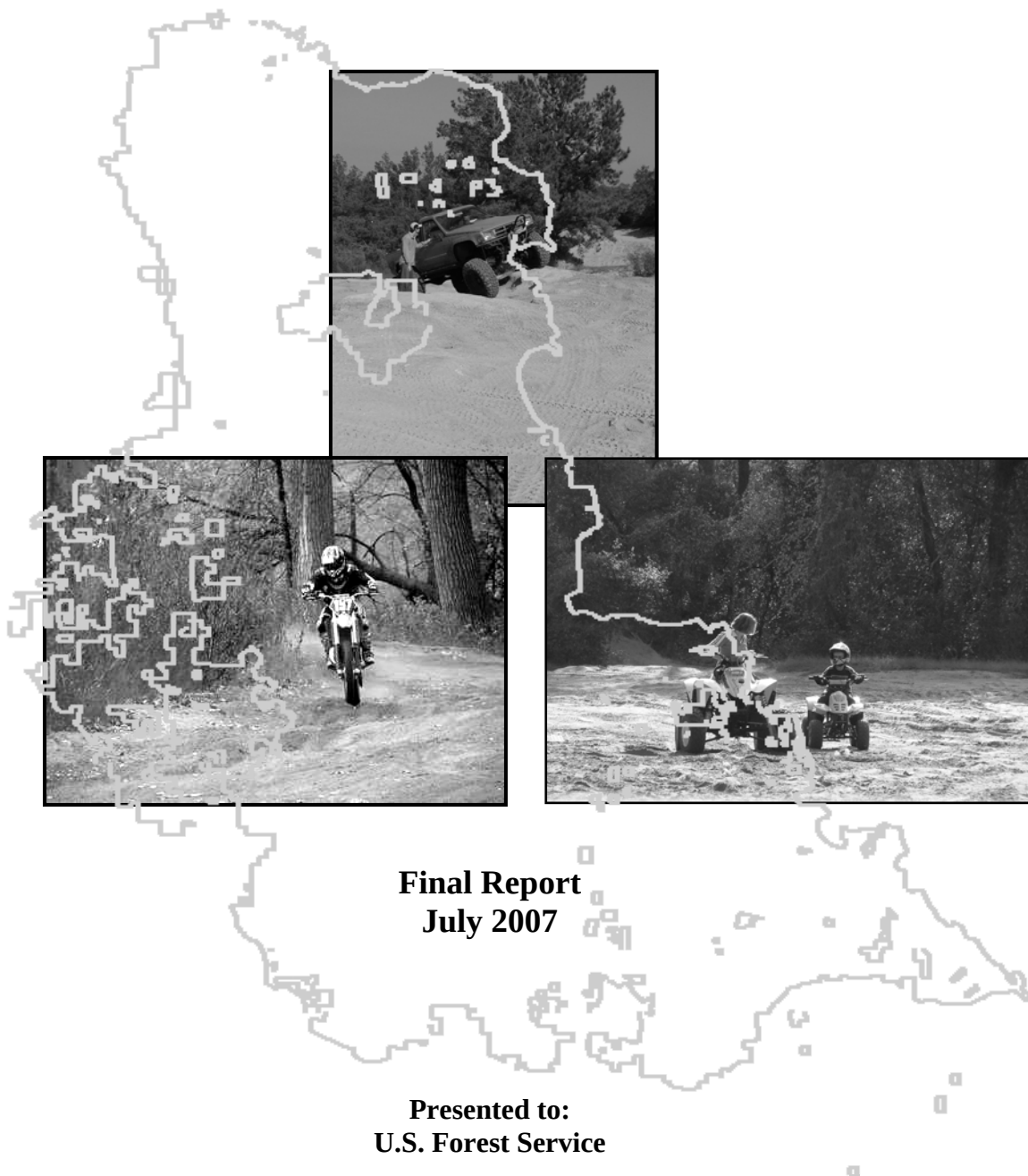


Off-Highway Vehicle Recreation: Ocala National Forest



**Final Report
July 2007**

**Presented to:
U.S. Forest Service**

**By:
Rachel Albritton
Taylor V. Stein
University of Florida
School of Forest Resources and Conservation**



**Off-Highway Vehicle Recreation Visitor Assessment:
Ocala National Forest**

Presented to:

USDA, National Forest of Florida

On:

July 25, 2007

Prepared By:

Rachel Albritton, Research Assistant
Taylor V. Stein, Associate Professor
University of Florida
School of Forest Resources & Conservation

Table of Contents

Executive Summary	5
Introduction.....	7
Methods.....	8
Data Collection	8
Data Analysis.....	9
Results.....	10
On-site Survey.....	10
Visitor demographics.....	10
Use History and Trip Characteristics.....	12
Participant Experience.....	12
Group Characteristics	14
Mail-back survey	16
Socio-Demographics	16
OHV Experience.....	18
Involvement	19
Motivations.....	19
Environmental Setting Preferences.....	21
Social and Camping Preferences	22
Trail Preferences.....	23
OHV Management.....	24
Open Comments	26
Differences between OHV Riders.....	27
Willingness to Pay	30
Discussion	31
Visitor Experiences.....	31
Willingness to Pay	32
Future Research	33
References.....	34
Appendices	
I. On-site Survey	37
II. Mail-back Survey	39
III. Recreation Opportunity Spectrum	49
IV. Classification of Florida Regions	51
V. Open Comments.....	53

List of Tables

Table 1. On-site survey: socio-demographics.....	11
Table 2. Visitor use history and trip characteristics.....	13
Table 3. Participant riding experience	14
Table 4. Group characteristics	15
Table 5. Mail-back: Socio-demographics.....	17
Table 6. OHV experience	18
Table 7. Riders past visits	19
Table 8. Outside involvement	19
Table 9. Participant motivations	20
Table 10. Motivation attainment.....	21
Table 11. Environmental setting preferences.....	22
Table 12. Preferred social and camping preferences	23
Table 13. Preferred trail construction	23
Table 14. Preferred day-use trailhead amenities.....	24
Table 15. Potential management actions	25
Table 16. Perceived management problems	26
Table 17. Open comments	27
Table 18. Differences in desired motivations	27
Table 19. Differences in the ability to attain desired motivations	28
Table 20. Differences for environmental attribute settings	28
Table 21. Differences for social preferences	29
Table 22. Differences for preferred trail construction	29
Table 23. Differences for day-use trailhead amenities	29
Table 24. Estimation of riders willingness to pay.....	30
Table 25. Support for annual fee system	31
Table A1.....	49
Table A2.....	51

List of Figures

Figure 1. Distribution of on-site surveys	10
Figure 2. Geographic distribution of on-site visitors.....	11
Figure 3. Distribution of mail-back surveys	16

Acknowledgements

Funding for this project was provided by the T. Mark Schmidt Off-Highway Vehicle Recreation and Safety Act through the Florida Division of Forestry Grant Program. The authors of this report would like to thank all of Ocala National Forest managers and volunteers who assisted with this project as well as upper division management officials in Tallahassee. In particular, Bret Bush, Tiffany Williams, Jim Schmid, Will Ebaugh, and Mark Warren provided invaluable direction and support. Numerous University of Florida researchers as well as U.S. Forest Service volunteers also assisted in this study. Thank you to Sam Nagran, Julia Shrader, Vanessa O'quendo, Amanda Brinton, Taylor Oxahart, Bin Wan, Linda and Larry Brugman, and Sarah Tobing for all the countless hours assisting with the on-site interview process. In addition, a special thank you to Lindsey Eidner who not only spent countless weekends performing field work, but many hours data entry as well. Finally, thank you to all of the participants' who took time out of their trip and personal lives to speak with interviewers and complete the mail back questionnaire. Without their cooperation this study would not exist.

Executive Summary

The recent announcement of unmanaged recreation as a major threat to National Forests and Grasslands in conjunction with the recent Travel Management Rule (2005) which calls for the creation of designated marked forest roads trails and areas that are open to off-highway vehicle (OHV) recreational use has raised awareness of the need for more information about OHV riders. Also, the construction of these new trails, signs, parking lots; and the need for increased staff can place a large strain on already declining budgets, and without the funding to support long-term monitoring efforts any initial steps taken to manage for off-highway vehicle recreation may only result in a less than ideal outcome. To help ensure long-term success of these initial management efforts, support for recreation should come from those individuals who are seeking out these riding opportunities. The purpose of the Ocala National Forest OHV Visitor Assessment study is to investigate and describe who OHV riders are within Ocala National Forest and assess their willingness to pay for OHV recreation opportunities within the forest. More specifically the objectives of the study were to:

1. Describe OHV riders in terms of their socio-demographic and trip characteristics, motivations for riding, and desired resource amenities,
2. Examine if differences in motivations and for riding preferences exist among the OHV riding population, and
3. Evaluate the riding population's average willingness to pay for an annual permit to help support and maintain OHV opportunities within the forest.

Methods

Data was collected through a combination of onsite and mail back surveys. A total of 703 on-site interviews were conducted from September 31, 2006 – March 31, 2007. A total of 660 mail back surveys were distributed and 300 were returned for a 45% response rate.

Results

Socio-Demographics

- 82% of respondents were male
- 67% of respondents were 30-49 years old
- 79% of respondents were married
- 32% of respondents were college graduates

Trip Characteristics

- 75% operate an ATV
- 79% have operated an OHV in Ocala before
- 47% have operated an OHV within Ocala 2-7 times within the past 12 months
- 40% of riders participate in at least one other form of recreation during their trip to Ocala

Group Characteristics

- 28% of riders travel in groups of 7 or more
- 56% of rider groups have at least 1 or 2 males over the age of 16
- 33% of groups have at least one female over the age of 16

Motivations

- 96% of riders come to Ocala to enjoy nature
- 94% of riders come to Ocala to spend time with friends and family
- 93% of riders come to Ocala to reduce stress and tension from everyday life

General Comments

- 26% of riders feel that the trail needed better maintenance
- 13% of riders felt that the trails were unchallenging
- 13% of riders expressed the desire for better camping and day-use amenities
- 10% of riders felt that safety was an issue

Differences between Rider Groups

All motivations were viewed as important reasons for operating an OHV within Ocala, however some rider groups place more importance on certain motivations. Individuals operating off-road motorcycles (ORMs) and 4x4s were more likely to place higher importance on individual motivations such as challenging one's self than all terrain vehicles (ATV) riders who placed more importance on spending time with family and/or friends.

In regards to trail construction, individuals on ORM's were more likely to prefer tight, technical trails compared to ATV and 4x4 riders who are more likely to prefer wider meandering trails. ATV riders are also more likely to prefer longer trails (i.e. 16-20 miles), while those operating 4x4s are more likely to desire shorter trails (i.e. 10 miles).

Individuals operating 4x4s desire the least amount of contact outside their own social group, while individuals operating ATVs preferred the most.

Physical, environmental attribute preferences also differed among riders. Overall, individuals operating 4x4s were less likely to prefer more open settings within a variety of habitats than ATV or ORM riders. Individuals operating ORM's were more likely to prefer areas where the sand was hard and compact and 4x4 riders were more likely to prefer areas where the soil was dry and sandy.

Willingness to Pay

Riders are willing to pay \$78.37 for an annual permit, a sufficient amount more than other riding areas within the southeastern region. A number of open ended comments regarding user fees indicated that riders are willing to pay a fee if improvements were made to riding areas. Also, many suggested that various fee options be offered such as day use fees as well as family rates.

Summary

Visitors to Ocala National Forest are diverse in both their motivations for riding within Ocala as well as desires for riding opportunities. More specifically, family bonding emerged as an important motivation for riders, however a deeper examination of desired motivations between riders shows that the desire to challenge one's self, depend on skills and abilities, and explore the natural environment were also of high importance to motorcycle and 4x4 riders indicating that while group bonding is important so is the need for individual achievement. Riders also expressed differing desires for how they would prefer to achieve these motivations through differing preferences for trail construction and layout. Overall, there is a desire for a network of trails, however the design and construction of these trails differed among rider groups. Also, many riders expressed that the current trails are monotonous and unchallenging, and they would prefer to see a more varied trail system that displays various levels of skill and challenge. Lastly, many riders are willing to pay for these desired riding opportunities through the purchase of an annual pass under the condition that the money paid into the system would be returned to system.

Introduction

Technological advances within modern society have changed the way in which we perform our jobs, maintain our homes, participate in educational curriculum, as well as the way in which we recreate (Moore and Driver, 2005). Traditionally, nature-based recreation within wildland areas has been associated with passive recreation opportunities such as hiking, bird watching, photography, etc. However, activities that have been considered environmentally consumptive, specifically off-highway vehicle (OHV) recreation (Teisel and O'Brien, 2003) has increased dramatically over the past several decades. Off-highway vehicle recreation within this report can be defined as any motorized recreation that entails the use of an all-terrain vehicle (ATV), off-road motorcycle (ORM), or licensed vehicle (4x4).

The number of new retail sales and estimated total number of OHVs in the U.S. has more than tripled from 1995 to 2003 with sales soaring from approximately 386,000 to over 1.1 million (Cordell *et al.*, 2005). In Florida, nearly 27,000 ATVs and nearly 11,000 ORMs were sold in 2003 placing Florida as the 8th most popular state for OHV ownership in the nation and the second most popular state in the southern region of the U.S. (USFS, 2005). This increase in OHV recreation may be attributed to increased population, increased non-obligated time, increased expendable income, and increased technological capabilities (Fly *et al.*, 2002). As the desired benefits from many recreation opportunities shift in conjunction with the advancement in technology, OHV recreation is predicted to keep increasing, becoming more prevalent throughout America's public lands, specifically on U.S. Forest Service (USFS) lands.

Until recently, much OHV recreation has gone unmanaged, and current use has caused severe environmental degradation (Bosworth, 2004 and Havlick, 2002) as well as decreased visitor experiences. In response to these environmental and social impacts, former USFS Chief Dale Bosworth announced, "unmanaged recreation" as one of the four major threats to National Forests and Grasslands in the United States. In a speech concerning these four major threats he specifically references OHV recreation noting, "ninety-nine percent of [OHV] users are careful to protect the land. But with [over 36 million users] even a tiny percentage of the problem use becomes relatively huge. We have to improve the management so we get responsible recreational use based on sound outdoor ethics" (Bosworth, 2004). This call for management is supported by prior executive legislations laid out by Nixon (1972) and Carter (1977) that detailed the necessity for management of OHVs on multiple-use lands in a manner that conserves the resources and provides quality visitor experiences, especially as it relates to visitor safety. The more recent Travel Management Rule (2005) echoes these past sentiments and calls for the creation of designated marked roads, trails, and areas that are open to recreational use by motorized vehicles. However, if riding opportunities are to be created, those opportunities should meet both past and present mandates, that detail the need to provide for quality visitor experiences while protecting natural resources. In order to achieve this dual mission, information must be obtained about the motivations and trip characteristics of OHV riders in order to create sustainable riding opportunities that reasonably match these user motivations.

In addition to the need for increased knowledge on rider motivations, the management of off-highway vehicle recreation is also costly. The construction of new trails, parking lots, and the need for increased staff can place a large strain on already declining budgets, and without the funding to support long-term monitoring efforts any initial steps taken to manage for off-highway vehicle recreation may only result in a less than ideal outcome. To help ensure long-term success of these initial management efforts, support for recreation should come from those individuals who are seeking out these riding opportunities.

The purpose of the Ocala National Forest OHV Visitor Assessment study is to investigate and describe who OHV riders are within Ocala National Forest and assess their willingness to pay for OHV recreation opportunities within the forest. More specifically the objectives of the study were to:

1. Describe OHV riders in terms of their socio-demographic and trip characteristics, motivations for riding, and desired resource amenities,
2. Examine if differences in motivations and for riding preferences exist among the OHV riding population, and
3. Evaluate the riding population's average willingness to pay for an annual permit to help support and maintain OHV opportunities within the forest.

Methodology

Data Collection

A stratified random sampling procedure based on day of the week (weekend and weekday) and volume of use (low or high) was used to sample participants. Data collection was achieved through the implementation of on-site interviews and mail back surveys. Trained interviewers were strategically placed at major staging and camping areas, and they randomly select individuals (at least 18 years of age) from each visitor group and ask them to complete a short on-site interview (Appendix I). The on-site survey was meant to gather basic information on the respondent's trip characteristics such as length of stay, party size and composition, number of previous visits, other activities engaged in during their visitors and basic demographic information.

At the end of the interview the researcher provided the participant with a mail-back questionnaire which contained a postage paid envelope. The mail back survey was more detailed and inquired further about the participant's recreation experience, involvement, preferences for trails, social interactions, and attitudes toward management (Appendix II).

Also included within the mail back survey was a hypothetical scenario which included a brief explanation on the need for annual permits. The willingness to pay (WTP) information used contingent valuation methods (CVM), which have been noted as an acceptable method to gather baseline information on a populations WTP, and to use the information gathered as a starting point for building a program such as a fee program (Arrow, 1993). The method is referred to as contingent since the respondents willingness to pay is contingent upon the hypothetical scenario provided. In addition, CVM is often preferred for its simplicity and its market approach (Loomis, 2006) where respondents are presented with a hypothetical scenario and are asked to state whether or not they would be willing to pay X amount of dollars for a stated good or service. The value of X presented varies and is evenly and randomly distributed over *n* individuals in the survey population. Participants are asked to indicated in yes/no terms if they are willing to pay the price presented to them for some named good or service.

The respondents within this study were presented with one of five possible bids (\$25, \$50, \$75, \$100, or \$125). The exact wording of the hypothetical scenario and follow-up question was:

National Forests throughout the United States are being required to provide for managed OHV trail systems. However, the U.S. Forest Service also faces declining budgets, which forces managers to either find new funding to provide OHV recreation opportunities, or to potentially limit and restrict OHV riding on the forests. To ensure OHV users have the ability to ride in national forests, many forests have begun to charge an annual fee in order to obtain a reliable

funding source devoted to the continual provision of quality OHV recreation. If such a fee were required on the Ocala National Forest, would you be willing to pay \$X each year for a permit?
[] Yes [] No

To help maximize response rates, Dillman's Tailored Method Approach (2000) was used wherein a follow-up postcard was mailed one week after the original mail back was. Then, if the mail back was not returned after another two weeks, a new mail back survey was sent to the participant. From September 30, 2006 – March 31, 2007 a total of 703 onsite interviews were completed. Forty-three participants did not to take a mail back questionnaire resulting in the distribution of 660 take home surveys. A total of 300 surveys have been returned for a 45.32% response rate (ATV = 219, ORM = 37, 4x4 = 39).

Data Analysis

Since the first objective of this study was to provide a basic understanding of OHV visitors to Ocala National Forest in terms of their socio-demographics, motivations, and trip characteristics, descriptive statistics were relied upon. All data was analyzed using SPSS v. 11.5.

For the second objective, to examine if differences exist among the OHV population, a series of one-way analysis of variance tests (ANOVA's) were used where the dependent variable was this individuals activity group (ATV, ORM, or 4x4), and the dependent variable was trip motivation, or recreation experience variable being examined. Although the F-test is usually the main statistic used to evaluate differences in means between different population groups, the test also requires that sample sizes are fairly equal. Due to the drastic differences among the three OHV groups, the Welch statistic was used to evaluate mean differences which helps compensate for variable sample sizes. Where variances were assumed to be equal, Tukey's HSD post-hoc test was used to explore exactly where differences existed. When equal variances were not assumed, Tamhane's T12 post hoc test was employed.

For the third objective, to examine the OHV population's average willingness to pay, a binary logistic statistical model was constructed. Hanemann (1989) showed that binary responses relating to CV questions can be integrated into economic theory by way of a random utility model, and the mean WTP can be analyzed through logistic regression (Hanemann, 1989, Buckland, 1999) where the probability that a respondent would be willing to pay for an annual permit could be estimated by

$$\text{Prob(Yes)} = 1 - \{1 + \exp[\beta_0 - B_1\bar{X}_1 + B_2\bar{X}_2 + B_3\bar{X}_3 + \dots B_n\bar{X}_n]\}^{-1} \quad (1)$$

Where the B's are the coefficients to be estimated using logit statistical techniques and X is the bid amount presented to the respondent. Within a basic model the coefficients include the bid amount and the constant where the mean WTP is calculated by dividing the constant by the absolute value of the coefficient of the bid.

$$\text{Mean WTP} = B_0 / [B_1] \quad (2)$$

In more complex models, other coefficients may include socio-demographic characteristics, attitudinal questions, or trip characteristics. From equation 1, Hanemann (1989) shows that the mean WTP can be calculated as

$$\text{Mean WTP} = \frac{B_0 + \sum B_n * X_n}{B_1} \quad (3)$$

The mean is estimated using the grand constant wherein each coefficient of the independent variables (with the exception of the bid) is multiplied by its respective variable mean then all the products are summed and divided by the coefficient of the bid term.

Based on a review of previous WTP studies implementing CVM techniques, all trip (Adams *et al.*, 1989; Schultz *et al.*, 1998; Williams and Betolli, 2003) and socio-demographic (Hanemann, 1984; Adams *et al.*, 1989; Lindburg, 1991; Huhtala, 2004; Williams and Betolli, 2003) characteristics were considered in the initial model under the assumption that at least some variables should show significant contribution to a person's WTP. The majority of data collected was categorical, and recoded into dummy variables. Interval and continuous data were ran in its original form as well as dummy variables. A forward step-wise regression approach was used to help build significant factors into a final model (Buckland *et al.*, 1999) and to exclude all variables that are irrelevant to the model, thereby upholding an assumption of logistic regression that independents are significant.

Results

On-Site Survey

The north end of Ocala, which encompasses trailheads at Lake Delancy (27.4%), Rodman (18.7%), Forest Road 97 (7.4%) and the OHV Center (5.3%) accounted for over half of the on-site interviews completed. Just over 41% (41.2%) of the interviews conducted in the south end of Ocala were completed at the Big Scrub campground (21.6%), along Forest Road 573 (12.2%), and the Wandering Wiregrass trailhead (7.4) located in the Paisley area (7%) (Figure 1).

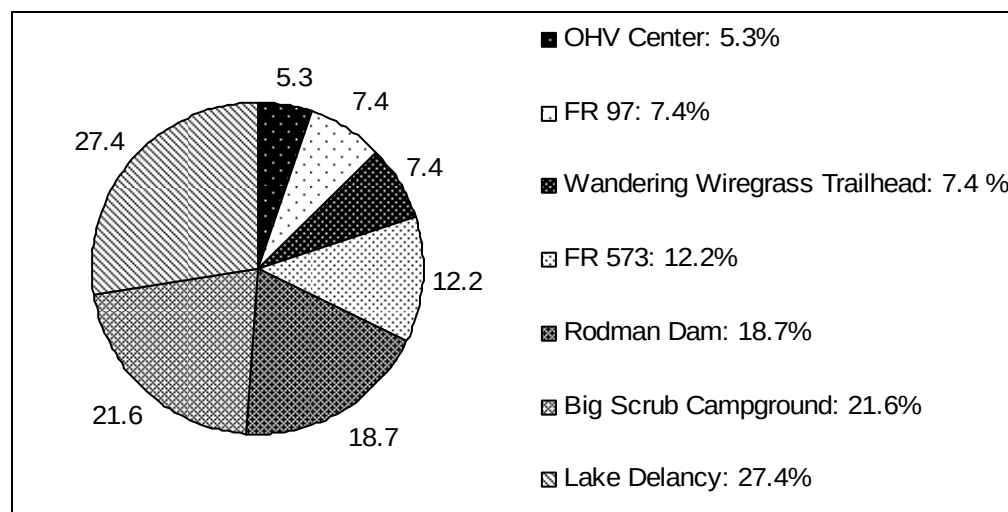


Figure 1. Distribution of on-site interviews

Visitor Demographics

The majority of respondents interviewed on-site were mostly male (81.4%), and mostly white (94.6%). Individuals who were between the ages of 30-39 years old accounted for the largest age group (33.7%), while individuals who were 60 years of age or older accounted for the smallest percent of the riding population interviewed (2.2%) (Table 1). Over half (63.3%) of visitors live in the east and west central regions of Florida, specifically within Marion, Volusia, and Orange counties which surround much of the forest. (Figure 2).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 1. On-site survey: Visitor demographics

Variable	n	Response	Valid Percent (%)
Gender	672	Male	81.4
		Female	18.6
Age	646	18-29 years old	24.5
		30-39 years old	33.7
		40-49 years old	30.5
		50-59 years old	9.1
		60 years or older	2.2
Ethnicity	650	White	94.6
		Hispanic/Latino	4.6
		African American	0.5
		Asian	0.3
Residency	655	North West	0.5
		North East	18.5
		North Central	5.2
		West Central	22.7
		East Central	40.6
		South West	2.3
		Heartland	1.2

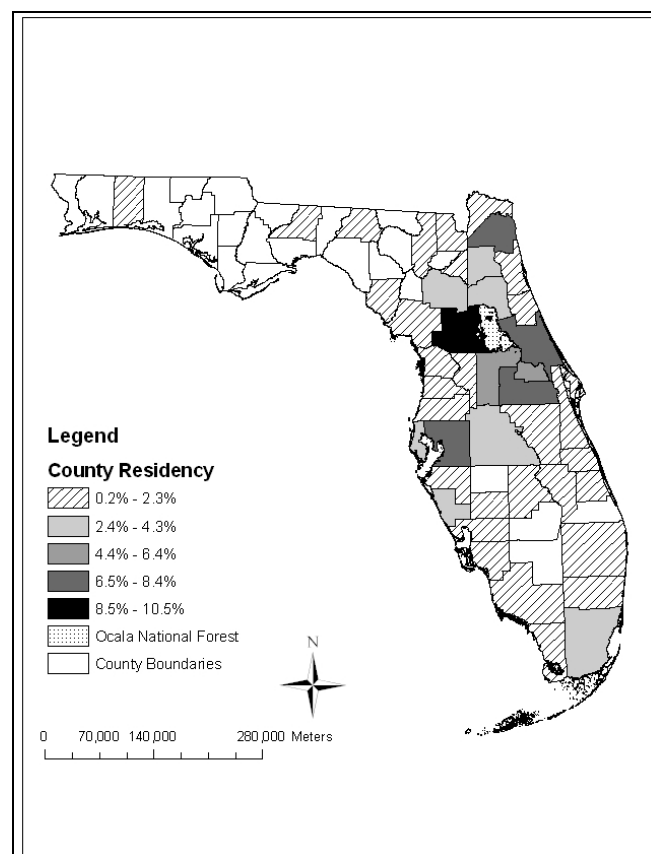


Figure 2. Geographic distribution of visitors (valid percent)

Use History & Trip Characteristics

The majority of respondents (74.5%) were operating an ATV the day they were contacted, while individual's operating other forms of OHVs such as Mules and Sand Rails account for the least percentage (2.4%) of respondents. Nearly 80% (79.4%) have ridden in Ocala before, and of those who have ridden in Ocala before over 56% (56.5%) have ridden within Ocala at least 1-7 times in the past year. Participants were also asked if they had ridden or planned to ride in other areas of the forest during their trip. Just over 69% (69.8%) said they did not plan to ride anywhere else, and nearly one third of respondents (27.4%) stated that they had or plan to ride somewhere else.

Participants tended to spend a whole day (25.6%) or more than one day (36.7%) riding during their trip. Of those staying more than a day, over half (53.5%) stayed for two days and just over one-third (33.2%) stayed for three days. Respondents who stayed more than one day tended to stay at a campground within the forest such as Lake Delancy or Big Scrub (78.3%). For just over 40% of respondents (40.6%), OHV riding was not the only recreation activity they participated in during their trip. Other popular recreation activities included camping (75.3%) and fishing (6.9%) (Table 2).

Participant Experience

Respondents were asked to rate their experience on a scale of one to five with five being a perfect experience. Over 72% (72.4%) stated that their experience was perfect (39.2%) or nearly perfect (33.2%) (Table 3). If the respondent did not have a perfect riding experience, they were asked if there was any particular reason why their experience was not a five. The most common reason cited was the lack of trail maintenance (25.9%). This included comments related to the trails being to bumpy, to much brush along the trail and the presence of litter on trails or within riding areas. Limited riding conditions was also stated often by participants as interfering with their riding experience (13.5%). This included comments related to trail closures which included open scramble areas such as Rodman Dam. Lastly, monotonous and/or unchallenging riding opportunities was seen as an obstacle to achieving a perfect riding experience for over 13% of respondents (13.2%). Participants often commented on the desire for more diverse riding opportunities that appealed to various riding levels and for different user groups. Individuals operating ORMs tended to state the sugar sand was difficult to ride in and the wide trails catered more to ATV riders than to ORM riders. In addition, the desire for obstacles, challenges, or jumps was expressed as a way to create more challenging riding opportunities (Table 3).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 2. Visitor use history and trip characteristics

Statement	n	Response	Valid Percent (%)
OHV operated	663	ATV	74.5
		ORM	10.9
		4x4	12.2
		Other	2.4
First time in Ocala	666	Yes	20.6
		No	79.4
Number of visits in the past year	517	None in the past year	3.1
		1 other time	8.9
		2-7 times	47.6
		8-14 times	13.2
		15-20 times	7.9
		21-30 times	8.5
		31-40 times	2.3
		41-50 times	3.3
		More than 50	5.2
Ride from other trailheads	658	Yes	27.4
		No	69.8
		Maybe/Not sure	2.9
Length of trip	663	Less than an hour	0.5
		A few hours	14.9
		half a day	22.3
		A whole day	25.6
		More than a day	36.7
Length of trip if more than a day	238	2	53.8
		3	33.2
		4 or more	13.0
Where the participant stayed overnight	258	At a designated campground within the forest	78.3
		At a private campground outside the forest	16.3
		At a nearby residence	3.1
		Other	2.3
Primary trail use	647	Designated trails	57.7
		Mixed use roads	7.0
		Open "scramble" areas	9.4
		Designated trails & open areas	10.2
		All the above	15.6
Participate in multiple recreation activities	658	Yes	40.6
		No	59.4
Other activities participated in	303	Camping	75.3
		Fishing	6.9
		Hunting	5.3
		Swimming	2.6
		Hiking	2.6
		Other	7.3

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 3. Participants riding experience

Statement	n	Response	Valid Percent (%)
Participant experience	655	0	0.5
		1	1.2
		2	5.2
		3	15.7
		4	33.2
		5	39.2
Reasons for a non-perfect experience	355	Trails need maintenance	25.9
		Limited riding conditions	13.5
		Monotonous and/or unchallenging riding opportunities	13.2
		Better campground & day use facilities/conditions desired	10.1
		Unclear trail markings and/or signage	6.2
		To many rules and restrictions	5.92
		Inconsistent and/or discourteous staff	5.07
		Unsafe riding conditions	4.50
		Crowded	4.50
		Other	10.98

Group Characteristics

Participants are more likely to travel in groups of five to six people (mean = 5.56), and are more likely to be a mixture of either family (37.5%) or friends (35%). Males tend to make up the majority of the group with most groups consisting of at least one or two males over the age of 16 (55.6%). Just under one third (32.5%) of the groups tend to be composed of at least one female over the age of 16, and one-third of the groups being composed of one or two males under the age of 16 (30.0%). Females under the age of 16 accounted for the smallest percentage of group composition with over 78% (78.8%) of the groups containing no young females and just under 13% (12.9%) containing at least one female under 16 years of age (Table 4).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 4. Visitor group characteristics

Variable	n	Response	Valid Percent (%)	Mean
Group size	670	1	4.3	5.56
		2	19.4	
		3	15.2	
		4	16.3	
		5	10.3	
		6	6.9	
		7 or more	27.6	
Number of males over 16 yrs. old	624	0	1.4	2.84
		1	28.2	
		2	27.4	
		3	15.7	
		4	10.9	
		5 or more	16.3	
Number of females of over 16 yrs. old	622	0	40.7	1.13
		1	32.5	
		2	13.8	
		3	6.1	
		4	3.7	
		5 or more	1.4	
Number of male under 16 yrs. old	621	0	59.9	0.78
		1	20.5	
		2	9.5	
		3 or more	5.0	
Number of females under 16 yrs. old	618	0	78.8	0.35
		1	12.9	
		2	5.0	
		3 or more	1.5	
Group type	669	Family	37.5	NA
		Friends and family	20.5	
		Friends	35.0	
		Alone	3.9	
		Organized group	3.1	

Mail Back Survey

The distribution of returned mail back questionnaires is in close alignment with the proportion of on-site interviews. Lake Delancy accounts for the largest majority of mail back surveys returned from campgrounds (30.1%), and Rodman Dam accounts for the largest percentage of mail back surveys returned from day use staging areas (24.6%). Surveys that were given out at forest Road 97 trailheads accounted for the least percentage of returned surveys (Figure 3).

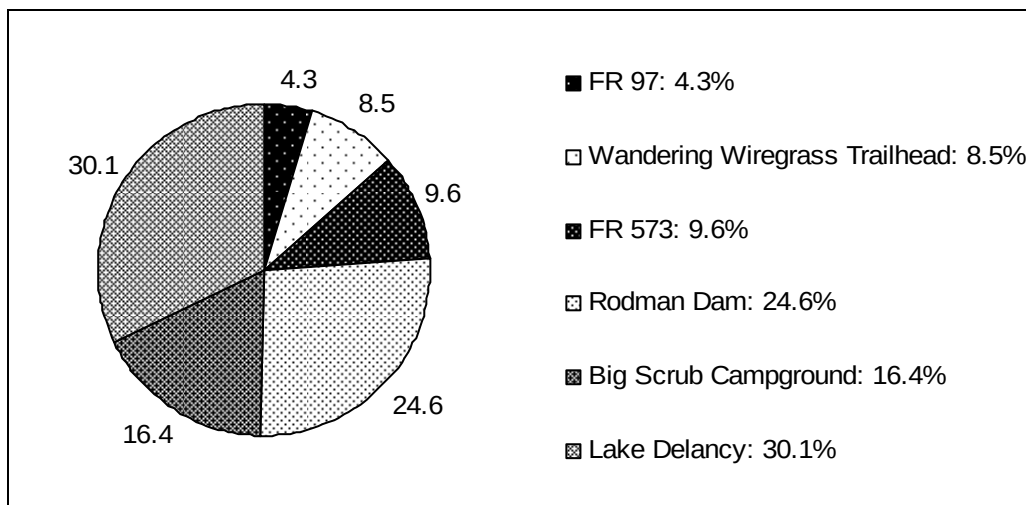


Figure 3. Distribution of returned mail back surveys

Socio-Demographics

The mail back survey provided more detailed socio-demographic information than the short on-site interview. Gender differences were still high with nearly 82% (81.5%) of respondents being males and 18.5% of respondents being female. Just over 66% (66.4%) of respondents were between the ages of 30-49 with individuals 30-39 accounting for 34.6%, and individuals 40-49 years old accounting for 31.8% of respondents. In addition, the majority of respondents were white (95.3%). Participants also tended to be married (78.6%) with at least one (25.1%) or two (24.0%) children living at home. Also, respondents were more likely to be highly educated receiving at least some college education or beyond (64.3%). Most were employed full-time (85%) and received an annual household income of \$100,000 or more (31.1%). (table 5).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 5. Mail back survey: socio-demographic information

Variable	n	Response	Valid Percent (%)
Gender	287	Male Female	81.5 18.5
Age	283	18-29 years old 30-39 years old 40-49 years old 50-59 years old 60 years or older	17.7 34.6 31.8 12.0 3.9
Marital Status	285	Married Single Divorced	78.6 11.9 9.5
Number of children living at home	283	0 1 2 3 4 or more	36.7 25.1 24.0 9.5 4.6
Education	280	Eight grade or less Some high school High school graduate or GED Some college College graduate Some graduate school Graduate degree or beyond	2.5 3.6 29.6 32.1 21.8 2.9 7.5
Employment	287	Full time Part time Unemployed Retired Full time student Full time homemaker	85.0 3.5 1.7 6.6 0.3 2.8
Ethnicity	278	White Hispanic/Latino Asian American Indian or Alaskan Native African American	95.3 3.2 0.7 0.4 0.4
Household income	267	\$10,001 - \$19,999 \$20,000 - \$29,999 \$30,000 - \$39,999 \$40,000 - \$49,999 \$50,000 - \$59,999 \$60,000 - \$69,999 \$70,000 - \$79,999 \$80,000 - \$89,999 \$90,000 - \$99,999 \$100,000 or more	1.9 6.0 7.5 9.0 9.0 9.0 12.0 9.4 5.2 31.1

OHV Experience

Respondents were once again asked what type of OHV they were operating when they were contacted by the researcher. Just over 73% (73.7%) indicated they were operating an ATV while individuals operating ORMs contributed to the least percentage of population (12.8%). Participants were also asked to indicate if they operated more than one type of OHV during their trip. Over half (56.8%) indicated they had not driven more than one OHV, and just over 43% (43.2%) indicated they had. Of those who had operated another form of OHV during their trip, over 32% (32.6%) indicated they had operated an off-road motorcycle, over 18% (18.8%) had indicated they operated a 4x4, and just over 15% (15.5%) indicated they also operated some form of ATV.

Respondents were then asked to rate their OHV skill level on a scale of one to five with one representing a novice and five representing an expert. Just over 53% (53.1%) indicated that they had a skill level of 4 and just over 27% (27.7%) felt that their skill level was intermediate. Almost 32% (31.8%) indicated that they had been involved in some form of OHV recreation for at least 2-5 years, and over 22% (22.6%) indicated they had been involved in some form of OHV recreation for 21 years or more. (Table 6).

Table 6. OHV experience

Variable	n	Response	Valid Percent (%)
Main OHV operated during the respondents trip	297	ATV Motorcycle 4x4 (licensed vehicle)	73.7 12.8 13.5
Operate more than 1 type of OHV	294	Yes No	43.2 56.8
What other vehicles did the participant operate?	129	ATV Motorcycle 4x4 (licensed vehicle) Other	15.5 32.6 18.8 3.1
Self reported skill level	296	1 - Novice 2 3 - intermediate 4 5 - Expert	1.4 4.1 27.7 53.1 13.9
Years participating in OHV recreation	292	1 year or less 2-5 years 6-10 years 11-15 years 16-20 years 21 years or more	11.3 31.8 14.7 8.2 11.3 22.6

In order to help evaluate if Ocala was the primary riding location for the respondents, riders were asked to estimate the number of times they have operated each form of OHV within and outside of the forest over the past year. ATV riders reported the highest overall average of visits to the forest (mean = 10.9), however, the average number of visits to site outside of Ocala was slightly higher (mean = 13.3) indicating that while Ocala is a popular spot for riders, it is not the only riding location for ATV riders overall. For those operating ORMs and/or 4x4s Ocala was more likely to be the primary location for recreation riding than other sites within Florida (Table 7).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 7. Riders past visits to Ocala

Variable	n	Mean		
		ATV	ORM	4x4
Within Ocala	295	10.9	3.3	3.4
Outside Ocala	288	13.3	2.1	3.1

Involvement

In addition to inquiring about the types of OHVs the participant operated, they were also asked a series of questions about their involvement in OHV recreation. Participants were asked if they were part of any OHV clubs or associations, or if they subscribed to any OHV magazines or electronic newsletters. Just over 75% (75.1%) percent of the respondents indicated that they were not part of a club or organization, but nearly 38% (37.9%) indicated that they did subscribe to a least one form of magazine or electronic newsletter. Lastly, respondents were asked if they had participated in some form of safety program for OHV operation. The majority (84%) indicated that they had not completed a program (Table 8).

Table 8. Outside involvement

Variable	n	Response	Valid Percent (%)
Member of a club	293	Yes	24.6
		No	75.1
Subscribe to OHV related magazines or electronic newsletters	293	Yes	37.9
		No	62.1
Completed a safety course	288	Yes	16.0
		No	84.0

Motivations

Participants were given a list of possible motivations for participating in OHV riding and were asked to rate the importance of each motivation as a possible reason for riding within Ocala during the trip in which they were contacted. Motivations related to being with family and friends, enjoying nature, and reducing tension and stress showed the greatest importance to respondents. More specifically, over 94% (94.2%) stated that “being with friends and family” was either very important or the most important reason for riding that day (mean = 4.60). Nearly 96% (95.9%) stated “enjoying nature” as being either very or most important (mean = 4.54), and to “reduce tension and stress” was rated as very or most important by over 93% of respondents (93.4%) (mean = 4.37). Reversely, the desire to “take risks” (38%, mean = 2.75) and “learn about the history and culture of the area” (37.1%; mean = 2.79) was rated as either not very or not at all important by respondents (Table 9).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 9. Participant motivations for OHV riding in Ocala National Forest

Motivation	n	Most Important (%)	Very Important (%)	Neutral (%)	Not Very Important (%)	Not at all Important (%)	Mean	Standard Deviation
Being with friends and family	291	68.4	25.8	4.1	1.4	0.3	4.60	0.67
Enjoy nature	291	59.1	36.8	4.1	0.0	0.3	4.54	0.61
Reduce tension and stress from everyday life	288	46.5	46.9	4.5	1.0	1.0	4.37	0.72
Strengthen Family Kinship	289	54.3	29.4	12.1	2.1	2.1	4.32	0.914
Explore the area and the natural environment	288	35.1	54.9	7.3	1.7	1.0	4.21	0.74
Be in a safe area	282	41.5	36.9	17.0	1.4	3.2	4.12	0.96
Depend on my own skills & abilities	281	30.2	49.8	13.9	3.6	2.5	4.02	0.90
Escape noise and crowds	282	30.1	39.4	17.4	7.1	6.0	3.80	1.13
Feel a sense of independence	281	26.7	36.3	24.9	9.3	2.8	3.75	1.04
Challenge myself and achieve personal goals	282	18.4	40.1	27.7	7.8	6.0	3.57	1.07
Promote physical fitness	278	11.2	44.6	26.3	11.9	6.1	3.43	1.04
Learn about the natural environment	279	11.1	44.4	26.5	10.4	7.5	3.41	1.06
Meet new people	289	15.2	32.9	32.5	12.1	7.3	3.37	1.10
Engage in personal & spiritual reflection	280	10.4	27.5	33.6	12.5	16.1	3.04	1.21
Learn about history & culture of the area	272	3.3	27.6	32.0	19.5	17.6	2.79	1.13
Take risks	274	8.4	17.9	35.8	16.1	21.9	2.75	1.22

1 = not at all important 2 = not very important 3 = neutral 4 = very important 5 = most important

In addition to asking possible reasons for visiting Ocala National Forest for their OHV trip, respondents were also asked to indicate their ability to attain the motivations that were either very or most important to them on a scale of one to four with one indicating that they were not at all able to attain their most desired experiences and four being they were totally able to attain the desired experience. In general, most of the desired motivations were attainable for riders with the exception of the ability to meet new people (mean = 2.94), the ability to learn about the natural environment (mean = 2.89), and the ability to learn about the history and culture of the area (mean = 2.35) which were viewed as only somewhat attainable (Table 10).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 10. Motivation attainment for all rider groups

Motivation Attainment	n	Totally Attained (%)	Moderately Attained (%)	Somewhat Attained (%)	Did not Attain (%)	Mean	Standard Deviation
Being with friends and family	244	84.0	12.7	3.3	0.0	3.81	0.47
Enjoy nature	242	73.1	21.5	5.0	0.4	3.67	0.58
Strengthen Family Kinship	209	68.9	26.3	3.3	1.4	3.63	0.62
Reduce tension and stress from everyday life	241	62.7	31.5	5.0	0.8	3.56	0.63
Feel a sense of independence	154	51.9	39.6	7.8	0.6	3.43	0.66
Escape noise and crowds	181	54.7	31.5	12.7	1.1	3.40	0.75
Depend on my own skills & abilities	198	50.0	37.9	10.6	1.5	3.36	0.73
Explore the area and the natural environment	229	49.3	37.6	12.2	0.9	3.35	0.73
Be in a safe area	197	48.2	33.5	17.3	1.0	3.29	0.78
Promote physical fitness	140	44.3	40.0	13.6	2.1	3.26	0.77
Engage in personal & spiritual reflection	93	37.6	49.5	12.9	0.0	3.25	0.67
Challenge myself and achieve personal goals	144	39.6	43.1	14.6	2.8	3.19	0.78
Take risks	62	43.5	35.5	17.7	3.2	3.19	0.85
Meet new people	134	33.6	36.6	20.1	9.7	2.94	0.96
Learn about the natural environment	141	26.2	43.3	24.1	6.4	2.89	0.87
Learn about history & culture of the area	78	15.4	28.2	32.1	24.4	2.35	1.02

1 = did not attain 2 = somewhat attained 3 = moderately attained 4 = totally attained

Environmental Setting Preferences

Participants were asked to rate how much they liked or disliked a series of possible environmental settings when operating their OHV within Ocala. Of the thirteen variables listed, “a mix of hardwoods, pines, and open spaces” was the most liked (mean = 4.13), followed by “a mix of hardwoods and open spaces (mean = 4.06), and “a mix of pine trees and open spaces” (mean = 3.97). Compact soils (mean = 3.95) were also viewed as more favorable than dry, sandy soils (mean = 3.31), and the ability to see water at least some of the time (mean = 3.91) was more favorable than not being able to see water at all (mean = 2.43) (Table 11).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 11. Environmental setting preferences

Environmental Preference	n	Strongly Like	Like	Neutral	Dislike	Strongly Dislike	Mean	Standard Deviation
A mix of hardwoods, pines, and open spaces	287	32.8	47.7	18.8	0.7	0.0	4.13	0.73
A mix of hardwoods and open spaces	286	27.3	52.1	20.3	0.3	0.0	4.06	0.70
A mix of pine trees and open spaces	289	23.2	52.6	22.5	1.7	0.0	3.97	0.73
Compact soils	288	31.9	38.2	25.3	2.1	2.4	3.95	0.94
Where water can be seen some of the time	290	23.8	47.2	26.9	0.7	1.4	3.91	0.80
A mix of pine and hardwoods	287	23.7	47.7	25.1	3.1	0.3	3.91	0.80
Dominated by hardwoods and shrubs	285	21.4	40.7	31.9	4.9	1.1	3.76	0.88
Dominated by pine trees and wiregrass	285	13.3	43.2	36.8	5.6	1.1	3.62	0.83
Where water can be seen all the time	289	15.6	24.6	51.6	5.5	2.8	3.45	0.92
Dry sandy soils	290	12.8	37.9	25.2	16.2	7.9	3.31	1.13
Scrub	284	9.9	25.7	46.5	13.7	4.2	3.23	0.95
Open with no presence of vegetation	286	6.6	14.3	25.2	23.4	30.4	2.43	1.24
Where water can never be seen	288	3.5	3.8	45.1	27.8	19.8	2.43	0.96

1 = strongly dislike 2 = dislike 3 = neutral 4 = like 5 = strongly like

Social & Camping Preferences

Next, participants were presented with a series of social related questions, and were asked to choose which social conditions they most preferred when operating their OHV in Ocala National Forest. The respondents were asked to choose a condition, rather than rate each condition on a scale of one to five in order to gain a better understanding of which social experience is the most desirable. The statements that presented the social conditions were meant to reflect the social conditions outlined by the Recreation Opportunity Spectrum (Appendix III).

Almost 67% (66.9%) stated that they preferred either to have very little contact (29.3%) or little contact (37.6%) with people outside of one's own group. In regards to camping, 58.9% of respondents stated that they preferred campsites for medium sized groups (5-10 people). This result is also reflective of the average group size of OHV visitors to Ocala. When camping on an OHV trip, 60.4% of respondents would prefer to stay in a developed campground which is accommodated with restrooms and showers (60.8%) (Table 12).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 12 . Preferred social and camping conditions

Variable	n	Response	Valid Percent (%)
Social encounters outside one's own group	290	Prefers very little contact (6 people or fewer)	29.3
		Prefers little contact (6-15 groups per day)	37.6
		Prefers moderate contact (30 or more groups per day)	25.9
		Prefers constant contact with others	7.2
Camp-site preferences	285	Prefers campsites for small groups (4 or fewer)	19.5
		Prefers campsites for medium size groups (5-10 people)	58.9
		Prefers campsites for large groups (11-20 people)	20.9
Camp Style	285	Prefers primitive (tent camping only) campsites	35.1
		Prefers developed campsites	60.4
		Prefer the choice of both	4.6
Preferred camping amenities	263	Prefers a campsite with restrooms only	12.5
		Prefers a campsite with restrooms and showers	60.8
		Prefers a campsite with electrical hookup	17.5
		Prefers a campsite with electrical hookups, restrooms, and showers	9.1

Trail Preferences

Participants were then asked to provide their opinion on a series of preferences related to trail design and layout. Over 54% (54.2%) the respondents stated that they preferred to ride on designated marked trails, while 17.1% stated that they preferred open areas where they were not confined to trails. Respondents were fairly split between preferred trail types with over 46.7% preferring tight technical trails, and 47.1% preferring wide, meandering trails. Also, most respondents (69.2%) preferred having a series of connecting linear trails, but most do not desire having only single linear trails (5.0%). Lastly, the desired length of an OHV trail greatly varied over the entire riding population with preferences ranging anywhere from 1 mile to over 50 miles. Trails that were 5-10 miles in length made up the largest percentage of responses (21.3%) (Table 13).

Table 13 . Preferred trail construction

Variable	n	Response	Valid Percentage (%)
Preferred riding opportunities	271	Designated marked trails	54.2
		Mixed use roads	28.6
		Open "scramble" areas	17.1
Preferred trail type	276	Tight, technical trails	46.7
		Wide meandering trails	47.1
		Both	6.2
Preferred trail layout	281	Loop trails	25.8
		Linear trails	5.0
		Series of connecting linear trails	69.2
Preferred trail length	233	1 – 4 miles	10.3
		5 – 10 miles	21.3
		11 – 15 miles	14.2
		16 – 20 miles	16.7
		21 - 30 miles	16.3
		31 – 50 miles	8.2
		51 miles or more	3.0

Ocala National Forest Off Highway Vehicle Visitor Assessment

Participants were also presented with four possible trailhead amenities for day-use trailheads and asked to rate the importance of each amenity. The desire to have restrooms at day-use trailheads was perceived as being the most important with just over 73% (73.32; mean = 3.86) indicating that restrooms were most or very important. The need to have picnic tables at day use trailheads was viewed more neutral (mean = 3.19) with 49.1% indicating that they were most or very important (Table 14).

Table 14. Preferred day use trailhead amenities

Trailhead Amenity	n	Most Important (%)	Very Important (%)	Neutral (%)	Not Very Important (%)	Not at all Important (%)	Mean	Standard Deviation
Restrooms	291	34.4	38.8	11.7	8.6	6.5	3.86	1.17
Water fountains	292	27.1	30.1	19.2	13.0	10.6	3.50	1.30
Pavilion/Shaded areas	290	18.3	30.3	22.1	17.6	11.7	3.26	1.27
Picnic tables	291	12.0	37.1	22.0	15.5	13.4	3.19	1.23

1 = not at all important 2 = not very important 3 = neutral 4 = very important 5 = most important

OHV Management

Section two of the mail back questionnaire inquired about the respondents' opinions on potential and current management actions. For potential management actions, the respondents were presented with a list of 13 possible management actions that could be taken to improve OHV management within Ocala National Forest and were asked to rate each potential management action on a scale of 1 to 5 with 1 indicating they strongly opposed the potential action and 5 indicating they strongly supported the action. Of these potential management actions, "provide detailed maps of riding areas" received the most support with 90.7% of respondents stating that they somewhat or strongly supported this action (mean = 4.63). Other potential management actions that received strong support included "provide signs at trailheads and trail junctions indicating trail length (mean = 4.38), and "provide children riding areas" (mean = 4.14). Reversely, the need to "provide warm up areas" was viewed as impartial by respondents with 51% of respondents feeling neutral about the action (mean = 3.07) (Table 15).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 15. Potential management actions

Potential Management Action	n	Strongly Support (%)	Somewhat Support (%)	Neutral (%)	Somewhat Oppose (%)	Strongly Oppose (%)	Mean	Standard Deviation
Provide detailed maps of riding areas	291	75.9	14.8	7.2	0.3	1.7	4.63	0.78
Provide signs at trailheads and trail junctions indicating trail length	293	62.1	22.5	10.2	1.0	4.1	4.38	0.99
Provide children riding areas	294	53.1	21.4	16.7	4.1	4.8	4.14	1.13
Take measures to protect/improve the natural environment	291	46.4	26.1	22.0	1.7	3.8	4.10	1.04
Improve maintenance of OHV areas and trails	293	48.5	22.2	22.2	2.7	4.4	4.08	1.10
Provide primitive camping at appropriate places for OHV riders	294	43.5	29.3	21.4	2.7	3.1	4.07	1.02
Provide trails to destination areas	293	37.2	32.8	25.6	1.0	3.4	3.99	0.99
Provide more parking space for OHV support vehicles	294	31.3	28.6	33.3	2.4	4.4	3.80	1.05
Provide more safety education	294	24.5	28.2	39.8	2.4	5.1	3.65	1.04
Provide environmental ethic training	294	23.8	24.1	43.5	4.4	4.1	3.59	1.03
Create an annual fee system	294	24.8	26.9	25.5	10.5	12.2	3.41	1.30
Provide more ranger patrols	295	18.3	19.3	42.4	10.8	9.2	3.27	1.15
Provide warm up areas	292	10.6	17.1	51.0	10.6	10.6	3.07	1.06

1= strongly oppose 2 = somewhat oppose 3=neutral 4=somewhat support 5=strongly support

In regards to current management actions, participants were presented with a list of 15 social, environmental, and managerial conditions that could exist within Ocala National Forest. The respondents were asked to rate each potential problem on a scale of one to five with one indicating that the statement is not at all a problem in Ocala and five indicating that it is a very serious problem in Ocala. Of the 15 possible problems, 14 of them resulted in a mean of 3 or lower indicating that while these actions were somewhat of a problem, none were perceived as being serious. The “lack of adequate campground sites” was perceived as being the most serious concern for participants with over one-third of all respondents seeing this as a serious or very serious problem (mean = 2.87). “Not enough rules and regulations” (mean = 1.87), “overcrowding” (mean = 1.98) and “environmental degradation within riding areas” (mean = 2.26) were seen as the least serious problems (Table 16).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 16. Possible management problems within Ocala National Forest

Statement	n	Not at all a problem (%)	Somewhat of a problem (%)	Neutral (%)	Serious Problem (%)	Very Serious Problem (%)	Mean	Standard Deviation
Lack of adequate campground sites	292	17.8	22.6	27.4	18.8	13.4	2.87	1.28
Litter	294	13.9	42.5	10.5	18.4	14.6	2.77	1.30
Lack of marked trails	294	23.8	22.8	18.0	19.4	16.0	2.81	1.41
Inadequate trail maintenance	293	29.0	16.0	24.9	16.4	13.7	2.70	1.95
Lack of riding information	291	15.1	29.9	21.3	19.6	14.1	2.88	1.29
Lack of knowledge by riders of rules and regulations	292	17.5	28.1	26.4	17.1	11.0	2.76	1.24
Not enough children and family riding areas	294	24.5	19.4	29.6	16.0	10.5	2.69	1.29
Too many rules and regulations	292	27.1	14.7	38.4	12.7	7.2	2.58	1.21
Lack of parking for support vehicles	294	27.2	22.4	29.9	14.6	5.8	2.49	1.19
Lack of proper safety equipment worn by other OHV riders	293	32.1	30.8	25.3	11.3	10.6	2.47	1.33
Lack of safety and environmental ethic training	291	28.9	24.7	34.4	7.6	4.5	2.34	1.12
Poor enforcement of rules and regulations	291	36.1	16.2	32.6	8.2	6.9	2.34	1.24
Environmental degradation within riding areas	290	34.5	25.2	30.7	5.9	3.8	2.19	1.09
Overcrowding	293	47.4	15.0	27.6	7.2	2.7	2.03	1.13
Not enough rules and regulations	293	58.4	10.2	25.9	4.8	0.7	1.179	1.03

1 = not at all a problem 2 = somewhat of a problem 3 = neutral 4=serious problem 5= very serious problem

Open Comments

At the end of the survey, respondents were given a chance to present any questions and or comments about OHV recreation within Ocala National Forest. The greatest percentage of the comments received (21.2%) were general statements. These statements were fairly diverse ranging from comments about having a good experience in Ocala, to rhetorical questions about increased regulations within the forest, and feelings of frustration about changes within Ocala as well as within the public land system. Many participants commented further about user fees in the forest, representing a fair balance between support and non-support for a program (14.5%). Some stated that a user fee system would be supported under the condition that the trail system was improved, as well as improved camping opportunities. Others felt that an annual fee should be funded with other sources and that the money they pay in taxes and OHV license fees should be sufficient. Lastly regarding user fees, many participants stated that a set annual fee for each family member was too high and that management should consider a family rate in order to make the permits more affordable. Respondents also greatly expressed the desire for more enhanced riding opportunities. More specifically, many respondents stated the desire for more family riding trails,

Ocala National Forest Off Highway Vehicle Visitor Assessment

destination trails, a better variety of trails by way of increased difficulty, and the need for more open, “scramble” areas (12.8%) (Table 17). A complete transcript of comments can be found in Appendix V.

Table 17. Open comments

Statement	Valid Percent (%)
General	21.2
Fees	14.5
Enhance riding opportunities	12.8
Better campgrounds/day use facilities desired	11.7
Safety	9.5
Rules, regulations, and monitoring	6.7
Better information & communication	5.6
Litter	5.0
Closures	4.5
Other	8.4

n = 179

Differences between OHV Riders

Motivations that were perceived as important were shared across all rider groups, however some rider groups felt that certain motivations were more important when compared to how other rider groups felt. Individuals operating ORMs were more likely to perceive motivations related to depending on one's own skills and abilities, self challenge and goal achievement, and promoting physical fitness as more important than individuals who were operating ATVs or 4x4s. Reversely, the ability to enjoy nature was more important to ATV riders than to individuals operating ORMs. Lastly, the ability to explore the natural environment was more important to 4x4 riders than to individuals ORM riders (table 18).

Table 18. Differences in desired motivations

Motivation	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Enjoy nature	4.59	4.32	4.55	3.552**	1 > 2
Explore the area and the natural environment	4.24	3.97	4.31	3.285**	3 > 2
Depend on my own skills & abilities	3.97	4.32	3.97	5.699***	2 > 1,3
Challenge myself and achieve personal goals	3.50	3.97	3.57	3.815**	2 > 1
Promote physical fitness	3.41	4.03	2.89	17.506***	2 > 1 > 3

*** significant at the .01 level

** significant at the .05 level

Overall, individuals operating 4x4s were less likely to attain their desired motivations in comparison to individuals who operated ATVs or ORMs. In particular, riders operating 4x4s were less likely to attain reduced stress and tension than riders operating ATVs or ORMs. Also, individuals operating 4x4s were less likely to feel that they could depend on their own skills and abilities compared to riders operating ORMs. However, mean scores for the attainment of these motivations were still high, indicating that while differences exist among the rider population, desired motivations were still moderately attainable.

Also, individuals operating 4x4s were less likely to feel that they were able to challenge themselves and achieve personal goals compared to those operating ATVs or ORMs. In relation to education, riders

Ocala National Forest Off Highway Vehicle Visitor Assessment

operating ORMs were the most likely to feel that the ability to learn about the history and culture of the area was not at all to only somewhat attainable (table 19).

Table 19. Differences in the ability to attain desired motivations

Motivation Attainment	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Reduce tension and stress from everyday life	3.60	3.75	3.24	5.981***	3 < 1,2
Depend on my own skills & abilities	3.37	3.61	3.07	4.590***	3 < 2
Challenge myself and achieve personal goals	3.21	3.54	2.67	6.388***	3 < 1,2
Learn about history & culture of the area	2.47	1.63	2.09	6.612***	2 < 1

*** Significant at the .01 level

Similar to previous results, most differences for environmental attributes settings were found between 4x4 riders and other rider groups. Individuals operating 4x4s were more likely to feel neutral about compact soils compared to both ATV and ORM riders who also significantly differed from each other. ORM riders were most likely to prefer compact soils, and hence dislike dry sandy soils compared to any other rider group. This is reflective of many of the comments received on site relating to the users' experience where individuals operating ORMs stated that it was difficult to operate a motorcycle in the soft, sugar sand. Lastly, individuals operating 4x4s were less likely to prefer more open settings within a variety of habitats than ATV or ORM riders (table 20).

Table 20. Differences for environmental attribute settings

Environmental Attribute	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Compact soils	4.00	4.59	3.10	25.831***	3 < 2 < 1
Dry sandy soils	3.33	2.89	3.63	5.676***	2 < 1,3
A mix of pine trees and open spaces	4.03	3.97	3.67	3.637**	3 < 1
A mix of hardwoods and open spaces	4.12	4.08	3.74	4.159**	3 < 1,2
A mix of hardwoods, pines, and open spaces	4.18	4.11	3.85	2.933*	3 < 1

Individuals operating 4x4s desired the least amount of contact outside their own riding group compared to those operating ATVs who desired to have slightly more contact with other users. Riders operating 4x4s were also more likely to prefer primitive camp settings compared to ATV riders who overall seemed to prefer more developed campsites. Off-road motorcycle riders also preferred small campsites that could comfortably accommodate 1-4 people, compared to ATV riders who were more likely to prefer medium sized campsites that could comfortably hold 5-10 people. Off-highway motorcycle riders were also more likely to prefer campsites accommodated with restrooms only compared to ATV riders who were more likely to prefer campsites with restrooms and showers (table 21).

Ocala National Forest Off Highway Vehicle Visitor Assessment

Table 21. Differences for social preferences

Variable	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Social encounters outside one's own group	2.17	2.13	1.83	2.914*	3 < 1
Camp-site preferences (Size)	2.04	1.80	2.15	3.078**	2 < 1
Camp Style (Type)	1.75	1.64	1.49	3.758**	3 < 1
Preferred camping amenities	2.29	2.03	2.11	5.157***	2 < 1

Four-wheel drive operators were more likely to prefer riding on designated trails than individuals operating ATVs and ORMs. Licensed vehicle operators were also more likely to prefer trails that were between 5-10 miles in length compared to ATV rides who were more likely to prefer trails that were 16-20 miles in length. Riders operating motorcycles strongly preferred tight technical trails whereas riders' operating ATVs and 4x4s showed a stronger preference for both wide meandering trails or tight technical trails types (table 22).

Table 22. Differences for preferred trail construction

Variable	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Preferred trail type	1.69	1.54	1.20	19.959***	3 < 1,2
Preferred trail layout	2.53	2.09	2.56	2.871*	2 < 1,3
Preferred trail length	3.51	3.21	2.68	3.048**	3 < 1

*** significant at the .01 level

** significant at the .05 level

In general, off-road motorcycle and ATV riders were more likely to feel that amenities such as restrooms, water, and shade were more important than other riders. Specifically, both rider groups felt that picnic tables and shaded/pavilion areas were important compared to 4x4 operators who were more likely to state that these amenities were not very important. They were also more likely to feel that the availability of water at trailheads was important compared to 4x4 riders who tended to feel more neutral about its presence. Lastly, off-road motorcycle riders were more likely than both ATV and 4x4 operators to feel that restrooms at day use trailheads were very important (table 23).

Table 23. Differences for day-use trailhead amenities

Variable	Mean			Welch Statistic	Post Hoc
	ATV (1)	ORM (2)	4x4 (3)		
Restrooms	3.89	4.13	3.38	4.299**	1,3 < 2
Water fountains	3.53	3.74	3.05	2.954*	3 < 1,2
Pavilion/Shaded areas	3.36	3.30	2.61	6.456***	3 < 1,2
Picnic tables	3.28	3.24	2.61	4.958***	3 < 1,2

*** significant at the .01 level

** significant at the .05 level

Willingness to Pay

After completing forward stepwise procedures, all variables were dropped from the model with the exception of the trip bid, an income category, and a distance category resulting in a final equation of

$$[\log(\text{Yes})/(1-\text{Yes})] = B_0 + B_1(\text{Bid}) + B_2(\text{Income}) + B_3(\text{Distance}) \quad (4)$$

Where

- Bid: indicated the amount that was presented to each respondent.
- Income: the respondent was asked to indicate annual household income. These amounts were re-coded into dummy variables where \$29,999 and less was a variable, \$30,000 - \$59,999 was another variable, \$60,000 - \$89,999 was a third variable, and \$90,000 or more annually was the last variable. In this model the dummy variable that emerged as significant was 1 = \$30,000-\$59,999, 0 = all other income.
- Distance: The approximate distance travels from the respondents home to the trailhead where they were contacted.
1 = traveled 90-120 miles and 0 = traveled more the 120 miles or less than 90 miles.

The overall fit of the model was significant at the 99% confidence level indicating that the final independent variables within the model were good predictors of one's willingness to pay. In addition, the level of correct predictions for the model was 78.8%, representing a robust model for prediction as well. Lastly, the Hosmer-Lemeshow Chi-square goodness of fit test is insignificant indicating that the model prediction is not significantly different from observed values (table 24).

Table 24 . Estimation of OHV riders willingness to pay

Variable	Coefficient	Stand. Error	Wald-Stat	Mean
Constant	2.617	.520	25.299	1
Bid Amount	-.039	.007	33.195	75.374
Income (30k-59.9k)	1.182	.532	4.937	.2520
Distance (90-120 miles)	1.484	.576	6.648	.0956
Cox-Snell R ²	.32			
Nagelkerke's R ²	.42			
- 2 Log-Likelihood	144.914			
Hosmer-Lemeshow	p = .064			

p < .01

Chi Sq.: 55.260 (3 d.f) p < .01

Correct predictions: No: 75.0% Yes: 91.7% Overall: 78.8% (cut value .500)

All independents were significant at the .01 confidence interval. More specifically, the coefficient of the bid amount was negative signifying that the higher the bid presented to the respondent, the more likely they were to reject it. For the income variable, the positive coefficient denotes that if the respondents made between \$30,000 - \$59,000 annually they were more likely to accept the bid than people who had smaller or larger incomes. Lastly, individuals who lived within 90 -120 miles of where they were surveyed were more likely to accept the bid than those living at either closer or farther distances.

Using equation (3) stated within the methods sections of this report, the resulting mean WTP is \$78.37, which is higher than other OHV permits within the southeastern US. For example, an annual permit at Croom Motorcycle Area in Brooksville, FL is \$50.00 per vehicle. At Hatfield-McCoy in West Virginia, an annual permit is \$30.00 for in-state residents, and National Forests in North Carolina charge \$30.00 for an annual use fee.

In addition to examining riders WTP, they were also presented with a more general statement about annual fees in order to understand and assess riders support for an annual fee system. More the half (51.7%) somewhat or strongly supported an annual fee system (table 25).

Table 25. Support for annual fee system

Variable	n	Strongly Support (%)	Somewhat Support (%)	Neutral (%)	Somewhat Oppose (%)	Strongly Oppose (%)	Mean	Standard Deviation
Provide an annual fee system	186	23.7	28.0	26.3	10.2	11.8	3.41	1.28

1= strongly oppose 2 = somewhat oppose 3=neutral 4=somewhat support 5=strongly support

Discussion

The results presented in this report are meant to provide managers within Ocala National Forest with a basic understanding of who their OHV visitors are and what recreation experiences they are seeking. This information can be used to help maintain existing OHV recreation opportunities as well as create new OHV recreation opportunities that meet both the objectives of the Forest Service and the desired recreation experiences of the visitor.

Summary of Visitor Experiences

Results of this study reveal that OHV riders share similar motivations for visiting Ocala National Forest as other recreation user groups, and were also reflective of other OHV user studies conducted within Florida (Parent *et al.*, 2007). Specifically, motivations relating to the ability to enjoy nature, reduce stress, and spend time with family and friends were of high importance to Ocala's OHV visitors. Even though these similarities existed, OHV visitors also showed diversity in both their motivations for riding within Ocala as well as desires for riding opportunities. More specifically, family bonding emerged as an important motivation for riders, however a deeper examination of desired motivations between riders shows that the desire to challenge one's self, depend on skills and abilities, and explore the natural environment were also of high importance to motorcycle and 4x4 riders indicating that while group bonding is important so is the need for individual achievement.

Willingness to Pay

The third objective of this research project was to estimate OHV respondents' average willingness to pay for an annual permit in order to participate in OHV riding within Ocala National Forest. Based on the results, participants are willing to pay just over \$78 for an annual permit on the Ocala National Forest. This could potentially mean increased revenues for Ocala, and increased abilities to provide quality OHV experiences.

Somewhat surprising and unexplainable are the lack of relationships between socio-demographic and/or trip characteristics within one's willingness to pay within this study. While studies focusing on OHV recreation have been minimal in comparison with other forms of recreation, those that have been conducted have shown strong influences from at least one or the other factors. In addition, other WTP studies that employed CVM methods also found a number of supporting factors. As an exception, Schultz *et al.* (1998) found similar results to this study, when investigating WTP for future park entrance fees in Costa Rica. Within the four WTP models they built, all four of them showed little or no influencing factors aside from the bid presented to the participants, and were only able to suggest that the lack of influencing variables could be a result of small sample size, the sample was not generalizable, and/or the respondents were not honest with their responses. However, the use of a stratified random sampling procedure in this study was used to help ensure the information gathered would be generalizable to entire the riding population, and the sample size was adequate for logistic regression. Also, in this study, it was decided to place the WTP question within the mail back questionnaire. This resulted in the concern that many riders would choose to not complete the survey, which may result in the loss of potential data. Future willingness to pay research efforts should be investigated through on-site interviews (Arrow, 1993). This approach would have two major advantages over the method used within this study. First, it would ensure a greater number of responses, hence and increased sample size. Secondly, the interviewer could be there to offer clarification to the respondent is necessary.

A known and possible bias within any mail or on-site survey is dishonesty from the respondent. However, the case of dishonesty on a wide scale is not suspected within this study for two main reasons. First, the issue of OHV recreation on public lands has been a heavily debated topic and source of contention between riders and Forest Service managers for the last several years. Rider groups have avidly given there thoughts and opinions to the USFS on the rights to use the land for riding purposes, resulting in one of the largest amounts of public commenting the Forest Service has ever received. Secondly, many of the respondents who both accepted and rejected the bid said they would not mind paying a fee if trail improvements were made.

This leads to another possibility of future examination of the payment vehicle within CVM studies. In this study, possible restricted use was the payment vehicle. Several comments from survey participants indicated that they would be willing to pay under the condition that improvements would be made. Although their comments are useful in understanding why some bids may have been rejected, they may have also been useful in the survey development process where thoughts such as these could have been synthesized into a CVM question and ideas such as improved infrastructure could be used a payment vehicle.

Future Research

Although this study allowed managers to gather a good overview of riders within Ocala, there is much to be learned about the riding population. Motivations relating to family bonding, stress reduction, and enjoying nature are highly rated, but an examination of motivational differences between groups reveals that other individual centered motivations are also highly valued indicating that while overall OHV recreation may be viewed as a family activity there still is a desire for individual challenge. Future research should investigate more into the motivations of riders to try and gain a better understanding of rider segments based on motivations rather than by activity style. In addition, more information is needed to better understand exactly how riders desire to achieve these experiences and if their perception of motivations such "enjoying nature," "explore the natural environment," or "be with family and friends" for example, are similar to other recreation groups. This knowledge could aid managers in better providing opportunities that could result in quality visitor experiences.

The desire for a more challenging trail system within Ocala was a consistent view among all OHV riders. Given Ocala's unique land characteristics, understanding what exactly make trails more

challenging here is also needed. Other places can rely on topography changes and natural rock formations to add to difficulty. While some natural obstacles exist, the majority of the Ocala National Forest is soft sand ridges. How can the relative homogeneity of the forest be utilized to create increased challenge in trails without degrading the natural setting? Understanding these desires within the constraints of managers ability to offer desired opportunities may also enhance the riders experience and help reduce illegal riding (Crimmins and NOHVCC, 2006).

Lastly, the results of the WTP portion of this evaluation raise several questions about developing an understanding of this population's willingness to pay. Why does the OHV population seem to respond differently to willingness to pay questions, and are they in fact that significantly different from other groups that have been investigated? As research develops within the OHV population that examines preferences for riding, perceptions of the landscape, perceptions of management, the affect of new laws being implemented etc. this knowledge can be applied in new willingness to pay studies within this as well as other study areas to help better determine what variables serve as good predictors for this population.

References

- Adams, R.M., Bergland, O., Musser, W.N., Johnson, S.L., and Musser, L.M. (1989). User Fees and Equity Issues in Public Hunting Expenditures: The Case of the Ring-Necked Pheasant in Oregon. *Land Economics* 65(4): 376-385.
- Arrow, K., Solow, R., Portney, P.R., Leamer, E.E., Radner, R., and Schuman, H. (1993). Report of the NOAA Panel on Contingent Valuation. *Federal Register* 58: 4602-4614.
- Bosworth, D. (2004). Four Threats to the National Forests and Grasslands. Idaho Environmental Forum, Boise, Idaho. United States Forest Service.
- Buckland, S.T., Macmillan, D.C., and Duff, H.N. (1999). Estimating Mean Willingness to Pay from Dichotomous Choice Contingent Valuation Studies. *The Statistician* 48(1): 109-124.
- Cordell, H.K., Betz, C.J., Green, G., and Owens, M. (2005). Off-Highway Vehicle Recreation in the United States, regions and States: A National Report from the National Survey on Recreation and the Environment (NSRE). U.S. Forest Service, Southern Research Station.
- Crimmins, T.M and the National Off-Highway Vehicle conservation Council (2006). Management Guidelines for OHV recreation.
- Dillman, D.A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: Wiley and Sons.
- Executive Order 11644 (Feb. 8, 1972), *Use of Off-road Vehicles on the Public Lands*.
- Executive Order 11989 (May 24, 1977), *Off-road Vehicles on Public Lands*.
- Fly, J.M., Stephens, B., Askins, L., and Hodges, D. (2002). Tennessee OHV User Survey. Human Dimensions Lab; Division of Forestry, Wildlife, and Fisheries. University of Tennessee, Knoxville, TN.
- Hanemann, M.W. (1989). Welfare Evaluations in Contingent Valuation Experiments with Discrete Response Data: Reply. *American Journal of Agricultural Economics* 71(4): 1057-1061.
- Havlick, D.G. (2002). Industrial Revolutions: The Motorized Recreation Boom. In: *No Place Distant: Roads and Motorized Recreation on Americas Public Land*. Island Press, N.W. Washington D.C.
- Holms, T.P. and Eglin, J.E. (2005). User Fees and the Demand for OHV Recreation. In: *Benefits and Costs of Resource Policies Affecting Public and Private Land*, Papers from the Annual Meeting Salt Lake City, Utah, February 14-15, 2005. Western Regional Research Publication, Eighteenth Interim Report, W-1133.
- Huhtala, A. (2004). What Price Recreation in Finland? A Contingent Valuation Study of Non-Market Benefits of Public Outdoor Recreation Areas. *Journal of Leisure Research* 36(1): 23-44.
- Lindberg, K. (1991). *Policies for Maximizing Nature Tourism's Ecological and Economic Benefits*, New York: World Resources Institute, 37 pp.

- Loomis, J. (2006). A comparison of the Effect of Multiple Destination Trips on Recreation Benefits by Travel Cost and Contingent Valuation Methods. *Journal of Leisure Research* 38(1): 46-60.
- Parent, G. D., Alavalapati, J. R. R., Stein, T. V., Hodges, A. W. (2007). *CMA Economic Impact and Visitor Assessment Survey Final Report*. Submitted to the Florida Division of Forestry. Gainesville, FL : School of Forest Resources and Conservation.
- Schultz, S., Pinazzo, J., and Cifuentes, M. (1998). Opportunities and Limitations of Contingent Valuation Surveys to Determine National Park Entrance Fees: Evidence from Costa Rica. *Environment and Development Economics* 3: 131-149.
- Moore, R.L. and Driver, B.L. (2005). *Introduction to Outdoor Recreation: Providing and Managing Natural Resource Based Opportunities*. State College, PA: Venture Publishing, INC.
- Teisl, M.F. and O'Brien, K. (2003). Who Cares and Who Acts? Outdoor Recreationist Exhibit Different Levels of Environmental Concern and Behavior. *Environment and Behavior* 35(4): 506-522.
- U.S. Department of Agriculture, Forest Service (2005). Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule. Vol. 70 (6): 68264-68291.
- U.S. Forest Service (2005). Record of Decision for access Designation in Restricted Areas on the Ocala National Forest: Lake Marion, and Putnam Counties, Florida. Tallahassee, Florida.
- Williams, J.S. and Bettoli, P.W. (2003). Net Value of Trout Fishing Opportunities in Tennessee Tailwaters. Fisheries Report 03-21. Tennessee Technological University.

**Appendix I:
On-Site Survey**

Ocala National Forest Off-Highway Vehicle On-Site Visitor Survey

MBID: _____

Surveyor: _____ **Date:** _____ **Access Point:** _____ **OHV Type:** _____

1. Is this your first time riding in Ocala NF? ☐ Yes → *go to question 3* ☐ No → *go to question 2*

2. How many times have you operated an OHV within Ocala National Forest within the past year?

☐ one other time ☐ 3-7 times ☐ 15-20 times ☐ 31-40 times ☐ More than 50 times
☐ 2-6 times ☐ 8-14 times ☐ 21-30 times ☐ 41- 50 times (# of times ____)

3. Have you ridden in or plan to ride in other areas of the forest during your trip?

☐ Yes → Where else did you/will you ride today? _____ ☐ No

4. How long do you plan to spend riding on this trip?

☐ Less than an hour ☐ Half a day ☐ More than a day (# of days ____)
☐ A few hours ☐ A whole day

5. If riding for more than a day, where are you staying overnight?

☐ At a designated campground near a trailhead ☐ At an undesignated site along the trail
☐ At an established campsite along a trail ☐ At a nearby residence of friends or family
☐ At a private campground outside the forest ☐ Other _____

6. When riding in Ocala, do you primarily ride on:

☐ designated marked areas ☐ mixed use roads ☐ open, “scramble” areas

7a. Including yourself, how many people are you traveling with on this trip? Number of total people _____

7b. Of the people you are traveling with on this trip how many are:

Males **over** 16 yrs. old _____ Males **under** 16 yrs. old _____
 Females **over** 16 yrs. old _____ Females **under** 16 yrs. old _____

8. What type of group are you traveling with?

☐ Family ☐ Friends & family ☐ Organized Group: _____
☐ Friends ☐ Alone ☐ Other: _____

9. How would you rate your trip today on a scale of one to five with five being a perfect experience? _____

10. Did you participate in any other recreation activities during your trip today?

☐ Yes → If yes, what activities did you participate in? _____
☐ No

11. What year were you born? 19 _____

12. Gender: ____ Male ____ Female

13. Race: _____

Zip Code: _____ **City:** _____ **St.:** _____ **County:** _____

Name: _____ **Address:** _____

Appendix II Mail Back Survey

Off-Highway Vehicle Recreation Visitor Study: Ocala National Forest

For purposes of this survey off-highway vehicles are defined as all ATVs, all off-road motorcycles, 4x4s, unlicensed vehicles, sand rails, and utility vehicles.

Section 1: Off-Highway Vehicle Riding Experience & Preferences

- Please indicate the type of off-highway vehicle you were riding during your trip to Ocala National Forest when given this survey:
☐ ATV ☐ Off-Highway Motorcycle ☐ 4x4 ☐ Other: _____
- Other than this vehicle, do you operate other type's of off-highway vehicles?
☐ Yes → If yes, what other types of off-road vehicles do you ride?
☐ ATV
☐ Off-road motorcycle
☐ 4x4
☐ Other: _____
☐ No
- About how many times have you operated each of the following off-highway vehicles for recreational purposes during the past twelve months **within** Ocala National Forest?

Vehicle Type	Number of Times Driven
Off-Highway Motorcycle	
ATV	
4x4/Jeep	
Other: _____	

- How many times have you operated each of the following off-highway vehicles for recreational purposes during that past twelve months **outside of** Ocala National Forest?

Vehicle Type	Number of Times Driven
Off-Highway Motorcycle	
ATV	
4x4/Jeep	
Other: _____	

- How many years have you participated in off-highway vehicle riding? _____ years _____ months
- How would you rate your OHV skill level?

1 2 3 4 5
Beginner Novice Intermediate Advanced Expert

7. Are you a member of an OHV club or organization?
☐ Yes → If yes, what club(s) or organization(s) are you a member of? _____
☐ No
8. Do you subscribe to any OHV magazines or electronic newsletters?
☐ Yes → If yes, what magazine(s) or electronic news letter(s) do you receive? _____
☐ No
9. Have you completed a safety program on OHV operation?
☐ Yes → If yes, what program(s) did you complete? _____ Date(s): _____
☐ No
10. People go to particular areas and participate in recreation activities for any number of reasons. Listed below are some possible reasons you might have had for recreating in the forest during your most recent OHV trip. Please indicate in column A how **important** each experience was for you during your visit. In column B, indicate how much you were able to **attain** this experience during your visit.

Experiences	(A) Importance					(B) Attainment			
	Not at all important	Not very important	Neither	Very Important	Most Important	Did not Attain	Somewhat Attained	Moderately Attained	Totally Attained
Learn about history and culture of the area	1	2	3	4	5	1	2	3	4
Promote physical fitness	1	2	3	4	5	1	2	3	4
Reduce tensions and stress from everyday life	1	2	3	4	5	1	2	3	4
Escape noise/crowds	1	2	3	4	5	1	2	3	4
Learn about the natural environment of the area	1	2	3	4	5	1	2	3	4
Be with friends and family	1	2	3	4	5	1	2	3	4
Feel a sense of independence	1	2	3	4	5	1	2	3	4
Take risks	1	2	3	4	5	1	2	3	4
Engage in personal/spiritual reflection	1	2	3	4	5	1	2	3	4
Explore the area and natural environment	1	2	3	4	5	1	2	3	4
Challenge myself and achieve personal goals	1	2	3	4	5	1	2	3	4
Depend on my skills and abilities	1	2	3	4	5	1	2	3	4
Enjoy nature	1	2	3	4	5	1	2	3	4
Strengthen family kinship	1	2	3	4	5	1	2	3	4
Be in an area where I feel secure and safe	1	2	3	4	5	1	2	3	4
Meet new people	1	2	3	4	5	1	2	3	4

11. Please indicate the degree to which you like or dislike the following environmental characteristics when operating your OHV.

Environmental Conditions	Strongly Dislike	Dislike	Neutral	Like	Strongly Like
Compact soils	1	2	3	4	5
Dry sandy soils (i.e. sugar sand)	1	2	3	4	5
Dominated by pine trees and wire grass	1	2	3	4	5
Dominated by hardwoods and shrubs	1	2	3	4	5
Dominated by a mix of pine trees and hardwoods	1	2	3	4	5
A mix of pine trees and open spaces	1	2	3	4	5
A mix of hardwood trees and open spaces	1	2	3	4	5
A mix of pine trees and hardwoods and open spaces	1	2	3	4	5
Open with no presence of vegetation	1	2	3	4	5
Scrub	1	2	3	4	5
Where I can see water all of the time	1	2	3	4	5
Where I can see water some of the time	1	2	3	4	5
Where I can not see water at all	1	2	3	4	5

12. Which of the following social encounters would you most prefer during your riding experience within Ocala National Forest?

- ☐ I would prefer to have very little contact with people outside my travel group (fewer than 6 people).
☐ I would prefer to have little contact with people outside my travel group (6-15 groups per day)
☐ I would prefer to have moderate contact with other people outside my travel group (30+ groups per day).
☐ I would prefer to have constant contact with other people (large numbers of users on-site and in nearby areas).

13. Which of the following trail opportunities would you most prefer while operating your OHV?

- ☐ I would most prefer to ride on designated, marked trails
☐ I would most prefer to ride on mixed use roads
☐ I would most prefer to ride in scramble areas

14. When riding on trails, which of the following types of trails do you most prefer?

- ☐ I prefer to ride on tight "technical" trails
☐ I prefer to ride on wide meandering trails

15. When riding on trails, what type of trails do you most prefer?

- ☐ I prefer riding on loop trails
☐ I prefer riding on linear trails
☐ A series of connecting linear trails

16. How long would you prefer an OHV trail to be? _____ miles

17. Please indicate how important you feel that each of the following amenities are at day-use trailheads.

Statement	Not at all Important	Not very Important	Neither	Very Important	Most Important
Restrooms	1	2	3	4	5
Picnic Tables	1	2	3	4	5
Pavilion/Shaded areas	1	2	3	4	5
Water Fountains	1	2	3	4	5

18. When camping with your OHV do you prefer to stay in:

☐ Primitive (tent camping only) campsites

☐ Developed campsites

19. When camping with your OHV, which of the following would you most prefer?

☐ Camping in a site for smaller groups (4 or fewer)

☐ Camping at a site for medium size groups (5-10 people)

☐ Camping at a large group site (11-20) people

20. When camping with your OHV, which of the following accommodations would you most prefer?

☐ A camp site with restrooms only

☐ A camp site with restrooms and showers

☐ A camp site with electrical hook-ups

21. Please rate the extent to which you agree or disagree with the following statements.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
People on ATVs bother me	1	2	3	4	5
People on off-road motorcycles bother me	1	2	3	4	5
People in 4x4s bother me	1	2	3	4	5
I find it undesirable to meet people on ATVs	1	2	3	4	5
I find it undesirable to meet people on off-road motorcycles	1	2	3	4	5
I find it undesirable to meet people in 4x4s	1	2	3	4	5
Parts of the forest should be open to ATVs only	1	2	3	4	5
Parts of the forest should be open to motorcycles only	1	2	3	4	5
Parts of the forest should be open to 4x4s only	1	2	3	4	5

22. Please rate the extent to which each of the following reduced or increased your riding enjoyment in Ocala.

Statement	Greatly Reduced Enjoyment	Reduced Enjoyment	Neither Reduced/ Increased My Enjoyment	Increased My Enjoyment	Greatly Increased My Enjoyment
Seeing people on ATVs	1	2	3	4	5
Seeing people on motorcycles	1	2	3	4	5
Seeing people in 4x4s	1	2	3	4	5
Encountering people on ATVs	1	2	3	4	5
Encountering people on motorcycles	1	2	3	4	5
Encountering people in 4x4s	1	2	3	4	5

23. Please rate the extent to which you view the following as a problem in Ocala National Forest.

Statement	Not at all a problem	Somewhat of a Problem	Neutral	Serious Problem	Very Serious Problem
People on ATVs are to destructive	1	2	3	4	5
People on ATVs ride unsafely	1	2	3	4	5
People on ATVs behave in a discourteous manner	1	2	3	4	5
People on ATVs pass unsafely	1	2	3	4	5
People on ATVs cut others off	1	2	3	4	5
People on ATVs are out of control	1	2	3	4	5
People on ATVs ride to fast	1	2	3	4	5
People on motorcycles are to destructive	1	2	3	4	5
People on motorcycles ride unsafely	1	2	3	4	5
People on motorcycles behave in a discourteous manner	1	2	3	4	5
People on motorcycles pass unsafely	1	2	3	4	5
People on motorcycles cut others off	1	2	3	4	5
People on motorcycles are out of control	1	2	3	4	5
People on motorcycles ride to fast	1	2	3	4	5
People on 4x4s are to destructive	1	2	3	4	5
People on 4x4s ride unsafely	1	2	3	4	5
People on 4x4s behave in a discourteous manner	1	2	3	4	5
People on 4x4s pass unsafely	1	2	3	4	5
People on 4x4s s cut others off	1	2	3	4	5
People on 4x4s are out of control	1	2	3	4	5
People on 4x4s s ride to fast	1	2	3	4	5

24. National Forests throughout the United States are being required to provide for managed OHV trail systems. However, the U.S. Forest Service also faces declining budgets, which forces managers to either find new funding to provide OHV recreation opportunities, or to potentially limit and restrict OHV riding on the forests. To ensure OHV users have the ability to ride in national forests, many forests have begun to charge an annual fee in order to obtain a reliable funding source devoted to the continual provision of quality OHV recreation.

If such a fee were required on the Ocala National Forest, would you be willing to pay \$125.00 each year for a permit?

☐ Yes

☐ No→

☐ Not worth the cost, but I would be willing to pay \$ _____

☐ Improvements and sustainment of riding opportunities should be financed in another way.

☐ Another reason, mainly, _____

Section 2: Off-Highway Vehicle Management

25. The following is a list of ***potential*** management actions that could be taken to improve the OHV riding experience within Ocala National Forest. Please indicate the extent to which you would support each item with (1) indicating that you strongly oppose and (5) indicating that you strongly support the potential action.

Potential Management Action	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Support	Strongly Support
Provide signs at trailheads and trail junctions indicating trail length	1	2	3	4	5
Provide children riding areas	1	2	3	4	5
Provide an annual fee system	1	2	3	4	5
Provide detailed maps of riding areas	1	2	3	4	5
Provide more ranger patrols	1	2	3	4	5
Improve maintenance of OHV areas and trails	1	2	3	4	5
Take measures to protect/improve the natural environment	1	2	3	4	5
Provide more parking space for OHV support vehicles	1	2	3	4	5
Provide primitive camping at appropriate places for OHV riders	1	2	3	4	5
Provide more safety education	1	2	3	4	5
Provide environmental ethic training	1	2	3	4	5
Provide warm up areas	1	2	3	4	5
Provide trail to destination areas	1	2	3	4	5
Other: _____	1	2	3	4	5

26. To what extent do you perceive the following conditions to be a problem in Ocala National Forest?

Statement	Not at all a problem	Somewhat of a Problem	Neutral	Serious Problem	Very Serious Problem
Litter	1	2	3	4	5
Overcrowding	1	2	3	4	5
Lack of proper safety equipment worn by other OHV riders	1	2	3	4	5
Environmental degradation within riding areas	1	2	3	4	5
Lack of safety and environmental ethic training	1	2	3	4	5
Not enough rules and regulations	1	2	3	4	5
Too many rules and regulations	1	2	3	4	5
Poor enforcement of rules and regulations	1	2	3	4	5
Lack of knowledge by riders of rules and regulations	1	2	3	4	5
Lack of riding information	1	2	3	4	5
Lack of marked trails	1	2	3	4	5
Not enough children and family riding areas	1	2	3	4	5
Inadequate trail maintenance	1	2	3	4	5
Lack of parking for support vehicles	1	2	3	4	5
Lack of adequate campground sites	1	2	3	4	5
Other: _____	1	2	3	4	5

Section 3: Demographics

We would like to ask you a few questions about yourself and your background. This information is for statistical purposes only and all information will remain strictly confidential.

27. What is your gender?

☐ Male

☐ Female

28. What year were you born? 19____

29. Which of the following best describes your status?

☐ Married

☐ Divorced

☐ Single

☐ Widowed

30. How many children **currently** reside in your household? _____

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

☐ Eighth grade or less

☐ College Graduate

☐ Some High School

☐ Some Graduate School

☐ High School Graduate or GED

☐ Graduate Degree or beyond

☐ Some College

32. Are you presently...

☐ Employed Full Time:

Occupation _____

☐ Retired: Previous Occupation _____

☐ Full Time Student

☐ Employed Part Time:

Occupation _____

☐ Part Time Student

☐ Full Time Homemaker

☐ Unemployed

33. What race or ethnic group would you place yourself in?

☐ White

☐ Hispanic or Latino

☐ African American

☐ American Indian or Alaskan Native

☐ Asian American

☐ Native Hawaiian or Pacific Islander

34. What was your approximate total household income, before taxes this past year?

☐ Less the \$10,000

☐ \$60,000 to \$69,999

☐ \$10,001 to \$19,999

☐ \$70,000 to \$79,999

☐ \$20,000 to \$29,999

☐ \$80,000 to \$89,999

☐ \$30,000 to \$39,999

☐ \$90,000 to \$99,999

☐ \$40,000 to \$49,999

☐ \$100,000 or More

☐ \$50,000 to \$59,999

35. What county do you live in? _____

If you have any questions or comments, please write them in the space below.

Thank you for your help with this study!

Please place this completed questionnaire in the postage-paid business return envelope provided!

Appendix III: Recreation Opportunity Spectrum

Table A1: The Recreation Opportunity Spectrum

Opportunity Class/Experience Opportunity	Physical, Social, and Managerial Setting
<i>Primitive (P):</i>	Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is fairly low and evidence of other area users is minimal. The area is managed to essentially be free from evidence of human induced restrictions and controls. Only essential facilities are used and are constructed of on-site materials. No facilities for comfort or convenience of the users are provided. Spacing groups is informal and dispersed to minimize contacts with other groups or individuals. Motorized use within the area is not permitted.
<i>Semi-Primitive, Non-Motorized (SPNM):</i>	Area is characterized by a predominately unmodified natural environment of moderate to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Facilities are primarily provided for the protection of resource values and safety of users. On-site materials are used where possible. Spacing of groups may be formalized to disperse use and provide low-to-moderate contacts with other groups or individuals. Motorized use is not permitted.
<i>Semi-Primitive Motorized (SPM):</i>	Area is characterized by a predominately unmodified natural environment to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but is subtle. Facilities are primarily provided for protection of resource values and safety of users. On-site materials are used when possible. Spacing of groups may be formalized to disperse use and provide low to moderate contacts with other groups or individuals. Motorized use is permitted.
<i>Roaded Natural (RN):</i>	Area is characterized by predominately naturally-appearing environments with moderate evidences of the sights and sounds of humans. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.
<i>Rural (R):</i>	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities intensified motorized use and parking are available.
<i>Urban (U):</i>	Area is characterized by a substantially urbanized environment, although the background may have natural appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site are predominate. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use are available, with forms of mass transit often available to carry people throughout the site.

Source: USDA Forest Service, 1982. *ROS Users Guide*.

**Appendix IV:
Florida County Regional Classifications**

Table A2: Florida counties

Region 1 North West	Region 2 North East	Region 3 West Central	Region 4 North Central	Region 5 East Central	Region 6 South West	Region 7 South East	Region 8 Heartland
Bay	Baker	Citrus	Alachua	Brevard	Charlotte	Broward	DeSoto
Calhoun	Clay	Hernando	Bradford	Lake	Collier	Indian River	Glades
Escambia	Duval	Hillsborough	Columbia	Marion	Lee	Martin	Hardee
Franklin	Flagler	Manatee	Dixie	Orange		Miami-Dade	Hendry
Gadsen	Nassau	Pasco	Gilchrist	Osceola		Monroe	Highlands
Gulf	Putnam	Pinellas	Hamilton	Seminole		Palm Beach	Okeechobee
Holmes	St. Johns	Polk	Lafayette	Sumter		St. Lucie	
Jackson		Sarasota	Levy	Volusia			
Jefferson			Madison				
Leon			Suwannee				
Liberty			Taylor				
Okaloosa			Union				
Santa Rosa							
Wakulla							
Walton							
Washington							

Appendix IV: Open Comments

Category	Comment
Better campground & day use facilities/conditions desired	We were really disappointed when they cut down all the tall pine trees on one side of the Big Scrub Campsite. Shade is really important and they should have preserved more of the tall trees. It looks barren now. If they consider adding another campsite, they need to try to have at least one tree for maybe every other parking space/fire ring. It's definitely what everyone tries to get when they go to the big scrub-shade. There aren't enough trees in the campsite.
	Lake Delancy needs showers.
	Provide more campgrounds for ATVs with showers and bathrooms.
	Need more campgrounds that allow use for ATVs. Need campgrounds with bathrooms and showers (at least running water). Need more marked trails for ATVs, motorcycles throughout the forest. In my opinion, that would keep crowds down in one area (more spread out).
	Less of an impact on natural environment if more campgrounds were provided for OHVs, they could be more spread out. Provide hook-ups for RVs. Allow generators to run at night. Open forest back up to night riding in hot summer months.
	Campground maintenance at Big Scrub was poor. The new facilities are nice, but they need to be cleaned better. The shower drains were clogged and the fire rings from previous users were full.
	Showers at Lake Delancy West – trails get really dirty.
	More campsites at Lake Delancy West are needed.
	Fix restroom door lock at Lake Delancy West; it hasn't worked in over a year.
	Big Scrub is adequate for camping or RVs. More campgrounds are needed so OHV riders are not all congested in one spot. Obviously everybody knows that's a big problem. Big Scrub looks like a bombing range due to too many OHVs in one location. Developed sites would be nice but not necessary. Lets improve trail riding first and work on other stuff later.
	We have been using the Ocala National Forest for 12 years. We usually camp at Big Scrub and have had only a few complaints. There should be campsites with electric hookups, its to hot in the summer not to be able to run a generator at night (after 10pm). I would pay more for this expense.
	There should be a designated area for people with generators where generators can run all night.
	One huge problem is the inability to run air conditioning at night. Campsites need electrical hookups or generator areas.
	I think that people who stay at trailheads need to stop at the front gate and check in before proceeding into the campground. Fees should be paid upon leaving. I find it discouraging when I am setting up for camp for a ranger to walk into my camp and start jotting down tag numbers and asking questions. It makes me feel like I'm doing something wrong. I understand that its camping but at the same time we are setting up our personal space for the time we are there.

Better campground & day use facilities/conditions desired	Put bathrooms at Rodman Trailhead. People using the woods to go to the bathroom is a health hazard.
	It would be nice to have full RV hookups with ATV trail access.
	Would be nice to have a playground for kids at the ATV campground.
	Place trash cans in parking areas.
	Fire rings I think are a must. I noticed almost all of them were gone at Lake Delancy.
	This was my first visit to Ocala National Forest. I had a very good experience with the exception of available water at the camp site/showers. The port-a -lets were very helpful also.
	I stayed in Lake Delancy West for the first time. Great campground! Very Crowded! Maybe reservations need to be done here. Although I think with reservations a reservation fee shouldn't be asked for. That is why I don't like other campgrounds anymore. The reservation fee (\$9) is more than the fee to stay (\$6) through Camp USA.com.
Better information/communication	Stop changing the rules without telling people and then hassling them when they don't follow today's rules. How are we supposed to keep up with daily rule changes when they're not communicated to us?
	The first campsite we found, we were told by the campground host to get our bikes out, but the ranger was pretty nice and explained why. I don't mind moving, but it took us 3 hours to find the place. There aren't any signs from the highway leading you to an appropriate campground site.
	The FR should be marked on site as well as on an OHV map in a way that indicates to the rider where they are in relation to the road, as well as which crossing they are currently at (when trail crosses multiple times).
	Improve maps. Other than the veteran employee who drew the maps, no one can actually read them.
	I think the rangers are doing a good job and seem to be better staffed than in the past. The maps that are available now do not adequately show sensitive area. Therefore the rangers are the only ones that know and enforce these rules.
	Current maps are not available for purchase at the ranger stations, they are on display, but not for sale.
	Rule books and maps should be supplied.
	Have signs with road names at trailheads and stop signs for reference points.
	It would be nice to have more signs leading to staging areas and to other areas of interest.
	Restricted areas should be marked better.
Closures	Central FL has few legal riding areas, therefore Ocala needs to remain open with large tracks of land for the growing OHV population to use.
	I feel that the closing of some areas is ridiculous. For instance the large sand pit at Rodman Dam. It has been a sand pit ever since I've been around, and I don't feel it hurts anything by riding in it.
	I still believe the whole forest should be open to OHVs except to highly sensitive environmental areas which should be clearly marked and mapped. The trail system would be good for families and people who are unfamiliar with the area.

Closures	It would be nice to have a big open space to ride in near the parking lot near Rodman Dam.
	Far to many trails have been closed.
	Bottom line, ONF trail closures are limiting OHV use severely. Add to that poor trail marking and vague rules and all ONF is doing is upsetting people. We all have a common goal for ONF to continue to exist and be available for everyone's use. More education on minimizing environmental impact, pamphlets for example. There are ways to use the forest and preserve it. For instance open/close trails for part of the year to allow for rest periods and regrowth. Offer incentives for OHV groups to collect trash in the forest.
	Please reopen "bar pit".
	Open Rodman Back Up.
Education	Have an optional safety program for beginners similar to that for hunters.
Enhance riding opportunities	A good variety of trails, flat or technical, would be nice.
	A series of family oriented trails for ATVs (no motorcycles or 4x4s) with destinations should be established.
	I would like to have some places for kids to swim and fish and have a way to get there with their ATV.
	From a beginners standpoint, I wish you had beginner trails with no banked curves and no big ruts to learn on. This would help a lot.
	I understand environmental concerns, but a nice area of soft sand and hills would be great.
	I don't like the limited number of trails that are now available. This will place a strain on the trails and will reduce the pleasure I received from being able to explore a greater number of areas. I would be willing to pay a yearly fee if the land available to ride on was greater than what is currently marked.
	Allow hunters to ride to their stands – some are disabled and can't walk or drag a deer that far (heart or leg problems).
	Should have mudding holes for ATV riders who like mud.
	Have different trails for different skill levels.
	In my opinion and in speaking with other 4x4 and Jeep owners, generally I feel left out in the planning and actions taken to provide challenging obstacles for our OHV vehicle type. Plain-jane trails and open areas are fine for ATV and Motorcycle use but are very boring for 4x4s. Personally, I am not a fan of "mudding". What is exciting are hill climbs (i.e. blueberry hill) and off camber climbing and decent situation (i.e. rail road grade). If there were a way to keep these areas open and maybe mark boundaries around them it would be appreciated. As a member of the Orlando Jeep Club I/we promote the rules/laws/designated trails whenever we are riding. However, it has become more difficult to decipher them, and has become less enjoyable to travel and ride in Ocala National Forest.
	I would love to see some open riding areas.
	Night riding should be reinstated because its to hot in the summer to ride during the day.

Enhance riding opportunities	No riding at night is my main complaint. Free time is so hard to come by that it is a shame to waste 12 hours of every 24. The night is the only time worth riding in the summer months. This is a really big deal to me.
	I don't feel that is fair that there is no night riding for ATV but Sand rails can blare down forest roads at 3am with no consequences.
	Riding areas have been cut out/removed in the past few years, as well as night riding. They say its because it is to save money. If for money, how? It costs more to implement and maintain a trail system. Also, how does cutting our night riding save money?
	Open night riding for ATVs again.
	Open OHV trails up to swimming areas.
	I truly believe that closing areas that have been open to OHVs for the last 10, 20, 30 years is a huge mistake, regardless of the often called "destruction" of the area. All this does in my eyes is make the OHV community disgruntled (feeling we lost yet another area). This in turn causes us to go out and seek a new area to ride, and the cycle continues. Before you know it there are several large areas of land that have seen heavy use of off-road vehicles that are useless to everyone. OHVs can't use it anymore because its closed, hikers don't want to be there because of the previous use by OHVs. If the OHVs were left alone to have one "anything goes" area (within reason) any so called destruction would be contained to that area. Also rangers could concentrate their efforts to stop "trailblazers" and dumping in one area instead of being spread out across the forest. The main areas that many of us are sad to see go is the old Rancho Lane area, and most recently the St. Francis area.
	Having dedicated 4x4 trails would be a big plus. We need to keep the 4x4 trails open.
	I think that more trails need to be designated for ATVs only. I come to Ocala 4 times a year with family to get away from everyday life and relax. We use our ATVs strictly for trail riding and enjoy it very much. I have noticed a lot more motorcycle traffic on the trails and don't agree with the way riders are riding them. We were cut off many times by motorcycles and forced off some trails when riding around narrow trails. They drive to fast and don't give themselves enough time to slow down.
	I would like to see more trails that I can take my son to and feel safer that an ATV or motorcycle isn't coming full speed right at me and my son.
	I think children and family trails are important.
Fees	I bought a mule, only to find that there are so many restrictions on where I can ride, and that most places require that the OHV being ridden must have a straddled seat. Therefore, I feel that there needs to be more mixed use trails since they're the only ones I can ride.
	If the permit fee were 50.00 - this should include camping prices.
	Concerning willingness to pay, "the money must be used wisely, i.e. environment control and protection. Protect the forest for future generations.

Fees

In response to not willing to pay, No. I see no maintenance to justify this fee, just forest personnel sitting in NEW trucks waiting to write tickets.
For user fees, you should have a family rate for up to 4 ATVs per family, so it doesn't hurt a family's budget to enjoy riding in the outdoors.
Have family rates for fees. Also, raise the price of campsites and use the extra money to help raise funds.
Because as Floridians and Americans, we pay taxes to take care of and manage our forests for the use of all citizens. Our representatives should lobby against such, singling out one group of forest users to purchase such a permit is not fair.
I have 4 riders and I like the freedom of paying a day use fee every time I visit. If a permit is required, it is always per rider and is too expensive with 4 riders.
Paying \$75 for a permit is not worth the cost because I have an OHV for each family member. Should offer discount to additional family member.
If the fee is going to be changed, then passes should be provided for 24hr camping and riding, but if the fee is not paid, then users should only have access from sun-up to sun-down. More rangers to enforce this. If yearly pass is not paid for, have a daily pass sold, or weekend, or weekly, etc.
May I suggest that instead of an annual ATV permit, that you instead issue a user's permit. That way a rider would be covered no matter the machine he was on. Also, if children under 16 could be exempt. This would lessen the burden on someone like myself who has 3 children and a wife who rides. We own 7 ATVs and to pay \$75 each per ATV per year is too much.
Would pay to maintain trail...grade trails on regular basis...too many "whoops" worse than last year.
We don't mind paying an annual fee, but it seems like the more we pay to use the forest the less we get. If the rules and regulations were enforced properly in the first place I believe things wouldn't have gotten this out of control.
In respect to paying a fee to use the forest I think it would be good to have a yearly or a pay per use fee. I went to a National Forest in N.C. and they had a \$5.00 per day fee or a yearly fee. This way people who use the forest more could pay a yearly fee and the people who only use it once in a while will still go.
I ride ATVs up in Tennessee OHV riding areas. They all charge a fee to ride the areas. Trail are kept up, numbered, and mapped out. You don't see any type of destruction (trash, riding off trails, etc.) There are restrooms at trailhead staging areas. Camping. ATVs motorcycles, 4x4s, bicycles, all use these trails.
Ocala National Forest is funded by taxes and license fees already. Take that money and enforce the problem of littering which is the only environmental impact in the area. If road construction doesn't impact the environment, how does riding an ATV in the woods impact the environment.

Fees	Bring back hang tags – higher yearly fee would be OK.
	I support the trail system with marked trails and maps. I would also be willing to support the efforts of a fee per OHV to support the efforts of the forest service to maintain and improve the trail system.
	Open more areas to ride in, and have an annual fee or license like they do for fishing.
	Having an annual pass would eliminate certain un-educated individuals. This would help eliminate litter and rider related crashes also.
	Funding should come from tagging helmets. At the Hatfield McCoy Trails you have to buy a tag for your helmet and it costs \$10/tag/helmet. It ensures wearing safety head gear, and provides revenue for the forest.
	A pay to use system would help limit/control; (1) money gained would go for more FS personnel to patrol/enforce “pay to use”, (2) fines could go to education, (3) maybe have a discount on annual pass if you attend education class, (4) for annual permit sales the driver must sign an agreement to protect land, not drive stupid, etc., and (5) discount also if people pick up certain amount of pounds in trash within riding areas.
	I have no objection to paying for an annual permit, but if the fee should be per household and not per person. If you charge per vehicle, you should charge \$25.00 for the permit because people in big families can’t afford to pay \$100 per person in the family.
	One-hundred dollars for a permit is to much, and I couldn’t afford that for every person in my family. I would be willing to pay \$25.00 per family.
	Ocala is a good place to ride with an OHV or Utility vehicle. Its our forest, and I don’t recommend fee’s or more regulations as is the current case.
	I feel there is not much benefit provided to us OHV users and tax-payers by constant closures (88, pit, etc.) increased fees (registrations, proposed fees, etc.) and other forest restrictions (night riding etc.). I would not mind paying for an annual fee for a forest service/benefit if there were additional generous improvements and open riding areas to merit the cost. Florida has one of the highest number of ATV sales in the US with the fewest legal riding areas available, along with continuous closures.
	I understand the need for rules, regulations, and procedures, and possibly small fees to cover the costs of forest improvements and additions. However, I don’t feel that there are enough of these much-needed improvements or additions to warrant these proposed fees. I believe this would also be the view of the “majority” of OHV users. But I would not mind paying a yearly fee if there were increased benefits for us OHV users! ONF has been free for OHVs for many years, without many regulations. Now there are proposed fees with many, many more regulations.

Forest Roads	I would like to be able to ride on numbered roads which is not allowed at this time. I have hunted the Big Scrub area for 26 years and the increased ATV and OHMs during hunting season has ruined many hunters attitudes toward them. They (hunters) also resent the fact that they pay \$25.50 for a management sticker and \$12.50 for a hunting license then have to deal with the solitude of the forest shattered by riders. I would like to hunt on my ATV, on numbered roads, like other management areas like 3 Lakes or Bull Creek. The fee to ride would be a fair option.
	I would like to see OHVs allowed to travel on numbered roads. Since 2003 ATVs have had a required one time registration fee at purchase time. I thought this would one day pave the way for ATVs to operate on these roads, but instead of increasing areas in which we are allowed to ride they were drastically reduced instead.
	Either the rule about riding on number roads need to be changed or better marked trails need to created in the Big Scrub area. Many of the “trails” become or turn into forest roads without any indication. Then when I get to a big intersection a see a FR sign and realize that I’m on a numbered road. I can get a ticket for this which is unfair since there was no indication of this change on the trail itself!
	The rule/law about driving on numbered roads needs to be reviewed. You can be riding on a trail that terminates into an road. You have no other alternative but to ride the road until you find another trail, thus you’ve broken the law.
General	The creation of the marked trail system is a welcome addition to riding in the forest. I have traveled on the trails in the North End and have found it to be well marked and very enjoyable. The number of riders in the south end far outnumber the north end.
	Most of the campers I meet are family oriented. Look at the rigs at Big Scrub. Many are high end, yet people camp near each other in tents, home made rigs, trailers, 5 th wheels and motor homes and I’ve never seen a fight or disturbance.
	Riders need to respect hunters and other campers.
	The park is fine as is. Smoothing out bumps in trails would be good, but not necessary.
	I wish all the counties would make up their minds on rules and regulations.
	Enforce rules and regulations in place now instead of creating new ones.
	When drove for two hours, to get to Big Scrub, couldn’t get in the gate.
	Trail damage by “donuts” and excessive speed is caused by rude and ignorant people. Solutions may be non-existent as changing personal behaviors in some of the population is near impossible. Implementing rules, regulations, and fines will not change their behavior, only restrict the freedom of the majority, the responsible riders. Good luck in planning the use of this wonderful resource in our area. I hope that the lack of respect for the Ocala Forest by a few does not end the opportunity to enjoy it for us all.

General	Small rental cabins would be nice in OHV areas (If you don't already have them). GPS rentals.
	I am a 23 years US Army retired my wife is 30 years from the state of Florida. My 3 children are grown and married and have husbands that ride, we all get together – some 2 through 3 days a month and campout. A total of 8 people ages 21-50 years old [make up our group]. This outdoor activity is important and has strong bonding.
	I never see people walking on the marked trails for hiking so they should be ATVs also! If people do walk the trails they can at least be helped by ATV riders if they get hurt and need to get a ride home.
	Yes, I agree there are some [riders] that don't follow the rules.
	Please understand that this [OHV recreation] gives people a chance to get away from many government rules to be free and for a little while, forget about their problems.
	We want to thank all that are involved in providing the riding area. My entire family loves everything about the ONF trails system. We really want to give back and help the organization in improving and expanding the trail system for us all to enjoy. We would like to become volunteers and ask that someone tell us how we can accomplish this.
	I have went on several clean up trips in the forest. I took my little girl with me, she loves going to the forest. She has learned a lot about nature and respecting it.
	The forest would be best left alone by any and all special interest groups. Already too much law enforcement involved which makes the forest seem like a low income "project" neighborhood. My family and I used to visit the forest to partake in the freedoms it used to support. Anymore, when I leave the forest from a weekend of camping and riding I am frustrated to the point of selling all our camping/riding gear and finding a new hobby. "Do this, don't do that" has replaced relaxing freedom in the forest. It won't be long.
	The forest has to realize that the more widely used (multi-use) they can make the [forest] the more opportunity there is for public support and funding. Managing the multi-use forests doesn't mean everyone should be allowed to hunt, off road ride, and hike on top of each other. Off road riding shouldn't be restricted for licensed vehicles.
	The new trail system is an excellent set-up; Kudos to the hard working rangers out there making the trails safer (trimming limbs, fallen trees, and leveling out the big whop-t-dos). Every ranger we've met has been extremely friendly and helpful.
	We have ridden ATVs for 20 plus years with our 3 children starting at age 4-5 years old. Now they're in their 20s and still ride with us – great family times and camping. Now grandchildren will continue. We would love to see Ocala become a family riding area like Durhamtown Plantation in Georgia. They have one-way trails which are safe, campgrounds for all sizes of rigs and trailers, also cabins to shop. It would be nice to have several campground area spread throughout the forest.

General	What we have here is a big mess caused by a select group of individuals who will not be affected by any of this because they will continue to do what they please. The designated trail system has in effect closed several thousand acres of riding land East of SR 19 not to mention several more thousand acres in other parts of the forest that have been open to OHVs for a long time. Forcing all the riders in one area to use one 16 mile trail isn't safe! There is no direction control and with groomed trails the speeds will go up. What happens if you loose the trail and have to find your way back, will you be ticketed for not being on the trail? Will the hunters who use ATVs be allowed to free ride to a hunting spot? By law they should have the same rules we do. It appears that the politicians railroad this legislation thru in the middle of the night. If you can not come to meetings in the middle of the week to voice opposition then this goes through unopposed. Most people who use the land live several hours away and can not attend any meetings. What we need to know is how to stop this and return ONF to what it was.
	The new bathrooms at Big Scrub campground are great!
	There should be on-site medical help.
	It is my experience as a 4x4 rider that we tend to go slower and cause less destruction then ATV and ORM riders who have no regard for safety or well being of others.
	ONF can be a great place for recreation if the government agencies and environmental groups had less influence on the current management. The current management seems to have the "make it illegal so I don't have to deal with it" stance: I work for the government and I see it all the time. It may be due to the lack of personnel with a better outlook: Make it nice, charge a few dollars and increase my resources/benefits/pay/work conditions. National forests are under pressure to preserve lands as wilderness. Great make thousands of forest land unusable for everyone else because 2-3% of users (who won't spend a cent in the area) protest against the other 97% of users who spend many dollars locally. Check Croom Recreation Area's finances. The current management is just nuts; the "District Ranger" has the ability to close the forest to the public whenever and however he/she sees fit. In short if the Ranger does not like any particular group such as hunters, OHV enthusiast, mountain bikers he/she can simply designate that recreation area as damaged and send everyone away.
	Our family enjoys riding in the forest. It is beautiful and wonderful to enjoy our time together outside with nature. ATV and motorcycles take a lot of the blame that is unfair. I have met so many wonderful people at Big Scrub campground and most are ATV riders. We are responsible, mature adults trying to enjoy our sport.
	We love to ride through the forest. Its one of the most fun family outings we have. We ride and have told many family's about our rides, and they have taken their family and friends. We need more places to provide kids and parents a place to share values and fun.

General	We had a great riding experience n Ocala with our grand children. The people we met we considerable and friendly.
	We are new to the sport, and have met many nice people when riding in Ocala, and have seen a few bears.
	Why is it that now we must be charged money through titles and daily fees and yet we have fewer places to ride?
	Why is it that a national forest, being a government owned land and therefore a taxpayer owned land can be restricted as to how much of it can be accessed?
	We enjoy getting out and riding in the woods. Its relaxing and fun for the whole family. Our ATVs are not racing bikes; just get out and enjoy riding ATVs. We like putting along and riding the trails. We always pack a lunch and make a day out of it.
	Every time we ride in the Ocala national Forest there are more rules, fences, and signs limiting where you can ride. I feel that the more they limit us the more people are tempted to break the rules. I am not a destructive rider and have never encountered any other destructive riders in that area. I think we should be more open to enjoy our natural resources and their beauty.
	OHV recreation is a great sport, and Ocala is big enough for everyone; hunters, campers, OHVer's and hikers if managed correctly.
	We camp in Ocala about 8 to 10 times a year and ride ATVs every time we go.
	It seems increasingly more difficult to operate any OHV in other than your own back yard. My family and I stay off public roads, pay taxes and insurance on each OHV, haul our OHVs safely to a national forest or other designated place to ride, and still face tougher and tougher rules, regulations, and fewer opportunities to enjoy quality outdoor family time!
	I have lived in Florida my whole life and have always ridden off road motorcycles. I have watched the cow pastures turn to golf courses and every farm bull dozed and houses built and riding areas shut down. Croom has been opened since the sixties the state forestry makes more money at that park than any other. Why don't we have riding areas? We are not the problem. We observe nature, we don't shoot it, or put our dogs on it, or ride up and down that roads all day looking for our dogs. The ONF is a sand ridge that the government has grown and profited on pine trees for years, riding through pine scrub that's cultivated isn't going to hurt the ecology of the area. Operating in wetlands and other sensitive areas will, so penalize the people that hurt the protected area. Also, make off-roaders wear numbered plates to identify the clowns. Most serious riders pick up their trash and wear full gear. Learn from California, they accommodate dirt bikers, you ride into a riding arch and they check for spark arrestors and you pay 8.00 for parking or 10.00 for primitive camping.
	Trails were well marked and some were very rustic. I look forward to the next visit.

General	ATV Riders need to have more respect for the environment. For instance a couple of younger riders threw their trash on the ground, and that only ruins it for the rest of us. Maybe you should say what you bring in, take out, or put some trash cans in the parking areas.
Inconsistent and/or discourteous management	My family and I have been going to Big Scrub Campsite for 4 years. The biggest complaint we have is the inconsistency of enforcement of the rules at the campsite. We have met many of the camp managers and some are enforcers and some are not. We have had many sleepless nights due to loud people, loud music, fireworks, chainsaws, and generators after curfew hours. This is our biggest complaint. Some of the past managers were great at keeping the noise down and some where not. This is not fair for the families that visit with children. It would be great if there was another campsite so there could be more space and diversity. Volunteer enforcement gives a hard time to legal riders. Not educated enough about regulations and tell OHV riders the wrong things sometimes.
Litter	Detrimental behavior to the Ocala NF OHV trails system will be caused by the same people who would litter and destroy their own neighborhood roads and property. You see this on the paved roads and from the forest in the form of litter, driving habits, and lack of regard for fellow drivers. Litter seems to be the most serious problem I have seen while riding in the forest. I typically will attach a five gallon bucket to my ATV and usually within 30 minutes will fill it with soda, water, and beer cans and bottles. Those who left the trash will not change their behavior. As usual, policing the litter will be done by those who don't litter. I was amazed at the amount of trail litter to the extent of a jacuzzi! Should have sponsor cleanup days for littering. Stricter patrol of forest for dumping which trucks are doing, not ATVs or motorcycles. I am tired of picking up beer bottles in the forest. More trash cans are need at trailhead and campground areas. I am saddened by other riders who have chosen to litter riding areas. I came back with a full 32 gallon trash bag of garbage today. Trash barrels need to be placed at Blue Sink, it would at least help the litter situation. A recycling program to reduce litter in the forest is needed, and it would make it easier for those of us who pick up trash to dump at filling stations for free. I support conservation of area I just feel that there are to many conservation areas in this state in relation to "just having fun" areas. I also strongly support heavy fines for dumping and littering, I hate seeing old automobiles and appliance dumped off trails. I think everyone would agree with me here. Not to point a finger but ATVs and motorcycles should not be penalized for this. I have never seen anyone strap a refrigerator to the back of their ATV to dump it in the woods, you can only blame trucks for that.
Rules, regulations, & monitoring	Enforce the rules, especially the need for wearing safety gear. Set 1st gear only rules inside/around campsites so people entering and leaving campsites are safer, especially with small children.

Rules, regulations, & monitoring	There should be a registration system where riders log in and out so that rangers can track trouble makers.
	Ban alcohol use in forest. Although I drink, I think most problems: litter, rule violating, parties, fires in unauthorized areas etc. are all strongly influenced by the excessive use of alcohol.
	It seems as though 4-wheel drives are classified under OHV. The only problem that I have with that is when environmentalist look at the problems during off-roading. When rangers hand out citations for violations there is no way to determine which type of OHV is really the menace. During a meeting with the Florida 4WDA; I suggested that a small section of the citation form be dedicated to a small box listing the 3 main types of OHVs so as the rangers and the environmentalist can see who is actually the biggest problem. The ranger can check the appropriate box. Not all ATVs are a menace. At least 50% of them show consideration. On the other hand, 90% of the motorcycles have total disregard for all. Jeeps aren't perfect either, but my club tries to have total concern for all.
	Place more patrol rangers at trailheads; alcohol use in the woods is a problem.
	More enforcement of campground rules are needed, however rules given about riding areas are good.
	Speed limits in the camping areas need to be idle speed only, and strictly enforced.
	The safe ATV riders and family groups should be protected from the crazies on the weekends. This includes the higher speed ATVs and motorcycles that continue to race up and down the powerlines in the scrub area, doing wheelies and donuts. It is a lot of fun riding the trails during the week with fewer riders. At times you take your life into your own hands on the weekends. Therefore, I think you should (1) set speed limits, (2) set noise levels, (3) improve law enforcement on the weekends.
	Make rules about proper behavior in loading areas (i.e. no donuts, rutting, etc.).
	I feel that there was an issue with people drinking and acting out of control on their OHVs. I am not saying that you should not be able to have alcoholic beverages, but try to enforce that fact that there are children riding their OHVs as well as adults. When people camp they should be allowed to drink responsibly, but when operating an OHV they should not. I have seen several times people getting stopped for their ruthless behavior. They will hide the beer in the woods and come back to retrieve it later. I personally love to come to ONF and ride, but people like that scare me. I have children to protect. Again, I am not saying that alcohol should be banned, but please make people aware they are still driving under the influence.
	The 150cc restrictions for ATVs is too limiting for the four-wheelers on the market. I suggest 250cc for ATVs and 125cc for motorcycles for those under 16 yrs. old.

Safety	Have designated hunting/riding areas during hunting season so those riding OHVs do not disturb hunters and create undue conflict.
	Should have designated hunting areas.
	We enjoy family time while in the forest and riding our ATVs. The main problems are hunters and trail maintenance. We look forward to spending more time in the forest and will do our part to keep it clean.
	We just stayed at the beginning of hunt season. Although we didn't run into any problems, I do think people on ATVs and Motorcycles need to wear reflective orange to help hunters notice them better. Mostly everyone had on camouflage and I think the noise from the ATV is the only thing to let the hunters know we were there. We saw so many hunters with guns hiding and walking on ATV trails. With my children riding with me I would like to feel more safe riding through the forest especially during the hunt season. Trail designated for ATVs only and boundaries for hunters should be designated. All it takes is one stray bullet! If this has already been done it does not seem like its being enforced.
	Hunters need to be separated from OHV areas, or OHV recreation needs to be shut down during hunt season.
	Hunters should not be allowed in riding areas.
	I am concerned for the safety of riders going in different directions on the same trail. Many turns are looping and tight and the possibility of a collision is very high. One way trail systems would be a solution but would quickly rut the trail. Change of direction every other week may work if that wasn't somehow possible.
	All marked OHV trails should be one-way to avoid collisions, which could be fatal.
	Have "one way" trails to avoid head-on collisions (had a few close calls on blind bends).
	No 4x4 trucks in the area. Its dangerous to allow this type of multi-use.
	There should be designated areas for ATVs and motorcycles on managed trails that have specific direction markings to avoid head on collisions. After two years, those trails are closed and new ones opened up to allow those trails to heal.
	OHV riders and hunters need to be separated during hunting season for safety reasons.
	Need one way trails.
	Some of the narrow trails should be marked one-way to keep from having a wreck on the curves.
	Please make your trails one-way, it was very dangerous for faster riders to be going at a practice race speed and other riders coming at you head on.
	You need to make it a requirement for all riders to wear helmets.
	We need to make one-way trails.
Trail need maintenance	Trails need to be groomed. OHV owners should help or pay a fee to help the state do this.
	Trails need to be smoothed out as well as a designated area just to ride with hills and jumps or even a trail.
	The powerline trail is too bumpy. Jars your lower back.

Trails need maintenance	Smoother trails would be a huge safety factor and prevent numerous accidents and injuries.
	Ocala is a wonderful day out with the family if conditions are OK. Sugar sand is a little dangerous for beginners and the non-stop whoops make it a little taxing. Whoops are OK, having them throughout the entire trail is a little too much.
	Whoops are great for motorcycles, but 4x4s and ATVs like more flat courses with banked curves. An equal amount of both would be great.
Unclear trail markings and signage	I try to teach my kids to always follow the rules, but where are the marked trails?
	With the trail system they have now it is impossible to know if you are on a numbered road or not until you come to an intersection and there's a sign. Sometimes trails turn into numbered roads. I think this is a serious problem.
	The ride I went on in January of 2007 was the first time I've seen trail markers. I found them to be very confusing as to which trail was which, and which direction each trail went in. I was very disappointed to see Rodman Dam closed. This was a great training/rest area.

