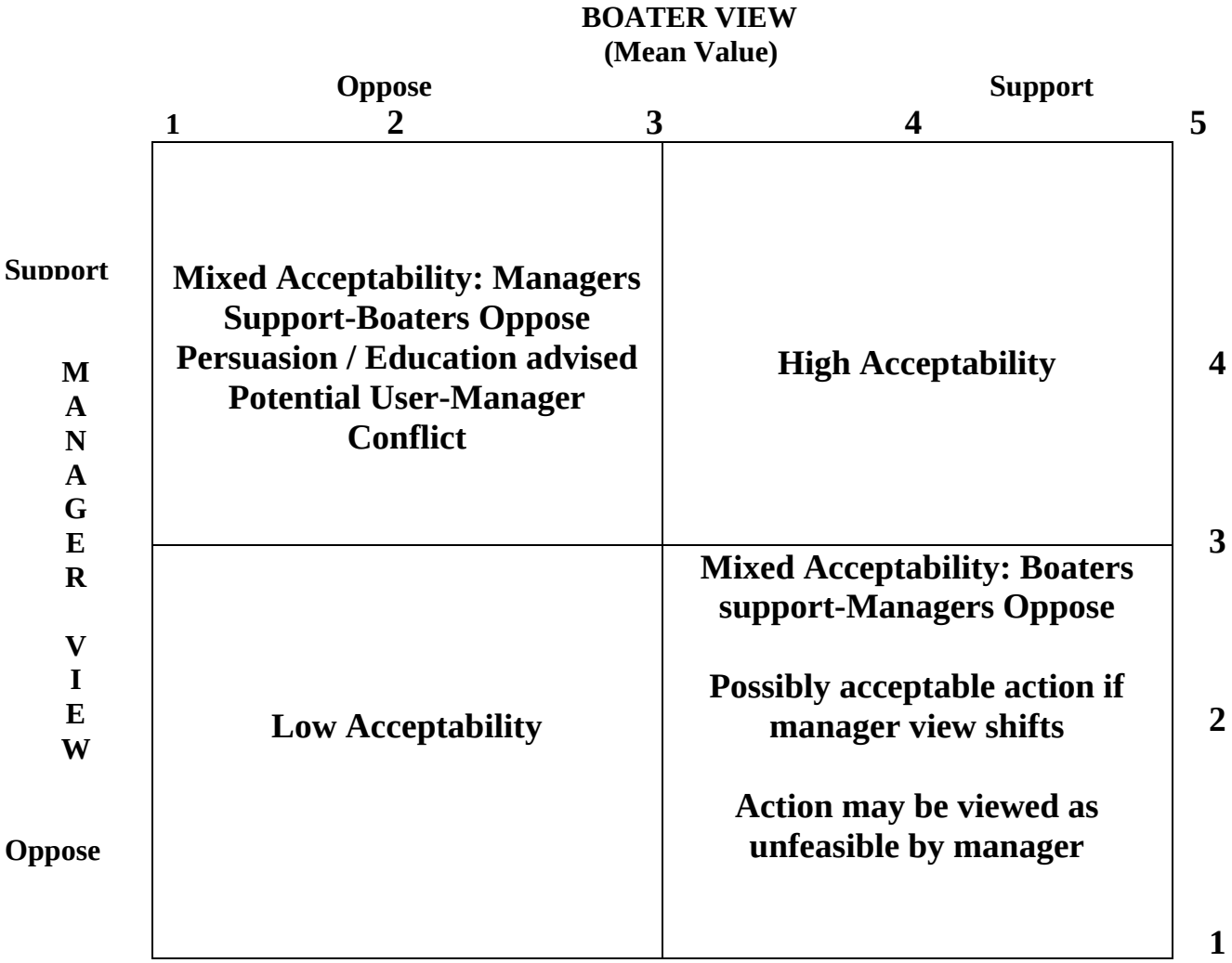
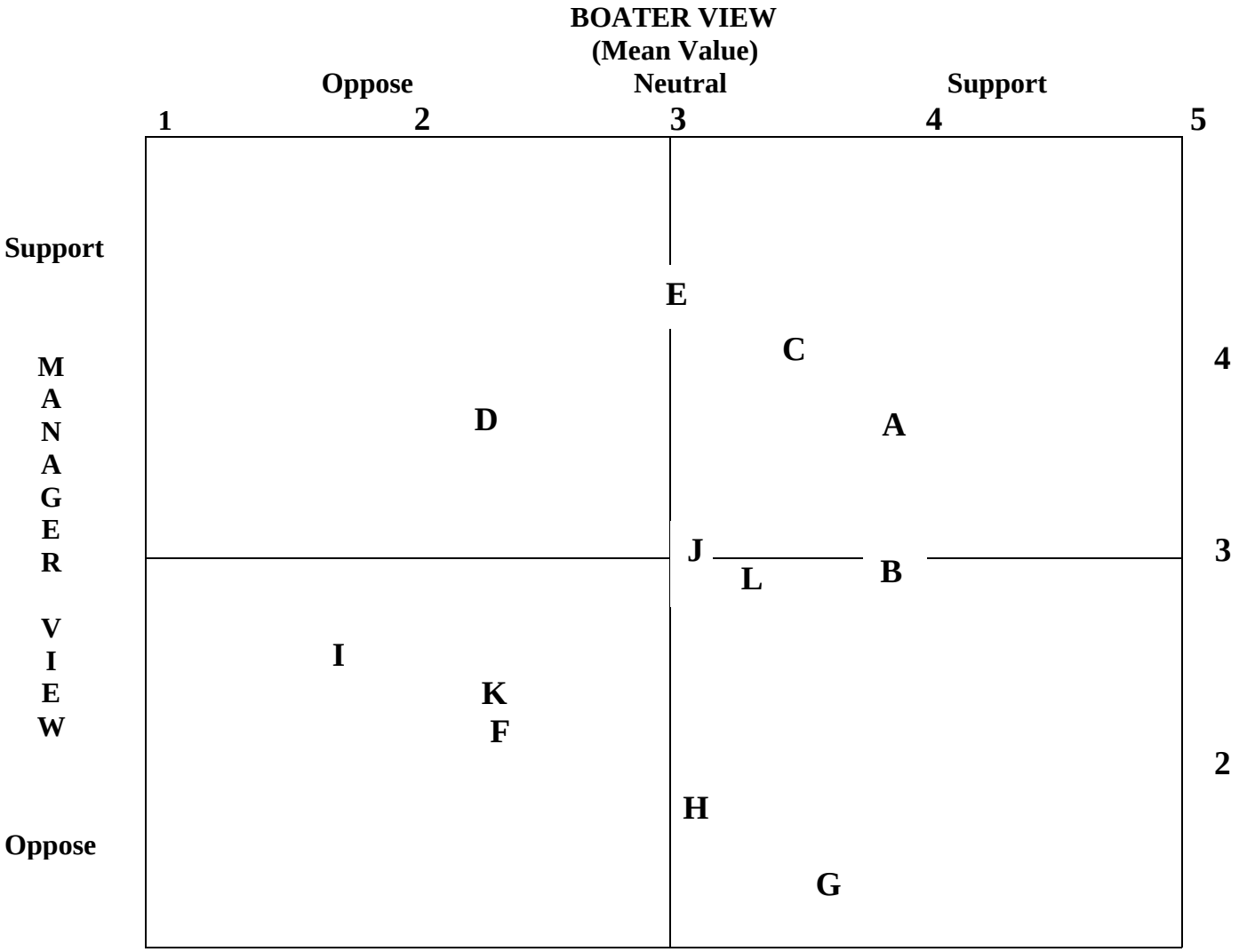


Figure 4-2 Comparison of User and Manager Views of Potential Management Actions



Mean values: 1= Strongly disagree, 2 = Somewhat disagree, 3 = Neutral, 4 = Somewhat Agree, and 5= Strongly Agree

- **A. Increase boater education programs**
- **B. Expand parking lot to allow more boats**
- **C. Expand boat ramp**
- **D. Increase fees for infrastructure**
- **E. Increase number of law enforcement**
- **F. Decrease number of law enforcement**
- **G. Limit PWC to certain areas on the water**
- **H. Separate motor boats from PWC**
- **I. Prohibit motorized activities 2 days/week**
- **J. Create or add no-wake zones**
- **K. Prohibit motorized activities early morning / late evening**
- **L. Reduce the number of boats on heavy use days**

4.2 Statewide Management Recommendations

Major issues on Utah water bodies include user conflict, PWC use, crowding, and addressing population growth. Site specific management strategies will likely have limited success in addressing all of these issues while still providing diverse recreation opportunities. A regional approach to managing Utah water bodies can assist in addressing many management issues and problems, including conflict and crowding, while maintaining an array of opportunities. A regional approach can also assist in preventing a homogenization of opportunities. The following sections briefly highlight issues specific to the boating use regions within the state identified with state and lake manager input. In general, the Wasatch and Southwestern region appear to have higher intensity use and subsequent management issues compared to other regions. In general, these two regions may need more active management strategies, while the other three regions may need to concentrate on maintaining the diverse options that already exist,

This section provides recommendations both at a statewide and regional level to assist in implementing a regional perspective of management at Utah water bodies. It is important to reinforce the idea that this document is advisory, and that management is inherently based on local managers' judgment. Some recommendations listed below may not be feasible, may apply only to certain regions, lakes, or issues, or managers may come up with alternative strategies that are more effective. The purpose of this approach is to maximize the breadth of opportunities available regionally while assuming that not every site needs to provide every opportunity. Furthermore, it is assumed a state park management goal for water bodies is to offer a diversity of opportunities. Certainly, the difference in the physical layout of the various water bodies provides unique aspects, and creative management strategies can further diversify the opportunities. The recommendations below are relatively brief with short rationales. Earlier sections of this report provide the empirical basis and expanded rationale for these recommendations. The management recommendations provided below primarily reflects those related to implementing a regional perspective for management.

(1) There should be a clear identification of visitor boating experiences to be offered at each lake and reservoir – There are at least three general types of lake experiences – motor boating, fishing, and quiet/solitude experiences – and each has specific environmental, social, and managerial requirements for satisfaction. It was beyond the purpose of this study to identify exactly what those requirements are, but managers know the primary locations, management preferences, and sources of conflict, which can serve as the foundation for a regional delineation of opportunities and some initial standards and indicators for success.

(2) Setting use limits should be the management action of last resort after others have failed – Setting a use limit should only occur after other management strategies including expanded education, increased enforcement, and zoning have not met desired management goals.

(3) Consider impact of displaced users before setting use limits – Most users stated they would still boat and stay in the same region if they were not allowed to boat at their lake of first choice. If a use limitation must be set, it is possible that the "problem" will move to the closest park or water body.

(4) Protect current unique opportunities for solitude and fishing– Use appropriate management actions to preserve solitude and quality fishing at Utah water bodies. In areas where fishing or solitude

is available, appropriate actions may include setting up wakeless speed zones, promoting nearby sites for motorized use, and perhaps even removing facilities that encourage motorized uses.

(5) Increase management consideration of non-motorized users – Non-motorized use was identified as being in decline by a few managers. The data collected to produce this report cannot confirm this, but protecting non-motorized opportunities is important. These opportunities do not necessarily need to be provided at state managed facilities but continued consideration for their provision is important.

(6) Park revenue should not be based on use level alone – An issue related to managing a site for lower use levels is that revenue may be lower or use level targets may not be met. If a water body is targeted for lower use or to provide solitude, financial support for managing that water body effectively and efficiently should still be provided.

(7) Differential pricing – Differential pricing is one tool that can potentially be used as an incentive to increase or decrease use at various sites. It could also be used to induce certain types of use at selected sites. One example would to provide coupons or discounts to boat during off-peak times or on lesser used lakes if the objective is to disseminate pressure on facilities and staff. Another example would be a discounted pass for those who complete a certified boating course if the objective is to decrease accidents resulting from ignorance of safe boating practices.

(8) Continue and expand use of web cams – Web cams can provide users with information about conditions at heavily used parks or water bodies; the web cams would focus on the parking lot and conditions at the boat ramps. Many users currently call the park to assess conditions. Providing webcams would allow users to access real-time information while decreasing the impact on staff. Web cams could be best utilized at parks having parking lots that have a tendency to fill and at parks that may serve as substitutes (e.g. Sand Hollow and Quail Creek, or Jordanelle and Deer Creek). Web cams could also serve as a promotional mechanism for parks or water bodies that have been identified as being high or intensive use areas.

(9) Separate conflicting uses using indirect management strategies (where possible) – Indirect management strategies include education or non-regulatory encouragement, such as developing a boat ramp solely for a specific craft, whereas direct management strategies include area closures, and use limits. We suggest that conflicting uses (e.g., PWC and many groups, anglers and motorized users) be segmented using indirect methods, where possible. Managers and boaters both seem averse to segmenting (or separating) uses on a particular lake, but we believe lake zoning is an important and underutilized conflict management tool. Also, segmenting users between lakes is still a possibility, but again, only if planning takes place in a regional context. It is not necessary to ban certain activities at parks, but creating facilities that attract different types of visitors at different lakes or sites is an alternative strategy. For example, a PWC only ramp could be built at one site while creating a large slow wakeless area at another for anglers. Removing facilities can serve the same purpose, but this will be initially controversial for visitors who have become accustomed to these facilities, and so public relations and educational efforts will be an equally important management tool.

(10) Continue and expand boater education programs – Educational programs are very popular for both boaters and managers. Expanding educational programs with an emphasis on estimating speed and proximity, PWC etiquette, and emphasizing regional opportunities alternatives is suggested. Requiring a boater education course could be considered. The key is users are aware of common infractions and managers can feel more comfortable ticketing knowledgeable individuals than those who are not familiar with the infraction. One potential specific educational tool is to provide a map that highlights specialized opportunities at Utah water bodies (e.g., PWC ramp at Jordanelle). Since indirect management actions are desirable, encouraging users to visit appropriate sites is important. Related to this is the need for improving information dissemination, especially through the internet, for issues like lake use restrictions, lake levels, and alternative opportunities.

(11) Develop plan for patrolling outlying water bodies – Park managers and other staff at the regional meetings mentioned the propensity of users to bring unregistered boats to less frequently patrolled sites. If enforcing registration violations is a priority, it is suggested increasing patrols at these areas be considered. Collaborating with other state agencies, in particular the Division of Wildlife Resources, who do patrol outlying water bodies may provide one method of patrolling these water bodies.

(12) Consider increased specialization for some staff roles – The challenge of balancing many tasks could be addressed by increasing specialization is some roles. Applying a regional perspective by sharing specialized staff between parks in close proximity to one another could be useful. A couple of possibilities include: (1) developing a team of law enforcement staff who can travel between different sites and support park specific staff; (2) considering maintenance support staff that could assist at multiple parks; and (3) developing regional specialists for certain redundant administrative and recording tasks, and for writing agreements and proposals.

(13) Additional staffing may be necessary at parks targeted for increased use – Parks or water bodies targeted for increased use should also see an increase in staff to address related use issues, including frequency of patrols.

(14) Consider the role of OHV management when planning for water-based recreation – OHV management is a major issue for state parks staff. Given the dispersed character of OHV recreation and the need for infrastructure, inter-jurisdictional trails, and dispersed management, maintenance, and enforcement, the provision of OHV activities and management in a geographic context requires regional coordination, perhaps even more so than water based recreation. OHV management appears to be especially dependent on inter- and intra-agency cooperation as discussed above, including funding, trail and facilities provision, enforcement, and management. Where possible, water-based and OHV recreation planning should be integrated. If planning is not integrated, consideration for OHV management should be made.

(15) Develop guidelines for expanding park revenues that may be used for facilities and permanent and/or temporary staff – Expand the use of fees for specialized uses and access (e.g. launching fees at high use parks), and develop guidelines for sharing fees across parks statewide and within the region. Identify and train a professional grant writer who has collaboration skills that can be

used to help write memoranda of understand, write collaborative agreements, and write grants to help increase funding for facilities and staffing.

(16) Conduct a managerial regional meeting periodically – The regional meeting presents an excellent opportunity for staff to address problems regionally. These meetings could follow the following format:

- Issue/problem identification
- Brainstorming management strategies and sharing resources
- Monitoring/evaluating provision of recreation expectations
- Management suggestions

(17) Consider intercept surveys focusing on different regions each year – On-site surveys provide unique information for recreation planning. Conducting on-site surveys focusing on different regions each season would allow for more comprehensive planning. In fact, surveys conducted at Utah water based state parks are cited above. Data collected from these surveys provide key information about experiential opportunities and management preferences for parks. These preferences do not necessarily dictate policy management strategies, but can help identify conflicts sources, missing or unique recreational experiences, and estimates of acceptability and educational needs related to alternative management strategies. These surveys can also assess if managerial objectives are being met at different units.

The following provides a possible schedule to implement the on-site surveys so that data collected can be incorporated into the next survey of registered boaters.
Year #1: Northeastern Utah and Southwestern Utah
Year #2: Wasatch Front / Back (about half of the sites)
Year #3: Wasatch Front / Back (about half of the sites)
Year #4: Northern Utah
Year #5: Central Utah

(18) Continue longitudinal (long-term) phone survey of registered boaters – It is suggested the statewide survey of registered boaters be conducted again in five years to continue collecting the longitudinal (long-term) data. Data should be collected via telephone if it is still feasible to obtain a reasonable response rate; otherwise, a multi-wave mail back survey could be conducted. This will provide the Division of Parks and Recreation with longitudinal data and allows response changes to be tracked over time. The statewide survey provides insight into the management issues associated with Utah water bodies with both occasional and frequent users being interviewed.

4.3 Regional Management Recommendations

This section includes management options that could be considered in various regions. Some regions have recommendations that are more specific, while the statewide data does not allow specific management considerations for some regions.

4.3.1 Southwest Region

The southwest region is exceptionally dry, has few water-based opportunities (although Lake Powell and Lake Mead are not too far away) and is experiencing rapid population growth. Opportunities are limited for solitude in this region, although the development of Sand Hollow provides a unique opportunity. Gunlock, the oldest of the area reservoirs, provides relative solitude and is not as developed as Quail Creek and Sand Hollow. Quail Creek and Sand Hollow are in close proximity to each other and may provide opportunities to zone potentially conflicting recreational activities between these two water bodies.

(SW1) Complete facilities at Sand Hollow considering regional perspective – Managers in the southwest region suggested completing Sand Hollow as the top priority. It is also suggested facilities be completed (if possible) with regional considerations.

(SW2) Protect relative solitude at Gunlock – Gunlock provides a unique regional opportunity for relative solitude. It is suggested to continue to manage Gunlock for this relative solitude by not expanding facilities and trying to attract use to Sand Hollow and Quail Creek.

(SW3) Consider indirect zoning methods between Quail Creek and Sand Hollow – Identify conflicting uses at these two water bodies and use indirect management actions to attract the conflicting groups to different sites. For example, facilities for anglers could be provided at Quail Creek (the better fishery), while expanded motorized use could be provided at Sand Hollow.

4.3.2 Northeastern Utah

Northeastern Utah has a relatively small population compared to some of the other regions. However, residents of Northeastern Utah have a wide variety of water-based opportunities with relatively fewer managerial concerns than the other regions. Steineker is close to Vernal (the largest city in the region) and provides opportunities for socialization, PWC use, beach use, as well as other opportunities. Red Fleet is more scenic and a little quieter, but still close to Vernal. Flaming Gorge is the main attraction in the region and provides excellent fishing. Although a very large water body, Flaming Gorge has a relatively short season. The range of opportunities in this region is impressive even without the smaller, outlying water bodies near the Uinta Mountains or on the Ute reservation. One issue discussed by managers in this region was the difficulty in patrolling some of these outlying water bodies.

(NE1) Protect current diversity of recreation opportunities – Steineker State Park should provide opportunities for social interaction, beach use, and PWC-use, among others; providing these opportunities here could prevent displacement to other water bodies in the region. Wakeless speed zones should be maintained at Red Fleet to provide unique opportunity in close proximity to Vernal. Flaming Gorge will continue to provide excellent fishing and opportunities for solitude. We do not project these opportunities to be lost soon; however, boating conditions at Flaming Gorge should continue to be tracked.

(NE2) Consider further cooperation with DWR and USFS with boating and fishing enforcement particularly at outlying water bodies – Consider collaboration with the Division of Wildlife Resources

and the USFS to enhance enforcement at outlying water bodies. In exchange, state park staff could do patrols related to wildlife regulations.

4.3.3 Wasatch Front / Back

Regional management strategies could be especially effective in this region. There is a wide array of water bodies in this region with a large population of boaters. This region experiences the most closures due to parking lots reaching capacity and managers cite very heavy use on weekends and holidays in the summer. Conflict at many of these sites was discussed by managers and confirmed in the registered boater survey. Focusing certain activities at selected sites may decrease the complexity associated with managing for a wide array of opportunities at one site, and increase effectiveness of future information and enforcement efforts. In other words, no single management unit in this region needs to focus on providing every opportunity. This does not mean that PWC use needs to be banned everywhere, but facilities specific to PWC could be provided at some sites. An example of these types of facilities is the PWC-only ramp at Jordanelle.

(WF1) Use indirect and direct management methods in providing a diversity of opportunities – Use indirect management actions to attract potentially conflicting user groups to different water bodies. For example, Jordanelle, Rockport, and Deer Creek could focus on PWC use, wakeboarding, and waterskiing, while maintaining Strawberry, East Canyon, and Lost Creek for anglers and even non-motorized craft. Yuba and Starvation reservoirs (see below) could continue to provide motorized access but also with increased opportunities for solitude. The Great Salt Lake will continue to provide one of the few opportunities for large sailboats.

Potential indirect management actions include expanding parking lots and boat ramps at high use areas, and decreasing parking lots at areas targeted for less use. Also, PWC-only ramps could be provided at additional parks while developing additional no wake zones could provide better opportunities for fishing at other water bodies. Direct management actions include dedicating one day a week at various state parks for wakeless speed to improve fishing opportunities.

(WF2) Management of Yuba and Starvation Reservoirs – Yuba and Starvation reservoirs have mandates to increase use and subsequently increase revenue. Certainly, it appears use could increase some at both of these sites and not dramatically change the social or environmental conditions at these parks. This could potentially alleviate some of the pressure on the water bodies closer to the Wasatch Front population. However, currently these parks provide unique opportunities for solitude in this region. A change in policy that increases use at these parks could eliminate those unique opportunities. It is suggested that the implications for increasing use at these sites be considered and examine carefully. Therefore, protecting these opportunities may include allowing additional use at state parks closer to the Salt Lake area.

(WF3) Develop web-based regional management information system – The Wasatch Front region is addressing the most complex array of management issues and opportunities. A web-based regional management system could be implemented here (with consideration for other regions later). The web based system would include links to webcams that highlight parking lot and boat ramp conditions. The web based system would also point out what opportunities are provided at the various facilities in the region.

4.3.4 Northern Utah

Capacity issues in Northern Utah are facility-based and are not significant on the water. Willard Bay and Hyrum provide close to home opportunities for boaters who visit these sites both on the weekends and after work. Bear Lake is unique in size and scenery, and provides boaters with an area where there will be relatively low density of on-water users. Hyrum could tolerate additional use, but facilities and staffing would need to be expanded.

(N1) Consider expanding facilities at Hyrum and Willard Bay Reservoirs if use continues to increase in this region – Hyrum State Park provides proximate opportunities for residents of Cache Valley, while Willard Bay is visited by may residents along the northern Wastach Front. Allowing increased recreation use at Hyrum could buffer increased use at Porcupine, Cutler, and Newton reservoirs that do not have as much law enforcement presence.

(N2) Protect opportunity for sailing at Bear Lake – Bear Lake is unique in providing an opportunity for sailing in fresh water in Utah; this is not only unique regionally but for the state as a whole. Additional sailing only facilities could be considered, including slips for additional sailboats or possibly even a sailboat only ramp. Although, there is no need to eliminate other motorized uses at Bear Lake, motorized facilities are better provided at Hyrum and Willard Bay.

4.3.5 Central Utah

This region has a wide array of boating opportunities from electric motor boating at the rather small Palisade water body to large water bodies including Otter Creek and Scofield. Currently, there are fewer management issues here compared to the Wasatch Front or Southwestern Utah. The challenge for the future will be to maintain these unique and wide arrays of opportunities. One issue that emerged as important in this region was the effect of irrigational practices on water levels. Future planning should consider this.

(C1) Protect current array of water-based recreation opportunities – This region has a vast array of recreation opportunities. Actions should be taken to maintain the wide array of opportunities in this region to prevent the possibility of homogenization.

(C2) Collaborate with irrigation companies on projects of mutual interest – Consider collaborating with irrigation distracts on projects of mutual interest, including dredging areas to increase reservoir capacity.

(C3) Provide clear direction on the use of revenue generators – The use of revenue generators, including concessions, can be contentious in this region. Clear guidelines about the use of revenue generators and working with local communities could be provided.

4.3.6 Lake Powell

Lake Powell continues to be one of the most popular and favorite water bodies for registered boaters, in spite of the distance it is from the population base. It is clearly one of the most unique water

bodies, not only in the state, but also in the country. Lake Powell does not fit into any specific region in the state but it is a part of every region, as individuals from all over the state visit it, which is also true to a lesser extent for Flaming Gorge and Strawberry reservoirs. The continuing drought in the southwestern United States has dramatically affected the water level at Lake Powell and it has appeared to reduce use levels. In 1999, about 40% of the respondents had visited Lake Powell, while about 28% visited in 2006 (some of this decline is likely due to fuel cost). Continuing drought could potentially put more pressure on other state park if the lower lake level at Lake Powell continues to draw fewer users.

(LP1) Consider role of Lake Powell in every region – Lake Powell is important to many registered boaters in every region. Management changes at Lake Powell affect users throughout the state (as well as throughout the country). Lake Powell provides a unique opportunity for boaters. The main constraint to visitation appears to be distance and cost for some users. Therefore, Lake Powell can be viewed as complementing the opportunities provided in the other regions.

(LP2) Continue tracking recreation use – Opportunities for solitude do not currently appear to be compromised at Lake Powell. However, it is suggested conditions continue to be tracked especially if drought conditions continue, and the reservoir size and accessibility continue to change.

5.0 APPENDICES

Registered boaters were asked about their favorite state park (see Table 3-17). Boaters were then asked about how they feel about various potential management strategies at their favorite water-based state park. Five water-based state parks were cited as a favorite by 30 or more respondents and information about these parks are provided below. The following five state parks are included: Bear Lake (Table A-1), Deer Creek (Table A-1), Jordanelle (Table A-3), Utah Lake (Table A-4), Willard Bay (Table A-5). Expanding the parking lot to allow more boats is more popular at Bear and Utah Lakes; this may be due to the rather large water bodies adjacent to rather small land based facilities. Further, zoning strategies are unpopular at these two parks; once again, this may be due to the large water bodies at these parks. Respondents who cited Deer Creek as their favorite are less supportive of limiting PWC compared to the other parks.

Table A-1 Registered boater view of potential management actions at Bear Lake State Park

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Increase number of boater education programs	26.5% *(22)*	30.1% *(25)*	16.9% *(14)*	18.1% *(15)*	8.4% *(8)*
Expand parking lot to allow more boats on the water	27.7% *(23)*	32.5% *(27)*	18.1% *(15)*	13.3% *(11)*	8.4% *(7)*
Expand the boat ramp to increase the number of boats that could be launched at one time	33.7% (28)	32.5% *(27)*	14.5% *(12)*	9.6% *(8)*	9.6% *(8)*
Increase fees to improve infrastructure	9.6% *(8)*	45.8% *(38)*	15.7% *(13)*	9.6% *(8)*	19.3% *(16)*
Increase the number of law enforcement patrols on water	14.5% (12)	30.1% *(25)*	19.3% *(16)*	21.7% *(18)*	14.5% *(12)*
Decrease the number of law enforcement patrols on water	10.8% (9)	7.2% *(6)*	20.5% *(17)*	26.5% *(22)*	34.9% *(29)*
Limit PWC to certain areas on the water	19.3% (16)	21.7% *(18)*	10.8% *(9)*	18.1% *(15)*	30.1% *(25)*
Separate motor boats from PWC	19.3% (16)	16.9% *(14)*	8.4% *(7)*	16.9% *(14)*	38.6% *(32)*
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	6.0% (5)	6.0% (5)	8.4% (7)	14.5% (12)	65.1% (54)
Add additional or create no wake zones	15.7% (13)	22.9% (19)	21.7% (18)	16.9% (14)	22.9% (19)
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	6.0% (5)	4.8% (4)	7.2% (6)	14.5% (12)	67.5% (56)
Reduce the number of boats allowed on the water on some of the heavier use days	10.8% (9)	27.7% *(23)*	10.8% *(9)*	16.9% *(14)*	33.7% *(28)*

Table A-2 Registered boater view of potential management actions at Deer Creek State Park

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Increase number of boater education programs	13.3% *(4)*	40.0% *(12)*	33.3% *(10)*	6.7% *(2)*	6.7% *(2)*
Expand parking lot to allow more boats on the water	13.3% *(4)*	20.0% *(6)*	23.3% *(7)*	16.7% *(5)*	26.7% *(8)*
Expand the boat ramp to increase the number of boats that could be launched at one time	20.0% *(6)*	30.0% *(9)*	20.0% *(6)*	3.3% *(1)*	26.7% *(8)*
Increase fees to improve infrastructure	3.3% *(1)*	16.7% *(5)*	16.7% *(5)*	16.7% *(5)*	46.7% *(14)*
Increase the number of law enforcement patrols on water	10.0% (3)	23.3% *(7)*	20.0% *(6)*	13.3% *(4)*	33.3% *(10)*
Decrease the number of law enforcement patrols on water	0	10.0% (3)	33.3% *(10)*	23.3% *(7)*	33.3% *(10)*
Limit PWC to certain areas on the water	20.0% *(6)*	16.7% *(5)*	23.3% *(7)*	16.7% *(5)*	23.3% *(7)*
Separate motor boats from PWC	16.7% *(5)*	16.7% *(5)*	20.0% *(6)*	20.0% *(6)*	26.7% *(8)*
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	6.7% (2)	16.7% *(5)*	10.0% (3)	20.0% *(6)*	46.7% *(14)*
Add additional or create no wake zones	16.7% *(5)*	20.0% *(6)*	16.7% *(5)*	10.0% (3)	36.7% (11)
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	20.0% *(6)*	6.7% (2)	10.0% (3)	10.0% (3)	53.3% (16)
Reduce the number of boats allowed on the water on some of the heavier use days	23.3% *(7)*	30.0% *(9)*	23.3% *(7)*	10.0% (3)	13.3% *(4)*

Table A-3 Registered boater view of potential management actions at Jordanelle State Park

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Increase number of boater education programs	30.0% *(15)*	36.0% *(18)*	14.0% *(7)*	14.0% *(7)*	6.0% *(3)*
Expand parking lot to allow more boats on the water	10.0% *(5)*	20.0% *(10)*	20.0% *(10)*	22.0% *(11)*	28.0% *(14)*
Expand the boat ramp to increase the number of boats that could be launched at one time	26.0% (13)	22.0% *(11)*	22.0% *(11)*	18.0% *(9)*	12.0% *(6)*
Increase fees to improve infrastructure	8.0% *(4)*	22.0% *(11)*	22.0% *(11)*	12.0% *(6)*	36.0% *(18)*
Increase the number of law enforcement patrols on water	22.0% *(11)*	16.0% *(8)*	26.0% *(13)*	14.0% *(7)*	22.0% *(11)*
Decrease the number of law enforcement patrols on water	8.0% (4)	2.0% *(1)*	30.0% *(15)*	24.0% *(12)*	36.0% *(18)*
Limit PWC to certain areas on the water	48.0% (24)	16.0% *(8)*	12.0% *(6)*	12.0% *(6)*	12.0% *(6)*
Separate motor boats from PWC	40.0% (20)	10.0% *(5)*	14.0% *(7)*	22.0% *(11)*	14.0% *(7)*
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	14.0% *(7)*	14.0% *(7)*	14.0% *(7)*	14.0% *(7)*	44.0% (22)
Add additional or create no wake zones	12.0% *(6)*	8.0% *(4)*	12.0% *(6)*	18.0% *(9)*	50.0% (25)
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	28.0% (14)	16.0% *(8)*	16.0% *(8)*	14.0% *(7)*	26.0% (13)
Reduce the number of boats allowed on the water on some of the heavier use days	42.0% (21)	24.0% *(12)*	10.0% *(5)*	12.0% *(6)*	12.0% *(6)*

Table A-4 Registered boater view of potential management actions at Utah Lake State Park

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Increase number of boater education programs	9.4% *(3)*	37.5% *(12)*	34.4% *(11)*	12.5% *(4)*	6.3% *(2)*
Expand parking lot to allow more boats on the water	31.3% *(10)*	18.8% *(6)*	15.6% *(5)*	25.0% *(8)*	9.4% *(3)*
Expand the boat ramp to increase the number of boats that could be launched at one time	34.4% (11)	28.1% *(9)*	15.6% *(5)*	3.1% *(1)*	18.8% *(6)*
Increase fees to improve infrastructure	15.6% *(5)*	28.1% *(9)*	3.1% *(1)*	15.6% *(5)*	37.5% *(12)*
Increase the number of law enforcement patrols on water	15.6% (5)	25.0% *(8)*	28.1% *(9)*	15.6% *(5)*	15.6% *(5)*
Decrease the number of law enforcement patrols on water	9.4% *(3)*	3.1% *(1)*	28.1% *(9)*	15.6% *(5)*	43.8% *(14)*
Limit PWC to certain areas on the water	43.8% *(14)*	15.6% *(5)*	9.4% *(3)*	15.6% *(5)*	15.6% *(5)*
Separate motor boats from PWC	34.4% (11)	18.8% (6)	12.5% *(4)*	6.3% *(2)*	28.1% *(9)*
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	0	9.4% *(3)*	9.4% *(3)*	18.8% *(6)*	62.5% *(20)*
Add additional or create no wake zones	12.5% *(4)*	12.5% *(4)*	25.0% *(8)*	18.8% *(6)*	31.3% *(10)*
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	6.3% *(2)*	3.1% *(1)*	6.3% *(2)*	9.4% *(3)*	75.0% (24)
Reduce the number of boats allowed on the water on some of the heavier use days	28.1% *(9)*	15.6% *(5)*	15.6% *(5)*	9.4% *(3)*	31.3% *(10)*

Table A-5 Registered boater view of potential management actions at Willard Bay State Park

Potential Management Action	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Increase number of boater education programs	34.1% *(15)*	34.1% *(15)*	20.5% *(9)*	11.4% *(5)*	0
Expand parking lot to allow more boats on the water	2.3% *(1)*	18.2% *(8)*	31.8% *(14)*	27.3% *(12)*	20.5% *(9)*
Expand the boat ramp to increase the number of boats that could be launched at one time	27.3% (12)	25.0% *(11)*	15.9% *(7)*	15.9% *(7)*	15.9% *(7)*
Increase fees to improve infrastructure	11.4% *(5)*	18.2% *(8)*	4.5% *(2)*	22.7% *(10)*	43.2% *(19)*
Increase the number of law enforcement patrols on water	13.6% (6)	29.5% *(13)*	29.5% *(13)*	18.2% *(8)*	9.1% *(4)*
Decrease the number of law enforcement patrols on water	2.3% *(1)*	0	38.6% *(17)*	31.8% *(14)*	27.3% *(12)*
Limit PWC to certain areas on the water	47.7% (21)	15.9% *(7)*	20.5% *(9)*	6.8% *(3)*	9.1% *(4)*
Separate motor boats from PWC	25.0% *(11)*	18.2% *(8)*	25.0% *(11)*	22.7% *(10)*	9.1% *(4)*
Prohibit PWC, waterskiing, or similar activity for 2 weekdays during the week	9.1% *(4)*	11.4% *(5)*	13.6% *(6)*	22.7% *(10)*	43.2% *(19)*
Add additional or create no wake zones	15.9% *(7)*	22.7% *(10)*	25.0% *(11)*	15.9% *(7)*	20.5% *(9)*
Prohibit PWC, waterskiing, or similar activity in the early morning or late evening	18.2% *(8)*	11.4% *(5)*	11.4% *(5)*	15.9% *(7)*	43.2% *(19)*
Reduce the number of boats allowed on the water on some of the heavier use days	27.3% *(12)*	38.6% *(17)*	13.6% *(6)*	11.4% *(5)*	9.1% *(4)*

Table A-6 shows what respondents cited as their primary activity organized by age cohort. It is worth noting the proportion of respondents who cite both waterskiing, tubing, kneeboarding and wakeboarding decreases steadily as age increases. Conversely, the proportion who cite fishing as their primary activity increases substantially as age increases.

Table A-6 Registered boater age and primary activity[1]

Age Group	Waterski, tube, kneeboard	Wakeboarding	Sightseeing	Fish from boat	Drive boat around
18-29 years old (n=12)	33.3% *(4)*	25.0% *(3)*	8.3% *(1)*	25.0% *(3)*	0
30-39 years old (n=43)	32.6% *(14)*	18.6% *(8)*	4.7% *(2)*	30.2% *(12)*	7.0% *(3)*
40-49 years old (n=105)	30.5% (32)	19.0% *(20)*	7.6% *(8)*	29.5% *(31)*	6.7% *(7)*
50-59 years old (n=97)	24.7% *(24)*	10.3% *(10)*	11.3% *(11)*	40.2% *(39)*	8.2% *(8)*
60-69 years old (n=80)	18.8% (15)	3.8% *(3)*	7.5% *(6)*	55.0% *(44)*	8.8% *(7)*
70 and older (n=56)	8.9% *(5)*	0	8.9% *(5)*	73.2% *(41)*	7.1% *(4)*

[1]Swimming, sailing, and canoeing and kayaking were not included but together they were cited as a favorite activity by only about 5% of the sample.

Recreational Water Use on Utah's Lakes and Reservoirs -- Interview Questions for the Key Informants

Introduction: We would like to thank you for your time and willingness to participate in this interview. The purpose of the study is to provide a regional and statewide overview of the issues, problems, and management challenges facing water-based recreation areas in Utah. Your comments and suggestions will be a valuable resource and will help to maintain quality boating opportunities and services.

Recordings of the interviews will be transcribed, but we will protect any information you share with us that you would like to keep confidential. You are free to discontinue or not to answer questions from the survey at anytime. In addition, you are free to turn off the recorder at anytime. Before we begin, do you have any questions about the interview process?

Section 1: Background Information…The first few questions provides us with general information about your professional experience.

1. How many years have you been employed by State Parks? How long have you been at this position?

2. What jobs or position have you held during your time with State Parks? (Please specify job title)

   _____ _____ _____

   _____ _____ _____

3. Have you worked for another natural resource agency prior to working for State Parks? 9 Yes 9 No

If yes, which ones? What were/was your position(s)?

_____

_____

_____

Section 2: Management Policies…The next few questions are general and their purpose is to get your ideas about Utah Parks and Recreation's policies.

1. What is the primary mission or purpose of Utah Parks and Recreation? How about for (INSERT NAME OF LAKE/RESERVOIR)?

2. How does this particular park contribute to the mission?

3. What is your role within Utah Parks and Recreation?

4. Are there specific recreation management objectives for the lake? (If yes, ask what they are and get copy.) Are they appropriate and useful? If no to any of these: How would you describe what the management objectives are/or should be? Do management objectives vary for different portions of the water body?

Section 3: Visitor Behavior…These next questions address visitor behavior while at (INSERT NAME OF LAKE/RESERVOIR).

1 How large is the staff at this site?

2 What water-based activities do visitors participate in at (INSERT NAME OF LAKE/RESERVOIR)?

9 Motorboating 9 Sailing 9 Waterskiing 9 Canoeing/kayaking

9 Oar Boating 9 Fishing 9 Swimming 9 Trolling

9 Snorkeling 9 Scuba Diving 9 Wake Boarding 9 Knee Boarding

9 Sightseeing on Lake/Reservoir 9 Personal Watercraft Use

Others: _____

3 What times of the year do these activities occur? What times of the day do they occur?

4 Where on (INSERT NAME OF LAKE/RESERVOIR) do (ACTIVITIES MENTIONED ABOVE) occur on the water? Why?

5 Are there certain portions of the water that are more appropriate for activities that require solitude? How about for larger groups and socializing? Do you notice any activities that are more common for those that seek solitude? How about socializating?

6 Are there sections of (INSERT NAME OF LAKE/RESERVOIR) that certain activities are not permitted?

7 Are there any activities or watercraft that are not allowed at this (INSERT NAME OF LAKE/RESERVOIR)?

8 Is there an activity that you believe this water body is especially well suited? Why? What other activities are related to this one?

9 Is there an activity that occurs at (INSERT NAME OF LAKE / RESERVOIR) that you believe is not appropriate? (If yes, what is it?)

10 Where do most of your visitors live?

11 What attracts visitors to (INSERT NAME OF LAKE/RESERVOIR)?

12 Do you know what other attractions that your users visit in this region?

13 Have you seen the types of recreation use change over time? Do you predict any changes in the future? If yes, how so?

14 Is there any factor(s) that you believe keep people from visiting (INSERT NAME OF LAKE / RESERVOIR)?

Section 4: Management Challenges...The next set of questions concerns the challenges you face as a park manager.

1 What are the most challenging aspects of managing (INSERT NAME OF LAKE/RESERVOIR)?

   a. Where is this problem occurring? (Ask if it is not obvious.)

   b. How are you currently addressing this challenge?

   c. What additional steps could be taken to meet this challenge?

   d. Are there barriers preventing management action to address this challenge?

2 Are there any major natural resource issues at (INSERT NAME OF LAKE/RESERVOIR)? If yes, do you believe that recreation use may be a factor? Why?

Section 5: Recreational Use Issues…The next set of questions relate to visitor and recreation management at (INSERT NAME OF LAKE/RESERVOIR).

Is there any official policy that limits recreation use at this (INSERT NAME OF LAKE / RESERVOIR)? (PROBE: Is there an actual number? What do you do when this occurs? Where do people go under these circumstances? What about lakes/reservoirs managed by other agencies or locally?)

1 Do any other water uses (agriculture, hydropower, etc.) adversely impact recreation use at (INSERT NAME OF LAKE / RESERVOIR)?

2 Are there any characteristics about (INSERT NAME OF LAKE / RESERVOIR) that make it unique?

3 How are other reservoirs/lakes in the state or region different or similar to your lake/reservoir?

Section 6: Accident and Incident History…The next set of questions concerns law and policy enforcement. We would like to know what law and policy enforcement challenges and issues you face as a park manager. We would also like to hear your suggestions about improving current law enforcement conditions.

If available: Request a 10 year history of accident, incident reports, citations, and verbal warnings. Or obtain as much information as possible if a 10-year history does not exist.

1. Who has jurisdiction within the State Park? Co other agencies patrol the water? (PROBE: What is the interaction with other agencies?)

2. What are the most common infractions?

For each, probe for reasons/causes. Why are visitors doing that?) (Has this been changing? How? Why?)

3. What are the most challenging aspects of law and policy enforcement?

   a. How are you currently addressing these challenges?

   b. What additional steps could be taken to meet these challenges?

4. How do you feel about boater safety education?

   a. Should boaters be required to take boater safety courses?
      If yes, Why? How could those courses be delivered?

Thank you for your time and participation in this survey.

In (month) we will present the findings from the manager surveys at regional meetings throughout the state. At that time, we will ask for additional ideas about how the state office can help meet park and regional management needs. We will also use the results to help design a statewide telephone survey of boaters. . . .

2006 Recreational Water Use Capacity on Utah's Lakes and Reservoirs Telephone Survey

Hello. May I speak to (Name of Registered Boat Owner). I am calling from Discovery Research on behalf of Utah State University and Utah State Parks. We are doing a statewide telephone survey of registered boat owners to collect information about recreational water use in Utah. This information will help park managers maintain quality recreational experiences and services, protect the lakes, and identify areas of concern.

This telephone survey is completely voluntary. You are free to discontinue or to not answer questions from the survey at anytime. To assure confidentiality, your personal information will not be included in the final report. The survey should take about 15 minutes. Is it OK if we do the survey now?

1. How many boats do you currently own? Please include any motorized boats, sailboats, or personal watercraft such as jet skis, wave runners, seadoos, etc. _____

   None **[Thank the respondent and end the interview – This is not a completed interview]**
   One **[GO TO 1a.]**
   _____ **[NUMBER OF BOATSBGO TO 1b.]**

1a. **[IF ONE BOAT]** What type of boat is that, a/an . . .
   Open motorboat, Personal watercraft (like a jet ski or wave runner),
   Sail (only) boat, Cabin motorboat, Auxiliary sail boat, Other:_____

1b. **[IF MORE THAN ONE BOAT]** How many are **. . .**
   ___Open motorboats ___Personal watercraft ___Sail (only) boats ___Canoes
   ___Cabin motorboats ___Auxiliary sail boats ___Rowboats ___Other:_____

2. How many years have you operated a boat, including personal watercraft? _____

The following Questions are about your Boating Preferences.

3. In the past 12 months, approximately how many outings did you take using your boat(s) in Utah? _____ **[PROBE:** What is your best guess?] [**IF NONE, GO TO Q6**]

[**AN OUTING IS DEFINED AS ANY TRIP TO A WATER BODY WITH A BOAT**]

4. In the past 12 months, how many days did you typically stay on a boat outing, including travel time to and from the boating location? _____

5. On which Utah lakes or reservoirs have you gone boating in the last 12 months?
PROBE: ANY OTHERS?
[LIST AREAS] How many times did you boat at . . .?

If Lake Powell, Utah Lake, or Flaming Gorge is mentioned, ask specifically where. For example, for Lake Powell – it could be Wahwep/Page area OR Bullfrog area.

6. Which Utah boating area would you say is your favorite? _____

6a. What is the MOST important reason _____ is your favorite boating area?
_____
_____

6b. Are there any other reasons?
_____
_____

7. Which Utah boating area would you say is your LEAST favorite? _____

7a. What is the MOST important reason _____ is your least favorite area?
_____
_____

8. The next set of questions deals with where you would like to see your boat registration funds spent. Do you believe it is very important, moderately important, slightly important, or not important that your boat registration funds are spent on . . .

(REPEAT SCALE AS NEEDED)

	VERY IMPORTANT	MODERATELY IMPORTANT	SLIGHTLY IMPORTANT	NOT IMPORTANT
printed facility guides?				
pump-out facilities?				
safety patrols?				
boating education programs?				
picnic areas and campsites?				
parking?				
launching facilities?				
non-motorized boating facilities				
restrooms?				
law enforcement?				

9. I am going to read you a list of activities. For each, please tell me if you participate in that activity when you go boating, and, if so, do you do it rarely, sometimes, often, or always. Do you . . .

[**IF YES:** How often would you say . . .]

ACTIVITY	**NEVER**	**RARELY**	**SOMETIMES**	**OFTEN**	**ALWAYS**
waterski, tube, or knee board?					
wakeboarding?					
swim from a boat?					
sail?					
go sightseeing on the lake?					
canoe or kayak?					
fish from a boat?					
just drive the boat around for fun?					

9a. **[IF MORE THAN ONE]** Which of these is your *primary* activity when you go boating? **[REPEAT LIST IF NECESSARY]** _____

10. Now I would like you to think about boating safety for a moment. What is the *primary* source where you obtained your boating safety knowledge?

10a. Where did you *most recently* see or hear boating safety information?

11. Have you ever completed a boating education course? YES NO DO NOT KNOW

12. Do you strongly agree, somewhat agree, are neutral, somewhat disagree, or strongly disagree with the statement? "Boating education courses are important."

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL DO NOT KNOW
SOMEWHAT DISAGREE
STRONGLY DISAGREE

13. Do you strongly agree, somewhat agree, are neutral, somewhat disagree, or strongly disagree with the statement? "Boating education courses should be mandatory for all boat operators."

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL DO NOT KNOW
SOMEWHAT DISAGREE
STRONGLY DISAGREE

14. How about the statement? "All boat operators should be licensed to operate a boat." This means that operator privileges could be revoked for certain boating violations.

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL DO NOT KNOW
SOMEWHAT DISAGREE
STRONGLY DISAGREE

15. How about the statement? " I support the use of personal watercraft on Utah lakes."

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL DO NOT KNOW
SOMEWHAT DISAGREE
STRONGLY DISAGREE

15a. **[IF DISAGREE]** And why is that?

_____

_____

_____

[**PROBE:** Are there any other reasons you DO NOT SUPPORT the use of personal watercraft on Utah lakes?]

16. Do you believe personal watercraft should be regulated differently than other boats?

YES NO DO NOT KNOW

16a. [IF YES] How should personal watercraft be regulated differently than other boats?

_____

_____

[**PROBE:** anything else?]

17. In GENERAL, do you feel that the actions of some lake users detract from your enjoyment while you are boating in Utah?

YES POSSIBLY NO [GO TO Q#18]

17a. How often is your boating enjoyment reduced by the actions of others when you go boating on Utah lakes? Would you say . . .

rarely (by that I mean on *some outings but not on every outing*),
infrequently (maybe once per outing)
sometimes (about 2 or 3 times per outing),
often (about 4 or 5 times per outing), or
very often (more than 5 times per outing).

17b. Which types of activities, actions, or lake users detract from your enjoyment?

_____

_____

[**PROBE:** Do any other actions detract from your enjoyment?]

18. In general, do you think there is a need to put a limit on the number of boats that can use a lake at one time? Would you say . . .

definitely yes,
probably yes,
probably no, or
definitely no.
DO NOT KNOW

18a. **[IF YES]** Why do you feel use limits are needed?

_____

_____

[**PROBE :** Any other reasons? UNTIL NO MORE ARE GIVEN]

[IF NO LAKES LISTED - GO TO Q 19]

[REPEAT FOLLOWING QUESTION SERIES FOR UP TO TWO LAKES – CHOOSE THE FIRST TWO LAKES ON THE LIST]

NOTE: IF A LAKE OR RESERVOIR THAT IS NOT LISTED BELOW IS INDICATED BY THE RESPODENT, PLEASE ASK ABOUT THAT LAKE OR RESERVOIR AS LAKE #2

PINEVIEW JORDANELLE DEER CREEK WILLARD BAY EAST CANYON QUAIL CREEK

18c. Why do you think use limits are needed on _____ [LAKE 1, Q19b]?
_____
_____

18d. If you were not able to get on [LAKE 1] as a result of restrictions on the number of boats that are allowed on the lake, do you think you would wait there for an opening, try boating somewhere else, or do something totally different?

WAIT FOR AN OPENING AT SAME LAKE
TRY BOATING SOMEWHERE ELSE -- Where do you think you would go? _____
DO SOMETHING TOTALLY DIFFERENT
UNSURE

19. Next I would like to read you a list of *potential* problems or concerns that may occur at various lakes. For each, please tell me if you think it is a problem on the Utah lakes you are familiar with, and if so, is it a small, moderate, or major problem.
[**IF YES:** Is it a small, moderate or major problem?]

PROBLEM	**NOT PROBLEM**	**SMALL PROBLEM**	**MODERATE PROBLEM**	**MAJOR PROBLEM**
Is drug or alcohol abuse by boaters a problem?				
How about…reckless motorboat operators?				
How about… reckless personal watercraft operators?				
How about…too many boats on the water at one time?				
How about…crowding at launch ramps & parking areas?				
How about…crowding at beaches and facilities?				
How about…fluctuating water levels?				
How about…safety problems on the water?				

20. For the following questions, please tell me if you would strongly agree, agree, disagree or strongly disagree with the following action at your favorite water-based State Park in Utah:
Note: If the respondent mentioned Lake Powell or Flaming Gorge as their favorite (SEE QUESTION #6) – tell them that we want to hear about their favorite state park. If they say that they do not have a favorite state park – have them discuss a park they use frequently or live near (find out which one they are talking about).

20a. Increase the number of boater education programs

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20b. Expand the parking lot to allow more boats on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20c. Expand the boat ramp to increase the number of boats that could be launched at one time

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20d. Increase fees to improve infrastructure (such as boat ramps, restrooms, picnic areas)

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20e. Increase the number of law enforcement patrols on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20f. Decrease the number of law enforcement patrols on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20g. Limit Personal Water Craft to certain areas on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20h. Separate motor boats from PWC on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20i. Prohibit PWC, waterskiing or similar activity on the water for 2 weekdays during the week

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20j. Add additional or create no-wake zones

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20k. Prohibit PWC, waterskiing or similar activity in the early morning or late evening

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

20l. Reduce the number of boats allowed on the water on some of the heavier use days

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

Finally, I have just a few personal questions that are for statistical purposes only. **As with all the questions on the survey, these questions are *completely* confidential.**

21. What was your age on your last birthday? _____

22. What is your zip code?_____

23. Including yourself, how many people in your household operate boats? _____

24. How many people are there living or staying in your household, including yourself?

24a. Of these x people, how many are 17 or younger?

25. What was your *total* combined household income from all wage earners during the past 12 months? Please include money from all sources, not just wages and salaries, before taxes and other deductions. Was it . . .

Less than $25,000,
between $25,000 and $45,000,
between $45,000 and $65,000,
between $65,000 and $85,000.
between $85,000 and $105,000,
between $105,000 and $125,000,
between $125,000 and $150,000,
between $150,000 and $200,000,
or
more than $200,000

26. What is the highest year or grade of school you have completed?

Junior high or less
Some high school
High school grad or GED
Some college or vocational school
Technical or vocational school grad. or Associates degree
College graduate (4 years, Bachelors degree)
Some graduate courses
Graduate/Professional degree

Thank you for your time and participation in this survey. This information will assist Utah State Parks in making your water recreation experience more enjoyable for you.

On-line Managerial Survey

This survey was administered on-line.

1. What State Parks(s) do you manage?

2. Do you believe it is very important, moderately important, slightly important, or not important that boater registration funds are spent on . . .

	VERY IMPORTANT	MODERATELY IMPORTANT	SLIGHTLY IMPORTANT	NOT IMPORTANT
printed facility guides?				
pump-out facilities?				
safety patrols?				
boating education programs?				
picnic areas and campsites?				
parking?				
launching facilities?				
non-motorized boating facilities				
restrooms?				
law enforcement?				

3. Please read the list of potential problems or concerns that may occur at various lakes or reservoirs. For each, please state if you think it is a problem on the Utah lake(s) or reservoir(s) that you manage, and if so, is it a small, moderate, or major problem.

PROBLEM	NOT PROBLEM	SMALL PROBLEM	MODERATE PROBLEM	MAJOR PROBLEM
Is drug or alcohol abuse by boaters a problem?				
reckless motorboat operators?				
reckless personal watercraft operators?				
too many boats on the water at one time?				
crowding at launch ramps & parking areas?				
crowding at beaches and facilities?				
fluctuating water levels?				
safety problems on the water?				

Note: The following set of potential management actions were listed twice following the two questions listed below. First, managers were asked about their preference towards management actions and then asked to predict their visitors view.

4. **For the following questions, please tell me if you would strongly agree, agree, disagree or strongly disagree with the following action at the lake(s) or reservoir(s) that you manage:**

5. **For the following questions, please rate how you believe boaters at the lake(s) or reservoir(s) that you manage would agree or disagree with the following management actions:**

4a/5a. Increase the number of boater education programs

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4b/5b. Expand the parking lot to allow more boats on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4c/5c. Expand the boat ramp to increase the number of boats that could be launched at one time

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4d/5d. Increase fees to improve infrastructure (such as boat ramps, restrooms, picnic areas)

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4e/5e. Increase the number of law enforcement patrols on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4f/5f. Decrease the number of law enforcement patrols on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4g/5g. Limit Personal Water Craft to certain areas on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4h/5h. Separate motor boats from PWC on the water

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4i/5i. Prohibit PWC, waterskiing or similar activity on the water for 2 weekdays during the week

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4j/5j. Add additional or create no-wake zones

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4k/5k. Prohibit PWC, waterskiing or similar activity in the early morning or late evening

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

4l/5l. Reduce the number of boats allowed on the water on some of the heavier use days

STRONGLY AGREE
SOMEWHAT AGREE
NEUTRAL
SOMEWHAT DISAGREE
STRONGLY DISAGREE

6. About how many times per year do you have to close your park because the parking lot is full or the lake or reservoir is at capacity?

SKIP THIS QUESTION IF YOU ANSWERED "0" TO THE PREVIOUS QUESTION

7. What two or three lakes or reservoirs do you believe that your users would go to if they were unable to get onto the lake(s) or reservoir(s) that you manage?

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