

Recreational Off-Highway Vehicle Use on Public Lands in Utah



A Report for the Utah Governor's
Public Lands Policy Coordination Office

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NATIONAL OFF-HIGHWAY VEHICLE USE ON PUBLIC LANDS WITHIN UTAH

EXECUTIVE SUMMARY

Overview

The use of off-highway vehicles (OHVs) for recreation and other outdoor activities has exploded in popularity over the past several decades. The number of registered OHVs in Utah has more than tripled in the past eight years alone, up from 51,686 in 1998, to 172,231 in 2006, a 233% increase. This increase has brought the issue of OHV use and management to the forefront for land management agencies in Utah.

While becoming a key public lands issue, the social dimension of OHV use has received little attention from recreation researchers or decision makers. This research fills that critical knowledge gap, collecting and interpreting information around which policy and planning efforts can be centered. This link is critical to making more informed public lands decisions as OHVs are an integral part of many recreationists' enjoyment of public lands.

Information was solicited from OHV owners through a mail survey sent to a random sample of Utah's registered OHV owners. The sample consisted only of owners who had registered an OHV, meaning an all-terrain vehicle (ATV), dirt motorcycle, dune buggy, or other non-street-legal, four-wheel drive vehicle. Snowmobile owners were not included.

The information gathered centered around six primary areas: 1) basic demographics; 2) trip characteristics; 3) the importance and satisfaction in certain management actions (including use fees); 4) the motivations and benefits desired by OHV owners; 5) their general level of environmental concern; and 6) their level of specialization within the activity.

Results

Demographics. A primary objective of this study was to establish baseline data on the demographics of registered OHV owners. While no direct management implications can be inferred from this information, it is essential if recreation managers are to better understand and track the changes and trends in outdoor recreation on public lands in Utah. Some trends did emerge after analyzing the 2007 data against results from previous studies. Utah's OHV owners are predominantly middle-aged and aging. The mean age of registered OHV owners (48.65 years old) is 4.7 years older than it was just six years ago. This result may correlate directly with the increase in median income for owners when compared to 2001 data, as older owners would generally bring higher incomes than their younger counterparts. Utah's OHV owners have lived in Utah nearly their entire lives, on average over 40 years. Consistent with previous surveys, we found that owners reside predominantly along the Wasatch Front. However, their residence is not proportional when compared to Utah's population as a whole. In other words, OHV owners reside in non-metro counties in larger proportions than the state's population as a whole.

Owner and trip characteristics. Ascertain information about the characteristics of Utah's OHV owners, as well as the types of OHV activities they are engaging in, was a primary

objective of this study. We found ATVs and off-highway motorcycles are not only becoming increasingly popular to new users but also among existing OHV owners. This is shown by results that indicate increases in the ownership rate of both off-highway motorcycles and ATVs among the overall OHV owner population over the past six years. Correlating with this increase in ownership rates is an increase in the mean number of bikes or ATVs owned.

Other owner characteristics include a recreationist's experience and skill within the activity. Utah's OHV owners are a fairly experienced group with the average rider using the vehicles for more than 20 years and considering him/herself an advanced rider. Their experience directly correlates to their preference for trail conditions as most said they prefer trails that require a moderate amount of technical difficulty (e.g., narrow sections, steep grades, and minor drop-offs). Management actions and planning should reflect this preference for moderately difficult trails while continuing to provide for a broad range of OHV recreational opportunities.

The idea of OHV riding as a family activity was supported as the average group consists of more than four immediate and extended family members. These groups participate in a surprisingly diverse array of ancillary recreational activities, including both passive (sightseeing and photography) and relatively more active activities (camping and hiking/walking).

Another primary objective of this study was to understand the amounts and patterns of OHV use on public lands throughout the State. Three distinct categories of highly visited counties became evident when analyzing the destinations of OHV owners on their most recent trip and over the past twelve months. The first are those counties that are most frequently the destination of OHV owners. Namely these are Utah, Juab, Tooele, and Sanpete Counties. Geographically, these are all centrally located in the State, relatively close to the major population centers, and all provide unique areas that are highly popular with OHV owners. The second category includes three counties that also have a high degree of attraction to recreationists, are located only slightly farther from the Wasatch Front, and receive high levels of use. These are Sevier, Summit, and Wasatch Counties. The third group of areas includes Washington County, and Idaho. These areas are unique in that they are still highly visited, receive high levels of use, and are geographically isolated from the Wasatch Front.

An interesting trend has emerged in OHV use in Utah over the past six years; nearly half of all respondents who own an ATV indicate they only use it one to five times a year. While ownership is increasing rapidly, the number of trips taken per year per owner is declining.

Importance/Satisfaction. Direct management implications can be inferred by understanding the importance and satisfaction of specific management actions. Statewide, respondents are generally satisfied with the provision of information, trailhead facilities, maintenance of OHV areas, signage, and the enforcement of rules and regulations on their most recent trip. Owners also see management actions that provide for these items as generally important, with the availability of information seen as the most important relative to the other four categories.

When charted for both importance and satisfaction, results indicate that the availability of information is the biggest relative weakness. More effort should be focused on providing information about rules, hazards, and conditions via high-quality maps, brochures, newsletters, and websites presented in a standardized format across agencies. The provision of this information should be effectively distributed to OHV recreationists if recreation managers wish

to increase visitor safety and satisfaction. Possible outlets include the internet, user groups, community leaders, chambers of commerce, visitor information bureaus, and scouting organizations, as well as field offices and ranger stations.

Trailhead facilities and law enforcement are the least important provisions a managing agency can provide, according to respondents. However, easily understood visitor use informational, interpretive, and regulatory signs that enhance the opportunity for safe and enjoyable visits while protecting resources should still be seen as a management goal. Law enforcement, while not seen as highly important to OHV owners, should still become a more effective tool of OHV management.

The provision of signage and the maintenance of OHV areas were both highly important and received adequate user satisfaction across the state. Future efforts can be concentrated, however, to improve resource conditions and visitor experiences on public lands. Route design, construction, monitoring, maintenance, and restoration technique standards should be established and shared across management agencies. In a similar vein, OHV signs should be easily identifiable and similar across agencies and jurisdictional boundaries. Users are often confused about the appropriateness of riding on public lands because of inadequate signage. Confusion can lead to conflict, the degradation of resources, and threats to safety. Hence, the provision of clear signage, while already being satisfactorily provided for, will improve use compliance on designated routes.

Fees. Across all agencies that manage OHV use, funding for activity management has not kept pace with growth. These agencies need to make increased use of existing funding sources while seeking new sources such as user fees, outside funding, and grants. When asked about their preference for use fees, respondents generally opposed two of the methods suggested; an additional Utah state tax on the sale of new OHVs and trailhead parking fees for *all* users. A daily use fee for heavily used areas was the least opposed of the three options given; nearly as many individuals oppose the idea as those that support it. If existing funding sources are inadequate at the local level and outside funding is unavailable, this form of user fee may prove to be the least opposed among Utah's OHV population. These funds should be marked for the improvement and management of the sites from which they were collected. This allows the capabilities of managers who supervise use on the most heavily visited areas to be increased and allows users to see the direct result of their user fees.

Motivations & Benefits. Providing an atmosphere in which OHV owners feel a sense of relief from stressful situations and where nature can be appreciated with others in a group setting should be a prime focus in guiding the design and management of OHV trails and areas. In response to owners' reasons for going riding, and with a goal of providing for a positive experience, managers should pay particular attention to the opportunities their OHV areas provide. This can be accomplished by a concerted effort to provide a wide variety of OHV opportunities for the recreationist to experience desired benefits (e.g., stress relief, achievement/stimulation, etc.). This spectrum of opportunities should include open area riding as well as looping and stacked trail systems that offer a variety of trail difficulties and experiential opportunities. Trailhead facilities should also reflect the fact that most OHV owners recreate in groups and want to teach or lead others in the activity. Group campsites and areas for gathering should be a consideration in the design of future OHV trailheads and facilities. OHV owners also noted that learning and experiencing new things was important to their participation.

Upgraded and expanded efforts of providing interpretive and educational opportunities are encouraged and would increase riders' enjoyment of public lands. These educational opportunities should also be used as an outlet for responsible riding information.

Environmental Attitudes. Contrary to the common perceptions that OHV owners are indifferent to the ecological impacts of their activity, results suggest that OHV owners, on average, have a slightly pro-environmental attitude. Knowledge of a slightly pro-environmental attitude among OHV owners carries direct management implications. OHV riders may be more open to environmental education efforts than previously thought. The public lands agencies within the state that deal with OHV use should create or increase their efforts to foster an environmental ethic in all users of public lands, especially OHV owners. These efforts should be focused on new owners and youth groups, as they are the most unfamiliar with responsible recreation on public lands. Agency personnel can be used to conduct a variety of trainings, focusing on safe and environmentally responsible OHV use. Collaboration is important with groups such as user groups, environmental groups, schools, OHV manufacturers and retailers, and especially ethic development organizations such as the Tread Lightly! The Leave No Trace Program may help also in the formation of training, as well as the dissemination of information.

Specialization. Given the explosive growth of OHV recreation within the state and the land management agencies' tight recreation management budgets, research is needed that is useful for planning and managing public lands efficiently and effectively. Recreation specialization—the idea that recreationists can be placed along a continuum based on their commitment to the activity, their behavior, and their skills and knowledge—accomplishes this goal by segmenting Utah's OHV owner population. Subsequently, planning and management efforts can focus on providing services and recreational activities that do not cater to a homogenous user group, but rather to the diverse population of OHV owners who lie along the specialization continuum.

Applying the idea of specialization, three groups emerged. These are best classified as: (a) casual owners, (b) focused and experienced owners, and (c) frequent and highly invested owners. The broadest demand for OHV recreation in the state comes from casual users as they make up the large majority of the OHV population. Management should admittedly focus the majority of resources on these owners; that is, the recreationists who identify themselves as intermediate riders while preferring trails that do not require a lot of skill to navigate. Managers can also infer that, because these users make up the largest proportion of OHV owners in Utah, significant efforts should be made to facilitate and enhance their participation. An example of this facilitation may include an increased effort to make information available via web sites, field offices, or ranger stations geared toward a user who has said they only use their OHV for recreational purposes less than five times per year. Or, make trailhead facilities accessible and accommodating (i.e., available restroom facilities, water, and camping areas) for a user that, relative to the more specialized groups, would not have camp trailers and “toy haulers” utilized for overnight trips.

In the design and development of OHV trails, managers need to be aware that the more populous casual owner prefers trails that do not require a significant amount of technical ability to navigate. As many recreation planners are moving to identifying segments of their trail systems by their difficulty level (e.g., moderate, more difficult, extreme), the majority of trail maintenance and future development should be focused on only moderately difficult trails.

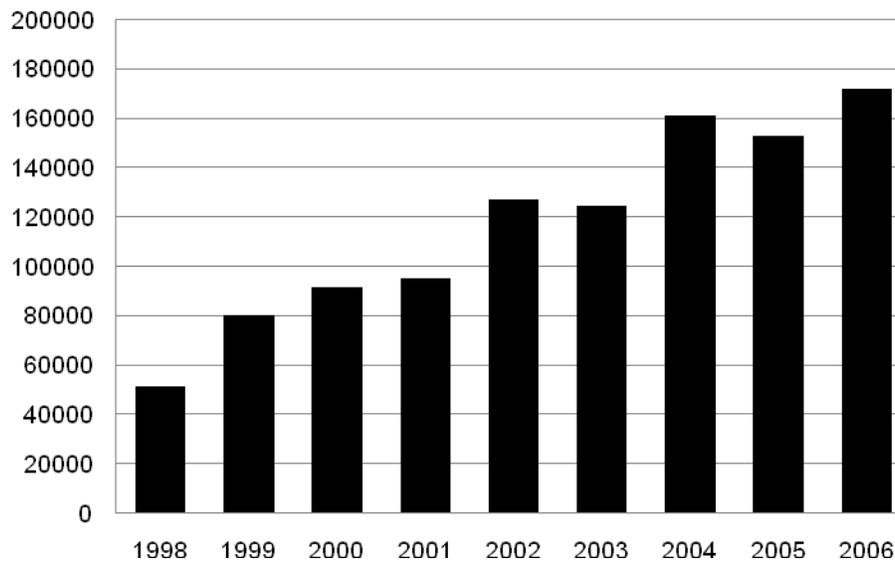
In conclusion, managers should realize that the state's OHV owners are not a homogenous group of recreationists and should not be planned for as such. Different opportunities for different types of OHV owners should be a priority if agencies are to deliver a broad spectrum of recreational opportunities. Many agencies and OHV owner organizations have already begun to realize the different needs and desires within the OHV owner population.

RECREATIONAL OFF-HIGHWAY VEHICLE USE ON PUBLIC LANDS WITHIN UTAH

INTRODUCTION

The use of off-highway vehicles (OHVs) for recreation and other outdoor activities is a relatively recent phenomenon, extending primarily across the last three decades. In 1960, when the first U.S. National Recreation Survey was done for the Outdoor Recreation Resources Review Commission, off-highway motorized recreation was not even on the radar as a recreational activity (Cordell et al., 2005). Use evolved quickly, however. The increasing popularity of OHVs has been cited frequently for the magnitude and speed at which it has developed. Nationwide, the population of OHVs (meaning strictly the number of vehicles owned) has grown by 174% between 1993 and 2003 (Cordell et al., 2005). The State of Utah is no exception and has seen a dramatic increase in OHV use. The number of registered OHVs in Utah has more than tripled in the past eight years, up from 51,686 in 1998, to 172,231 in 2006, a 233% increase (Figure 1). The mass popularization of personal OHV use on public lands within Utah has introduced public lands managers to a new type of recreationist who needs to be considered in future policy decisions and the continued management of public lands.

Figure 1. *Off-highway Vehicle Registrations in Utah*



Note. These registration numbers are for all OHVs, excluding snow machines.

Source. Utah Department of Motor Vehicles.

What is an OHV?

Off-highway vehicles (OHVs) are often popularly defined as 4-wheel drive jeeps, motorcycles designed for off-highway use, all-terrain vehicles (better known as ATVs), and other specially designed off-road motor vehicles (e.g., dune buggies, rock crawlers, and sand rails). Over-snow machines are also considered in a broad definition of OHVs; however, these vehicles are not within the scope of this study and have been excluded from analysis.

PURPOSE

While motorized recreation is one of the key issues facing public land management agencies in the United States, it continues to receive little attention from recreation researchers (Bosworth, 2004). This fact is changing as the growing use of OHVs has prompted federal, state, and local land management agencies to direct increased attention and funding toward OHV research, planning, and management with the goal of providing for a socially demanded recreational opportunity while simultaneously providing ecological protection as required by various laws and policies. The academic and managerial attention given to the activity of OHV riding has traditionally been focused on the ecological impacts of OHVs. Not until recently has more notice been given to the sociodemographic characteristics of OHV users and to the economic impact of the activity. To date, only two previous studies concerning OHV use in Utah have been attempted. The first was conducted in 1994 by the University of Utah's Survey Research Center (University of Utah Survey Research Center, 1994), and the second by Utah State University's Institute for Outdoor Recreation and Tourism (IORT) in 2001 (Fisher et al., 2001) (see Appendix G for more detailed information about each of these surveys).

The 2007 study reported here contributes to the existing knowledge created by the two previous surveys, as well as furthering our understanding about OHV use in Utah. The study does this by discerning detailed information about Utah's OHV users as well as how and where this use occurs on public lands. It accomplishes this by soliciting responses about basic demographics, trip characteristics, the importance and satisfaction of certain management actions (including use fees), the motivations and benefits desired by OHV owners, their general level of environmental concern, and finally their level of specialization within the activity. The acquisition of this information will allow land managers and policy makers to make more informed decisions about OHV recreation throughout the state. More broadly, it will also further the understanding of OHV activity and users beyond the scope of Utah, as results have implications for managers who deal with similar issues involving recreational OHV use and public lands elsewhere.

OBJECTIVES

The survey was designed to generate the following information:

- (1) Demographics of registered OHV users;
- (2) Social characteristics of OHV user groups;
- (3) Types, amounts, patterns, and characteristics of OHV use on public lands;
- (4) The importance of specific management actions to OHV users' recreational experiences;
- (5) Registered OHV users' satisfaction with management of OHV areas;
- (6) Registered OHV users' preferences for experiences related to their OHV activity;
- (7) Registered OHV users' level of specialization within the activity;
- (8) Registered OHV users' environmental attitudes.

METHODS

Study Population, Sample Selection, and Survey Administration

The study population consisted of individual OHV owners in Utah who were at least 18 years old. The IORT at Utah State University, working in collaboration with Utah State Parks, was able to obtain the Utah Department of Motor Vehicles' list of registered OHV owners. This list is the most complete record of OHVs within the state as all vehicles are required by law to be registered with the DMV¹. The list contains each vehicle registered, and its owner's contact information. To eliminate the potential sampling error of drawing from a population of vehicles, OHV owners who owned multiple vehicles and, therefore, had multiple entries, were pared down and duplicates deleted. An owner who owns one vehicle had an equal chance of being selected in the sample as one who owned five or six. There was no way to account for individuals who rent or borrow OHVs, but their effect on survey results is negligible.

Table 1 shows the final study population that consisted of 113,713 individual registered OHV owners who live in Utah. Of these registered owners, 1,500 names were randomly selected to receive the mail survey. The actual number of individuals that received surveys was 1,416; 84 were undeliverable (either the potential respondent had moved and no current address was available, or they had died within the previous year). Five attempts were made to contact each respondent. Three mailings were sent beginning June 2007. Owners were sent a survey, cover letter, and State of Utah map (See Appendix A for the survey instrument and Appendix B for the cover letters). Non-respondents were sent a postcard reminder (See Appendix C) three weeks after this initial mailing. A second full mailing (i.e., survey, letter, map) was sent to non-respondents three weeks after the postcard reminder. The third and final mailing was sent after another three weeks of non-response. Completed surveys were returned via pre-paid postage printed directly onto the instrument. Respondents were directed to tape the corners of their completed survey and place it in the mail. Collection of surveys continued for three months after the third mailings. Finally, data were converted into a digital format from the instruments via Microsoft Excel and SPSS software programs.

Table 1. *Selection of the Survey Sample*

Group	Number	Percentage of Group
Registered OHVs	181,542	100% of Registered OHVs
OHV owners	113,713	100% of Population
Original Sample	1,500	1.32% of Population
Undeliverable ¹	84	5.6% of Original Sample
Received Mail Survey	1,416	100% of Sample
Non-Responses ²	816	57.6% of Sample
Complete Responses	600	42.4% of Sample
1. Includes individuals for whom no forwarding address was available and those who had died in the previous year. 2. Includes rejections and surveys returned blank.		

¹ OHV registration is not required if that vehicle is used solely for farming related work purposes. Owners of these vehicles must state that their vehicle(s) are "implements of husbandry." Not having them in the population from which the survey sample was drawn is inconsequential, assuming that the vehicle is not used for recreational purposes.

Survey Design

The survey was designed to gather information about OHV users, their recreational experiences, and their expenditures on OHV related activities. To ascertain this information in a way that could be easily understood by the respondent, the survey was segmented into six distinct sections:

- (1) Within the Last 12 months;
- (2) Experience;
- (3) Activities/Motivations;
- (4) Most Recent Trip;
- (5) Trips Environmental Attitudes; and
- (6) Demographics.

The questions within each section were based on a review of previous surveys conducted by IORT in Utah and by other agencies or universities outside of Utah. The question formulation was also informed by review sessions between the project staff and a representative from the Utah Governor's Office of Public Lands Policy Coordination. The review sessions resulted in a 12-page survey instrument (Appendix A).

Data Analysis

Data generated from surveys were "cleaned" to eliminate any entry errors, and then analyzed using Microsoft Excel and Statistical Package for the Social Sciences (SPSS) data analysis software. The information obtained from the mail survey was then analyzed and served as the basis for this report.

DEMOGRAPHICS

Methods

As public land managers are tasked with the responsibility of examining and implementing clear and consistent agency policy, understanding who the OHV recreationists are has become ever more important (Cordell et al., 2005). This project examines a recreational user group that appears to be fairly heterogeneous as evidenced by the National Survey on Recreation and the Environment (Cordell et al., 2005). By analyzing demographic characteristics of recreational OHV users, the current study is able to discern differences among the user group. To obtain this information, respondents were asked 11 basic demographic questions.

Results

Age: Respondents' age ranged from 20 to 84 years of age with the mean being 48.65 years old. When compared to previous studies, this signifies an aging of the OHV owners in Utah. The 1994 survey yielded a mean age of nearly 44, as did the 2001 survey, which reported a mean age of 43.9 (Table 2).

Table 2. *Age of OHV Owners*

Group	1994 Percentage (n=627)	2001 Percentage (n=303)	2007 Percentage (n) (n=549, M=48.65)
18-29	11.0%	10.6%	6.9% (38)
30-39	28.0%	21.5%	19.5% (107)
40-49	29.0%	32.0%	29.5% (162)
50-59	18.0%	20.1%	22.4% (123)
60-69	13.0%	11.2%	14.0% (77)
Over 70	N/A	4.6%	7.7% (42)

Ethnicity: Utah’s OHV owners predominantly classify themselves as white, with only extremely small portions of the sample indicating otherwise. The 1994 and 2001 studies did not report on the ethnicity of respondents.

Table 3. *Ethnicity of OHV Owners*

Ethnicity (n=560)	Percentage (n)
White	98.4% (551)
African American	0.0% (0)
Hispanic	1.1% (6)
Native American	0.2% (1)
Other	0.4% (2)

Education: As presented in Table 4, the majority of respondents (76.9%) completed at least some college or attended community college, while more than 28% completed a four-year college degree.

Table 4. *Education of OHV Owners*

Highest degree completed (n=563)	Percentage (n)
Less than a high school degree	2.3% (13)
High school degree or GED	20.8% (117)
Some college or a community college	30.2% (170)
2 year technical or associate degree	18.3% (103)
4 year college degree (BS, BA)	19.7% (111)
Advanced degree (MS, MA, JD, MD, PhD)	8.7% (49)

Marital Status: The vast majority of OHV owners in Utah are married (85.9%). The 1994 and 2001 studies did not report on marital status of respondents.

Table 5. Marital Status of OHV Owners

Status (n=560)	Percentage (n)
Single	8.2% (46)
Married	85.9% (481)
Separated/Divorced	4.6% (26)
Widowed	1.3% (7)

Household income: The median income was between \$75,000 and \$99,999. This is considerably higher than what was reported in the 1994 and 2001 surveys, both noted a median income between \$30,000 and \$60,000. Converted into today's dollars, this would be between \$41,761 and \$83,522 for the 1994 survey and between \$34,966 and \$69,932 for the 2001 survey.

Table 6. Household Income of OHV Owners

Income (n=514, Median=\$75,000--\$99,999)	Percentage (n)
Under \$34,999	8.9% (46)
\$35,000 -- \$49,999	10.7% (55)
\$50,000 -- \$74,999	27.6% (142)
\$75,000 -- \$99,999	25.5% (131)
\$100,000 -- \$149,999	17.7% (91)
Over \$150,000	9.6% (49)

Years Lived in Utah: As Table 7 displays, the majority of Utah OHV owners (52.3%) have lived in Utah for at least 41 years. For all owners, the mean years lived in Utah was 40.5.

Table 7. Years OHV Owners Have Lived in Utah

Years (n=568, M=40.52)	Percentage (n)
<20	13.0% (74)
21-30	13.7% (78)
31-40	21.0% (119)
41-50	26.9% (153)
51-60	13.9% (79)
61+	11.5 % (65)

County of Residence: Previous research (Fisher et al., 2001) found slightly more than half (50.1%) of Utah's OHV owners lived in Utah, Salt Lake, and Davis counties in 2001. This fact remained as we found 50.6% of survey respondents reside in these three counties. Change has been occurring, though, as several counties have either increased or decreased in the proportion of OHV owners who reside in them (Table 8). Namely Davis, Washington, Weber, and Salt

Lake Counties have seen the largest proportional increases, 2.1%, 2.1%, 3.1%, and 3.4 %, respectively. Utah County, on the other hand, has seen a 5% decrease.

Comparisons also can be drawn from the population distribution of Utahns, age 18 and older. The heavily urbanized counties along the Wasatch Front (Salt Lake, Davis, Weber, and Utah) are home to nearly 60% of registered OHV owners, but more than 76% of all Utahns. This indicates that the state's OHV owners reside in more rural areas when compared to the entire state population.

Table 8. OHV Owners' County of Residence

County	2001 Percentage (n=307)	2007 Percentage (n) (n=561)	2000 Census Population Distribution ≥18 yrs. (% of State Pop.)	2001 – 2007 Percentage Change
Beaver	1.6%	.4% (2)	3,994 (0.3%)	-1.2%
Box Elder	4.5%	3.2% (18)	27,319 (1.8%)	-1.3%
Cache	3.6%	4.6% (26)	62,798 (4.2%)	+1.0%
Carbon	2.3%	1.8% (10)	14,548 (1.0%)	-.5%
Daggett	0.0%	0.0% (0)	707 (0.1%)	0.0%
Davis	7.7%	9.8% (55)	155,031 (10.2%)	+2.1%
Duchesne	.3%	1.1% (6)	9,086 (0.6%)	+0.8%
Emery	1.9%	1.1% (6)	7,017 (0.5%)	-.8%
Garfield	1.0%	.5% (3)	3,190 (0.2%)	-.5%
Grand	0.6%	.4% (2)	6,203 (0.4%)	-.2%
Iron	2.3%	2.1% (12)	23,232 (1.5%)	-.2%
Juab	1.3%	.9% (5)	5,061 (0.3%)	-.4%
Kane	.6%	.9% (5)	4,269 (0.3%)	+3.3%
Millard	1.6%	1.6% (9)	7,779 (0.5%)	0.0%
Morgan	1.3%	1.2% (7)	4,486 (0.3%)	-.1%
Piute	0.0%	0.0% (0)	994 (0.1%)	0.0%
Rich	0.3%	.2% (1)	1,282 (0.1%)	-.1%
Salt Lake	22.4%	25.8% (145)	624,804 (41.3%)	+3.4%
San Juan	1.0%	.9% (5)	8,746 (0.6%)	-.1%
Sanpete	2.6%	3.4% (19)	15,209 (1.0%)	+8.8%
Sevier	3.6%	2.3% (13)	12,342 (0.8%)	-1.3%
Summit	1.3%	.7% (4)	20,873 (1.4%)	-6.6%
Tooele	2.6%	2.5% (14)	26,482 (1.8%)	+1.1%
Uintah	2.9%	2.0% (11)	16,492 (1.1%)	-0.9%
Utah	20.0%	15.0% (84)	243,049 (16.1%)	-5.0%
Wasatch	1.0%	1.4% (8)	10,010 (0.7%)	+4.4%
Washington	4.5%	6.6% (37)	62,164 (4.1%)	+2.1%
Wayne	.6%	.4% (2)	1,697 (0.1%)	-0.2%
Weber	5.8%	8.9% (50)	135,607 (9.0%)	+3.1%
Other State: Colorado	N/A	.2% (1)	N/A	N/A
Nevada	N/A	.2% (1)	N/A	N/A
Total	100.0%	100.0% (561)	1,514,471 (100%)	

Political Views: Utah’s OHV population leans to the right in their political views, with more than 60% classifying themselves as either conservative or moderate conservative.

Table 9. *Political Views of OHV Owners*

View (n=528)	Percentage (n)
Conservative or Moderate Conservative	60.6% (320)
Moderate	19.9% (105)
Moderate Liberal or Liberal	10.6% (56)
Other	8.9 % (47)

Household Size: OHV owners in Utah belong to households that, on average, contain 3.36 people. This is comparable to the Utah population as a whole, which has a mean household size of 3.13 (US Census Bureau, 2008).

Table 10. *Household Size of OHV Owners*

Household Size (n=564, M=3.36)	Percentage (n)
1	9.2% (52)
2	32.3% (182)
3	14.5% (82)
4	15.8 % (89)
5	13.5% (76)
6	9.2% (52)
7+	5.5% (31)

Discussion

A primary objective of this study was to establish baseline data on the demographics of registered OHV owners. While no direct management implications can be inferred from this information, it is essential if recreation managers are to better understand and track the changes and trends in outdoor recreation on public lands in Utah. Some trends did emerge after analyzing the 2007 data against results from previous studies. Utah’s OHV owners are predominantly middle-aged and aging. The mean age of registered OHV owners (48.65 years old) is 4.7 years older than it was just six years ago. This result may correlate directly with the increase in median income for owners, when compared to 2001 data, as older owners would generally bring higher incomes than their younger counterparts. Utah’s OHV owners have also lived in Utah for nearly their entire lives, on average more than 40 years. Consistent with previous surveys, we found that owners reside predominantly along the Wasatch Front. However, their residence is not proportional when compared to Utah’s population as a whole. In other words, OHV owners reside in non-metro counties in larger proportions than the state’s population as a whole.

OWNER AND TRIP CHARACTERISTICS

Methods

Owner and trip characteristics can be best described as those attributes beyond basic demographics that describe OHV owners and their relationship with riding. Data were collected on a host of owner variables ranging from the basic type of OHV owned, to the owners' experience with riding. Data was also collected on the respondent's trip history. For methodological purposes, primarily related to creating a more robust measure of where use is occurring, questions were asked about the owners' most recent trip and all OHV trips taken within the past 12 months.

Results

Owner Characteristics: Data were collected on five variables classified under owner characteristics; two questions regarding the type and number of OHVs the respondent owns, and three questions concerning their experience with the activity.

Types of Vehicles Owned: The vehicle type categories used in this survey were slightly modified from those used in 1994 and 2001. The categories "off-highway motorcycle" and "ATV" were carried directly over and defined within the instrument the same way as the 2001 survey. The category "other non-street-legal 4-wheel drive vehicle" is a modification of the 2001 survey's more general "4x4 trucks, jeeps, or Sport Utility Vehicles (SUV)" category because we did not want to introduce the threat to validity that would have resulted from asking questions about behaviors on public lands that do not require an OHV registration (e.g., driving a street-legal SUV off-road). That is, if a vehicle is street-legal it does not need to be registered as an OHV with the state. The previous studies were drawing inferences about recreational activities from a small sub-sample of recreationists (those individuals who just happened to own a registered OHV and another "4x4 truck, jeep, or SUV") while we analyze only those uses that would require state registration. The next category was identified as "dune buggy/sand rail." This category was not included in either the 1994 or 2001 survey, but we concluded it was distinct enough from other OHV activities in its prescriptions for management to be given a distinct category. The final category of OHV type, snow machines, was only inquired about in the initial question concerning the total number of OHVs in each category that respondents own; no further questions or analysis were conducted². This is because the State Department of Motor Vehicles keeps two distinct records of registered vehicles, one for OHVs and another for snow machines. Our sample was drawn from the OHV list; hence, like our reason for not inquiring about all 4x4 use, we felt it inappropriate to ask questions about use from respondents who only represented a fraction of the user group (they would have had to have owned both an OHV in one of the other categories and a snow machine).

Regarding types of vehicles owned, an increase, albeit slight, was noticed in the percentage of OHV owners who own an ATV, up 3.5% over the past six years. Consistent with past results, ATVs continue to dominate the percentage of all OHVs within the state. Results indicate that now more than 90% of OHV owners own at least one ATV.

² However, a recent study by Utah State University's Institute for Outdoor Recreation and Tourism did address snowmobile use specifically. It can be found at the website: <http://extension.usu.edu/iort/htm/research/january2001rp>

Table 11 also shows an increase in the proportion of owners who have an off-highway motorcycle, up 7.6% from 2001. Other non-street-legal 4-wheel drive vehicles, as well as dune buggies or sand rails, are represented by much less frequent ownership among the population of all OHV owners, 5.3% and 3.5% respectively.

Table 11. *Types of Vehicles Owned*

Vehicle Type	1994 Percentage (n=627)	2001 Percentage (n=335)	2007 Percentage (n) (n=599)
Off-highway motorcycle or mini-bike	40.0%	21.0%	28.6% (171)
3 or 4 wheel All-Terrain Vehicles (ATVs)	62.0%	89.8%	93.2% (558)
Other non street-legal 4-wheel drive vehicles	N/A ¹	N/A ¹	5.3% (32)
Dune buggies or sand rails	N/A ²	N/A ²	3.5% (21)
Snowmobiles or snowcats	39.0% ³	15.0% ³	15.0% (90) ³
Other	7.0%	1.8%	N/A
1. The 1994 and 2001 surveys included the category “4x4 trucks, jeeps, or SUVs”. Given that our population was derived from a list of registered OHV owners, we felt it unwise to ask about activity that did not require state registration. 2. The 1994 and 2001 surveys did not include “dune buggies or sand rails” as a category. 3. These percentages only represent individuals who own an OHV <i>and</i> a snowmobile because samples were drawn from lists of OHV owners and not from the entire population of snowmobile owners.			

Number of Vehicles Owned: Similar to the increase in overall percentage of OHV owners who owned an off-highway motorcycle or mini-bike, the mean number of bikes owned also increased slightly, up to nearly two bikes per respondent. ATVs saw a similar increase, passing the two vehicles per owner mark for the first time. The increase in mean number of ATVs owned, up 10% from 2001, was the largest observed increase. This result holds significant implications for understanding how much of the increase in OHV use and ownership can be attributed to existing users and how much can be attributed to new users. With only a 10% rise in the number of vehicles owned per owner (Table 12) and an 81% increase in registrations from 2001 to 2007 (Figure 1), the large majority of new registrations can be ascribed to new users.

Table 12. *Number of Vehicles Owned*

Vehicle Type	1994 (n=627)	2001 (n=335)	2007 (n) (n=599)
Off-highway motorcycle or mini-bike	1.95	1.75	1.98 (171)
3 or 4 wheel All-Terrain Vehicles (ATVs)	1.88	1.81	2.05 (558)
Other non street-legal 4-wheel drive vehicles	N/A ²	N/A ²	1.16 (32)
Dune buggies or sand rails	N/A ³	N/A ³	1.19 (21)
Over snow machine or snowcats	2.32	2.60 ⁴	2.27 ⁵ (90)
1. This is the number of vehicles owned if the respondent owned at least 1 vehicle in that category. 2. The 1994 and 2001 surveys did not include “other non street-legal 4-wheel drive vehicles” as a category. 3. The 1994 and 2001 surveys did not include “dune buggies or sand rails” as a category. 4. Taken from McCoy et al. 2001. 5. This number should be perceived cautiously, as the sample was not representative of all snowmobile owners throughout the state.			

Experience: Questions were asked about the respondent’s self-determined level of ability as well as their experience with OHVs, measured in years riding, and their preference for trail difficulty. The reasons for asking these questions were to determine if there is a correlation between the three measures and to determine if there is a general preference for trail style or OHV area.

Years Riding OHVs: Utah’s OHV owners reported on average they have been using OHVs for just over 20 years, while the largest proportion of the sample indicated they have been riding for under 10 years. Controlling these data for age of respondent (Years riding ÷ Age) revealed that owners, on average, have been riding for just over 44% of their lifetime.

Self-Assessed Skill Level: Utah’s recreation resource managers can better provide for the needs and desires of OHV owners if they are informed about how the owners classify themselves along a spectrum of skill levels (e.g., providing trails and riding areas that have an acceptable degree of difficulty while not being overwhelming to the rider). The vast majority (51%) of Utah’s owners classify themselves as advanced riders, while nearly 30% classify themselves as intermediate. Important to note is that very few say they are beginners, novices, or conversely, experts.

Table 13. Skill Level of OHV Owners

(n=585, Median=4, Advanced)	
Beginner	1.7% (10)
Novice	3.8% (22)
Intermediate	29.7% (174)
Advanced	51.8% (303)
Expert	13.0% (76)

Preference for Trail Difficulty: Directly correlated to self-assessed skill level is respondents’ preference for trail difficulty, as it has important management implications for the same reasons. Most owners (51.9%) noted they preferred trails that contained narrow sections, steep grades, and some minor drop-offs. Only a small portion (21.9%) indicated they did not prefer easy trails, and an even smaller proportion (5.6%) preferred the most difficult trail conditions. Given these results, it is evident there is little demand for extreme routes; rather, only moderate technical difficulty is desired. Route mapping and trail master planning should consequently follow suit.

Table 14. OHV Owners’ Preferred Trail Difficulty

Preference (n=572, Median=2, More difficult)	
Easiest (relatively smooth throughout)	21.9% (125)
More difficult (narrow sections, steep grades, minor drop-offs)	51.9% (297)
Most difficult (sharp turns, steep side-slopes, exposure to large drop-offs)	20.6% (118)
Extreme (extremely steep and rocky with ledges and severe drop-offs)	5.6% (32)

Trip Characteristics: Respondents were asked questions about their most recent trip as well as all of their recreational trips over the past 12 months.

Trips by County: The first column in Table 15 is representative of the percentage of respondents who visited each county or adjacent state on their *most recent trip*. The second column represents the percentage of trips that the county received within *the past 12 months*³. One will immediately notice the similarities between the two sets of data. Similar results support the validity of each measure.

Using the two measures together allows for a more robust, valid measure of visitation patterns. We achieve this by converting two key variables, the number of times a county was visited on a respondent's most recent trip and the number of times it was visited within the past 12 months, into standardized Z-scores⁴. This places both variables on an equal distribution and allows for them to be averaged, creating one measure for visitation throughout the state (Table 16).

The counties receiving the most visitations became evident very early in the analysis. Overall, four counties emerged as the most heavily used; these are Utah, Juab, Tooele, and Sanpete. Utah County, by far, receives the most visitation in the state, with 8.5% of owners' most recent trips and 7.1% of all trips within the past 12 months (Table 15). These results are not unexpected, given the unique natural and aesthetic qualities offered to recreationists. Utah County has White River, Mineral Basin, and American Fork Canyon, while Juab County has perhaps the most visited single OHV recreation area within the state, Little Sahara. Tooele County has unique features as well, namely the Five-Mile Pass Area, which serves as a weekend play area for the rapidly growing area west of Utah Lake. Sanpete County offers the Arapeen OHV trail system within the Manti-LaSal National Forest. A second tier of counties that receive a significant portion of use became visible. Three in particular are worth noting: Sevier, Summit, and Wasatch. These counties also offer some of the state's most unique and beautiful recreational resources. Sevier and the adjacent counties of Beaver and Piute, are home to the Paiute Trail System, Utah's largest.

³ We tallied respondents' number of times they visited each county over the past 12 months, summed these for each individual county (*represented by n*), then summed again across all counties and adjacent states (*represented by the 5,715 number*). The total trips to each county were then divided by the total number of trips to give a percentage of total trips within the last 12 months. This percentage may be overestimated due to the small number of outliers (those respondents who report unusually high numbers of trips within a given county).

⁴ A standardized Z-score allows for the comparison or manipulation of two or more data sets that occur along different distributions; it is calculated by subtracting the mean from each case and dividing by the standard deviation (Knoke, Bohrnstedt, & Mee, 2002).

Table 15. Trips by County

County	Percentage of Most Recent Trips (n) (n=726)	Percentage of Total Trips within the Last 12 Months ⁵ (n) (n=5,715)	Average Z-score ⁶
Beaver	1.4% (10)	1.0% (60)	-0.77
Box Elder	2.2% (16)	1.7% (97)	-0.41
Cache	4.7% (34)	4.7% (269)	0.93
Carbon	2.2% (16)	2.2% (126)	-0.29
Daggett	0.3% (2)	0.3% (15)	-1.24
Davis	2.1% (15)	2.8% (158)	-0.18
Duchesne	2.8% (20)	1.8% (102)	-0.25
Emery	4.3% (31)	3.8% (218)	0.61
Garfield	3.0% (22)	1.9% (106)	-0.16
Grand	1.8% (13)	2.0% (113)	-0.45
Iron	2.1% (15)	2.0% (113)	-0.38
Juab	6.2% (45)	6.5% (371)	1.74
Kane	3.0% (22)	4.1% (234)	0.37
Millard	3.6% (26)	3.1% (175)	0.26
Morgan	0.6% (4)	0.5% (27)	-1.12
Piute	2.1% (15)	1.7% (99)	-0.44
Rich	2.3% (17)	1.8% (102)	-0.35
Salt Lake	1.5% (11)	2.5% (142)	-0.39
San Juan	1.2% (9)	1.5% (88)	-0.69
Sanpete	6.6% (48)	4.4% (250)	1.46
Sevier	5.1% (37)	5.2% (299)	1.16
Summit	4.5% (33)	5.5% (314)	1.10
Tooele	5.5% (40)	6.1% (350)	1.48
Uintah	2.6% (19)	1.5% (87)	-0.35
Utah	8.5% (62)	7.1% (404)	2.55
Wasatch	5.4% (39)	4.6% (263)	1.08
Washington	3.4% (25)	6.1% (349)	0.96
Wayne	1.4% (10)	1.8% (103)	-0.59
Weber	1.5% (11)	1.5% (86)	-0.63
Other States: Arizona	0.7% (5)	1.4% (81)	-0.85
Colorado	0.6% (4)	0.8% (43)	-1.05
Idaho	3.6% (26)	6.2% (354)	1.01
Nevada	0.4% (3)	0.6% (37)	-1.11
Wyoming	1.9% (14)	0.9% (52)	-0.67
Other States: Other	1.0% (7)	0.5% (28)	-1.01

⁵ This percentage may be overestimated due to the small number of outliers (those respondents who report unusually high numbers of trips within a given county).

⁶ Z-scores are necessary because two distributions of use are available, the number of most recent trips and the number of trips over the past 12 months. The average Z-score is calculated by summing the county's scores from each distribution and then dividing by 2.

Table 16. Counties Ranked by 2007 Trips¹

Rank	County/Adjacent State	Rank	County/Adjacent State	Rank	County/Adjacent State
1	Utah	13	Millard	25	Wayne
2	Juab	14	Garfield	26	Weber
3	Tooele	15	Davis	27	Wyoming
4	Sanpete	16	Duchesne	28	San Juan
5	Sevier	17	Carbon	29	Beaver
6	Summit	18	Rich	30	Arizona
7	Wasatch	19	Uintah	31	Other States
8	Idaho	20	Iron	32	Colorado
9	Washington	21	Salt Lake	33	Nevada
10	Cache	22	Box Elder	34	Morgan
11	Emery	23	Piute	35	Daggett
12	Kane	24	Grand	36	New Mexico
1. Based on average Z-scores (see Table 15).					

A third group emerged that is of particular importance and has a unique set of attributes. This group consists of Washington County and the State of Idaho. These areas are unique in that these counties are not geographically related to the Wasatch Front or any of its large metro areas. Because these counties are somewhat isolated from the major urban centers in Utah, respondents were asked about their place of trip origin. Results are displayed in Tables 17 and 18. Washington County receives the vast majority of its visitation from within its own borders, while Idaho sees a large portion traveling from Salt Lake County and other counties in northern Utah (i.e., Weber, Cache, and Davis counties).

Table 17. Origin of Trips to Washington County

Origin County	Trips within the Past 12 Months (n=350)	% of Trips within the Last Year
Washington	247	70.6
Salt Lake	55	15.7
Utah	15	4.3
Davis	13	3.7
Iron	11	3.1
Other	9	2.6

Table 18. *Origin of Trips to Idaho*

Origin County	Trips within the Past 12 Months (N=354)	% of Trips within the Last Year
Salt Lake	115	32.5
Weber	59	16.7
Cache	39	11.0
Davis	37	10.5
Washington	19	5.4
Iron	16	4.5
Uintah	16	4.5
Utah	12	3.4
Other	41	11.6

Most Recent Trip: Questions were asked specific to the owner’s most recent trip in order to better understand general trip behavior, represented by an agglomeration of individual trips. It also serves a secondary purpose because, while their last trip may not represent a typical trip, it is thought to eliminate some of the error caused when a respondent cannot accurately recall information that occurred over a long temporal span. Therefore, it is the most commonly used method to discern patterns across a large group of recreationists.

First, respondents were asked a series of questions regarding simple descriptive characteristics of their most recent trip: the date it occurred, the type of vehicle(s) used, the length of stay, the number of individuals in the group, the relationship of those individuals to the respondent, and the types of recreational activities participated in during the trip.

Type of Vehicle Used on Most Recent Trip: The vast majority of recreational OHV trips (89.4%) taken in Utah involve an ATV. Off-highway motorcycles are a distant second with just 17% of respondents indicating they used one of these vehicles on their most recent trip. Other non-street-legal 4-wheel drive vehicles, and dune buggies or sand rails, represented an even smaller proportion of trips taken in Utah, with 2.6% and 2.2%, respectively.

Table 19. *Type of Vehicle Used on Most Recent Trip*

Vehicle Type (n=584)	Percentage (n)
Off-highway motorcycle or mini-bike	16.8% (98)
3 or 4 wheel All-Terrain Vehicles (ATVs)	89.4% (522)
Other non street-legal 4-wheel drive vehicles	2.6% (15)
Dune buggies or sand rails	2.2% (13)

Number of People in Group on Most Recent Trip: The mean number of people in OHV groups throughout the state is 7.07. This number is heavily skewed because of respondents who indicated they were on a club or larger group ride. Hence, we use the median, which is five people per group. Those group members consisted primarily of

immediate family members, with half of respondents indicating more than two individuals in their group were immediate family members.

This finding supports the idea that OHV riding is primarily a family activity. This is further supported by the open-ended answers to Question 18 (Appendix D) and the comments from respondents that were included in the end of the survey (Appendix F).

Table 20. *Number of People in Group on Most Recent Trip*

(n=573, Mean=7.07, Median=5)		
Relationship to Owner	Mean	Median
Immediate Family	2.25	2.00
Extended Family	2.25	0.00
Friends	2.14	0.00
Others	0.08	0.00

Mean Length of Most Recent Trip: Respondents’ average trip, if it was less than one day, was just under six and a half hours. If the respondent’s most recent trip was more than one day, it was on average 3.77 days long.

Table 21. *Length of Most Recent Trip*

	Hours	Days
If less than one day (n=265)	6.29	N/A
If more than one day (n=292)	N/A	3.77

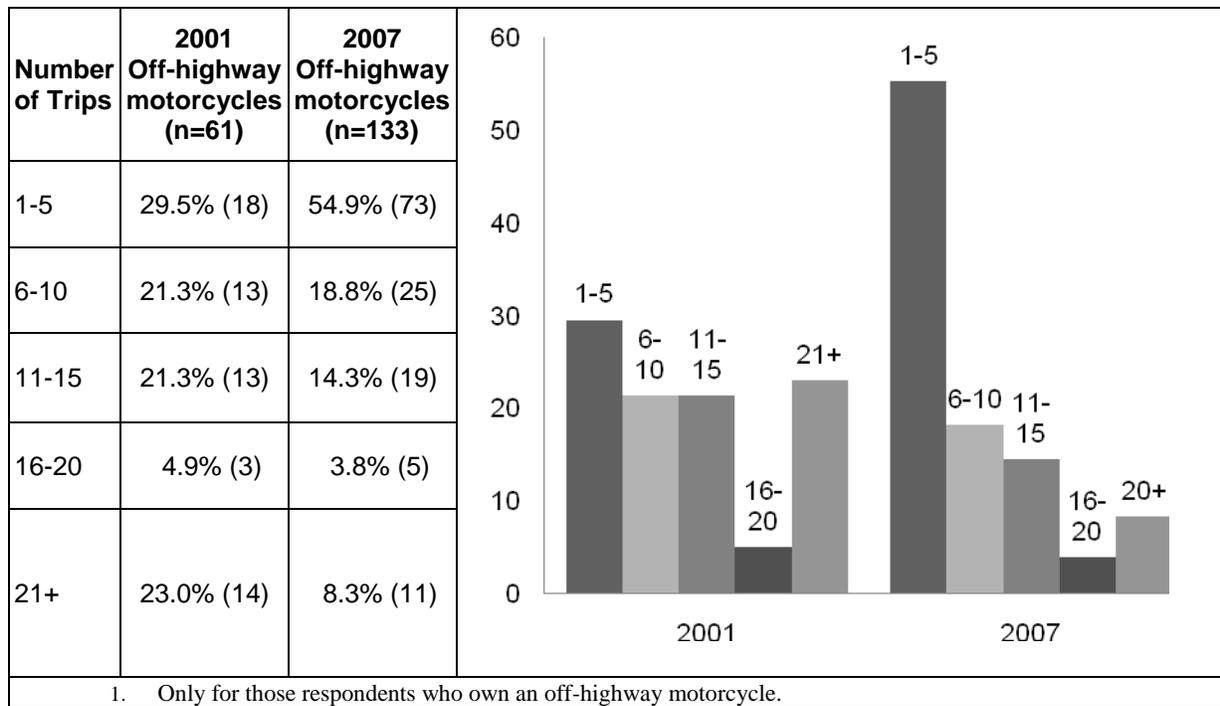
Recreational Activities Participated in on Last Trip: Owners were asked in what recreational activities they participated during their last recreational OHV trip. Not surprisingly, trail riding (75.9%) and driving backroads (55.0%) were the most frequently cited activities. Sight seeing and camping were the next most reported activities, with nearly half of all respondents indicating they engaged in one or both during their most recent trip. Photography and hiking/walking were reported by more than 30% of respondents. This may be of particular interest to managers in the design and management of OHV areas, as scenic lookouts and adjacent hiking trails would likely be seen as significant attractions for OHV users. Table 22 displays the remaining activities noted by OHV users, and Appendix E contains those activities fewer than 5% of OHV owners participated in on their most recent trip.

Table 22. *Other Recreational Activities Participated in on Most Recent Trip*

Activity	Percentage (n)	Activity	Percentage(n)
Trail riding	75.9% (429)	Wildlife/ Bird watching	18.6% (105)
Driving backroads	55.0% (311)	Hill climbing	18.4% (104)
Sightseeing	48.7% (275)	Fishing	18.2% (103)
Camping	44.8% (253)	Dirt biking	17.4% (98)
Hiking/walking	31.7% (179)	Target shooting	12.7% (72)
Photography	31.5% (178)	Visiting historical/ Archeological sites	11.5% (65)
Open-area driving	23.2% (131)	Hunting	10.1% (57)
Picnicking	21.4% (121)	Swimming	7.4% (42)

Trips within the Past 12 Months: Finally, questions were asked concerning all of the owners' trips taken within the past 12 months, in order to better understand patterns in trip behavior. Respondents were asked how many trips they had taken within the last 12 months for each type of vehicle they own. For off-highway motorcycles, the majority (54.9%) indicated they only use their motorcycle one to five times a year. One to five times a year was also the modal category for 2001. However, one can note an obvious decline in the number of respondents who say they use their motorcycle more than five times a year. The most significant decline is among motorcyclist who indicated they used their vehicle more than 20 times a year.

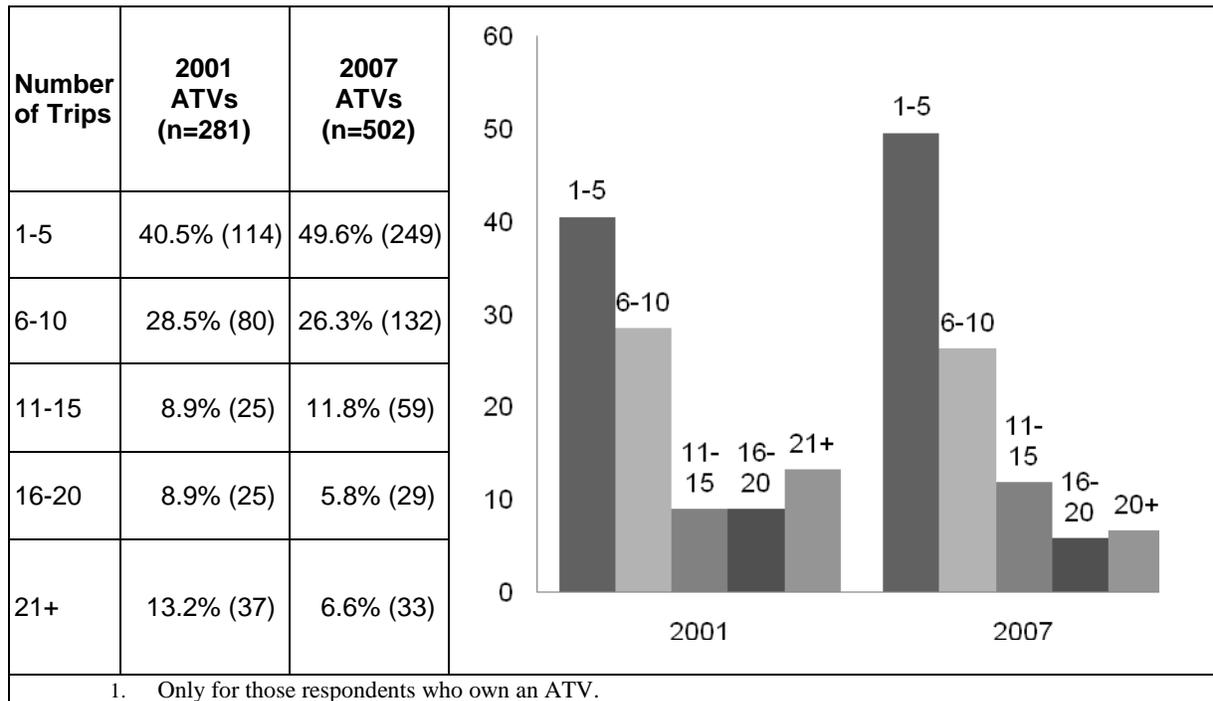
Figure 2. *Trips within the Last 12 Months (Off-Highway Motorcycles)*¹



For ATVs, nearly half (49.6%) of the respondents indicated they only use their ATV one to five times a year. Similar to off-highway motorcycles, one to five times a year was the

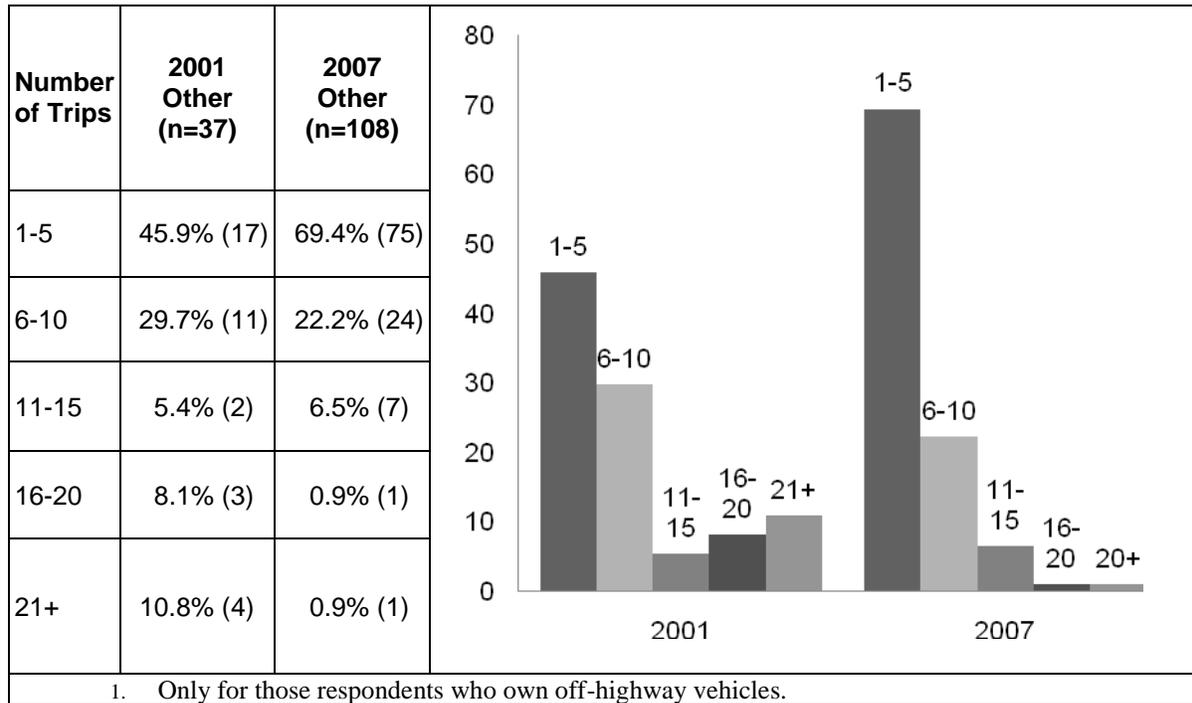
modal category for 2001. Also similar to off-highway motorcycles is the pattern of less frequent use. All of the trip categories declined with the exception of the 1 to 5 and 11 to 15 categories. The 21 plus category saw the biggest reduction, from 13.2% in 2001 to 6.6% in 2007.

Figure 3. *Trips within the Last 12 Months (ATVs)*¹



The remaining two categories exhibit many of the similar traits as ATVs and off-highway motorcycles. Namely, the vast majority of recreationists only use their vehicle from one to five times a year. Interestingly for these two categories, there were hardly any respondents who indicated they use their vehicle more than 10 times a year. This likely reinforces the idea that the unique and sparse geographical settings required for the activities (unique rock formations for rock-crawlers and large expanses of sand for dune buggies) constrain more frequent use.

Figure 4. Trips within the Last 12 Months (Other)¹



Yearly Trips to a Particular Location on a Specific Date for a Particular Reason: A truly unique component of this research is that it inquired about regular or annual trips respondents take to a particular place for a particular purpose. The impetus for developing this line of questioning came from the simple observation that many OHV owners take these types of trips. For example, thousands of individuals travel to Moab, Utah, over Easter weekend every year for an event known as the Easter Jeep Safari.

The results from this line of questioning indicate nearly half (45.5%) of all OHV owners in Utah participate in some sort of annual trip.

Table 23. OHV Owners' Annual Trips

Yearly trips to a particular location on a specific date for a particular reason (n=556)	
	Percentage (n)
NO	54.5% (303)
YES, at least one	45.5% (253)

DISCUSSION

Ascertaining information about the characteristics of Utah's OHV owners, as well as the types of OHV activities they are engaging in, was a primary objective of this study. We found ATVs and off-highway motorcycles are not only becoming increasingly popular to new users but also among existing OHV owners. This is shown by results that indicate increases in the ownership

rate of both off-highway motorcycles and ATVs among the overall OHV owner population over the past six years. Correlating with this increase in ownership rates is an increase in the mean number of bikes or ATVs owned.

Other owner characteristics include a recreationist's experience and skill within the activity. Utah's OHV owners are a fairly experienced group with the average rider using the vehicles for more than 20 years and considering him/herself an advanced rider. Their experience directly correlates to their preference for trail conditions as most said they prefer trails that require a moderate amount of technical difficulty (e.g., narrow sections, steep grades, and minor drop-offs). Management actions and planning should reflect this preference for moderately difficult trails while continuing to provide for a broad range of OHV recreational opportunities.

The idea of OHV riding as a family activity was supported as the average group consists of more than four immediate and extended family members. These groups participate in a surprisingly diverse array of ancillary recreational activities, including both passive (sightseeing and photography) and relatively more active activities (camping and hiking/walking).

Another primary objective of this study was to understand the amounts and patterns of OHV use on public lands throughout the state. Three distinct categories of highly visited counties became evident when analyzing the destinations of OHV owners on their most recent trip and over the past 12 months. The first category is comprised of those counties that are most frequently the destination of OHV owners, namely Utah, Juab, Tooele, and Sanpete. Geographically, these are all centrally located in the state, relatively close to the major population centers, and all provide unique areas that are highly popular with OHV owners. The second category includes three counties that also have a high degree of attraction to recreationists, are located only slightly farther from the Wasatch Front, and receive high levels of use. These are Sevier, Summit, and Wasatch. The third group of areas includes Washington County and Idaho. These areas are unique in that they are still highly visited while being geographically isolated from the state's major metro areas. Specific visitation to these counties is outlined in Tables 17 and 18.

An interesting trend has emerged in OHV use in Utah over the past six years; nearly half of all respondents who own an ATV indicate they only use it one to five times a year. While ownership is increasing rapidly, the number of trips taken per year per owner is declining.

IMPORTANCE AND SATISFACTION

Visitor satisfaction with outdoor recreation settings has been an important area of inquiry in the management of leisure resources (Tarrant & Smith, 2002). Satisfaction among OHV owners with the areas and trails within Utah is no exception. Public land managers, in their goal of providing opportunities that meet the demands of recreationists in the state, must understand if or how satisfied recreationists are with current management and, likewise, how important certain management actions and facilities are to users.

Methods

To measure both satisfaction with and importance of certain management actions, we solicited responses about the OHV owners' most recent trip. The most recent trip was used particularly because it was thought respondents would be able to assess more accurately a specific trip than if we were to inquire about all of the respondents' trips within the last 12 months collectively.

Five distinct categories of management actions or OHV facilities were offered. These include:

- *Information* – this includes availability of information about rules, hazards, and conditions; it can include maps, brochures, newsletters, laws, web-sites, etc.;
- *Trailhead facilities* – this includes the availability of restrooms, water, unloading ramps, signs, garbage receptacles, camping areas, etc.;
- *Maintenance* – this includes both site facilities and OHV riding trails/areas;
- *Signage* – this includes provision of trail area signs that can be of a variety of types including directional, reassurance, information, caution, etc.; and
- *Law enforcement* – this includes enforcement of rules and regulations by ranger patrols or other enforcement officials.

Respondents indicated on a 5-point Likert scale both their level of perceived importance and satisfaction on their most recent trip for the categories above. Satisfaction responses ranged from 1 = “Strongly Dissatisfied”, 2 = “Somewhat Dissatisfied”, 3 = “Neutral”, 4 = “Somewhat Satisfied”, to 5 = “Strongly Satisfied”. Importance responses ranged from 1 = “Not Important At All”, 2 = “Not Very Important”, 3 = “Neutral”, 4 = “Moderately Important”, to 5 = “Very Important”.

Results

Importance/Satisfaction: We emphasize here that these results are based on aggregate statewide data and not reflective of any particular site or management agency.

OHV owners see the provision of well-signed trails and OHV areas as most important relative to the other four categories. The importance of signage is displayed by a mean value of 4.08 and was followed closely by the provision of “information” (4.00), “site maintenance” (3.98), “trailhead facilities” (3.74), and finally “law enforcement” (3.68).

Statewide, responses were consistently positive as all of the five categories exhibited a mean score of at least 3.48 (a score of three would indicate neutrality and a score of five would indicate strong satisfaction). The mean scores for “site maintenance,” “signage,” and “law enforcement” were high, 3.67, 3.56, and 3.57 respectively. The other two categories (information and trailhead facilities) saw less satisfaction; however, these categories still exhibited positive levels.

Given these values prescribed to the five categories by OHV owners, we are able to visually illustrate where management priorities may be placed to provide the greatest increase in satisfaction among recreationists. To do this we plot each of the five categories on a four-quadrant matrix with importance on the vertical axis and satisfaction on the horizontal axis (Figure 5). The four quadrants represent different management needs. Managers would want to concentrate most of their efforts in Quadrant 1, where importance is high yet satisfaction is low. They might see items in Quadrant 2 as low priority, given that users place little importance on them. Quadrant 3 indicates where managers may be wasting resources on items that are of little importance to users and are already adequately provided. Quadrant 4 indicates where managers are doing good work providing items that are more important to the user with high levels of satisfaction.

For all of the most recent trips, respondents noted that the availability of information was the most important to them; however, they did not exhibit a relatively high level of satisfaction with the information currently provided by recreation managers. More effort should be focused here to improve OHV owners' satisfaction. Trailhead facilities and law enforcement are seen as the least important provisions a managing agency can provide; these actions by management should be seen as a lower priority than the items that are more important to users. Signage and maintenance were both highly important as well as provided for adequately, noted by the high levels of satisfaction, across the state.

Figure 5. Importance/Satisfaction of Management Actions

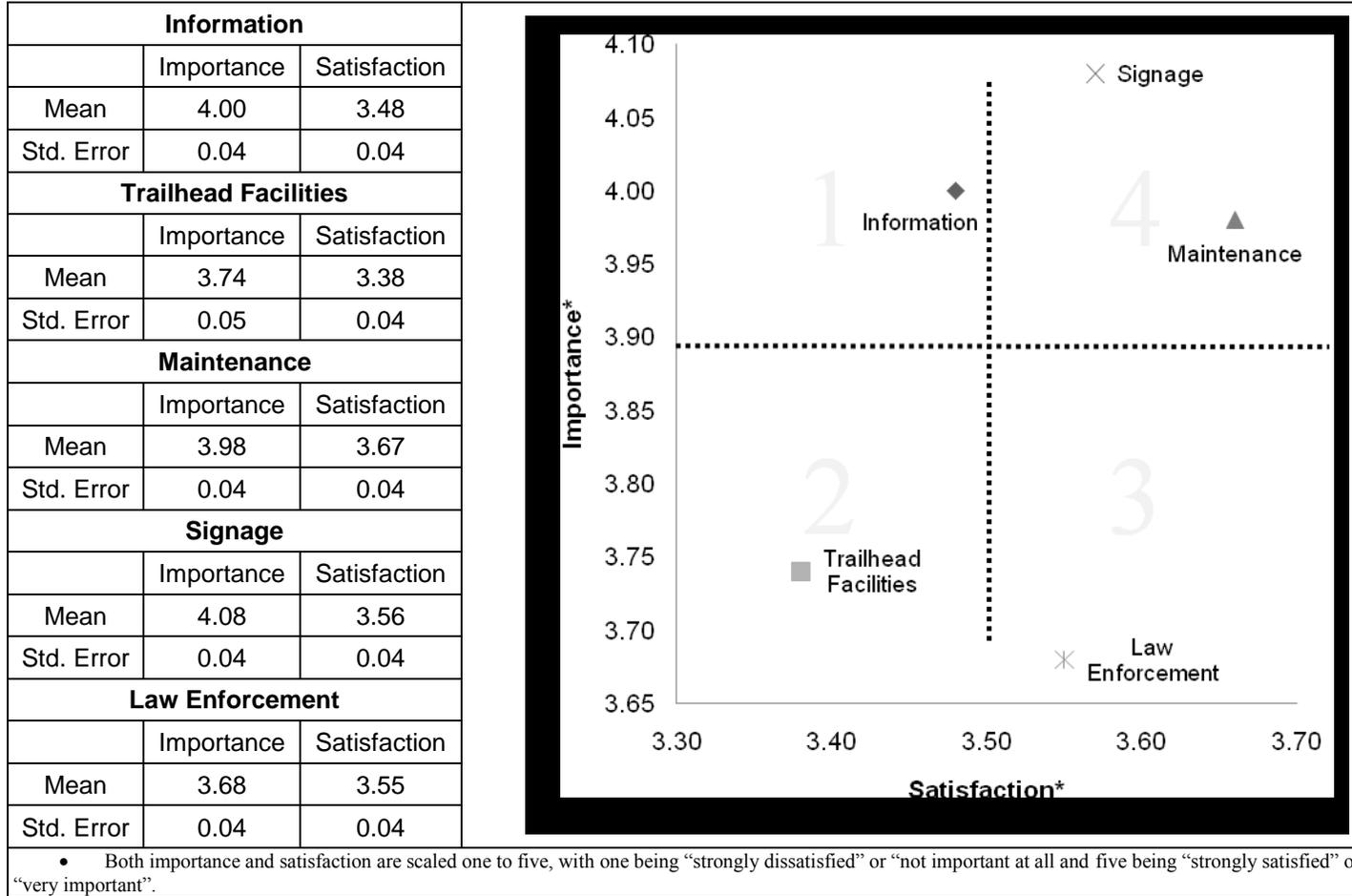


Table 24. Importance/Satisfaction of Management Actions

(n≥564)	Importance (n)			Satisfaction (n)		
	Not important	Neutral	Important	Dissatisfied	Neutral	Satisfied
Information	8.4% (48)	17.7% (101)	73.9% (421)	14.8% (84)	37.5% (213)	47.7% (271)
Trailhead facilities	13.5% (77)	21.4% (122)	65.1% (372)	20.2% (114)	32.3% (182)	47.5% (268)
Site maintenance	8.2% (47)	18.6% (106)	73.2% (418)	10.4% (59)	30.4% (172)	59.1% (334)
Signage	6.0% (34)	15.8% (90)	78.3% (447)	15.1% (86)	29.3% (167)	55.5% (316)
Law enforcement	13.0% (74)	28.2% (161)	58.8% (336)	8.3% (47)	46.0% (262)	45.7% (260)

Preference for User Fees: Respondents were asked the extent to which they would oppose, feel neutral, or support three different methods of raising funds for the management of OHV areas. Specifically, the funds would be for the five management actions already identified: provision of information, trailhead facilities, site maintenance, signage, and law enforcement.

Unsurprisingly, all three methods (Table 25) were not widely supported. However the option of implementing a daily use fee for heavily used areas was actually neutral among all users. An additional Utah state tax on the sale of new OHVs was heavily opposed with more than 68% of respondents indicating they oppose the idea. Trailhead parking fees were also opposed by a majority of owners (52.4%).

Table 25. Preference for Use Fees¹

(n=574)	Oppose	Neutral	Favor
Daily use fee for heavily used areas	37.0% (213)	25.9% (149)	37.2% (214)
Additional Utah state tax on sale of new OHVs	68.2% (391)	16.4% (94)	15.4% (88)
Trailhead parking fees for all users	52.4% (301)	20.7% (119)	26.8% (154)
1. It is very important to note that these are not “willingness to pay (WTP)” questions. WTP questions solicit information about the actual prices recreationists would pay for a good or service. They are dependent upon the recreationist knowing the costs, benefits, and drawbacks of that good or service to themselves, others, and the environment (Ajzen & Driver, 1992). The detail and rigor that is necessary to establish proper WTP questions was not feasible in this study, hence the results should be seen as such.			

Reasons for riding in respondent’s most frequently visited place: When solicited about the reason they ride in their most frequently visited place, a majority of respondents cited the ease with which they can reach the area (53.1%) or identified it as one of their favorite places to ride (50.8%). Affordability was considerably less of a reason for using an area often (22.7%). The lack of other places to ride (4.7%) is also seen as an insignificant determinant of frequent use. Many other reasons were and are noted in detail in Appendix D.

Table 26. OHV Owners’ Reasons for Riding

(n=559)	Percentage (n)
It is easy to get to	53.1% (297)
It is one of my favorite places to ride	50.8% (284)
I can afford to go there	22.7% (127)
There is no other place to ride	4.7% (26)
Other (See Appendix D)	23.6% (132)

Understanding the importance of and satisfaction with specific management actions can infer direct management implications. Statewide, respondents were generally satisfied with the provision of information, trailhead facilities, maintenance of OHV areas, signage, and the enforcement of rules and regulations on their most recent trip. Owners also see management

actions that provide for these items as generally important, with the availability of information seen as the most important relative to the other four categories.

When charted for both importance and satisfaction, results indicate that the availability of information is the biggest relative weakness. More effort should be focused on providing information about rules, hazards, and conditions via high-quality maps, brochures, newsletters, and web sites presented in a standardized format across agencies. The provision of this information should be effectively distributed to OHV recreationists if recreation managers wish to increase visitor safety and satisfaction. Possible outlets include the internet, user groups, community leaders, chambers of commerce, visitor information bureaus, and scouting organizations, as well as field offices and ranger stations.

Trailhead facilities and law enforcement are the least important provisions a managing agency can provide, according to respondents. However, easily understood visitor use informational, interpretive, and regulatory signs that enhance the opportunity for safe and enjoyable visits while protecting resources should still be seen as a management goal. Law enforcement, while not seen as highly important to OHV owners, should become a more effective tool of OHV management.

The provision of signage and the maintenance of OHV areas were both highly important and received adequate user satisfaction across the state. However, future efforts can be concentrated to improve resource conditions and visitor experiences on public lands. Standards for route design, construction, monitoring, maintenance, and restoration technique should be established and shared across management agencies. In a similar vein, OHV signs should be easily identifiable and similar across agencies and jurisdictional boundaries. Users are often confused about the appropriateness of riding on public lands because of inadequate signage. Confusion can lead to conflict, the degradation of resources, and threats to safety. Hence, the provision of clear signage, while already being satisfactorily provided for, will improve use compliance on designated routes.

Across all agencies that manage OHV use, funding for the activity's management has not kept pace with growth. It is suggested that these agencies need to make more effective use of existing funding sources while seeking new sources such as user fees, outside funding, and grants. When asked about their preference for use fees, respondents generally opposed two of the methods suggested; an additional Utah state tax on the sale of new OHVs and trailhead parking fees for *all* users. A daily use fee for heavily used areas was the least opposed of the three options given; nearly as many individuals oppose the idea as those that support it. If existing funding sources are inadequate at the local level and outside funding is unavailable, this form of user fee may prove to be the least opposed among Utah's OHV population.

MOTIVATIONS & BENEFITS

Methods

According to Wagar (1966, p. 9), "The sole purpose of all land management is to provide benefits for people." However, the benefits of leisure are not widely understood either by the public or the scientific community. Two important reasons for this have been noted by Moore and Driver (2005): scientific knowledge about many benefits has only recently emerged, and

there is no “clear and comprehensive definition of what is meant by a benefit of leisure” (p. 23). For our purposes here, we infer there are benefits uniquely achieved through outdoor environments or settings, and that those benefits can be achieved through successfully achieving a recreationist’s desired outcomes.

Benefits-Based Management: Benefits-based management (BBM) is a relatively new and evolving recreation management framework that targets hard-to-measure benefits in an attempt to more clearly define the outcomes of recreation engagements (Stein & Lee, 1995). The key to implementing BBM is to understand how recreation managers can facilitate the realization of recreation benefits (Bruns et al., 1994). Within BBM, a benefit is a “desirable change of state,” or an “improved condition or state of an individual, a group of individuals, a society, or even nonhuman organisms” (Driver et al., 1987, p. 295). Prevention of a worse condition is also considered a benefit.

Benefits have been classified into four types: personal, social, economic, and environmental (Lee & Driver, 1992; Driver, 1994). Personal benefits include those related to improved physical and mental health and personal growth and development such as cardiovascular benefits, reduced depression and anxiety, and improved self-confidence. Social benefits include items such as community pride, strengthened bonds with family and friends, and decreased delinquency. Increased productivity, reduced health costs, and local economic growth are examples of economic benefits. Environmental benefits include a stronger environmental ethic and benefits associated with ecosystem protection and health such as species diversity and prevention of loss of critical habitat.

To measure visitor preferences for recreational experiences, respondents are typically asked to rate the desirability or importance of a list of potential reasons for participating in an activity. They are asked to rate these management actions using a 5-point Likert scale ranging from “not important at all” to “very important.” The list of potential benefits is typically reduced into mutually exclusive benefit domains. These domains are usually similar to: stress relief/nature appreciation/fitness, share similar values, achievement/stimulation, learn new things, independence, improve mental well-being and sense of self, introspection, teach/lead others, and meet new people (Stein & Lee, 1995).

These domains form the umbrella under which the list of potential motivations is populated. These can be used to assess the preferences for recreational experiences of OHV owners in Utah. The knowledge gained from assessing the desired outcomes of OHV owners will prove useful to managers of recreation resources in their development of plans for new services and facilities, their management of existing OHV areas, and their general knowledge base concerning recreationists’ desires.

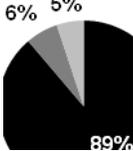
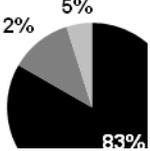
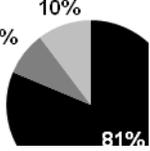
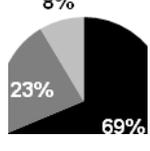
Results

Motivations for Riding

Respondents’ most prominent reasons for riding were stress relief and appreciation of the outdoors. This was nearly unanimous as 99% of owners indicated these motivations were important to them (Tables 27 & 28). These motivations were followed by the ability to share similar values with other OHV riders. Here again, like the results from the group composition

question would suggest, a strong group/family orientation is present. Other domains not as prominent included achievement/stimulation, learning new things, being independent, and teaching or leading others (Tables 27 & 28). The least important reason for going riding was meeting new people. This domain asked about observing other people in the area and talking to new and varied individuals. While neither were strongly seen as unimportant, these motivations were less important than the other potential reasons asked about.

Figure 6. Motivations for Riding by Domain

	<p>Percentages</p> <p>■ = Important</p> <p>■ = Neutral/Unsure</p> <p>■ = Not Important</p>
<p>Stress Relief and Nature Appreciation</p> <ul style="list-style-type: none"> • Enjoying natural scenery. • Getting away from the demands of life. • Experiencing personal freedom. • Experiencing solitude. • Releasing or reducing built-up tension. 	 <p>Mean = 4.46</p>
<p>Sharing Similar Values</p> <ul style="list-style-type: none"> • Being with other people who enjoy the same activities that I do. • Being with members of my group. 	 <p>Mean = 4.27</p>
<p>Learning New Things</p> <ul style="list-style-type: none"> • Experiencing new and different things. • Learning more about the natural history of an area. 	 <p>Mean = 3.99</p>
<p>Achievement/Stimulation</p> <ul style="list-style-type: none"> • Doing something challenging. • Enjoying places that are special. • Experiencing excitement. • Developing skills and abilities. • Testing the capabilities of my vehicle. 	 <p>Mean = 3.83</p>
<p>Independence</p> <ul style="list-style-type: none"> • Doing things my own way. • Being in control of things that happen. 	 <p>Mean = 3.79</p>

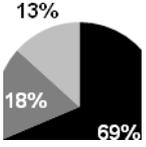
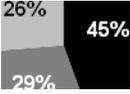
<p>Teach/Lead Others</p> <ul style="list-style-type: none"> • Helping others develop their skills. • Sharing what I have learned with others. • Leading other people. 	 <p>Mean = 3.62</p>
<p>Meet New People</p> <ul style="list-style-type: none"> • Talking to new and varied people. • Observing other people in the area. 	 <p>Mean = 3.18</p>

Table 27. OHV Owners' Motivations for Riding

(n≥576)	Not important	Neutral	Important
Stress relief and nature appreciation			
• Enjoyment of natural scenery	1.5%	4.1%	94.4%
• Getting away from the demands of life	1.8%	3.8%	94.5%
• Experiencing personal freedom	1.4%	10.7%	87.9%
• Experiencing solitude	2.8%	16.2%	81.1%
• Releasing or reducing built-up tension	3.8%	18.3%	77.9%
Sharing similar values			
• Being with other people who enjoy the same activities that the owner does	5.4%	10.0%	84.6%
• Being with members of a group	4.9%	10.2%	84.9%
Achievement/Stimulation			
• Doing something challenging	10.4%	25.2%	64.4%
• Enjoying a place that is special to the respondent	3.3%	12.2%	84.6%
• Experiencing excitement	6.9%	18.5%	74.5%
• Developing skills and abilities	9.9%	27.7%	62.4%
• Testing the capabilities of their OHV	23.4%	35.1%	41.5%
Learning new things			
• Experiencing new and different things	5.5%	15.2%	79.3%
• Learning more about the natural history of an area	6.8%	21.7%	71.6%
Independence			
• Doing things respondent's own way	10.7%	31.0%	58.3%
• Being in control of things that happen	7.2%	25.3%	67.5%
Teaching and leading others			
• Helping others develop their skills	10.0%	28.4%	61.6%
• Sharing what the respondent has learned with others	8.1%	22.4%	69.5%
• Leading other people	15.6%	40.6%	43.8%
Meeting new people			
• Talking to new and varied people	18.9%	36.1%	45.0%
• Observing other people in the area	27.8%	35.7%	36.6%

Discussion

Providing an atmosphere in which OHV owners feel a sense of relief from stressful situations and where nature can be appreciated with others in a group setting should be a prime focus in guiding the design and management of OHV trails and areas. This can be accomplished by a concerted effort to provide a wide variety of OHV opportunities for the recreationist to experience desired benefits (e.g., stress relief, achievement/stimulation, etc.). This spectrum of opportunities should include open-area riding as well as looping and stacked trail systems that offer a variety of trail difficulties and experiential opportunities. Trailhead facilities should also reflect the fact that most OHV owners recreate in groups and want to teach or lead others in the activity. Group campsites and areas for gathering should be a consideration in the design of future OHV trailheads and facilities. OHV owners also noted that learning and experiencing new things was important to their participation. Upgraded and expanded efforts to provide interpretive and educational opportunities are encouraged and would increase riders' enjoyment of public lands.

ENVIRONMENTAL ATTITUDES AND OUTDOOR RECREATION

Concern about the environment has grown over the last 30 years as pressure has increased on the use of the natural resources of the United States (Cottrell & Graefe, 1997). Consequently, research aimed at better understanding environmental concern has followed the trend. However, one area of research that has lagged behind is inquiry into the environmental concerns and behavior of outdoor recreation participants (Nord et al., 1998). The association between outdoor recreation participation and environmental concern has important implications for managers of natural resources (Schuett & Ostergren, 1999). Some research has been done, but results have been mixed (Schuett & Ostergren, 1999). For example, Dunlap and Heffernan (1975) found participants in appreciative outdoor activities (e.g., hiking, camping, and photography) had a higher level of environmental concern than participants in consumptive (e.g., hunting, fishing) outdoor activities. Pinhey and Grimes (1979) found participation in outdoor recreation was not a predictor of environmental concern, and similarly Geisler, Martinson, and Wilkening (1977) found outdoor recreation was not associated with environmental concern. These early studies did not compare specific user groups based on different outdoor recreational activities, a process that would logically produce more significant results given the wide variability of outdoor recreation participation. Later research would be more successful in defining activity-based differences. Jackson (1987) assessed views on resource development and preservation of several specific types of outdoor recreation participants. He surveyed cross-country skiers and hikers (appreciative behavior), anglers and hunters (consumptive behavior), and motor boaters and snowmobilers (motorized behavior). Results showed participants in the appreciative activities held a stronger preservationist orientation than participants in consumptive (except hunters) and motorized activities, who held a stronger pro-development view. Similarly, Nord et al. (1998) found participants in motorized recreation activities to be less environmentally active (e.g., contributing money or time to an environmental organization) than participants in non-motorized outdoor activities.

The New Ecological Paradigm Scale: The metrics for measuring environmental attitudes are obtained from five latent content areas: 1) the idea that there is a balance to nature, 2) the idea that humans are not exempt from the laws of nature, 3) the idea that humans do not have an inherent right to modify and rule over nature, 4) the idea that an ecological crisis is possible, and

5) the idea that there are limits to human growth defined by the finite amount of resources on the planet. These constructs, taken together, form the New Ecological Paradigm (NEP) Scale that was developed by Dunlap and Van Liere (1978). The NEP scale assesses environmental attitudes using a 15-item scale. There are five sets (corresponding to the five latent constructs noted above) of three items each. Respondents rate these items on a 5-point scale where 1 = *strongly disagree* and 5 = *strongly agree*. This research gathered information from the five content areas to assess the environmental attitudes of OHV owners in Utah.

Results

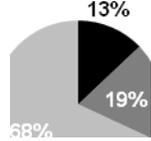
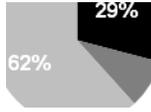
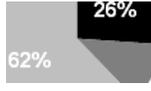
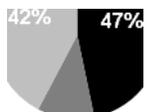
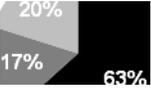
Environmental Attitudes: Contrary to the common perceptions that OHV owners are indifferent to the ecological impacts of their activity, results suggest that OHV owners, on average, have a slightly pro-environmental attitude (Table 28). The average of all five latent constructs was 3.18 on a scale from 1 (low environmental attitude) to 5 (high). The strongest construct to emerge from the scale was the idea that humans are exempt from the laws of nature ($M=3.54$). Utah's OHV owners strongly supported the ideas that humans are subject to the laws of nature (86.1% in support) and that humans will never learn enough about how nature works in order control it (53.4% in support). The construct that there is a balance to nature was also supported by OHV owners ($M=3.39$). They do not agree with the idea that humans have the right to modify the environment to suit their needs (53.8% disagreeing) while they support the idea that plants and animals have just as much right to exist as them (67.4% in support).

All measures of environmental attitudes were not supported however, as the potential of an ecological crisis was not seen as an imminent threat ($M=2.90$). OHV owners most strongly disagreed with the idea that there are limits to the amount of human growth possible on the planet ($M=2.64$). They also disagreed with the idea that the earth's population is nearing or has already surpassed the amount of human life that it can support (45.9% disagreeing). In a similar vein, they believe strongly that the earth has plenty of natural resources if humans can just learn how to develop them (71.4% in support).

Table 28. Environmental Attitudes of OHV Owners

Statement (n≥580)	Disagree	Neutral/ Unsure	Agree
We are approaching the limit of the number of people the Earth can support.	45.9% (269)	25.8% (151)	28.2% (165)
Humans have the right to modify the natural environment to suit their needs.	53.8% (312)	13.4% (78)	32.7% (190)
When humans interfere with nature, it often produces disastrous consequences.	32.7% (192)	15.2% (89)	52.1% (305)
Human ingenuity will insure that we do not make the Earth unlivable.	28.6% (167)	30.8% (180)	40.6% (237)
Humans are severely abusing the environment.	36.7% (215)	12.8% (75)	50.5% (295)
The earth has plenty of natural resources if we just learn how to develop them.	15.9% (93)	12.8% (75)	71.4% (418)
Plants and animals have as much right as humans to exist.	17.7% (102)	14.8% (87)	67.4% (395)
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	49.7% (289)	26.5% (154)	23.8% (138)
Despite our special attributes, humans are still subject to the laws of nature.	2.6% (15)	11.4% (67)	86.1% (505)
The so-called “ecological crisis” facing humankind has been greatly exaggerated.	25.9% (151)	26.3% (153)	47.8% (278)
The Earth has a finite amount of room and resources.	35.6% (208)	22.8% (133)	41.6% (243)
Humans were meant to rule over the rest of nature.	42.2% (245)	20.7% (120)	37.1% (216)
The balance of nature is delicate and easily upset.	23.0% (135)	18.4% (108)	58.5% (343)
Humans will eventually learn enough about how nature works to be able to control it.	53.4% (311)	25.7% (150)	20.9% (122)
If things continue on their present course, we will soon experience a major ecological catastrophe.	38.5% (225)	28.0% (164)	33.5% (196)

Figure 7. Components of Environmental Attitudes

<p style="text-align: center;">Latent Constructs within the New Ecological Paradigm Scale for OHV Owners (grand mean = 3.18)</p>	<p style="text-align: center;">Percentages = Disagree = Neutral/Unsure = Agree</p>
<p>Anti-exemptionalism</p> <ul style="list-style-type: none"> • Human ingenuity will insure that we do not make the Earth unlivable (reverse coded). • Despite our special attributes, humans are still subject to the laws of nature. • Humans will eventually learn enough about how nature works to be able to control it (reverse coded). 	<div style="text-align: center;">  <p>13% 19% 68%</p> </div> <p style="text-align: center;">Mean = 3.54</p>
<p>Anti-anthropocentrism</p> <ul style="list-style-type: none"> • Humans have the right to modify the natural environment to suit their needs (reverse coded). • Plants and animals have as much right as humans to exist. • Humans were meant to rule over the rest of nature (reverse coded). 	<div style="text-align: center;">  <p>29% 9% 62%</p> </div> <p style="text-align: center;">Mean = 3.42</p>
<p>Balance to Nature</p> <ul style="list-style-type: none"> • When humans interfere with nature, it often produces disastrous consequences. • The balance of nature is strong enough to cope with the impacts of modern industrial nations (reverse coded). • The balance of nature is delicate and easily upset. 	<div style="text-align: center;">  <p>25% 12% 62%</p> </div> <p style="text-align: center;">Mean = 3.39</p>
<p>Eco-crisis</p> <ul style="list-style-type: none"> • Humans are severely abusing the environment. • The so-called “ecological crisis” facing humankind has been greatly exaggerated (reverse coded). • If things continue on their present course, we will soon experience a major ecological catastrophe. 	<div style="text-align: center;">  <p>47% 11% 42%</p> </div> <p style="text-align: center;">Mean = 2.90</p>
<p>There are limits to human growth</p> <ul style="list-style-type: none"> • We are approaching the limit of the number of people the Earth can support. • The earth has plenty of natural resources if we just learn how to develop them (reverse coded). • The Earth has a finite amount of room and resources. 	<div style="text-align: center;">  <p>20% 17% 63%</p> </div> <p style="text-align: center;">Mean = 2.64</p>

Discussion

The most surprising finding revealed about OHV owners is that, by in large, respondents hold a pro-environmental view. This runs counter to many common conceptions and stereotypes about not only OHV owners, but about all motorized recreationists. While the NEP scale is by no means a conclusive measure of all of an individual's attitudes, values, and beliefs, it does open the door for new and informed discussions about how OHV use can be successfully managed throughout the state. The findings may help support future management and planning actions that require federal or state land management agencies to find common ground between their interests or mandates and the needs and desires of the OHV community.

Knowledge of a slightly pro-environmental attitude among OHV owners carries other direct management implications. OHV riders may be more open to environmental education efforts than previously thought. The public lands agencies within the state that deal with OHV use should create or increase their efforts to foster an environmental ethic in all users of public lands, especially OHV owners. These efforts should be focused on new owners and youth groups as they are the most unfamiliar with responsible recreation on public lands. Agency personnel can be used to conduct a variety of trainings focusing on safe and environmentally responsible OHV use. Collaboration is important with groups such as user groups, environmental groups, schools, OHV manufacturers, retailers, and especially ethic development organizations such as Tread Lightly! The Leave No Trace Program may help also in the formation of training as well as the dissemination of information.

SPECIALIZATION

Methods

Specialization Theory: Outdoor recreation resource management's focus has gradually evolved from a basic understanding of how and where recreation occurs to a broad understanding of why recreationists participate in an activity. It has achieved this new dimension through analysis of sociological and psychological variables. A particularly distinguishable moment in the development of this understanding came with the publication of Hobson Bryan's 1977 seminal paper, *Leisure Value Systems and Recreational Specialization: The Case of Trout Fishermen*. This article engaged tangible qualities of recreationist's engagement in an activity (e.g., their skill level, the amount they have invested in the activity, their knowledge about certain techniques, etc.) and hypothesized that they varied in a similar fashion. This theory became known as recreation specialization (Bryan, 1977). Specialization is a concept for splitting recreationists into subgroups based on a "continuum of behavior from general to the particular, reflected by equipment and skills used in the sport and activity setting preferences" (Bryan, 1977, p. 175). The theory has proven to be the most appropriate way of segmenting a large user group. At one end of the continuum are novices or infrequent participants who do not consider the activity to be central to their lifestyle or who do not show any strong preferences for equipment or techniques (Needham et al., 2007). At the other end of the continuum are individuals who more frequently participate in the activity and feel a stronger level of commitment toward its role in their life. They also tend to hold strong preferences for site choice, equipment, and technique (Bryan, 1977). Over time, recreationists are believed to progress or regress throughout the continuum depending on a host of external factors or

constraints, such as age or proximity to an area that facilitates the activity (Bryan, 1977; Scott & Shafer, 2001).

Measures

Interspersed throughout the survey instrument (Appendix A) were 11 different measures of specialization. The measures are centered around four domains frequently observed throughout the theory's development: centrality, skill, expenditures, and behavior. Table 29 illustrates which measures were used for each of these four domains.

The domain of centrality is measured using two variables. 1) total number of trips to a particular place for a particular reason on a particular date each year (i.e., annual trips taken to Little Sahara Recreation Area on Memorial Day for family reunions), and 2) membership in voluntary association groups such as OHV clubs or open-access advocacy groups.

The skill domain is measured by asking for the respondent's self-assessed skill level and their preference for trail difficulty. Both of these variables are fairly standard measures of skill throughout specialization literature.

Behavior is measured by 1) the respondent's total number of vehicles owned, 2) the total number of trips they have taken within the past 12 months, and 3) the percentage of their life that they have spent riding OHVs. Again these measures are consistent with previous specialization research. Finally, expenditures are measured through investments made into the activity within the past 12 months and across the respondent's lifetime.

Table 29. Measures and Dimensions of Recreation Specialization

Domain	Measure	Question #	Response categories
Centrality	Total number of annual trips to a particular place for a particular reason	Q19	yes/no
		Q19a	open-ended indication of total number of annual trips
	Membership in a voluntary association group	Q38	9 types of voluntary association groups listed with a open ended “other” category
Skill	Self-assessed skill level	Q23	Beginner, novice, intermediate, advanced, expert
	Preference for trail difficulty	Q24	Easiest, more difficult, most difficult, extreme
Behavior	Total number of vehicles owned	Q1	Open ended for each vehicle type
	Total trips within the past 12 months	Q17	Open ended for each county and adjacent state
	Years riding OHVs (controlled for age)	Q22/Q33	Open ended/respondents age
Expenditures	OHV expenses	Q20a	Open for OHVs purchased, custom parts/installation, etc.
	Miscellaneous	Q20i	Open for riding apparel, safety gear, emergency supplies, etc.
	Lifetime expenditures	Q21	Open value
	Support equipment	Q20e	Open for equipment purchased exclusively for OHVs

RESULTS

Table 30 presents the means and standard deviations of the final nine variables used to measure OHV owner specialization. Eleven variables were originally included in the model; however first-order confirmatory factor analysis revealed low factor loadings (< .40) on the “membership in volunteer association” variable, used to measure centrality, and the “support equipment” variable, used to measure expenditures. Both variables were subsequently deleted from the model.

Table 30. Factor and Reliability Analysis of Specialization Dimensions

Specialization dimension and variable	<i>M</i>	<i>SD</i>	Loadings
<i>Centrality</i>			
Annual trips to a particular place	0.62	0.81	.42
<i>Skill</i>			
Self-assessed skill level	3.71	0.80	.53
Preference for trail difficulty	2.10	0.80	.54
<i>Behavior</i>			
Number of vehicles owned	2.92	2.14	.56
Total trips within the past 12 months	10.39	12.80	.41
Percentage of life riding	0.43	0.26	.51
<i>Expenditures</i>			
OHV expenses	2601.98	5047.18	.70
Miscellaneous: Includes riding apparel, safety gear, emergency supplies, memberships, and entry fees.	163.44	300.16	.70
Lifetime expenditures	30243.08	37020.05	.55
<i>Note.</i> Cronbach's <i>alpha</i> = 0.71; Eigenvalue = 2.76; Variance explained = 30.67			

The factor analysis was performed and the data demonstrated an acceptable fit (Cronbach's *alpha* = 0.71). Factor loadings were satisfactory for all measures of specialization and deletion of any variable did not improve reliability. The equipment variables were more closely related to the latent construct relative to the centrality, skill, or behavior variables. "OHV expenses" and "miscellaneous expenses" had the two highest β s with both exhibiting 0.70 scores. "Number of vehicles" owned exhibited the third highest loading (0.56) followed by "lifetime expenditures" (0.55), "preference for trail difficulty" (0.54), and "self-assessed skill level" (0.53).

Ancillary analysis tested a second-factor model (i.e., the two skill variables loading on the first-order factor "skill," the three behavior variables loading on a "behavior" factor, and the three equipment variables loading on an "equipment" factor before index scores for each of those factors loading onto the second-order factor "owners specialization"). However, the first-order factors did not exhibit high enough reliability coefficients to justify this approach.

Having demonstrated reliability and construct validity, standardized scores were interpreted using K-means cluster analysis. Several iterations of the analysis were explored, forcing the variables into two to five clusters. The three-cluster solution (Table 31) proved to fit the data most appropriately with adequate sample sized falling into each cluster. Three cluster solutions are also the most accepted result of cluster analysis when applied to specialization theory (Scott, Ditton, Stoll, & Eubanks, 2005). Means of the nine variables were then compared across the three clusters to identify how the clusters differed. Based on a comparison of means, the three clusters were identified as (1) casual owners, (2) focused and experienced owners, and (3) frequent and highly invested users. The distributions of these sub-groups differed significantly, $\chi^2 = 117.42$, $df = 2$, $p < .001$. The proportion of casual owners vastly outnumbered focused or invested owners (Table 31).

Table 31. Specialization Groups

Specialization group	Sample size (n)	Percent (%)
Casual	256	54.2
Focused and Experienced	152	32.2
Frequent and Highly Invested	64	13.6
<i>Note.</i> $\chi^2 = 117.42$, $df = 2$, $p < .001$		

The means of the nine dimensions of specialization across all three groups are displayed for comparison purposes in Table 32. Casual riders ranked lowest on all nine variables, meaning they tend to identify themselves as “intermediate” riders while preferring trails that do not require a lot of skill to navigate. The casual owners also own the lowest number of vehicles, take fewer trips, and have made a smaller financial commitment to the activity than their non-casual counterparts. The focused and experienced riders were identified as such because they tend to identify themselves as “experts” or “advanced” riders and prefer “difficult” trails. These riders have also been riding for the largest proportion of their life when compared to the other two groups. The final sub-group of Utah’s OHV owner population was identified as “frequent and highly invested” users. They take five trips per year more than the focused group and nearly ten trips per year more than the casual group. These recreationists have also invested the most in the activity, vastly outspending the other two groups on “OHVs purchased, custom parts, etc.” and “miscellaneous OHV expenses.”

Table 32. Comparison of Means Across Groups for Specialization Measures

		Specialization dimension										
		Centrality		Skill		Behavior			Expenditures (\$)			
Specialization Group		No. of annual of trips	Self-assessment	Trail preference	# of vehicles	Trips	Years riding	OHV Expenses	Misc.	Lifetime		
Casual	M	.42	3.43	1.82	2.16	7.86	.3103	725.24	75.07	16441.38		
	SD	.658	.759	.621	1.318	10.254	.21868	1694.18	126.221	16187.06		
Focused and Experienced	M	1.10	4.23	2.62	3.92	12.28	.6519	1455.92	216.55	51736.25		
	SD	.912	.592	.805	2.393	15.296	.17171	2166.376	324.946	53375.34		
Frequent and Highly Invested	M	.78	3.92	2.45	4.03	17.58	.4460	12621.87	369.30	38976.56		
	SD	.863	.625	.733	2.275	15.021	.26094	6630.437	488.412	22787.57		

DISCUSSION

Given the explosive growth of OHV recreation within the state and land management agencies' tight recreation management budgets, research that is useful for planning and managing public lands efficiently and effectively is needed. By segmenting Utah's OHV owner population, planning and management efforts can focus on providing services and recreational activities that do not cater to a homogenous user group, but rather to the diverse population of OHV owners who lie along the specialization continuum.

Recreation managers can begin to focus on providing for a more particular type of user within the activity. The broadest demand for OHV recreation in the state comes from casual users as they make up the large majority of the OHV population. As many recreation planners are moving to identifying segments of their trail systems by their difficulty level (e.g., moderate, more difficult, extreme), the majority of trail maintenance and future development should be focused on only moderately difficult trails. Significant efforts should be made to facilitate and enhance their participation. An example of this facilitation may include an increased effort to make information available via web sites, field offices, or ranger stations geared toward a user who has said they only use their OHV for recreational purposes less than five times per year. Another example of this facilitation toward the casual owner would be to make trailhead facilities accessible and accommodating (i.e., available restroom facilities, water, and camping areas).

In conclusion, managers should realize that the state's OHV owners are not a homogenous group of recreationists and should be planned for as such. Different opportunities for different types of OHV owners should be a priority if agencies are to deliver a broad spectrum of recreational opportunities (USDA Forest Service, 1990). Many agencies and OHV owner organizations have already begun to realize the different needs and desires within the OHV owner population. For example, Canyon Country 4x4 Club and the UT/AZ OHV Club have worked in conjunction with the BLM's Kanab Field Office to construct, designate, and monitor the Hog Canyon OHV Trail System northeast of Kanab, UT (Bureau of Land Management, 2008). The system includes trails of varying difficulty to compliment a variety of OHV riders from younger children to the most experienced and adventurous. The system also complements the open riding area of Coral Pink Sand Dunes in eastern Kane County. These are just a few examples of how the diverse population of riders attracted to OHV use are beginning to be addressed on public lands in Utah.

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APPENDIX A

Survey Instrument

*Utah Recreational
Off-Highway Vehicle Use Survey*



UtahState
UNIVERSITY

For the purposes of this study, Off-Highway Vehicles (OHVs) are defined as **any all-terrain vehicle, dune-buggy, rock-crawler, or motorcycle**. This excludes snowmobiles. While snowmobiles are often considered Off-Highway Vehicles, they **are not** within the focus of this study and have been excluded, with the exception of Question 1.

This study also **specifically** concerns off-highway **recreational** use on **public lands**. If you only use your OHV for work purposes or you do not recreate on public lands, **don't disregard this survey**. We are still interested in what you have to say, please complete question 1, then skip to question 20 toward the end of the booklet.

First, please tell us about the types of Off-Highway Vehicles that you own.

1. How many are in each of the following categories?

- Off-highway motorcycles or mini-bikes. _____
- 3 or 4 wheel All-Terrain Vehicles (ATVs). _____
- Other non street-legal 4-wheel drive vehicles. _____
- Dune buggies or sand rails. _____
- Snowmobiles or snowcats. _____

Most Recent Trip

We would like to begin by asking you about your most recent recreation trip during which you used your OHV. Questions 2 through 15 pertain to your most recent trip only.

2. What type of Off-Highway Vehicle did you use on your **most recent trip** (Please select all that apply)?

- Off-highway motorcycle, mini-bike, etc.
- ATV, etc.
- Other non street-legal 4-wheel drive vehicles.
- Dune buggy, sand rail, etc.

3. In what month and year was your **last** recreation trip when you **used an OHV**?

Month _____ Year _____

4. In which Utah County or adjacent state was that **trip taken**? (Use the **map** at the end of this booklet to assist you).

<input type="checkbox"/> Beaver	<input type="checkbox"/> Iron	<input type="checkbox"/> Sevier	<input type="checkbox"/> Arizona
<input type="checkbox"/> Box Elder	<input type="checkbox"/> Juab	<input type="checkbox"/> Summit	<input type="checkbox"/> Colorado
<input type="checkbox"/> Cache	<input type="checkbox"/> Kane	<input type="checkbox"/> Tooele	<input type="checkbox"/> Idaho
<input type="checkbox"/> Carbon	<input type="checkbox"/> Millard	<input type="checkbox"/> Uintah	<input type="checkbox"/> Nevada
<input type="checkbox"/> Daggett	<input type="checkbox"/> Morgan	<input type="checkbox"/> Utah	<input type="checkbox"/> New Mexico
<input type="checkbox"/> Davis	<input type="checkbox"/> Piute	<input type="checkbox"/> Wasatch	<input type="checkbox"/> Wyoming
<input type="checkbox"/> Duchesne	<input type="checkbox"/> Rich	<input type="checkbox"/> Washington	
<input type="checkbox"/> Emery	<input type="checkbox"/> Salt Lake	<input type="checkbox"/> Wayne	<input type="checkbox"/> Other States
<input type="checkbox"/> Garfield	<input type="checkbox"/> San Juan	<input type="checkbox"/> Weber	
<input type="checkbox"/> Grand	<input type="checkbox"/> Sanpete		<input type="checkbox"/> Don't Know

5. What is the name of the area or trail where your **last trip** occurred?

6. Are you aware of which agency is responsible for the management of that area?

- Yes
- No

6a. If **yes**, which agency is it (Check all that apply)?

- USDA Forest Service
- Bureau of Land Management
- Utah State Parks
- Other, please specify: _____

7. For your **most recent trip**, how **satisfied** were you with the availability of information about rules, hazards, and conditions? This includes maps, brochures, newsletters, laws, etc.

Strongly dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Strongly satisfied
<input type="checkbox"/>				

7a. How **important** to you is it that this information is available?

Not important at all	Not very important	Neutral	Moderately important	Very important
<input type="checkbox"/>				

8. Again for your **most recent trip**, how **satisfied** were you with the availability of trailhead facilities? This includes restrooms, water, unloading ramps, signs, garbage receptacles, camping areas, etc.

Strongly dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Strongly satisfied
<input type="checkbox"/>				

8a. How **important** to you is it that these facilities are provided?

Not important at all	Not very important	Neutral	Moderately important	Very important
<input type="checkbox"/>				

9. Continuing with your **most recent trip**, how **satisfied** were you with the maintenance of site facilities and maintenance of the OHV trail or area?

Strongly dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Strongly satisfied
<input type="checkbox"/>				

9a. How **important** to you is it that the site facilities and the OHV trail or area be maintained?

Not important at all	Not very important	Neutral	Moderately important	Very important
<input type="checkbox"/>				

10. For this trip, how **satisfied** were you with the provision of trail or area signs? These signs can be directional, reassurance, informational, caution, etc.

Strongly dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Strongly satisfied
<input type="checkbox"/>				

10a. How **important** to you is it that these signs are provided?

Not important at all	Not very important	Neutral	Moderately important	Very important
<input type="checkbox"/>				

11. Again for your **most recent trip**, how **satisfied** were you with the enforcement of rules and regulations by ranger patrols or other enforcement officials?

Strongly dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Strongly satisfied
<input type="checkbox"/>				

11a. How **important** to you is it that this enforcement is provided?

Not important at all	Not very important	Neutral	Moderately important	Very important
<input type="checkbox"/>				

We have a few more questions concerning your **most recent trip**. They relate to your group makeup, the length of your trip, and some expenses that may have been associated with your trip.

12. How many people were with your group?

of people _____

12a. How many of those people were...

Immediate family (individuals living **in** your household)? _____
 Extended family (individuals living **outside** your household)? _____
 Friends? _____
 Others, please specify: _____

13. How long did your trip last, from the time you left home until the time you returned? (*write in number of hours OR number of days*)

Number of hours if one day trip _____
 Number of days if overnight trip _____

14. To improve our understanding of how OHV use affects local economies and the state economy we need to know what **you** spent on your **most recent** OHV recreation trip in Utah or elsewhere. Please write down your best estimate of what **you** spent for each kind of item **within** your home county and **outside** of that county.

Item	Within your home county	Outside of your home county
Lodging: Includes hotels, motels, bed/breakfasts, cabin or home rentals, public or private campgrounds, tents, and campers.	\$_____.00	\$_____.00
Food and Beverages purchased at grocery stores.	\$_____.00	\$_____.00
Food and Beverages purchased at restaurants and convenience stores.	\$_____.00	\$_____.00
Transportation: Includes gasoline and oil for your transportation/tow vehicle, gasoline and oil for your OHV(s), and repairs/services on both your transportation/tow vehicle and your OHV(s).	\$_____.00	\$_____.00
Parking, trail use, and area access fees.	\$_____.00	\$_____.00
Rental fees and supplies: Includes RVs, trailers, other OHV(s), and fishing and hunting supplies.	\$_____.00	\$_____.00
Entertainment: Includes movies, amusement, etc.	\$_____.00	\$_____.00
Retail goods other than food and beverages.	\$_____.00	\$_____.00

15. On this trip, what recreation activities did you participate in? (check all that apply)

<input type="checkbox"/> Driving backroads	<input type="checkbox"/> Camping	<input type="checkbox"/> Photography
<input type="checkbox"/> Dirt biking	<input type="checkbox"/> Boating	<input type="checkbox"/> River running
<input type="checkbox"/> Hill climbing	<input type="checkbox"/> Fishing	<input type="checkbox"/> Rock climbing
<input type="checkbox"/> Trail riding	<input type="checkbox"/> Hunting	<input type="checkbox"/> Wildlife/Bird watching
<input type="checkbox"/> Open-area driving	<input type="checkbox"/> Target shooting	<input type="checkbox"/> Backpacking
<input type="checkbox"/> Competitive events	<input type="checkbox"/> Swimming	<input type="checkbox"/> Cross-country skiing
<input type="checkbox"/> Hiking/walking	<input type="checkbox"/> Picnicking	<input type="checkbox"/> Snowshoeing
<input type="checkbox"/> Sightseeing	<input type="checkbox"/> Visiting Historical/ Archeological sites	<input type="checkbox"/> Other, please specify: _____

Now, we need to ask you some questions about OHV purchases and recreation trips you have taken **in the last 12 months**. Questions 16 through 20 pertain only to recreation trips taken **within the last 12 months**.

Trips Within the Last 12 Months

16. How many off-highway vehicle recreational trips have you taken within the last 12 months for each of the following OHV types?

Vehicle Type	# of Trips within the last 12 months				
	1-5	6-10	11-15	16-20	21+

Off-highway motorcycles or mini-bikes	<input type="checkbox"/>				
All-Terrain Vehicles (ATV).	<input type="checkbox"/>				
Other 4-wheel drive vehicles or rock-crawlers	<input type="checkbox"/>				
Dune buggies or sand rails	<input type="checkbox"/>				

17. Now please tell us how many of your trips **within the last 12 months** were to each Utah county or adjacent state. Please use the Utah **map** to assist you.

	# of trips		# of trips		# of trips		# of trips
Beaver	_____	Iron	_____	Sevier	_____	Arizona	_____
Box Elder	_____	Juab	_____	Summit	_____	Colorado	_____
Cache	_____	Kane	_____	Tooele	_____	Idaho	_____
Carbon	_____	Millard	_____	Uintah	_____	Nevada	_____
Daggett	_____	Morgan	_____	Utah	_____	New Mexico	_____
Davis	_____	Piute	_____	Wasatch	_____	Wyoming	_____
Duchesne	_____	Rich	_____	Washington	_____		
Emery	_____	Salt Lake	_____	Wayne	_____	Other States	_____
Garfield	_____	San Juan	_____	Weber	_____		
Grand	_____	Sanpete	_____				

18. For the area that you use most often, why do you ride in this area?

- It is easy to get to.
- It is one of my favorite places to ride.
- There is no other place to ride.
- I can afford to go there.
- Other, please specify: _____

19. Do you have any OHV trips that you take on the same time or days of the year to a particular location? (*for example, holidays or festival trips, or perhaps family reunions*)

- _____ Yes
 _____ No

19a. If **Yes**, please indicate the place where you go, the date, or holiday when you typically go, and the purpose for the trip (**if there are multiple trips, please list them separately**).

OHV area or trail: _____
 Date or holiday: _____
 Purpose: _____

OHV area or trail: _____
 Date or holiday: _____
 Purpose: _____

20. Please write down your best estimate of what you spent **within the last 12 months** for each kind of item:

OHV Expenses: Includes OHVs purchased, custom parts/installation, tools, tires/rims, parts/repairs.	\$_____.00
OHV Insurance:	\$_____.00
Licenses, permits, and emissions checks:	\$_____.00
Vehicles purchased specifically to tow your OHVs:	\$_____.00
Support Equipment: Includes equipment purchased exclusively for OHVs.	\$_____.00
Repairs and Services: Includes repairs/services on both your transportation/tow vehicle and your OHV(s).	\$_____.00
Rental fees and supplies: Includes RVs, trailers, other OHV(s), and fishing and hunting supplies.	\$_____.00
Out-of-pocket medical costs related to your OHV use	\$_____.00
Miscellaneous Includes riding apparel, safety gear, emergency supplies, memberships, and entry fees.	\$_____.00

21. Now, for your **entire lifetime**, how much would you estimate that you have invested in OHV equipment? This includes vehicles, custom parts, installation, and support equipment like tools.

\$_____ .00 over my **entire lifetime**.

We just have a few more questions about your experience and your opinion on different fees for OHV management.

Experience

22. How many years have you been riding Off-Highway Vehicles?

_____ # of years

23. How would you rate your skill level in driving your OHV?

- Beginner
- Novice
- Intermediate
- Advanced
- Expert

24. Many trail systems around the state are now designating their routes according to difficulty. Of the following trail ratings, which do you prefer to ride on?

- Easiest (relatively smooth throughout).
- More difficult (narrow sections, steep grades, minor drop-offs).
- Most difficult (sharp turns, steep side-slopes, exposure to large drop-offs).
- Extreme (extremely steep and rocky with ledges and severe drop-offs).

25. Please indicate the extent to which you would oppose, favor, or feel neutral towards each of the following methods to raise funds for the OHV management actions listed in questions 7 thru 11 (availability of information, trailhead facilities, site maintenance, trail or area signs, and enforcement).

	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
Daily use fee for certain heavily used areas (e.g., Paiute, Shoshone, Hog Canyon, other)	<input type="checkbox"/>				
Additional Utah state tax on sale of new OHVs	<input type="checkbox"/>				
Trailhead parking fees for all users	<input type="checkbox"/>				

Activities/Motivations

26. Below is a list of your possible reasons for OHV riding. Please tell us how important each one is to you when you go riding.

The OHV allows me to:	Not important at all	Not very important	Neutral	Somewhat important	Very Important
Stress Relief and Nature Appreciation					
Enjoy natural scenery.	<input type="checkbox"/>				
Get away from the demands of life.	<input type="checkbox"/>				
Experience personal freedom.	<input type="checkbox"/>				
Experience solitude.	<input type="checkbox"/>				
Release or reduce built-up tension.	<input type="checkbox"/>				
Share Similar Values					
Be with other people who enjoy the same activities that I do.	<input type="checkbox"/>				
Be with members of my group.	<input type="checkbox"/>				
Achievement/Stimulation					
Do something challenging.	<input type="checkbox"/>				
Enjoy a place that is special to me.	<input type="checkbox"/>				
Experience excitement.	<input type="checkbox"/>				
Develop my skills and abilities.	<input type="checkbox"/>				
Test the capabilities of my vehicle.	<input type="checkbox"/>				
Learn New Things					
Experience new and different things.	<input type="checkbox"/>				
Learn more about the natural history of an area.	<input type="checkbox"/>				
Independence					
Do things my own way.	<input type="checkbox"/>				
Be in control of things that happen.	<input type="checkbox"/>				
Teach/Lead Others					
Help others develop their skills.	<input type="checkbox"/>				
Share what I have learned with others.	<input type="checkbox"/>				
Lead other people.	<input type="checkbox"/>				
Meet new people					
Talk to new and varied people.	<input type="checkbox"/>				
Observe other people in the area.	<input type="checkbox"/>				

Environmental Attitudes

27. Finally, we would like to get your opinion on a wide range of environmental issues. The following questions were asked on a national survey of OHV users affiliated with the **National Off-Highway Vehicle Conservation Council (NOHVCC)**. We would like to ask the **exact same questions** of Utah OHV users to determine both similarities and differences between nationwide OHV users and users in Utah.

For each of the following statements, please indicate the extent to which you agree or disagree.

	Strongly Disagree	Somewhat Disagree	Neutral/ Unsure	Somewhat Agree	Strongly Agree
We are approaching the limit of the number of people the Earth can support.	<input type="checkbox"/>				
Humans have the right to modify the natural environment to suit their needs.	<input type="checkbox"/>				
When humans interfere with nature, it often produces disastrous consequences.	<input type="checkbox"/>				
Human ingenuity will insure that we do not make the Earth unlivable.	<input type="checkbox"/>				
Humans are severely abusing the environment.	<input type="checkbox"/>				
The earth has plenty of natural resources if we just learn how to develop them.	<input type="checkbox"/>				
Plants and animals have as much right as humans to exist.	<input type="checkbox"/>				
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	<input type="checkbox"/>				
Despite our special attributes, humans are still subject to the laws of nature.	<input type="checkbox"/>				
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	<input type="checkbox"/>				
The Earth has a finite amount of room and resources.	<input type="checkbox"/>				
Humans were meant to rule over the rest of nature.	<input type="checkbox"/>				
The balance of nature is delicate and easily upset.	<input type="checkbox"/>				
Humans will eventually learn enough about how nature works to be able to control it.	<input type="checkbox"/>				
If things continue on their present course, we will soon experience a major ecological catastrophe.	<input type="checkbox"/>				

Demographics

Now, we would like to know some general information about you and your family in order to make comparisons among the many kinds of visitors to public lands in Utah. Remember that all information is voluntary and confidential and will not be identified with your name.

28. What is the highest level of education you have completed?

- Less than a high school degree
- High school degree or GED
- Some college or a community college
- 2 year technical or associate degree
- 4 year college degree (BA, BS)
- Advanced degree (MA, MS, JD, MD, Ph.D.)
- Don't Know/Refuse

29. How many years have you lived in Utah?

_____ # of years

30. In which county do you currently live?

31. How many years have you lived in your current county?

_____ # of years

32. Before taxes, for 2006, what was your total household income?

- Under \$15,000
- \$15,000 -- \$24,999
- \$25,000 -- \$34,999
- \$35,000 -- \$49,999
- \$50,000 -- \$74,999
- \$75,000 -- \$99,999
- \$100,000 -- \$149,999
- \$150,000 -- \$200,000
- Over \$200,000
- Don't Know/Refuse

33. In what year were you born?

19____

34. How many children do you have under 18?

_____ # of children

35. How many people live in your household in the following age groups?

Under 15 _____
15-24 _____
25-54 _____
55 – 64 _____
65 or older _____

36. What is your present marital status?

- Single
- Married
- Separated/Divorced
- Widowed

37. Which of the following best describes your ethnic origin?

- White
- African American
- Hispanic
- Native American
- Asian American or Pacific Islander
- Other: _____

38. Do you currently belong to any of the following kinds of **organizations**?

- Conservation/Protection groups (Audubon Society, Sierra Club, etc.)
- Wildlife conservation groups (Ducks Unlimited, R. M. Elk Foundation, etc.)
- Fish conservation groups (Trout Unlimited, etc.)
- Rod and gun clubs
- Sportsman/Sportswomen groups
- Motorcycle clubs
- Dune-buggy clubs
- Jeep and four-wheel drive owners' associations
- ATV/OHV clubs
- Other (please specify): _____

39. With respect to your political views, do you consider yourself to be a:

- Conservative
- Moderate conservative
- Moderate
- Moderate liberal
- Liberal
- Other

Thank you for your participation in this survey!

PLEASE TAPE OR STAPLE THE CORNERS OF THE SURVEY AND DROP IT IN THE MAIL.

NO POSTAGE IS NEEDED.

If you have any further comments you wish to make, please use the space below.

APPENDIX B

Cover Letters

First Cover Letter



INSTITUTE FOR OUTDOOR RECREATION AND TOURISM
5220 Old Main Hill
Logan UT 84322-5220
Telephone: (435) 797-7094
FAX: (435) 797-4040

June 18, 2007

Dear Off-Highway Vehicle Owner:

You have received this packet because we are contacting a random sample of registered Off-Highway Vehicle (OHV) owners in Utah, and you have been selected. We are obtaining information to **help both federal and state land managers develop and maintain quality recreational experiences in OHV areas**. We would greatly appreciate your cooperation so that more informed decisions about Off-Highway Vehicle issues can be made.

This research is being conducted by the Institute for Outdoor Recreation and Tourism (IORT) at **Utah State University**. It is funded by the **Utah Governor's Office of Public Lands Policy Coordination**.

Please help us by completing this survey. It will take approximately 25 minutes to complete. **Your responses and comments will be kept *completely confidential*.** Therefore, please do not place your name on this survey. **Please note that participation in this research is voluntary.** However, in order to understand the opinions of OHV owners, **your response is very important.** Feel free to contact us if you are interested in the survey results.

When completed, please staple or tape the edges of the booklet and drop it in the mail. **We would like to have all of the surveys returned by July 9, 2007.** If you have any questions, please e-mail or call us at the addresses and numbers listed below.

Respectfully, and appreciative of your input,

Steve W. Burr
Director, IORT
5220 Old Main Hill
Logan, UT 84322-5220
Phone: (435) 797-7094
E-mail: steve.burr@usu.edu

Jordan W. Smith
Research Assistant, IORT
5220 Old Main Hill
Logan, UT 84322-5220
Phone: (435) 797-1009
E-mail: jws@cc.usu.edu



COLLEGE OF NATURAL RESOURCES

Second Cover Letter



INSTITUTE FOR OUTDOOR RECREATION AND TOURISM
5220 Old Main Hill
Logan UT 84322-5220
Telephone: (435) 797-7094
FAX: (435) 797-4040

July 20, 2007

Dear Off-Highway Vehicle Owner:

About one month ago we sent out a survey concerning recreational Off-Highway Vehicle Use on public lands in Utah. We have not, to date, received your response. Your feedback remains crucial to the success of the survey.

The results of this survey will be important in helping better understand Off-Highway Vehicle owners as well as the trends, patterns, and types of recreational OHV use that is occurring in the state. By better understanding OHV owners' preference for and satisfaction with current management policies, **both federal and state land management agencies will be more equipped to develop and maintain quality recreational experiences in OHV areas.** As such, we need the input of OHV owners to help us gain insight into the preferences for and satisfaction with certain management actions.

The survey has been sent to a random sample of OHV owners in Utah. We are writing to you again because your cooperation and input is essential to ensuring that management agencies receive and understand your opinions.

In the event that the original survey has been misplaced, a replacement survey is enclosed. Please fill it out and return it to us as soon as possible.

Respectfully, and appreciative of your input,

Steve W. Burr
Director, IORT
5220 Old Main Hill
Logan, UT 84322-5220
Phone: (435) 797-7094
E-mail: steve.burr@usu.edu

Jordan W. Smith
Research Assistant, IORT
5220 Old Main Hill
Logan, UT 84322-5220
Phone: (435) 797-1009
E-mail: jws@cc.usu.edu



COLLEGE OF NATURAL RESOURCES

Third Cover Letter

UtahState
UNIVERSITY

INSTITUTE FOR OUTDOOR RECREATION AND TOURISM
5220 Old Main Hill
Logan UT 84322-5220
Telephone: (435) 797-7094
FAX: (435) 797-4048

August 21, 2007

Dear Off-Highway Vehicle Owner:

About two months ago we sent out a survey concerning recreational Off-Highway Vehicle Use on public lands in Utah. **This research is being conducted by the Institute for Outdoor Recreation (IORT) at Utah State University and is funded by the Utah Governor's Office of Public Lands Policy.** Your feedback is crucial to the success of this research. If you have already returned the survey, I would like to thank you for your effort. This letter is probably crossing your completed response in the mail. I am writing today to encourage you to complete the survey.

The results of this survey is important in helping agencies that manage public land OHV recreation opportunities gain a better understanding of Off-Highway Vehicle owners as well as the trends, patterns, and types of recreational OHV use that is occurring in the state. By better understanding OHV owners' preference for and satisfaction with current management policies, **both federal and state land management agencies will be better equipped to develop and maintain quality recreational experiences in OHV areas.** As such, we need the input of OHV owners to help us gain insight into the preferences for and satisfaction with certain management actions.

The survey has been sent to a random sample of OHV owners in Utah. We are writing to you again because your cooperation and input is essential to ensuring that management agencies receive and understand your opinions. **Your responses and comments will be kept completely confidential.** Let me assure you that this is the last time you will hear from me. After this round of mailing, the list containing your address will be destroyed.

In the event that the original survey has been misplaced, a replacement survey is enclosed. Please fill it out, staple or tape the edges of the booklet, and drop it in the mail. If you have any questions, feel free to e-mail or call me at the number listed below.

Thanks again for your help

Sincerely,

Doug Reiter
Research Associate
Institute for Outdoor Recreation and Tourism
Utah State University
Phone: (435) 797-2502
E-mail: dougreiter@gmail.com



COLLEGE OF NATURAL RESOURCES

APPENDIX C

POSTCARDS

*Front of
Postcards*

**Institute for Outdoor Recreation and Tourism
Utah State University
Logan, UT 84322-5220**

**Institute for Outdoor Recreation and Tourism
Utah State University
Logan, UT 84322-5220**

**Institute for Outdoor Recreation and Tourism
Utah State University
Logan, UT 84322-5220**

**Institute for Outdoor Recreation and Tourism
Utah State University
Logan, UT 84322-5220**

Back of 1st Postcard

Two weeks ago we sent you a survey concerning recreational Off-Highway Vehicle use on public lands in Utah. Response to the survey has been excellent; unfortunately we have not yet received your comments. Your input is very valuable, and we would very much like to include your response.

If you have already returned the survey, we thank you for your effort. If you haven't had a chance to fill it out, we encourage you to do so soon. Your response will allow Federal, State, and local land managers to make more informed decisions about Off-Highway Vehicle issues.

If you have any questions, or need a replacement survey, please call (435) 797-1009. Thank you for your assistance.

Sincerely,

Dr. Stephen W. Burr
Utah State University

Jordan W. Smith
Utah State University

Two weeks ago we sent you a survey concerning recreational Off-Highway Vehicle use on public lands in Utah. Response to the survey has been excellent; unfortunately we have not yet received your comments. Your input is very valuable, and we would very much like to include your response.

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Dr. Stephen W. Burr
Utah State University

Jordan W. Smith
Utah State University

*Back of 2nd
Postcard*

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Utah State University

Doug K. Reiter
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Sincerely,

Dr. Steven W. Burr
Utah State University

Doug K. Reiter
Utah State University

APPENDIX D

Other Reasons for Riding In Most Frequently Visited Areas

Other Reason for Riding in Most Frequently Visited Area	
Plow snow -- home use	A lot of relatives
We have a family cabin there	Have cabin near there
No bear hunting in Utah, Cache County	It's where I grew up and hunt
Enjoy the sights	Closest to home
Good trails for kids	I own property Northwest of Vernal, UT close to Ashley NF
Live in area	Hunting
Close to personal property	My wife's parents live there
It is the only place where there is sand	Hunting
Cabin in Pine Valley	I am familiar with these areas
It is "the back yard"	I live in Stockton, UT and can leave from my house
Where I live	Scenery, Historic, Archeological, Challenging, personal knowledge of area
The number of trails	Deer hunt
It is where I live	Family own property
Less people, better riding	Beautiful scenery and wildlife
Camping trip close to home but can still ride without paying camping fees	Family ties
The riding is excellent and a very large area	We have a cabin there
Close to camping area we go to	Own property in area
Trail access from every campground. All trails connect to each other, "loop riding".	Go hunting
Not a lot of people there	We have people to ride with
Trails are fun with no car/truck traffic	Close to home
Hunting, camping	The people understand and we care how we treat the land
Ride at home	5-mile is close
Close to Salt Lake Valley	Like the trails
Cabin	Exploring new areas each time
Own property in area	Own home there
We have cabin in that area	Across street from my home
This is my duck club	Own a cabin in Uinta lands, Summit County
Hunting area	Cabin site
I own property there	I just ride anywhere I'm able
Cabin	Sand dunes
Own a cabin there	Hunting
Close to home	Children's favorite place to ride
Close to home	Shed horn hunting -- Hunting Colo.
I can ride from my house	Ice fishing at Hyrum Dam
Own land	California has better Motocross tracks than

	Utah
Tradition	It's close to home
Closest sand dunes to Davis County	Close proximity to home
Good variety of trails	I live there
A lot of open country with a lot of trails	Easy access to ATV trails & a lot of trails to ride
Like sand, no dust	Private land
By my duck club	Private property
I have a cabin there	The hunt
My own property	Hunting area with 4 wheeler access
I ride to get from camp to hunting area	?
Own a cabin	Close to home
Desert races	Hunting
Private property	I own it
Own private property -- cabin	I know the area
Hunting	Beautiful area and good trails
Familiar with area	We have a cabin in Uinta mountains
?	Private land – cabin
Don't know of other places	Family reunion every year, same place
Have cabin in the area	Hunting
Our cabin is in the area	Scout out deer and elk to hunt
For \$10 pass, you can ride in town	Cabin property
It's beautiful	Cabin location
Hunting areas	Hunting
Scouting for Elk	Hunting trip
I like the location for camping	Large area, relatively close to home
History, the history of the area	Very few people
Have a cabin in Oakley, UT	Own resort share
Hunting deer	I live there and can ride from my home
Piute trail -- OHV friendly	Chosen by group
Hunting	Not have to trailer the ATVs there
Went with a group	

APPENDIX E

Other Recreational Activities Participated In On Most Recent Trip

Other Recreational Activities Participated In On Most Recent Trip (only activities ≤5% of total) (n=565)	
	Percentage (n)
Boating	5.0% (28)
Rock climbing	1.3% (7)
Competitive events	0.9% (5)
River running	0.9% (5)
Backpacking	0.9% (5)
Mountain Biking ¹	0.2% (1)
Golfing ¹	0.2% (1)
Rest and Relaxation ¹	0.2% (1)
Family Reunion ¹	0.2% (1)
Lizard Watching ¹	0.2% (1)
Staying out of the heat ¹	0.2% (1)
Looking at the damage the loggers did at the top of Red Creek ¹	0.2% (1)
MotoCross ¹	0.2% (1)
Search and Rescue ¹	0.2% (1)
GeoCacheing ¹	0.2% (1)
Outdoor Cooking	0.2% (1)
Pre-hunt Scouting ¹	0.2% (1)
Feeding Livestock ¹	0.2% (1)
Cross-country Skiing	0.0% (0)
Snowshoeing	0.0% (0)
1. Answer provided by respondent in "other" category.	

APPENDIX F

Further Comments

Further Comments

At the end of the 2007 survey, respondents were asked if they had any further comments. These are the 153 responses given, EXACTLY as they were written by the respondent on the instrument.

Comment Number	Comment
1	I don't do recreational trips!!
2	I use my ATV (Suzuki) to plow snow, haul rock on my property. Haul top soil and wood. I occasionally haul it to Bear Lake to retrieve a deer if I shoot one. Last time was 2002.
3	Cache County Rich County close to many roads and campsites used for camping and ATV use. Snowmobile parking lots need to be expanded and parking organized. The trails groomed and the roads, lets just say they change for a whole lot of good when you get to the Idaho border. For money spent on OHV registration, Idaho does more with less that Utah does with way too much.
4	Utah -- Unbeatable Scenery
5	I would rather take my horses and ride when I go to the mountains or the desert. I don't use my 4 wheeler for pleasure. I am 80 yrs. Old and have been riding horses for more than 70 years. (Signed)
6	I appreciate your willingness to find out how and why the trails are being used. We have a great time riding on them and see them as a great asset to our mountains.
7	Although there are always people who abuse the environment, there are too many radical fringe groups attempting to outlaw all forms of recreation on public lands. More trails need to be developed for OHV users rather than fewer. Outlaws are no excuse for restructuring the law abiding -- Deal with them separately!
8	Areas are well maintained -- ATVs are our life. We enjoy it and hope we will always be able to. Thanks.
9	Wider trails for 2 seater ATVs would be nice for our senior citizens -- this really needs to be addressed -- Turn the trails back into Jeep trails and we can all share and enjoy the sights on the 4 wheeler trails!
10	More trails are needed. Trail should be open unless signed closed or listed as closed to ATVs/motorcycles on travel map. Fancy parking not needed, just room to park. Good trail maps available on weekends helps.
11	I hope Utah continues to develop OHV trail systems. My family and I have seen more of Utah on 4 wheelers than I ever imagined existed. Wonderful wildlife and beautiful scenery. Thank for all you have done to develop the Paiute trail system, Paunsagunt OHV trail, Markagunt ATV trail, Arapeen OHV trail, Gooseberry ATV trail, and allowing OHVs on lots and back roads. I would one day like to see the Great Western Trail Reopened for OHVs from Mexico to Canada. What a great system that would be for all of America to enjoy! Thanks, (Signed)
12	I don't believe the Federal Government should control State lands and private. How they are used. The state should be in control of all government land within it's boundaries.
13	Why do we have to pay so much to own an ATV? We can only ride six months out of a year. Bicycles have the best black top trails. Where does this money come from? Most of the trails the ATVs ride on are old horse and cattle trails taken over by the ATVs. Most of the trails are maintained by ATV riders (i.e. cut dead fall, fill some wash outs). You can't get a state worker to help out. If so where? I have never seen a state worker in Garfield County. The State is ripping off the ATV rider, with license fees. I have a 1999 Polaris and I pay just like I have a 2007 model. The bicycles can take up the whole dang road and pay nothing. No gas tax, no license, but yet the bike clubs can hog the whole road.
14	I believe we need to take care of the environment, but I also feel that responsible ATV owners do not destroy the environment as much as the media/radical environmentalist groups state we do.
15	Quit restricting riding on so many areas.
16	More lands need to be open to ATV/OHV use, not closed.

17	Grad Ag College 1950. Keep up the good work. Come take an ATV ride with me this fall, you will love where I will take you. No place on Earth like it.
18	Most people who go 4 wheeling are doing it because they love the sport and entertainment. Sometimes the BLM likes to control too much on the area you grew up in. We stay on the trails and don't make new ones.
19	Thanks for the chance to have a voice. But why is it so black and white? Why can't people just use common sense and teach their children to do the same. When I was young, me and my buddies spent all our time on ATVs on our desert (San Rafael). When we was there we did not destroy the land but we used. We did not litter. Then the wilderness crap came along and ruined everything. This land looks the way it does because of erosion. It will always change its way it looks. So good, so is a tire track really going to make a difference or is it going to cause another whole to look at. Let's face it, environmentalists are ass wholes who are afraid to work for a living so they get a bunch of crackpots to jump on a band wagon and start crap like SUWA. They don't care about our land, they just know they came in and crack heads to join them and screw things up. Wilderness land of no use!!!
20	All users of our natural environment need to be proactive in cleaning up after themselves and others when necessary. There are a few that don't seem to care and affect the rest of us that do care.
21	I feel that everyone who used public lands has a responsibility to take care of it and not misuse or abuse it. And everyone including horsemen, bicycle riders, hikers, dirt bikers, ATVers, 4x4, Dune buggies, need to pay to play and it should be fair for all who use these lands. Thank you (Signed).
22	I think it is ridiculous all of the road closure on all the public land like up in Willard Peak area. Closing all of the side roads just made people tear up the mountainside because people like to take side roads other than the main road.
23	We need more patrol, more trails opened up, more enforcement of people doing damage to the land. Open up more areas to ride.
24	Cache not very ATV -- Too many people per mile. Piute -- Well done, many miles, well maintained. Idaho -- worth the travel time.
25	Please don't take our individual rights from us. We're not free to enjoy our country anymore. We have been going to the sand area for the past 35 years and you can [undecipherable] see one [undecipherable] where we have been riding our ATV.
26	We use our ATV occasionally in the mountains on trails or dirt roads, which are for ATVs. We enjoy nature and seeing beautiful surroundings. We enjoy camping and fishing and being with family and friends. Thanks.
27	I drive my ATV to a no vehicle area, park and walk in. As I walk in I am past by many others who ride and ignore the rules. There is no enforcement by USDA. In my town, ATVs and off-road bikes are ignored by all law enforcement. They are underage, no safety equipment, brake speed limits, burst through stop signs, and ride wild along state and county right of ways. This town is Woodruff in Rich County.
28	There are quite a few ATV trails in our area, they are fairly well maintained and my wife and I really enjoy them.
29	US Gov. continues to close public land to ATV use, they will make outlaws out of all ATV riders.
30	Why doesn't the state get a beach groomer machine and clean up Little Sahara (Sand Mountain)? They are available in State GSA auctions or as surplus equipment regularly. Then impose hefty fines for litterbugs. Thanks. (Initialed)
31	Most of my OHV use is for farming. It would be unfair to add state tax to ATVs.
32	How will you make your findings public? I would like to review your results. Can you send a letter to those who have participated in this survey? Thank you.
33	We appreciate five mile area because it's close. Wish they could get restrooms/outhouses at minimal cost. Love American Fork canyon -- wish trails were marked like Piute. We're excited about trails down around St. George.

34	We need more places to ride!
35	Don't make too many rules and stick there noses in what everybody else is doing. Things worked great till so many people moved here and wanted to have things their way!!!
36	This is a great way to enjoy Utah as a family :-)
37	We believe you keep taking places we can get on our ATV away from us and keep making us pay more for license [undecipherable] and places to go.
38	We would be willing to pay to access trails that are private property. Could be source of revenue for property owners. Many areas could be opened up in can be treated properly. These trails provide a way for middle age and the elderly to enjoy the beautiful back country.
39	Stop SUWA from closing our riding areas!
40	I use my ATV at a duck club only. This is private land. Boats I use on public land and my camper. I don't like to camp with ATV riders coming and going in and out of camp. There are places to ride, there are places to camp and fish, but they all don't need to be done at the same time. It is OK to have these ATVs, boats, campers, etc. but use them at the right times and places.
41	For questions on pages 2 and 3, neutral is N/A.
42	I think the responsible care of nature is very important, but not to the point where it is not used or enjoyed. Protecting the endangered whatever animal or fish etc. and prohibiting the use of the land isn't right.
43	In reference to question 25, I am a firm believer in you pay for what you do. Little Sahara dunes is a good example. When I was in high school there was nothing out there, now with charging to get in they have done a lot of improvements to the campgrounds. If I go boating I expect to pay to launch and that's fine, but I also expect that my money is being used to keep up the facilities. I also feel that if the well used trails charge a fee, that the fees collected should have some sort of equitable structure to also benefit the trails that are used less.
44	Do not want taxes raised on OHV -- Sales tax or the yearly tax. I think they are high enough.
45	Sorry for the delay in sending my response.
46	You need to stop closing down trails and ATV areas and roads that have been open for years, need to open new areas.
47	There are certain groups that have the misconception that highways, trails, off-road uses are so detrimental. I've seen ducks and geese feed in water between freeways. They are not going to lay down and die because of a freeway. This land has the ability to provide all our needs, and wants. We need to be caring and wise, but not so restrictive and selfish with our lands. Man has the ability to provide ways and means to give us what we want without restrictive, even greedy means. Ducks are strong, animals still flourish. We all adapt to each other. Motor vehicles are one of the world's greatest inventions. We should provide more and more places designated for there use at the same time be concerned for all life, property and open lands.
48	Existing BLM, Forest lands belong to the people and trails should not be closed to serve special interest groups who view their cause more important than the central public. Most special interest groups objectives are based on "junk science" such as the global warming craze!
49	Please don't send another survey? Thank you.
50	We are a multiuse family that believes that we can all share the land if people are responsible and stay on the trails. We should not encourage intolerance of other people's lifestyles. The earth is a crowded place and people need to lean how to get along and show respect for others. OHV use is one way my family enjoys God's gifts. My husband is handicapped, and OHV use is the only way he can explore the great state of Utah. Some of these liberal conservation groups believe that the most fit should be able to enjoy the outdoors. We used to belong to SUWA because we truly want to protect Southern Utah.

	We love the place and don't want it ruined. But, SUWA has changed over the last 10 years to become an anti-OHV group instead of a conservation group. We have cancelled our membership because they don't want to "share". If illegal OHV use is prosecuted, there is no reason to close down new areas. If you close everything down but a couple of areas. Then overuse is inevitable. If you close the state down completely, I'll have to leave. And I love Utah! I'm tired of the illegal land grabs and designations of wilderness, which truly isn't wilderness because there are roads that have been there for 90+ years. Humans are a part of natural erosion. We are no different than water, wind, and animals. If you think that riding an ATV in a dry wash is damaging, take a good look at what a big storm does to the wash. Mother nature can be a very destructive force! Just take a look at Sevier, Emery, and Wayne counties after that 100 year storm that happened October 2006. Wow! We were there and were stranded for 3 days because all the roads were washed out. When humans are gone, nature will take care of itself.
51	The closing of access to retrieve downed game with my 4 wheeler has resulted in me hunting Wyoming for elk now. Utah has lost my buying a permit and hunting elk in Utah. What a shame!
52	We need more enforcement of OHV rules (e.g. helmets, trail misuse, litter, etc.). Some people ruin it for others. Helmet laws should be mandatory for ALL riders!
53	I have in my lifetime ridden off-road ATVs a lot, but now I am older and ride mostly on our private property. But really have appreciated the use of the sand dunes at least twice a year with my family. My kids still use ATV all the time.
54	I actually enjoy the trailhead at Monte Cristo for sledding more than bike riding, but do enjoy the sand at Jericho and other riding in that area. My son's desert race is that area and on BLM land.
55	Sorry I am late. Been on vacations and didn't get first survey and just found this one.
56	I think that signs and markers are a good idea on the common trails in Utah, but I don't wasn't to see fees for everything. I also think that there are several areas in Utah that could be opened up to OHV access without environmental disaster.
57	To this point, I have not taken any long trips. I own a cabin in the Smith Mountain area and have done most of my riding in the cabin area other that I took an afternoon ride up American Fork canyon. I really have no opinion on the questions you are looking for answers in your survey.
58	Availability of maps with places to ride. Restroom facilities at 5 mile pass, lookout point.
59	Off-roading helps the economies of small town Utah, the forest service needs to be put in check on (prescribed burns) and random trail closures, the Sierra club needs to go home!
60	We enjoy riding the BLM land behind our home, the only disturbing things that I find on our off-road adventures, are the needless slaughter of deer and other wildlife that other people have left behind just for the fun of it.
61	We need to take care of nature and not destroy it. We should be allowed to enjoy nature and not be locked out of it. There should be research done on snowmobiles and their use in nature. It is wrong for snowmobiles to be limited in their use in Yellowstone National Park. I don't think they look at other alternatives to resolving the issues there.
62	I use my ATVs for hunting only. I don't like trail riding or being around other people. If you are going to be successful hunter you can't be around other people. They always mess it up for you.
63	Utah should specifically earmark a substantial portion of sales tax and licensing fees from OHVs and have in a fund for trail maintenance and keeping needed trails open. These funds should be kept out of the general fund.
64	I appreciate your concern in these matters, they are important!!!
65	No new taxes and open more ATV trails.
66	Why does the Forest Service take roads out in different areas that have been used for lots of years? Like the road between blue and purple lake in the Boulders.
67	ATV means All Terrain Vehicle, yet when I license it I am not allowed to declare its use. All terrain to me means any road or trail regardless of dirt, sand, gravel, blacktop, etc. Box

	Elder county has hundreds of miles of dirt "county roads" going to many beautiful and interesting sites, but by ATV is not legally licensed to travel these roads. Although Mantua will let you ride on their blacktop for a fee (tax). I had the same problem with my wave runner (boat) having all kinds of special laws not applied to all boats. I don't understand why Chevrolet 4x4 5,000 #s is legal to take anywhere common sense allows but not an ATV??? Just wondering.
68	I'm sorry, but I felt some of your questions were a bit dumb. No matter what, people will always have an effect on the earth. Education on care and maintenance of nature would go a long way to help us take better care. Larger fines might help you with your funding problem. Forced education on rule breakers too. Then if they break the rules, you can really nail them. Good luck. Some folks are pretty careless. I don't know if you'll ever teach everyone to respect and enjoy nature at the same time.
69	Keep all existing roads and trails open. If they keep closing OHV trails most of those riders will make new ones. There is too much demand for riding OHV and more and more people are riding.
70	Enforce the laws, I'm a widow who found ATVing a fun way to get out and enjoy nature along with hiking, but can not afford the few times I get out to pay high prices to enjoy the outdoors. Working two jobs just to keep a roof over my head. We can enjoy nature without overdoing it by following the laws and the agencies giving us areas to go and enjoy the outdoors. I will follow the rules and stay on paths given to me to enjoy. I will and have always took out what I brought into the outdoors and visually clean the area better when I got there. Know lots of people don't, but just keep hoping that humans can enjoy the outdoors and share it with animal and plant life.
71	Thanks for the opportunity -- Good luck!
72	I think it is up to us to conserve our wildlife and habitat, and also our natural resources. I don't think it is fair to fee and tax those who ride ATVs for those who don't recycle waste paper, use heavy machinery, are just as to blame as ATV riders. So why tax and us and no one else? If there are trail head fees and parking fees, most people try to avoid those places anyways. I believe it will negatively affect the recreation activities Utah is known for. I believe law enforcement patrolling people who do not obey the laws and visible signs will better benefit wildland erosion other than fees and taxes.
73	Everyone needs access to all public lands even if you don't use OHVs this is not a one group decides all. I feel we should not build a fence around all the things that we want to protect, just to keep everyone out. All this is for us to use and enjoy.
74	Basically, most riders are responsible. Only a small percentage are truly irresponsible and abusive to the environment and should be punished accordingly.
75	I have not ridden my motorcycle for years. I miss VERY MUCH not being able to for an evening after work or on Saturday to LARK and ride a variety of terrain for free here in the valley. It was HORRIBLE that, that opportunity was taken away!!!
76	Thank you for your interest in this, it's not everyday that a real off-road rider sets to give his opinion and you can learn about us. The majority of the off-roaders, not just the posers that tear up the environment and let guys like me pay the price. Thank you.
77	The only fair way to tax anything is to tax the users. The more they use the more they pay.
78	My ATV is used to launch a tandem kayak at Bear Lake -- very few "rides" on trails.
79	We love the outdoors, we want to enjoy it to the fullest and respect it always.
80	We do need to limit the damage being done to the Forest. But the riding trails are growing scarce because of the land and power to control that land by Ranchers, and allowing them to graze cows wherever they want is doing more to our trails and landscapes. They can do more damage to any forest or National Landscape than riders. I know because I know a few ranchers, and to free range cows is damaging in the long run for everybody.
81	In some states you don't pay taxes on OHVs to bad we live in Utah, the money hungry state.
82	Have more trails built in the southwest part of the state, in Beaver, Iron, and Washington Counties.

83	I would like to see trails and roads left open so everyone can enjoy the beauty of this great land. With respect that it needs.
84	People need to learn to pick up their trash etc. in their camp grounds to keep it cleaner for others.
85	It is a shame the infected and dead trees in our forests, are not being used, and that they only got that way to start our mountains and forests looking like shit. The wildlife is depleting, so will, there looking livestock, out of the once living areas the money is most important to some.
86	SUWA SUCKS
87	Keep the trails and public land open for many different people to use. I enjoy the outdoors and riding ATVs.
88	We love to ATV ride -- our kids have grown up riding. Our favorite things to ride are the sand dunes. We have over 50 people that love to ride. We are responsible riders (family) and plan to keep riding for years to come.
89	Please consider depreciating values on ATVs/motorcycles such as cars/trucks, when it comes to tax and registration. Thank you. (Initialed)
90	Please keep trails open to OHVs. How else can we see these beautiful areas?
91	A++ to San Juan county on their ATV trails, well marked and maintained. It is a lot easier to ride on trails that you know where the trail goes and don't have to go off the trail to find the trail (Grand county.
92	JOIN -- PARTICIPATE -- DONATE!! The world is run by those who get involved.
93	Thanks for the map!!
94	Population is what dictates the amount of freedom we can have.
95	I enjoy riding my ATVs in the mountains and around the State. It seems somewhat difficult to find areas to ride that are fairly close to home. I also realize that ATVs are becoming more and more popular and that some of these areas need to be managed but it also irritates me that we pay for the use of these vehicles but they are becoming fewer places to ride. I hope we will continue to be able to access the public lands and be able to enjoy nature. Thank you.
96	I enjoy being able to see all of Utah and I hope that we can keep trails open for all areas and enforce riders to stay within the guidelines so that it does not destroy the beauty that we have. We all need to ride responsibly.
97	Please protect the right to ride ATVs off-road.
98	One of these days when the opportunity arises, I'll be going OHV riding. I hope sooner than later. (Signed).
99	I am a liberal, but only in Utah! I would be considered a conservative anywhere else.
100	I do not think your environmental attitude questions will solicit answers that can be representative of respondents true attitudes about development of back country to OHV use -- Please have all data excessively peer reviewed and throw these questions out.
101	Tax and license fees for OHVs are too high in Utah, all my "taxes" are new licensed out of state at a 2nd home I own fees are much more reasonable.
102	Dirt bikers tread lightly. It's a great industry for Utah, family experience and you can see a lot of natural terrain in short order compared to hiking. Air and water pollution impact the environment much more than 2-wheel vehicles rearranging the desert sand.
103	I don't believe this type of survey works. Its too long and wording is tricky.
104	Why is it that Idaho has a flat rate on OHV that is cheaper than Utah, but still take better care of the recreational areas? Lets use the money right.
105	I believe all ATV operators need to be educated about riding only where designated. They should learn respect for the environment and other users. I believe if an ATV user abuses the rules, they should loose their right to ride again. Their equipment, including their ATV should be taken, similar to a poaching violation.

106	Sorry for not getting done sooner, I've been sick.
107	Keep big brother off my back.
108	Not once have I seen any enforcement, people on any of the trails I have been on.
109	Why are only motorized vehicles taxed? To make everything even, we should charge all people who use trails, lands, mountains, camping, etc., pay for that privilege. Have the following groups of individuals pay just like motorized vehicles as they use the same facilities (campgrounds, toilets, water, etc) and they have always done it for free, and they are the ones who complain the most, such as the Sierra Club. (Horsemen and women, they mostly always leave a mess, straw, hay, horse shit; cross country skiers; mountain bikers; hikers; rock climbers). These individuals should have to have a tag or permit or season pass or whatever. Just like we do!!! We have to stay on trails or roads they go anywhere they want and do what they want.
110	A quiet relaxing ride through public lands is almost impossible because of those insist on testing the limits of the land and their equipment.
111	Preservation of our rights to access public lands is very important and needs to be maintained.
112	Approved trails that stop or are closed at private property should have access through them.
113	I am a member of the Iron County Search and Rescue. I support training and education for ATV riders, especially the inexperienced. We spend much of our volunteer time with ATV accidents or lost people, I will support a high fee for ATV registration to go the local search and rescue groups.
114	I feel inclined to mention that not many things sever the enjoyment of an activity outdoors faster than the constant bombardment of ridiculous and ever changing rules implemented by countless self-serving bureaucrats.
115	There are other groups that use the same trail heads and camping spots as OHV owners, and don't help pay, or in a lot the same camping spots, and don't clean up after, the camping spots used by horse users should have to clean up when they leave and don't. They leave the smell, hay, straw, manure. We approached Forest personal about problem and they have done nothing about it yet and I am sure there are many other spots that are the same way! Mostly what we hear is that OHV users are to blame for all the messes left, or all the damage to the watershed. Not true! If you expect help, treat all users the same and charges on costs.
116	Use volunteers to post trail signs and do other work. I think there are people that would like to do some work on trail projects.
117	I appreciate the opportunity. Please contact me again should another opportunity arise.
118	The State charges too much for license and registration fees for OHVs.
119	My family and I enjoy motocross tracks. My youngest son is so tiny that if he were to be on a trail and fall just a little ways from where we are, and get hurt, I would not see him and be able to help. On a motocross track, everyone goes in the same direction and I can see him at all times. I would like to see more motocross tracks in the State of Utah. The one we know of is "Jordan River State Park" and it is not watered that well so we don't go there that much. If it was maintained a little more professionally, we would support the track.
120	The taxes that we pay aren't used very well, the land needs to be managed by all of us, that use it or it will all be destroyed. People need to respect it and clean up after themselves. Restrooms need to have trails to them not shut off so you can't get to them.
121	We are all subject to the laws of God and nature. We all need to learn to be better stewards of this planet. We need less government and more personal accountability. We need to learn to get along with each other (other nations) and not be such a greedy consumeristic nation (USA).
122	My ATV is used almost exclusively for deer hunting. My grandchildren use it once in a while when they go to an area where it can be ridden legally.
123	How about yearly pass for all parks and fees?

124	I support public OHV use.
125	Please post bear attacks and mountain lion attacks when they occur for safety. I do know elk can attack also. Thank you.
126	On question 8 I would like to clarify. We pack it in, we pack it out. We try to be responsible ATV riders and when camping, hunting, and all outdoor activities we do. On question 10, proper signage translates to responsible riding, lets you know if a certain area is closed to ATVs. We purchased ATVs to get into the backcountry we like to ride and enjoy the scenery, wildlife, etc. We do not go out to tear up the mountains and see how fast we can go or how much damage we can do. We, as most ATV riders, respect the mountains, trails, and just go out to enjoy the outdoors. On question 25 about fees; As avid hunters, hikers, fishermen, ATVers, we are not opposed to fees as long as they are reasonable and it should include all types of use (i.e. slick rock, rock climbs, etc.) not just ATVs.
127	I think people or trucks with bikes or motor homes should be not charged as much of a fee as the cars or trucks that don't have toys to ride. Because more likely they are there to party and destroy things.
128	ATVs need to be more closely watched and strict fines for riders that go off trails and cut fences.
129	Because of OHV use, I have seen parts of Utah, California that I would never have seen without the use of OHV. There's room in Utah and this country for all users of our great outdoors.
130	Salt Lake County only has one OHV trail. There needs to be more access.
131	We need to slow down government control and the shutting down of riding areas. We need to stop the eco-extremists that think everything should be shut down or closed. Balance is the key to our environment.
132	Was the map to keep?
133	ATV riders should have speed limits, going 40 + 50 miles an hour on a windy and bumpy [undecipherable] road is wrong.
134	Any littering of any area in the state should be fined \$1,000.00. This money should then be used to offset costs of trail maintenance.
135	We need better trail maps, I need to know where I can ride and also where I can't ride.
136	We don't use ATVs very much, or OHVs.
137	We could ride 4 wheelers all day everyday and not do the damage the loggers are doing now on Red Creek. Our lifetime hunting area has now been obliterated and where once there were forests there are hardly any trees and the deer an elk have no where to go except private property and so we can't hunt them for years to come, if ever.
138	The game wardens, rangers, etc. need to quit harassing the law abiding people in their camps and trails and go and do something important! They think they are better than us.
139	Open roads and trails back to where on they were on the Geological Survey maps approx. 1965 and leave things the same.
140	I am not a true OHV user, so my answers are not as valid as others will be as to OHV use.
141	There are a few people in the world today that will cause as much damage in a day as the general public will in a year. Ignorance is out of control!!
142	I appreciate what you are doing. As in most pastimes and recreation most people are good and conscientious, but there are always a few boneheads who have to ruin it for the rest of us.
143	I've been injured for the last two years. My injuries have kept me and my family from enjoying our bikes. At least my bike. I look forward to being healthy enough to spend time off-road.
144	I am concerned about the driving speed and people who pull OHV trailers etc. High speeds and trailers don't mix living in Park City I see a lot of I-80 I-40 traffic and people pulling their trailer/pick-up load with 4 wheels, buggy, motorcycles, driving above the speed limit (some way above) also triple rigs (not safe) driving fast. The state of Utah needs to regulate /enforce or change OHV towing laws. The under 16 OHV permit is a good idea, but needs

	to be more accessible. Maybe computer/online classes or regular offerings at local shops or on site permit education at popular OHV areas. BLM ranger need to educate public not only about regulation/permits etc. but also about environment/litter fires, smoking, cig., drinking, music. Whenever I have encountered a ranger, they check our permits and registration but say nothing to the camp across the road about their trash, glass and cans litter?
145	As long as safety is not at risk, most all off-highway roads could be made accessible to ATV travel. This could result in economic and resource savings.
146	We only ride ATV in our property.
147	I'm a person that respects what God gave us. I always stay on the trail and do not litter. I recycle, and wish Washington county had a better recycling plan, or even a plan actually.
148	There is a need to unify ATV rules and regulations so ATVs can ride and call 3 states without getting individual licenses and tags.
149	This is an extra you sent me -- I had my father fill it out -- Hope it can be helpful as well.
150	I would like to say that OHVs are a very important part of my life and because of this I am always curious of nature and will go out of my way to tread lightly. It saddens me to think that ATVs have gotten such a bad rap due to the actions of a careless few.
151	This State has lost a lot of opportunities to use its natural resources to generate money it needs to spend and build State Parks and other areas for resident use. Taxes are not the only way. For example, funding to federal areas when money was cut and old Indian sites that could have been saved and enjoyed? Also, Utah lake was destroyed by humans and the State.
152	I use my 4 wheeler for snow removal the most.
153	There need to be more mountain roads that you can ride you 4-wheeler.

APPENDIX G

1994 Utah Off-Highway Vehicle Users Survey

Only two previous studies have been conducted in which Utah's recreational Off-Highway Vehicle use was analyzed; the first was completed in 1994 by the University of Utah's Survey Research Center. Below we have included the results of that survey. The second was completed by Utah State University's Institute for Outdoor Recreation and Tourism (IORT) in 2001. Data and results from this survey can be found at the following website: <http://extension.usu.edu/iort/htm/professional/january2001>. The information can also be obtained by contacting the IORT directly at (435) 797-2502.

Report of the 1994 Utah Off-Highway Vehicle Users Survey

This information is included in this report because due largely to the fact that it is vital to understanding Utah's past off-highway vehicle use and because it is generally unavailable and inaccessible. The only report found by the authors was at Utah State University's Special Collections Library. Hopefully its inclusion here will facilitate the advancement of further research, especially in areas that will rely on not only this information and the 2007 study, but the data collected by Utah State's IORT in 2001 as well.

- Conducted by the University of Utah's Survey Research Center.
- Prepared for the Utah Department of Natural Resources' Division of Off Highway Vehicles.

Sample, Confidence Level, and Confidence Interval

- 708 adults (18+) contacted, 627 completed interviews
- 95% Confidence Level, $\pm 4\%$ Confidence Interval

Results

Sex

- 11% Female
- 89% Male

Age

- 11% 18-29
- 28% 30-39
- 29% 40-49
- 18% 50-59
- 13% 60+

Owners' residence (classified by county or area of Salt Lake County)

- 7% NE Salt Lake
- 9% NW Salt Lake
- 7% SE Salt Lake
- 16% SW Salt Lake
- 17% Davis
- 4% Weber
- 11% Utah
- 29% Rural

Annual household income

- 17% less than 30k
- 50% 30-60k
- 24% 60k+
- 9% DK/Ref

Household size

- 4% 1
- 25% 2
- 19% 3
- 20% 4
- 31% 5+
- 1% DK/Ref

of children <18

- 17% 1
- 20% 2
- 13% 3
- 6% 4
- 3% 5+
- 41% DK/Ref

Avg. # of vehicles per respondent

- Mean= 4.093
- Median= 4.0
- Std. Dev.= 2.411

Vehicle ownership

- Motorcycle 40% yes – 60% no
- Snowmobile 39% yes – 61% no
- 4x4 (truck, jeep, SUV) 79% yes – 21% no
- ATV 62% yes – 38% no
- Other 7% yes – 93% no

How many...

Motorcycles

•	44%	1
•	31%	2
•	15%	3
•	5%	4
•	2%	5
•	2%	6+
•	1%	DK/Ref

Snowmobiles

•	25%	1
•	44%	2
•	13%	3
•	11%	4
•	3%	5
•	4%	6+
•	0%	DK/Ref

4x4, etc.

•	67%	1
•	24%	2
•	5%	3
•	2%	4
•	0%	5
•	0%	6+
•	0%	DK/Ref

ATVs

•	42%	1
•	39%	2
•	13%	3
•	3%	4
•	2%	5
•	1%	6+
•	0%	DK/Ref

Other

- 69% 1
- 17% 2
- 7% 3
- 0% 4
- 5% 5
- 2% 6+
- 0% DK/Ref

Thinking about the number of areas in Utah open to OHV use, would you say there are...

- 3% Too many
- 30% Just the right amount
- 63% Not enough
- 4% DK/Ref

How important to you is the provision of maps by the OHV division of Utah's Department of Natural Resources?

- 7% Not at all
- 18% Somewhat
- 19% Moderately
- 56% Very
- 0% DK/Ref

How important is it to you that the Utah DNR's Division of Off Highway Vehicles works with Federal, State, and other agencies to provide open riding areas (open areas defined as sand dunes, open desert, play areas, etc.)?

- 4% Not at all
- 12% Somewhat
- 14% Moderately
- 70% Very
- 0% DK/Ref

How important to you is it that the Utah DNR's Division of Off-Highway Vehicles distributes information about rules, hazards, and conditions (information defined as maps, brochures, newsletters, laws, rules, etc.)?

- 4% Not at all
- 16% Somewhat
- 17% Moderately
- 63% Very
- 0% DK/Ref

How important to you is it that the Utah DNR's Division of Off-Highway Vehicles provides trailhead facilities (restrooms, unloading ramps, signs, garbage, camping areas, water, etc.)?

- 9% Not at all
- 19% Somewhat
- 17% Moderately
- 54% Very
- 0% DK/Ref

How important to you is it that the Utah DNR's Division of Off-Highway Vehicles provides signs (directional, reassurance, informational, cautions, etc.)?

- 7% Not at all
- 16% Somewhat
- 20% Moderately
- 56% Very
- 0% DK/Ref

How important is it to you that the Utah DNR's Division of Off-Highway Vehicles works with federal, state, and other agencies to provide access to public land (open to motorized use)?

- 3% Not at all
- 11% Somewhat
- 14% Moderately
- 73% Very
- 0% DK/Ref

How important is it to you that the Utah DNR's Division of Off-Highway Vehicles works with federal, state, and other agencies to develop and maintain trails for OHV use?

- 6% Not at all
- 15% Somewhat
- 19% Moderately
- 61% Very
- 0% DK/Ref

How many trips per year do you take to designated OHV areas in Utah?

- 8% 0
- 35% 1-5
- 20% 6-10
- 12% 11-15
- 9% 16-20
- 4% 21-25
- 4% 26-30
- 6% 31+
- 1% DK/Ref

Where would you like to see the money from OHV registrations and taxes spent?

- 27% Existing trail maintenance
- 21% New trail construction
- 11% More open areas
- 8% Trailheads/parking
- 4% Printed maps/trail guides
- 3% Sanitation facilities
- 3% General OHV program
- 2% Safety patrols
- 2% Trail signage
- 2% Areas closer to home
- 1% State personnel
- 13% Other
- 3% DK/Ref

If you could make one suggestion to improve the OHV Education Program, what would it be?

- 17% Would make no improvements
- 7% More hands-on training
- 1% No education should be required
- 61% Other (*these responses were specified in the report's appendix, however they were not coded or further analyzed*)
- 14% DK/Ref

Looking ahead, what do you think about the most important issue affecting OHV use in Utah?

- 25% Having enough places to ride
- 17% Access to public lands
- 10% Resource management and conservation
- 5% Increased public awareness
- 4% Trail etiquette
- 3% Knowing where to ride
- 3% Trailhead facilities/areas
- 0% Maps
- 11% Other (*these responses were specified in the report's appendix, however they were not coded or further analyzed*)
- 14% DK/Ref

What type of riding area do you prefer?

- 54% Trails
- 36% Open areas
- 3% Motocross areas
- 7% Other (*these responses were specified in the report's appendix, however they were not coded or further analyzed*)
- 1% DK/Ref

APPENDIX H

Institute for Outdoor Recreation and Tourism Mission Statement and Acknowledgements

THE INSTITUTE FOR OUTDOOR RECREATION AND TOURISM
at
UTAH STATE UNIVERSITY

Mission of the Institute for Outdoor Recreation and Tourism:

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.

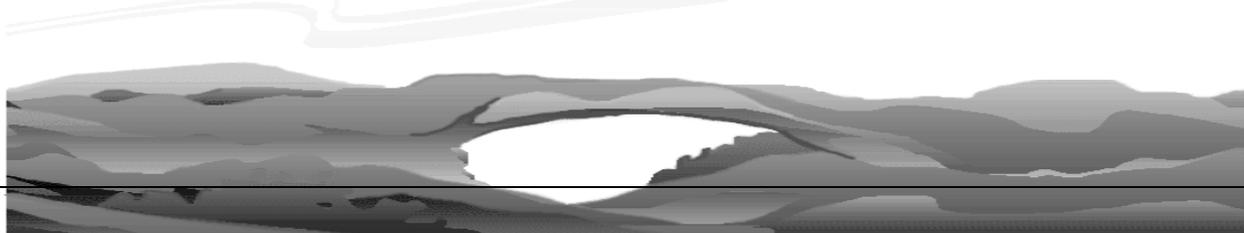
Through statewide collaboration and cooperation, IORT will be a source for the creation, communication, and transfer of knowledge on resource-based recreation and tourism issues affecting social, economic, and environmental systems, in order to assist Utah's citizens in making decisions that enhance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

Institute for Outdoor Recreation and Tourism

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