Public Support, Demand, and Potential Revenue for Recreation at the McDonald-Dunn Forest

Final Report

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Although several people assisted with this project, any errors, omissions, or typographical inconsistencies in this final report are the sole responsibility of the authors. All content in this final report was written by the authors and represents views of the authors based on the data and does not necessarily represent views of the funding agency or others who assisted in this project.

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EXECUTIVE SUMMARY

Objectives

The McDonald-Dunn Forest is an 11,250 acre multiple use forest located northwest of Corvallis, Oregon. This forest is owned and managed by the College of Forestry at Oregon State University for teaching, research, demonstration, timber harvest, cultural resources, and recreation. Day use recreation has been open to the general public free of charge and primary activities include hiking, walking, trail running, dog walking, mountain biking, and horseback riding.

The annual budget for recreation management at this forest has declined dramatically in recent years. Timber harvest also declined before being suspended until timber market conditions improve, limiting supplemental funds that could be used for forest and recreation management. These budget constraints have made it challenging to manage this forest and accommodate high use levels without deteriorating resource conditions and user experiences. Specific objectives of this project, therefore, were to:

- Determine the extent that users are willing to pay to access the McDonald-Dunn Forest under various mechanisms (e.g., donations, user fees), their support and opposition to these mechanisms, and their expectations for onsite improvements in return for payments.

- Describe user activities, demographic characteristics (e.g., age, residence), and opinions about conditions and management (e.g., satisfaction, conflict) at this forest.

- Understand current use levels and demand for recreation at the McDonald-Dunn Forest.

- Provide recommendations regarding possible payment mechanisms for access to the McDonald-Dunn Forest and for maintaining or improving conditions at this forest.

Methods

Data were obtained from onsite questionnaires administered to recreationists as they exited the McDonald-Dunn Forest. A stratified random sampling design was used, as follows:

- Data collection occurred for a full year from October 2008 to September 2009.

- An attempt was made to contact each party and one questionnaire was given to each household in each party to the person with the most recent birthday. Nobody completed the questionnaire more than once during the year.

- Sampling dates were randomly selected, but the time of day and site strata were rotated. Dates were categorized into weekdays (Mondays, Tuesdays, Wednesdays, Thursdays) and weekends (Fridays, Saturdays, Sundays, holidays). About half of the weekdays and weekends were randomly selected for sampling each month, and sampling was in both morning or afternoon strata (morning: 7:30 am to 12:30 pm in fall, 8:00 am to 12:00 pm in winter, and 8:00 am to 1:00 pm in spring and summer; afternoon: 12:30 pm to 5:30 pm in fall, 12:00 pm to 4:00 pm in winter, and 1:00 pm to 6:00 pm in spring and summer).

- Questionnaires were completed onsite (face to face) by users at the five main access gates: Oak Creek, Jackson Creek, Lewisburg Saddle, Peavy Arboretum, and Highway 99. When sampling at Lewisburg Saddle and Highway 99, questionnaires were also administered at Sulphur Springs and 400 Rd. (Dunn Forest). Given the remoteness and low visitation at these two sites, a drop off and mail back method was used where a questionnaire, stamped envelope, and letter explaining the study were left on each vehicle parked at these sites and respondents were asked to complete and mail back the questionnaire. Onsite counts of users exiting the forest were also recorded using hand held counters during all sampling dates and times to estimate forest use levels.

- In total, 1,463 people were contacted and the sample size or number of completed questionnaires was *n* = 1,068. This sample size allows generalizations about the total population of users at ± 3% with 95% confidence and ± 4% with 99% confidence. The overall response rate was 73% percent. Sample sizes and response rates at each site were: Oak Creek *n* = 283 (72% response), Lewisburg Saddle *n* = 284 (74% response), Jackson Creek *n* = 107 (75% response), Peavy Arboretum *n* = 201 (76% response), Highway 99 *n* = 134 (76% response), Sulphur Springs *n* = 48 (59% response [drop off / mail]), and 400 Rd. (Dunn forest) *n* = 11 (52% response [drop off / mail].

Results

Personal and Visit Characteristics

- Almost all users have gone hiking or walking in this forest before (94%), 60% have walked dogs in this forest, 55% have gone nature viewing, 52% have run or jogged the trails, 47% have mountain biked, and 24% have gone bird watching in this forest. Fewer users have gone horseback riding (7%) or hunting (2%) in this forest.

- The primary activities in which users participate in this forest are hiking or walking (42%), trail running or jogging (21%), dog walking (17%), and mountain biking (15%); few users consider horseback riding (3%) or nature viewing (1%) as their main activities.

- Repeat visitation is high, as almost half of users (46%) have been recreating in this forest for over 10 years (20% for 20 or more years). Only 15% of users have recreated in this forest for one year and users, on average, have spent 11 years recreating at this forest.

- Over 36% of users visit this forest at least twice a week, 18% visit once a week, and 19% visit two or three times a month. The remaining 28% visit once a month or less.

- Most users spend one hour or less (26%) or one to two hours (53%) at this forest.

- The majority of users typically visit most often in the summer (52%), but 23% visit in the fall, 15% visit in spring, and the smallest proportion (9%) visit in the winter.

- Most users visit on their own (53%) or with a second person (29%). Fewer users visit in groups of three or four (13%), or five or more people (5%).

- Most users drive vehicles to this forest (86%); only 8% walk or jog and 6% ride bikes.

- Approximately half of users (51%) bring dogs with them on a typical visit to this forest.

Satisfaction with Experiences and Conditions

- Overall satisfaction was extremely high, as 96% of users were satisfied and only 4% were dissatisfied. The highest proportion of users was "very satisfied" (66%).

- Users considered the most *important* characteristics at this forest to be experiencing nature (97%) and escaping crowds (95%), amount of litter (94%), scenic views (89%), number and maintenance of trails (88%), not having to pay a fee (82%), trailhead and directional signs (78-79%), and safety from logging operations (71%). The majority of users also felt that it was important to learn about a working forest (50%). The least important attributes were horse trailer parking (10%), presence of managers (16%), timber harvesting (33%), and toilets (48%).

- Users were most *satisfied* with experiencing nature (96%) and escaping crowds (91%), not paying a fee (89%), amount of litter (89%), trail maintenance (88%), scenic views (86%), number of trails (80%), and vehicle parking (73%). The majority of users were also satisfied with safety from logging operations (65%) and opportunities to learn about a working forest (54%). Users were least satisfied with horse trailer parking (19%), but

this did not apply for many, as 75% selected "neither" for this attribute. Satisfaction was also lower for timber harvesting (33%), horse waste (44%), and manager presence (45%).

- Relationships between satisfaction and importance of forest attributes showed that users thought managers were doing a good job with most aspects of experiences and conditions at this forest. However, the amount and quality of trailhead signs, directional signs on trails / roads, safety from logging, and amount of animal waste were highly important to users, but these users were only slightly satisfied with these attributes at this forest.

- The majority of users observed mountain bikers riding too fast (52%) and failing to give verbal warnings on approach (50%), 39% encountered bikers not yielding the right of way, and 28% witnessed them being rude or discourteous. Up to one-third (33%) of users believed that these behaviors were a problem in the forest. In total, 28% of users also observed people on foot failing to give verbal warnings and 24% encountered people on foot being rude or discourteous. Less than 20% of users observed conflict events associated with horseback riders or people on foot not yielding the right of way.

- There was two-way out-group conflict between horseback riders and mountain bikers. Up to 79% of horseback riders, for example, observed mountain bikers riding too fast and failing to give verbal warnings on approach. Up to 32% of bikers observed horseback riders not yielding the right of way and failing to give verbal warnings on approach.

- There was also two-way out-group conflict between mountain bikers and people on foot. Between 37% and 52% of people of foot, for example, observed mountain bikers not yielding the right of way, failing to give verbal warnings on approach, and riding too fast. Likewise, one-third of mountain bikers (31% to 32%) witnessed people on foot being discourteous, not yielding the right of way, and failing to give verbal warnings.

- There was one-way out-group conflict between horseback riders and people on foot. Up to 62% of horseback riders observed people on foot failing to give verbal warnings and between 31% and 41% experienced them being rude and not yielding the right of way. Conversely, less than 18% of people on foot had these issues with horseback riders.

- There was some in-group conflict between mountain bikers and other mountain bikers, as 49% of bikers observed other bikers failing to give verbal warnings, 47% saw mountain bikers riding too fast, and 43% witnessed other bikers not yielding the right of way.

- In total, only 11% of users experienced conflict with people on foot or horseback. Over one-third of users (34%), however, experienced conflict with mountain bikers, with most of this being interpersonal (indirect or direct face to face) and instigated largely by mountain bikers riding too fast and failing to give verbal warnings upon approach.

- Most mountain bikers (73% to 83%) did not experience any conflict with activity groups and their highest conflict (27%) was with other mountain bikers. Conversely, almost all of those on foot (91%) did not experience conflict with horseback riders or other people on foot, but 34% experienced conflict with mountain bikers with most of this being interpersonal conflict. Horseback riders reported the highest conflict with both mountain bikers (59%) and people on foot (52%) with most of this being interpersonal conflict.

Current and Future Management Strategies
- Almost all users responded correctly by selecting Oregon State University / College of Forestry (82%) when asked what agency or organization is currently responsible for managing this forest. A few respondents were unsure (11%), 4% selected Oregon Department of Forestry, and the remaining 4% selected other agencies.

- The largest percent of users supported not changing anything at this forest and keeping things as they are now (65%), but a majority supported providing more trails designated only for people on foot (e.g., hike, jog; 53%). Almost half of users supported providing better user information about appropriate behavior (47%), providing more trails only for mountain biking (45%), and providing more technical or challenging trails (45%). Only 34% of users supported providing trails designated only for horseback riding, 22% supported directional trails (e.g., uphill, downhill only), 19% supported requiring dogs be kept on leash, and only 8% supported increasing the presence of management personnel.

- Users were asked if they had ever paid use fees for recreation on any local, private, state, and / or federal lands, and 83% had previous experience paying fees to access these types of lands and only 14% did not have experience paying these types of fees.

- Users were also asked what source(s) they thought pays for recreation management at this forest. In total, 65% selected timber harvest, 50% selected grants and subsidies, 47% selected state taxes and gifts and donations, 29% were unsure, 21% selected local taxes, and 16% selected federal taxes. It is clear that there was some confusion among users about what sources currently pay for recreation management at this forest.

- Users were divided on whether they thought that recreationists should help pay for recreation management at this forest, as 37% were unsure, 34% believed that users should pay, and 28% believed that users should not pay.

- If users are ever asked to pay a fee to visit this forest in the future, the highest percent (54%) would prefer to do so with a voluntary donation. If a fee was mandatory, the most preferred method of payment would be an annual (i.e., yearly) use fee or pass (36%), whereas few users would prefer a seasonal use pass (6%) or a daily fee (4%).

- Support was high for voluntary contributions (93%), as 87% supported voluntary money donations and volunteering time to assist management, and 79% supported endowments (e.g., sponsor / name a trail). In addition, 83% of users were willing to pay a voluntary money donation, with an average donation of $30.80 and a median donation of $20.00. The most common listed donation amounts were $5.00, $20.00, $50.00, and $100.00.

- Only 28% of users supported a mandatory fee, but 80% understood the need and would be willing to pay a fee. Some fees, however, were more strongly supported than others. The most supported mandatory fee was an annual use fee or pass, which was supported by 39% of users and 76% were willing to pay this fee type. Average willingness to pay an annual pass was $35.98, with the most common listed amounts of $20.00, $25.00, and $50.00. In total, 31% supported a seasonal use fee or pass, but 67% were willing to pay this fee. Average willingness to pay a seasonal pass was $20.98, with the most common listed amounts of $10.00, $20.00, and $25.00. The least supported fee was a daily fee (12% support) and only 50% were willing to pay this fee. Average willingness to pay a daily fee was $2.76, with common listed amounts of $2.00, $1.00, $5.00, and $3.00.

- The majority of users believed that paying a fee to recreate at this forest would cause them to expect better maintenance of facilities / services (61%), make them feel like they would be helping to protect this forest (59%), and make them feel good because they would be helping to cover management costs (57%). Approximately 48% of users believed that a fee would cause them to expect more facilities and services. Fewer users believed that a fee would cause them to recreate at this forest less often (38%), make recreating at this forest too expensive (20%), improve their enjoyment (15%), make them more willing to comply with regulations (14%), or stop recreating at this forest (13%).

- A choice experiment was used to measure user tradeoffs between paying an annual fee / pass and expecting more and improved facilities and services. The most important factor in respondents' willingness to pay an annual fee was number of trails followed by trail signs, whereas the least important factors were parking and trash cans. Respondents were willing to pay the most per year for more trails (number of trails = $20.94). Next, they were willing to pay $11.64 for more trail direction / information signs followed by $7.86 for permanent toilets at trailheads. Respondents would receive disutility to the amount of -$4.03 per year for more parking and -$2.31 for more trash cans. Users would be willing to pay the highest annual fee ($40.43) pending that the current parking and trash cans would be retained, but new permanent toilets would be provided, more trail direction / information signs would be installed, and more trails would be created in this forest.

Sociodemographic Characteristics of Users

- Users are relatively evenly split between females (51%) and males (49%).
- The average age of users is 45 years old. The largest proportions are 50 to 59 years old (28%) and 40 to 49 years old (20%); 16% of users are 20 to 29 years old and 18% are between 30 and 39 years old. Few groups contain children under 16 years old (8%).
- Users are highly educated, as 37% have earned a four year college degree (e.g., bachelors) as their highest level of education achieved and 43% have an advanced degree beyond a four year degree (e.g., masters, Ph.D., medical, law). Most users are not currently students (82%), as only 18% are students.
- Most users live in Corvallis (71%) or Albany (9%), with 21% living within 1 mile of this forest, 43% one to five miles from this forest, and 36% living five or more miles away.
- Annual household income of users averages approximately $64,000 with the largest proportions earning $30,000 to $69,999 (32%) or $70,000 to $109,999 (28%).

Use Level Estimates

- The total number of *visits* estimated for the McDonald Forest between October 2008 and September 2009 (one year) was 105,000 plus or minus 10% (i.e., 94,500 to 115,500). The highest proportion of actual visitation was in spring and summer (56%) and the lowest was in fall and winter (44%). The highest proportion of visits was at Peavy Arboretum (34%) followed by the Lewisburg Saddle (25%), Oak Creek (25%), Jackson Creek (8%), and Highway 99 entry gates (8%). These estimates are conservative and do not include the Dunn Forest, visits made by users during non-daylight hours, or people accessing this forest using secondary or unauthorized access points (e.g., adjacent properties).
- Annual use levels have grown from an estimated 7,500 visits in 1980 to 33,000 in 1989 (Finley, 1990) to 65,000 visits in 1994 (Wing, 1998) to 105,000 in 2009. This growth in visitation is strongly correlated (adjusted R^2 = .998) with the increasing population of the Corvallis areas (e.g., 40,960 in 1980, 44,757 in 1989, 49,473 in 1994, 54,462 in 2009). Based on the relationship between the Corvallis area population and the number of visits to the McDonald Forest, the number of visits to this forest increases by 6.47 for each additional new resident in the Corvallis area. Visits are likely to conservatively increase (plus or minus 10%) to approximately 132,000 (i.e., 118,800 to 145,200) by 2015, and 156,000 (i.e., 140,400 to 171,600) by 2020 based on current population growth rates.
- Based on the high amount of repeat visitation reported by users in the questionnaires and researcher counts of visits, it is estimated that 11,702 separate individuals (i.e., *visitors*) visited this forest in 2008-2009 plus or minus 5,851 (i.e., 5,851 to 17,553 visitors).

- Possible revenues generated from an annual fee or pass charged to each *visitor* would be approximately $111,170 plus or minus $55,585 (i.e., $55,585 to $166,755). Similar to other fee programs (e.g., Northwest Forest Pass, State Parks Pass), however, if only one person in each group was required to have an annual pass, revenues generated from an annual fee or pass charged to each *group* would be approximately $59,450 plus or minus $29,725 (i.e., $29,725 to $89,174).

Recommendations

- This forest is visited by many people (approximately 105,000 *visits* ± 10% [94,500 to 115,500]; approximately 11,702 separate *visitors* ± 5,851 [i.e., 5,851 to 17,553]) many of whom live in Corvallis and other nearby communities, visit frequently (e.g., 36% visit at least twice a week), and have been visiting this forest for a long time (e.g., 46% for 10 or more years). Many residents and users also live adjacent to this forest's boundaries. It is clear that this forest is important to the lives of many residents and plays a pivotal role in the local community. If population trends continue rapidly diversifying and urbanizing, this forest will likely play an even greater role in the community in the future, so it will be critical for forest managers to work closely with users and the local community in any planning and management efforts, and disseminate information about this forest to the community. It is also recommended that recreation and its management be a much higher priority at this forest primarily because it is through recreation at this forest that many residents are able to experience forests and have the potential to learn about and appreciate these areas. This forest is also part of the fabric of the community and adds to the quality of life of residents through the provision of ecosystem services.

- In total, 93% of groups visiting the McDonald-Dunn Forest did not contain a child under the age of 16. Current nationwide trends show rapidly declining youth visitation and recreation in natural settings, and increasing child health concerns (e.g., obesity, attention deficit disorder). Managers should consider collaborating more with existing public and private programs (e.g., REI's Peak Program, Oregon Recreation and Park Association's Outdoor Seekers and Activity Passport) to enhance child and youth visitation at this forest, thereby providing opportunities for them to learn about and experience forests, increase their physical activity and improve their physical and mental health, and increase the visibility and importance of this forest, the college, and the university.

- Almost all users were aware that the College of Forestry at Oregon State University is currently responsible for managing this forest. It is important, therefore, for managers to continually seek information about and input from users, and then incorporate this input into future planning and management to ensure a transparent decision making process and also enhance the reputation and community perception of the college and university. Many users, however, appear to be unaware of where the recreation program funding currently comes from. Users should be made aware that their recreation experiences are subsidized through active timber management at the forest.

- Almost all users traveled to this forest in a motorized vehicle, so parking is important and should be considered in planning and management. Managers should, however, exercise caution because 73% of users were already satisfied with the amount of parking at this forest and the choice experiment showed that parking was associated with disutility in that users were willing to pay $4.03 per year just to keep the current amount of vehicle parking and not add more parking.

- Over half of users brought dogs with them to this forest, so it will be important to ensure adequate facilities to accommodate dogs and their owners (e.g., pick up bags, signs

specifying regulations or restrictions). This is important because only 57% of users were satisfied with the amount of dog waste / excrement at this forest. Managers should exercise caution if they ever consider implementing a policy that dogs are kept on leash given that only 19% of users supported this strategy.

- Almost all users were satisfied with their experiences and the conditions at this forest, and almost all forest attributes were in the "keep up the good work" category, indicating that users thought staff and managers were doing a good job managing this forest. Satisfaction, however, was lowest for the amount of horse waste / excrement, horse trailer parking, timber harvesting, and presence of management personnel. Managers may need to evaluate these issues to ensure that the forest is meeting user needs. Managers should also consider monitoring attributes such as the amount and quality of trailhead signs with information and regulations, directional signs on trails and roads, safety from logging and forestry operations, and amount of dog waste / excrement because these issues were highly important for users, but they were only slightly satisfied with these characteristics.

- Users considered the most important characteristics at this forest to be opportunities to experience nature and escape crowds, amount of litter, scenic views, number of trails and trail maintenance, trailhead and directional signs, and safety from logging and forestry operations. Managers should ensure that future planning, management, and monitoring focuses on these issues so that conditions and experiences do not deteriorate.

- There was evidence of substantial conflict among some activity groups, especially among mountain bikers, horseback riders, and other groups. Spatial or temporal zoning (e.g., more activity specific and less multiuse trails, more activity specific times of visitation) followed by additional funding for monitoring and enforcement would likely help to mitigate this conflict and improve user experiences. Providing trails designated for specific activity groups was supported by many current users. In addition, zoning some mountain bike trails by experience level similar to the approach used at alpine ski areas (e.g., green for novices, black diamond for experts) may help to reduce some of the conflict that is occurring between mountain bikers and other mountain bikers.

- The largest percent of users supported not changing anything and keeping things the same at this forest, but a majority also supported more trails designated only for people on foot and almost half supported providing better visitor information about appropriate behavior, providing more trails only for mountain biking, and providing more technical or challenging trails. Managers may want to consider some or all of these strategies.

- Visitation is expected to increase up to 145,200 visits by 2015 and 171,600 by 2020, so increasing funding of the recreation program will likely be necessary as demand rises.

- Given the declining budgets for recreation management at the McDonald-Dunn Forest, there is a need to identify and implement alternative funding sources that could generate additional revenue and recover some costs. A mandatory fee (annual, seasonal, daily) is *not* recommended for multiple reasons. First, although upward of 76% of users would be willing to pay a mandatory fee, less than 40% actually support the idea of implementing this type of fee. Although users would pay a mandatory fee, implementing this fee could reduce community support of recreation management at this forest. Second, the costs of implementing, administering, collecting, monitoring, and enforcing mandatory fees are high and would likely result in limited or no return on investment. Third, this forest has a permeable boundary with multiple adjacent private residences and several secondary or unauthorized access points, so monitoring and enforcing a fee would be challenging and require increased personnel and associated costs. Fourth, users' stated willingness to pay

(e.g., 76% willing to pay an annual fee, average of $36) are likely exaggerated by hypothetical and strategic bias. Hypothetical bias is related to the lack of experience a respondent may have in specifying a price for a commodity that has no longstanding tradition for being priced, such as a recreation use fee at an urban forest. Strategic bias occurs when a respondent deliberately overstates (i.e., make the fee so high that nobody but the respondent can afford it so they have the area to themselves) or understates true willingness to pay (i.e., make the fee so low that they could easily afford it). Fifth, state statute ORS 105.682 (http://www.leg.state.or.us/ors/105.html), which limits liability for any personal injury, death, or property damage when providing free access to lands for recreation and other activities (i.e., "the owner makes no charge for permission to use the land") could be voided with a mandatory access fee. Charging a fee for parking, however, may be one alternative at some of the access points, but this should be verified with city and county officials and university legal counsel before possible implementation.

- It is recommended, however, that managers increase the ability for users to make voluntary contributions. In total, 87% of users supported the idea of voluntary donations, 83% were willing to donate, and this was their most preferred method of payment. Many users were willing to donate, but expressed concerns that they did not know how and where to donate. It will be important to provide extensive public education informing users about: (a) how and where to donate; (b) the rationale and need for donating (e.g., implications of reduced funds for recreation management); and (c) that all donations collected will be retained and reinvested in this forest's management. Methods for collecting donations must be convenient and easily accessible, visible, and secure. Placing donation boxes at main entry points may be possible, but theft, vandalism, and collection costs and time may be prohibitive. Other options such as access gate / trailhead signs, media articles or advertisements, direct mailings, door-to-door campaigns at adjacent residences, and occasional in-person contacts at entry points requesting donations may be useful. Given that this forest is important to the lives of many residents and plays a pivotal role in the local community, managers should also strongly consider exploring a targeted and aggressive campaign to attract endowments and / or foundation accounts for both structural attributes (e.g., adopt a trail, trail connectors) and personnel (e.g., endow positions). Managers could also attract more public or special events similar to the current 50km trail run (e.g., mountain bike events, concerts in the woods) that could generate financial support through sponsorships and increase visibility for the forest, college, and university. Finally, managers should also consider a possible cost share or tax arrangement with the city or county given that the McDonald-Dunn Forest plays an important role enhancing: (a) community benefits and quality of life, (b) alternative recreation opportunities that complement city and county opportunities, (c) property values with incremental increases in property tax revenues, and (d) health and safety (e.g., safe off-street parking, toilets and garbage cans for waste and litter).

- Users provided a number of open-ended positive comments and negative comments and suggestions for improvement at the McDonald-Dunn Forest. Many of these comments may provide insights for future planning and management. The most common comments, in no particular order, focused on the: (a) amount of dog and horse excrement, (b) appropriateness of a fee system, (c) willingness to voluntarily donate money to this forest as long as users were told how and where to donate, (d) conflict with mountain bikers and horseback riders, (e) desire for more trails, (f) need for more signs and interpretive material, (g) dogs off leash and concerns about potential leash laws, and (h) forestry practices and logging operations in this forest.

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INTRODUCTION AND OBJECTIVES

The McDonald-Dunn Forest is an 11,250 acre multiple use forest located northwest of Corvallis, Oregon. This forest is owned and managed by the College of Forestry at Oregon State University for teaching, research, demonstration, timber harvest, cultural resources, and recreation. Day use recreation has been open to the general public free of charge and primary activities include hiking, walking, trail running, dog walking, mountain biking, and horseback riding.

The annual budget for recreation management at this forest has declined dramatically in recent years (e.g., approximately $120,000 to $13,000 by 2010). Timber harvest also declined before being suspended until timber markets improve, limiting supplemental funds that could be used for management. These budget constraints have made it challenging to manage this forest and accommodate high use levels without deteriorating resource conditions and user experiences. In addition, recreation use at this forest is expected to continue increasing, especially given its close proximity to population centers such as Corvallis, Adair Village, and Albany.

The goals of this project, therefore, were to examine public willingness to pay for access to the McDonald-Dunn Forest and support for alternative funding sources that could possibly be used as opportunities for generating additional revenue and recovering costs. This project also examined other issues, including the overall quality of user visits and their satisfaction with specific aspects of this resource and their experiences, attitudes toward management, and activity and demographic characteristics. Specific objectives of this project were to:

- Determine the extent that current users are willing to pay for access to the McDonald-Dunn Forest under various mechanisms (e.g., donations, endowments, user fees), their support and opposition to these mechanisms, and their expectations for any onsite improvements in return for any payments.

- Describe user activities, demographic characteristics (e.g., age, location of residence), and opinions about conditions and management (e.g., satisfaction, conflict) at the McDonald-Dunn Forest.

- Understand current use levels and demand for recreation at the McDonald-Dunn Forest.

- Provide recommendations regarding possible payment mechanisms for access to the McDonald-Dunn Forest and for maintaining or improving conditions at this forest.

The rationale for this project was to generate scientifically defensible baseline data that identifies potential funding sources and revenue opportunities for the McDonald-Dunn Forest, provide an understanding of relationships between this forest and its users, involve students in conducting research, and address research needs outlined in recent planning documents for this forest.

- *Funding sources and revenue generation.* A goal of this project was to reveal the probability of public support for possible alternative sources of funding recreation management at the McDonald-Dunn Forest, and the amount of revenue that may be generated by these sources conditional on any applicable liability and administrative issues. Data from this project may also be used in the future to leverage opportunities for attracting investments from additional sources and external research funds.

- *Understanding relevant stakeholders.* This research project provides a more complete understanding of recreation users at the McDonald-Dunn Forest and the importance of this forest in the local community.

- *Educational opportunities.* This project generates cutting edge data for incorporating into courses and other teaching opportunities including integration of the forests in recreation management courses, involves students in data collection and other aspects of scientific research, and promotes graduate student research culminating in a rigorous thesis.

- *Forest plan priorities.* This project addresses critical research priorities for the McDonald-Dunn Forest identified in the forest plan and recently approved monitoring plan, which highlighted the need for estimating demand for recreation by category of use and examining alternative mechanisms for funding delivery of recreation at this forest.

This final project report addresses these objectives by summarizing responses from onsite questionnaires conducted for a full year with individuals who visited the McDonald-Dunn Forest between October 2008 and September 2009. Results of this study will not only be used to understand users and their preferences at the McDonald-Dunn Forest, but also to inform future decision making, planning, and management at this forest.

METHODS

Data were obtained from onsite (i.e., face to face) questionnaires (Appendix B) administered between October 2008 and September 2009 to users as they exited the McDonald-Dunn Forest. Most sampling was conducted at the main access gates to this forest: (a) Lewisburg Saddle, (b) Oak Creek, (c) Peavy Arboretum, (d) Highway 99, and (e) Jackson Creek (Figure 1). Onsite questionnaires were necessary given that contact information (e.g., mail, email, telephone) required for alternative approaches such as telephone or mail surveys was not currently available because the College Forests does not systematically collect this information from users. Users were asked if they would be willing to complete a questionnaire, asked to read a letter of recruitment / consent, and asked to immediately complete and return the questionnaire onsite. Questionnaires were printed on both sides of two legal sized (8 ½ x 14) pages and folded into a small booklet that took most respondents approximately 15 to 20 minutes to complete. Respondents were provided with a clipboard and pen to complete a questionnaire onsite.

Figure 1. Map of study area and main sampling sites (modified from Wing & Shelby, 1999)

To increase the probability of achieving a representative sample of users, an attempt was made to contact each adult party and one questionnaire was given to the person in each household with the most recently passed birthday. Users were sampled without replacement (i.e., no one completed the questionnaire more than once) and a stratified random sampling design was used. Sampling dates were randomly selected, whereas the time of day and gate were stratified and rotated. Dates were categorized into weekdays (Mondays, Tuesdays, Wednesdays, Thursdays) and weekends (Fridays, Saturdays, Sundays, federal holidays). Approximately half of the weekdays and weekends were randomly selected for sampling each month, and sampling was conducted during morning or afternoon strata (mornings: 7:30 am to 12:30 pm in Fall, 8:00 am to 12:00 pm in Winter, 8:00 am to 1:00 pm in Spring and Summer; afternoons: 12:30 pm to 5:30 pm in Fall, 12:00 pm to 4:00 pm in Winter, 1:00 pm to 6:00 pm in Spring and Summer). Start times were selected because they began approximately one half hour after sunrise and ended one half hour before sunset, which corresponded with most day use recreation activity at this forest.

Supplemental data collection at secondary and lower use access points was completed at the Sulphur Springs (McDonald Forest) and 400 Rd. (Dunn Forest) gates on sampling days for Lewisburg Saddle and Highway 99, respectively. An explanatory cover letter asking respondents to complete the questionnaire and return it by mail, a questionnaire, and a self-addressed stamped envelope were left in a waterproof bag on vehicles parked near each gate. Vehicle and horse trailer (when applicable) license plates were also recorded in reference to a questionnaire identification number to limit the number of repeat contacts to three times if no response was received (i.e., they had not mailed back a questionnaire).

To minimize questionnaire length and reduce respondent burden, it was necessary to develop two different versions of the questionnaire (Appendix B). Both versions were identical except for the four scenarios (questions 14 to 17) measuring user tradeoffs in support of an annual fee / pass and facility upgrades. To adequately measure these tradeoffs, eight scenarios were necessary, but would have dramatically increased completion time and respondent burden. As a result, these scenarios were split into two sets of four scenarios divided between the two questionnaire versions. Each respondent, however, was asked to complete only one version, not both versions. The version that respondents received was systematically alternated (e.g., first person selected received version 1, the next person received version 2, the next person received version 1). In

addition to questionnaire data, onsite counts of users exiting the forest were recorded using hand held counters during all sampling dates and times to estimate forest use levels.

As shown in Table 1, the total number of completed questionnaires across all sites / gates was *n* = 1,068 with a response rate of 73%. This sample size allows generalizations about the total population of users at ± 3.0% with 95% confidence and ± 3.9% with 99% confidence, which is better than the conventional standard of ± 5.0% that has been widely accepted and adopted in recreation research (Mitra & Lankford, 1995; Vaske, 2008). Sample sizes and response rates at each site were: (a) Lewisburg Saddle *n* = 284 (74% response), (b) Oak Creek *n* = 283 (72% response), (c) Peavy Arboretum *n* = 201 (76% response), (d) Highway 99 *n* = 134 (76% response), (e) Jackson Creek *n* = 107 (75% response), (f) Sulphur Springs *n* = 48 (60% response [drop off / mail]), and (g) 400 Rd. (Dunn) *n* = 11 (52% response [drop off / mail].

Table 1. Sample sizes and response rates

Site	Contacted	Refused	Accepted (*n*)	Response Rate (%)
Lewisburg Saddle (onsite)	383	99	284	74
Oak Creek (onsite)	395	112	283	72
Peavy Arboretum (onsite)	264	63	201	76
Highway 99 (onsite)	177	43	134	76
Jackson Creek (onsite)	142	35	107	75
Sulphur Springs (drop off / mail)	80	32	48	60
400 Rd. (Dunn Forest) (drop off / mail)	21	10	11	52
Total	1,463	394	1,068	73

The questionnaires included questions on a range of topics such as prior visitation, activity participation, satisfaction, activity conflict, support and opposition toward management, willingness to pay to access this forest, and demographic characteristics. Results in this report are grouped into subsections according to these questions. To highlight key findings, data were often recoded into major response categories (e.g., agree, disagree; support, oppose), but descriptive findings of all uncollapsed questions (i.e., strongly, slightly agree) are provided in Appendix C.

RESULTS

Personal and Visit Characteristics

Activity Groups. The questionnaires asked respondents to: (a) check all activities in which they had ever participated in the McDonald-Dunn Forest, (b) select one primary activity in which they were participating in this forest on the day they were surveyed, and (c) select one primary activity in which they typically participate at this forest. Table 2 shows that almost all users have gone hiking or walking in this forest before (94%). In addition, 60% have walked dog(s) in this forest, 55% have gone nature viewing, 52% have run or jogged the trails, 47% have mountain biked, and 24% have gone bird watching in this forest. Fewer users have gone horseback riding (7%) or hunting (2%). Other activities listed include mushroom picking and photography. On the day when respondents were surveyed, the largest activity groups were hikers / walkers (41%), dog walkers (21%), trail runners (18%), and mountain bikers (14%). The primary activities in which users typically participate at this forest are hiking or walking (42%), trail running or jogging (21%), dog walking (17%), and mountain biking (15%). Few users considered horseback riding (3%), nature viewing (1%) or other activities (1%) as their primary activity.

Table 2. Activity group participation [a]

	Activities ever in forest [b]	Activity on day surveyed	Typical activity at forest
Hiking or walking	94	41	42
Trail running or jogging	52	18	21
Dog walking	60	21	17
Mountain biking	47	14	15
Horseback riding	7	3	3
Nature viewing	55	1	1
Bird watching (e.g., owls)	24	0	0
Hunting	2	1	0
Other [c]	8	1	1

[a] Cell entries are percentages (%).
[b] Percentages do not sum to 100% because respondents could check more than one activity.
[c] The most popular "other" activities were: mushroom picking / mushroom hunting, photography, research / work.

Frequency and Duration of Visitation. Respondents were asked four questions related to their duration and frequency of visitation: (a) how many years they have been recreating at the McDonald-Dunn Forest, (b) how often they have visited this forest in the past 12 months, (c) how many hours they spend in this forest on a typical visit, and (d) what season they typically

visit. Table 3 shows that repeat visitation is high, as almost half of users (46%) have been recreating in this forest for 10 or more years (20% for 20 or more years). Only 15% of users have recreated in this forest for only one year. On average, users have spent almost 11 years recreating in this forest. Over 36% of users visit this forest at least twice a week, 18% visit once a week, and 19% visit two or three times a month; the remaining 28% visit once a month or less. Most users spend one hour or less (26%) or between one and two hours (53%) at this forest on each visit (79% spend two hours or less). The majority of users typically visit most often in summer (52%), whereas 23% visit in the fall, 15% visit in spring, and the fewest (9%) visit in the winter.

Table 3. Frequency and duration of visitation

	Percent (%) or Mean (*M*)
Years recreating in forest	
1 year	15
2 to 4 years	21
5 to 9 years	18
10 to 19 years	26
20 or more years	20
Mean (average)	10.5 years
Visitation in past 12 months	
Less than 1 time / month (less than 12 times / year)	17
About 1 time / month (12 to 18 times / year)	11
About 2-3 times / month (19 to 45 times / year)	19
About 1 time / week (46 to 80 times / year)	18
About 2 times / week (81 to 130 times / year)	17
About 3 or more times / week (over 130 times / year)	19
Duration of typical visit	
1 hour or less	26
Between 1 and 2 hours	53
Between 2 and 3 hours	16
More than 3 hours	6
Mean (average)	1.9 hours
Typical season of visit	
Summer	52
Fall	23
Spring	16
Winter	9

Group Size. Respondents were asked to report how many people, including themselves, accompanied them at the McDonald-Dunn Forest on the day when they were surveyed. Most

users were visiting on their own (53%) or with one other person (29%). Fewer respondents were visiting in groups of three or four people (13%) and less than 5% were visiting in larger groups of 5 or more people (Table 4). The average group size was 1.87 people.

Table 4. Group size of users

	Percent (%) or Mean (*M*)
1 person (alone)	53
2 people	29
3 to 4 people	13
5 or more people	5
Mean (average)	1.87 people

Transportation to the Forest. The questionnaires asked users how they got to the McDonald-Dunn Forest on the day when they were surveyed. Table 5 shows that most users drive vehicles to this forest (86%) and only 8% walk or jog, 6% ride their bike, and 1% ride a horse to the area.

Table 5. Transportation to this forest

	Percent (%)
Drove motorized vehicle here	86
Walked / jogged here	8
Rode bicycle here	6
Rode horse here	1

Bringing Dogs to the Forest. The questionnaires also asked users if they typically bring dog(s) with them when visiting the McDonald-Dunn Forest. Table 6 shows that approximately half of users (51%) bring dogs with them on a typical visit to this forest.

Table 6. Users bringing dogs with them to this forest

	Percent (%)
Yes, brought dog(s)	51
No, did not bring dog(s)	49

Section Summary. Taken together, results in this section showed that:

- Almost all users have gone hiking or walking in this forest before (94%), 60% have walked dogs in this forest, 55% have gone nature viewing, 52% have run or jogged the trails, 47% have mountain biked, and 24% have gone bird watching in this forest. Fewer users have gone horseback riding (7%) or hunting (2%) in this forest.

- The primary activities in which users participate in this forest are hiking or walking (42%), trail running or jogging (21%), dog walking (17%), and mountain biking (15%); few users consider horseback riding (3%) or nature viewing (1%) as their main activities.

- Repeat visitation is high, as almost half of users (46%) have been recreating in this forest for over 10 years (20% for 20 or more years). Only 15% of users have recreated in this forest for one year and users, on average, have spent 11 years recreating at this forest.

- Over 36% of users visit this forest at least twice a week, 18% visit once a week, and 19% visit two or three times a month. The remaining 28% visit once a month or less.

- Most users spend one hour or less (26%) or one to two hours (53%) at this forest.

- The majority of users typically visit most often in the summer (52%), but 23% visit in the fall, 15% visit in spring, and the smallest proportion (9%) visit in the winter.

- Most users visit on their own (53%) or with a second person (29%). Fewer users visit in groups of three or four (13%) or five or more people (5%).

- Most users drive vehicles to this forest (86%); only 8% walk or jog and 6% ride bikes.

- Approximately half of users (51%) bring dogs with them on a typical visit to this forest.

Satisfaction with Experiences and Conditions

Overall Satisfaction. Respondents were asked "overall, how dissatisfied or satisfied are you with your recreation experiences at the McDonald-Dunn Forest?" Table 7 shows that overall satisfaction was extremely high, as 96% were satisfied and almost no respondents (4%) were dissatisfied. In addition, the highest proportion of users was "very satisfied" (66%).

Table 7. Overall user satisfaction at this forest

	Percent (%)
Very satisfied	66
Satisfied	30
Dissatisfied or neutral	4

Satisfaction and Expectations with Specific Characteristics. Although almost all users were satisfied with their overall visits at the McDonald-Dunn Forest, this does not mean that they were

satisfied with every aspect of this forest. In fact, uniformly high levels of overall satisfaction almost always occur in recreation research, thus are of only limited usefulness for managers (Manning, 2010; Needham & Rollins, 2009). Hendee's (1974) "multiple satisfactions" approach suggests that recreation resources offer people the opportunity for a range of experiences which, in turn, give rise to multiple human satisfactions. In other words, an individual's satisfaction is complex; he or she may evaluate several attributes of the setting and experience (e.g., resource, social, managerial). Satisfaction is based on multiple factors that differ from person to person rather than a single overall or "global" evaluation of satisfaction. Research has also shown that although recreationists may be satisfied with an aspect of the setting or their experience, it may not be important to them that this characteristic is actually provided or available (Manning, 2010). Users, for example, may be satisfied with information provided about regulations at an area, but feel that educational information is not an important characteristic of good experiences at the setting. This project, therefore, first measured respondent *expectations* by asking them the extent they believed that several attributes of the McDonald-Dunn Forest were *important* to their visits (e.g., trash cans, directional signs on trails, parking). Then, respondents reported their *satisfaction* of these same attributes at this forest to measure *performance* of these attributes.

Table 8. User *expectations* with specific characteristics at this forest

	Percent Important (%) [a]
Opportunity to experience nature	97
Opportunity to escape from crowds of people	95
Amount of litter	94
Opportunity for scenic views	89
Number of trails	88
Trail maintenance	88
Pay no fee to use this forest	82
Trailhead signs with information / regulations	79
Directional signs on trails / roads	78
Safety from logging / forestry operations	71
Amount of dog waste / excrement	68
Trail maps / brochures	68
Amount of parking for vehicles	60
Trash cans	58
Amount of horse waste / excrement	55
Opportunity to learn about a working forest	50
Toilets / bathrooms	48
Timber harvesting	33
Presence of management personnel	16
Amount of parking for horse trailers	10

[a] Cell entries are percentages (%) of users who rated the characteristic as 4 "somewhat important" or 5 "very important."

Table 8 shows that users considered the most important characteristics at this forest to be opportunities to experience nature (97%) and escape crowds (95%), amount of litter (94%), scenic views (89%), number of trails and trail maintenance (88%), not having to pay a fee (82%), trailhead and directional signs (78-79%), and safety from logging and forestry operations (71%). Interestingly, the majority of users also believed that it was important for them to learn about a working forest (50%). The least important attributes were parking for horse trailers (10%), presence of management personnel (16%), timber harvesting (33%), and toilets (48%).

Table 9. User *satisfaction* with specific characteristics at this forest

	Percent Satisfied (%) [a]
Opportunity to experience nature	96
Opportunity to escape from crowds of people	91
Pay no fee to use this forest	89
Amount of litter	89
Trail maintenance	88
Opportunity for scenic views	86
Number of trails	80
Amount of parking for vehicles	73
Safety from logging / forestry operations	65
Trailhead signs with information / regulations	65
Trail maps / brochures	62
Toilets / bathrooms	57
Amount of dog waste / excrement	57
Directional signs on trails / roads	57
Opportunity to learn about a working forest	54
Trash cans	53
Presence of management personnel	45
Amount of horse waste / excrement	44
Timber harvesting	33
Amount of parking for horse trailers	19

[a] Cell entries are percentages (%) of users who were 4 "somewhat satisfied" or 5 "very satisfied" with characteristic.

Table 9 shows that the majority of users were satisfied with most of these characteristics at the McDonald-Dunn Forest. Users were most satisfied with opportunities to experience nature (96%) and escape crowds (91%), not paying a use fee (89%), amount of litter (89%), trail maintenance (88%), scenic views (86%), number of trails (80%), and vehicle parking (73%). The majority of users were also satisfied with safety from logging / forestry operations (65%) and opportunities to learn about a working forest (54%). Users were least satisfied with parking for horse trailers (19%), but this did not apply for many users, as 75% selected "neither" satisfied nor dissatisfied

with this characteristic. Satisfaction was also lower for timber harvesting (33%), amount of horse waste / excrement (44%), and presence of forest management personnel (45%).

Figure 2. Importance-performance (I-P) analysis matrix

One approach for visualizing relationships between expectations (i.e., importance of attributes) and satisfaction (i.e., performance of these attributes) is Importance – Performance (I-P) analysis (Figure 2). Importance or expectations are represented as averages (i.e., means) on the vertical axis (i.e., *y*-axis) and average performance or experiences (i.e., satisfaction) are measured on the horizontal axis (i.e., *x*-axis). When combined, these axes intersect and produce a matrix of four quadrants that can be interpreted as "concentrate here" (high importance or expectation, low satisfaction or poor experiences; Quadrant A), "keep up the good work" (high importance or expectation and high satisfaction or good experiences; Quadrant B), "low priority" (low importance or expectation and low satisfaction or poor experiences; Quadrant C), and "possible overkill" (low importance or expectation, high satisfaction or good experiences; Quadrant D). This matrix provides managers with an easily understandable picture of the status of services, facilities, and conditions as perceived by users, and reveals conditions that may or may not need attention (Bruyere, Rodriguez, & Vaske, 2002; Vaske, Beaman, Stanley, & Grenier, 1996).

Figure 3. User importance-performance (I-P) analysis matrix

V1	Vehicle parking	V11	Dog waste
V2	Horse trailer parking	V12	Horse waste
V3	Toilets	V13	Presence of staff
V4	Trash cans	V14	No fee
V5	Trail maps / brochures	V15	Experience nature
V6	Trailhead signs	V16	Scenic views
V7	Directional signs	V17	Escape crowds
V8	Trail maintenance	V18	Learn of working forest
V9	Number of trails	V19	Timber harvesting
V10	Litter	V20	Safety from forest operations

Figure 3 is the I-P matrix for users and shows that almost all attributes were in the "keep up the good work" quadrant, indicating that users thought that the forest staff were doing a good job managing conditions and experiences at the McDonald-Dunn Forest. It may be important, however, to more carefully examine this quadrant (i.e., dashed lines) because there are a few attributes that were highly important to users, but these users were only slightly satisfied with these attributes. Managers should, therefore, consider monitoring attributes such as the amount and quality of trailhead signs with information and regulations, directional signs on trails and roads, safety from logging and forestry operations, and amount of dog waste / excrement.

Conflict among User Groups. Research has revealed several different types of conflict that can occur between people participating in similar or different types of outdoor recreation activities (see Graefe & Thapa, 2004; Manning, 2010 for reviews). *One-way* or *asymmetrical conflict* occurs when one activity group experiences conflict with or dislikes another group, but not vice versa. A study of snowmobilers and cross-country skiers, for example, showed that skiers disliked encounters with snowmobilers, but snowmobilers were not in conflict with skiers (Vaske, Needham, & Cline Jr., 2007). *Two-way conflict* occurs when there is resentment or dislike in both directions (e.g., skiers in conflict with snowboarders, snowboarders in conflict with skiers; Thapa & Graefe, 2003; Vaske, Carothers, Donnelly, & Baird, 2000). Conflict between users engaged in different activities (e.g., hikers versus mountain bikers) is known as *out-group conflict*, whereas conflict between participants in the same activity (e.g., hikers versus other hikers) is known as *in-group conflict* (Graefe & Thapa, 2004; Manning, 2010).

Most recreation studies have examined *interpersonal* or *goal interference conflict* where the actual physical presence or behavior of an individual or group interferes with goals, expectations, or behaviors of another individual or group (Vaske et al., 2007). A skier, for example, may experience interpersonal conflict if he or she is cut off by or collides with a snowboarder. Recent research has also introduced and explored the concept of *social values conflict* (Vaske, Donnelly, Wittmann, & Laidlaw, 1995; Vaske et al., 2007). Social values conflict occurs between groups who do not share similar opinions, norms, or values about an activity. Unlike interpersonal conflict, social values conflict is defined as conflict that can occur even when there is no direct physical contact or interaction among user groups (Vaske et al., 2007). For example, although encounters with horseback riders may be rare in some recreation settings such as parks and wilderness areas, recreationists may philosophically disagree about the appropriateness of such animals in these settings. A study of wildlife viewers and hunters showed that viewers did not witness many hunters or hunting behaviors (e.g., see animals being shot, hear shots fired) in a backcountry area because management regulations and rugged terrain and topography separated these two groups (Vaske et al., 1995). Regardless, viewers still reported conflict with hunters simply because of a conflict in values regarding the appropriateness of hunting in the area.

To differentiate social values and interpersonal conflict, studies have operationalized conflict by combining responses from two sets of questions asked in surveys of recreationists (Vaske et al.,

1995, 2007). First, individuals indicated how frequently events happened to them during their visit (e.g., being rude or discourteous, passing too closely). Responses were recoded as observed (i.e., at least once) or did not observe the event (i.e., never saw). Second, users evaluated if they perceived each event to be a problem (i.e., no problem or problem). Combining the occurrence of observation variables with the corresponding perceived problem variables produces a conflict typology (Figure 4). Individuals who observed or did not observe a given event, but did not perceive it to be a problem were considered to have experienced no conflict (i.e., no social values or interpersonal conflict). Those who never saw a given event, but believed that a problem still existed were considered to be expressing social values conflict. Users who saw a given event and believed that it caused a problem were judged to be indicating either interpersonal conflict or a combination of both interpersonal and social values conflict (Vaske et al., 2007).

Figure 4. Conflict evaluation typology (Vaske et al., 2007)

Understanding the extent and type of conflict is important for managing recreation settings because some management strategies may be effective for addressing one type of conflict, but not another. When conflict stems from interpersonal conflict, for example, spatial zoning or temporal segregation of incompatible groups may be effective. When the source of conflict is a difference in social values, user information and education may be needed (Graefe & Thapa, 2004; Vaske et al., 2007). Managers need to understand the basis of user concerns and types of conflict occurring in a particular setting to develop appropriate strategies for managing conflict.

This project measured the extent that conflict exists within and among various recreation activity groups at the McDonald-Dunn Forest. Consistent with past research (Vaske et al., 1995, 2007), respondents were first asked how frequently they had observed different situations / events for three different activity groups at this forest: (a) mountain bikers, (b) horseback riders, and (c) people on foot (e.g., hikers, walkers, joggers). Respondents were asked how frequently they had observed each of these activity groups: (a) being rude or discourteous, (b) not yielding the right of way, and (c) failing to give verbal warnings upon approach. In addition, respondents were asked how frequently they had observed both mountain bikers and horseback riders riding too fast. Responses for these situations / events were measured on 4-point scales of "never," "once or twice," "sometimes," and "many times." For analysis purposes and consistent with past research (Vaske et al., 1995, 2007), responses were recoded as "observed" (i.e., at least once) or "did not observe" the event (i.e., never saw event). Users were then asked if they believed that each of these events for each of the three activity groups was a problem. Responses were coded on 4-point scales of "not at all a problem" to "extreme problem." For analysis purposes and consistent with past research (Vaske et al., 2007), variables were recoded as "no problem" or "problem."

Table 10. Observed and problem conflict events reported by *all users in total*

	Observed Event at Forest (%)	Considered Event a Problem at Forest (%)
Mountain bikers riding too fast	52	33
Mountain bikers being rude or discourteous	28	20
Mountain bikers not yielding the right of way	39	26
Mountain bikers failing to give verbal warnings upon approach	50	30
Horseback riders riding too fast	6	6
Horseback riders being rude or discourteous	14	8
Horseback riders not yielding the right of way	17	10
Horseback riders failing to give verbal warnings upon approach	20	10
People on foot (hikers, walkers, joggers) being rude or discourteous	24	10
People on foot (hikers, walkers, joggers) not yielding the right of way	19	9
People on foot failing to give verbal warnings upon approach	28	9

Table 10 summarizes responses to these conflict events for all respondents taken together. The largest proportions and majority of forest users reported observing mountain bikers riding too fast (52%) and failing to give verbal warnings upon approach (50%), and slightly fewer encountered mountain bikers not yielding the right of way (39%) and being rude or discourteous (28%). Up to one-third (33%) of users believed that these mountain biker behaviors were a

problem at the McDonald-Dunn Forest. In total, 28% of users also observed people on foot (e.g., hikers, walkers, joggers) failing to give verbal warnings on approach and 24% encountered people on foot being rude or discourteous (Table 10). Not many users, however, believed that these events were ongoing problems at this forest (≤ 10%). Finally, less than 20% of users observed conflict events associated with horseback riders or people on foot not yielding the right of way, and only 10% or less felt that these were problem behaviors at this forest.

Table 11. Observed and problem conflict events reported by *people on foot*

	Observed Event at Forest (%)	Considered Event a Problem at Forest (%)
Mountain bikers riding too fast	52	34
Mountain bikers being rude or discourteous	28	20
Mountain bikers not yielding the right of way	37	26
Mountain bikers failing to give verbal warnings upon approach	49	30
Horseback riders riding too fast	5	5
Horseback riders being rude or discourteous	11	7
Horseback riders not yielding the right of way	14	8
Horseback riders failing to give verbal warnings upon approach	18	9
People on foot (hikers, walkers, joggers) being rude or discourteous	21	8
People on foot (hikers, walkers, joggers) not yielding the right of way	16	6
People on foot failing to give verbal warnings upon approach	26	7

Table 12. Observed and problem conflict events reported by *mountain bikers*

	Observed Event at Forest (%)	Considered Event a Problem at Forest (%)
Mountain bikers riding too fast	47	25
Mountain bikers being rude or discourteous	23	12
Mountain bikers not yielding the right of way	43	22
Mountain bikers failing to give verbal warnings upon approach	49	25
Horseback riders riding too fast	12	9
Horseback riders being rude or discourteous	28	17
Horseback riders not yielding the right of way	31	18
Horseback riders failing to give verbal warnings upon approach	32	16
People on foot (hikers, walkers, joggers) being rude or discourteous	32	15
People on foot (hikers, walkers, joggers) not yielding the right of way	32	16
People on foot failing to give verbal warnings upon approach	31	12

Table 13. Observed and problem conflict events reported by *horseback riders*

	Observed Event at Forest (%)	Considered Event a Problem at Forest (%)
Mountain bikers riding too fast	79	57
Mountain bikers being rude or discourteous	55	45
Mountain bikers not yielding the right of way	54	41
Mountain bikers failing to give verbal warnings upon approach	79	69
Horseback riders riding too fast	21	3
Horseback riders being rude or discourteous	17	7
Horseback riders not yielding the right of way	7	7
Horseback riders failing to give verbal warnings upon approach	14	10
People on foot (hikers, walkers, joggers) being rude or discourteous	41	31
People on foot (hikers, walkers, joggers) not yielding the right of way	31	31
People on foot failing to give verbal warnings upon approach	62	45

Tables 11, 12, and 13 summarize the extent that each activity group observed conflict events occurring within their own activity group and with other activity groups, and considered these events to be a problem at the McDonald-Dunn Forest. There was clearly two-way out-group conflict occurring between horseback riders and mountain bikers. Up to 79% of horseback riders, for example, reported observing mountain bikers riding too fast and failing to give verbal warnings on approach. Between 41% and 69% of horseback riders also believed that these events were problematic at this forest. Likewise, up to 32% of mountain bikers observed horseback riders not yielding the right of way and failing to give verbal warnings on approach, but most mountain bikers did not feel that these were ongoing problems at this forest.

There was also two-way out-group conflict occurring between mountain bikers and people on foot (e.g., hikers, walkers, joggers). Between 37% and 52% of people of foot, for example, reported observing mountain bikers not yielding the right of way, failing to give verbal warnings, and riding too fast. In addition, up to 34% of people on foot considered these mountain biker behaviors to be problematic at the McDonald-Dunn Forest. Likewise, approximately one-third of mountain bikers (31% to 32%) witnessed people on foot being discourteous, not yielding the right of way, and failing to give verbal warnings on approach, but most mountain bikers did not feel that these were ongoing problems at this forest.

There was one-way out-group conflict between horseback riders and people on foot. Up to 62% of horseback riders, for example, reported observing people on foot failing to give verbal

warnings on approach and between 31% and 41% of horseback riders observed people on foot being rude or discourteous and not yielding the right of way. Between 31% and 45% of horseback riders also believed that these events were problematic at the McDonald-Dunn Forest. Conversely, less than 18% of people on foot experienced these conflict events with horseback riders and less than 10% thought they were a problem at this forest.

Finally, there was some in-group conflict between mountain bikers and other mountain bikers, as 49% of mountain bikers observed other bikers failing to give verbal warnings on approach, 47% saw other bikers riding too fast, and 43% witnessed other bikers not yielding the right of way. Up to 25% of mountain bikers also believed that these events were a problem. There were minimal conflict problems between people on foot and other people on foot, and between horseback riders and other people riding horses at this forest.

Identical to previous research, combining the frequency of occurrence (observed, not observed) variables with the corresponding perceived problems (no problem, problem) for each user produced conflict typologies with three possible attributes for each activity group: (a) no conflict, (b) interpersonal conflict, and (c) social values conflict (Figure 4). K-Means cluster analyses were conducted on the events for each of the activity groups to obtain the total proportion of respondents in each activity experiencing each type of conflict. For each activity, cluster analyses were performed for 2, 3, and 4 group solutions. The 3 group solution provided the best fit. To confirm these solutions, data were randomly sorted four times and cluster analyses were conducted after each sort. These analyses supported the 3 group solution. The first cluster of individuals did not express any conflict (i.e., no conflict). Cluster 2 individuals consistently indicated social values conflict, and those in cluster 3 always expressed interpersonal conflict.

Table 14. No conflict, interpersonal conflict, and social values conflict in total

Conflict with …	No conflict	Social values conflict	Interpersonal conflict
… people on foot	89	5	7
… mountain bikers	66	13	21
… horseback riders	89	5	6

Table 14 describes the total amount and type of conflict for all respondents taken together, and shows that only 11% of users expressed conflict with people on foot and horseback. Over one-

third of users (34%), however, expressed conflict with mountain bikers, with most of this conflict being interpersonal (indirect or direct face to face) and largely instigated by mountain bikers riding too fast and failing to give verbal warnings upon approach (Table 10).

Table 15. No conflict, interpersonal conflict, and social values conflict for each activity

	No conflict	Social values conflict	Interpersonal conflict
People on foot conflict with …			
… other people on foot	91	4	5
… mountain bikers	66	13	21
… horseback riders	91	4	5
Mountain bikers conflict with …			
… other mountain bikers	73	10	18
… people on foot	83	5	12
… horseback riders	80	5	14
Horseback riders conflict with …			
… other horseback riders	89	11	0
… people on foot	48	21	31
… mountain bikers	41	19	41

Table 15 compares these types of activity conflict for each of the three activity groups. Most mountain bikers (73% to 83%) did not feel that they experienced any conflict with any activity groups and their highest conflict (27%) was with other mountain bikers (i.e., in-group), with most of this being interpersonal conflict. Conversely, almost all of those on foot (91%) did not experience conflict with horseback riders or other people on foot, but 34% experienced conflict with mountain bikers, again with most of this being interpersonal conflict. The activity group expressing that they encounter the most conflict is horseback riders, as the majority of those on horseback also experience conflict with mountain bikers (59%) and people on foot (52%), with the largest proportion of this conflict with both activity groups being interpersonal (indirect or direct face to face). Spatial or temporal zoning (e.g., more activity specific and less multiuse trails, more activity specific times of visitation) followed by additional funding for monitoring and enforcement would likely help to mitigate this conflict and improve user experiences. In addition, zoning mountain bike trails by specialization or experience level similar to the approach used at alpine ski areas (e.g., green for novices, black diamond for experts) may help to reduce some of the in-group conflict that is occurring between mountain bikers. Providing trails designated for specific activity groups was supported by many current users (Table 17).

Section Summary. Taken together, results in this section showed that:

- Overall satisfaction was extremely high, as 96% of users were satisfied and only 4% were dissatisfied. The highest proportion of users was "very satisfied" (66%).

- Users considered the most *important* characteristics at this forest to be experiencing nature (97%) and escaping crowds (95%), amount of litter (94%), scenic views (89%), number and maintenance of trails (88%), not having to pay a fee (82%), trailhead and directional signs (78-79%), and safety from logging operations (71%). The majority of users also felt that it was important to learn about a working forest (50%). The least important attributes were horse trailer parking (10%), presence of managers (16%), timber harvesting (33%), and toilets (48%).

- Users were most *satisfied* with experiencing nature (96%) and escaping crowds (91%), not paying a fee (89%), amount of litter (89%), trail maintenance (88%), scenic views (86%), number of trails (80%), and vehicle parking (73%). The majority of users were also satisfied with safety from logging operations (65%) and opportunities to learn about a working forest (54%). Users were least satisfied with horse trailer parking (19%), but this did not apply for many, as 75% selected "neither" for this attribute. Satisfaction was also lower for timber harvesting (33%), horse waste (44%), and manager presence (45%).

- Relationships between satisfaction and importance of forest attributes showed that users thought managers were doing a good job with most aspects of experiences and conditions at this forest. Managers should, however, monitor the amount and quality of trailhead signs, directional signs on trails / roads, safety from logging, and amount of animal waste.

- The majority of users observed mountain bikers riding too fast (52%) and failing to give verbal warnings on approach (50%), 39% encountered bikers not yielding the right of way, and 28% witnessed them being rude or discourteous. Up to one-third (33%) of users believed that these behaviors were a problem in this forest. In total, 28% of users also observed people on foot failing to give verbal warnings and 24% encountered people on foot being rude or discourteous. Less than 20% of users observed conflict events associated with horseback riders or people on foot not yielding the right of way.

- There was two-way out-group conflict between horseback riders and mountain bikers. Up to 79% of horseback riders, for example, observed mountain bikers riding too fast and

failing to give verbal warnings on approach. Up to 32% of bikers observed horseback riders not yielding the right of way and failing to give verbal warnings on approach.

- There was also two-way out-group conflict between mountain bikers and people on foot. Between 37% and 52% of people of foot, for example, observed mountain bikers not yielding the right of way, failing to give verbal warnings on approach, and riding too fast. Likewise, one-third of mountain bikers (31% to 32%) witnessed people on foot being discourteous, not yielding the right of way, and failing to give verbal warnings.

- There was one-way out-group conflict between horseback riders and people on foot. Up to 62% of horseback riders observed people on foot failing to give verbal warnings and between 31% and 41% experienced people on foot being rude or discourteous and not yielding the right of way. Conversely, less than 18% of people on foot experienced these events with horseback riders.

- There was some in-group conflict between mountain bikers and other mountain bikers, as 49% of bikers observed other bikers failing to give verbal warnings, 47% saw mountain bikers riding too fast, and 43% witnessed other bikers not yielding the right of way.

- In total, only 11% of users experienced conflict with people on foot and horseback. Over one-third of users (34%), however, experienced conflict with mountain bikers, with most of this being interpersonal (indirect or direct face to face) and largely instigated by mountain bikers riding too fast and failing to give verbal warnings upon approach.

- Most mountain bikers (73% to 83%) did not experience any conflict with activity groups and their highest conflict (27%) was with other mountain bikers. Conversely, almost all of those on foot (91%) did not experience conflict with horseback riders or other people on foot, but 34% experienced conflict with mountain bikers with most of this being interpersonal conflict. Horseback riders reported the highest conflict with both mountain bikers (59%) and people on foot (52%) with most of this being interpersonal conflict.

Current and Future Management Strategies

Knowledge and Attitudes about Management.   Several questionnaire items examined user knowledge and attitudes about management of the McDonald-Dunn Forest. First, users were asked what agency or organization they thought was responsible for managing this forest. Table

16 shows that almost all users responded correctly by selecting Oregon State University / College of Forestry (82%) and only a few respondents were unsure (11%) or selected other agencies such as Oregon Department of Forestry (4%).

Table 16. Knowledge of current management at this forest

	Percent (%)
Oregon State University (OSU) / College of Forestry	82
Unsure	11
Oregon Department of Forestry	4
Oregon Parks and Recreation Department	1
United States Forest Service	1
Corvallis Parks and Recreation Department	1
Benton County Parks	1
United States Bureau of Land Management	0

Users were also asked the extent that they would support or oppose nine possible strategies for managing this forest in the future. Table 17 shows that the largest percent of users supported not changing anything and keeping things the same (65%), but a majority also supported more trails designated only for people on foot (53%). Almost half of users supported providing better visitor information about appropriate behavior (47%), providing more trails designated only for mountain biking (45%), and providing more technical or challenging trails (45%). In total, 34% of users supported providing trails designated only for horseback riding, 22% supported providing directional trails (e.g., uphill or downhill only), 19% supported requiring that all dogs be kept on leash, and only 8% supported increasing the presence of management personnel.

Table 17. Support and opposition to possible future management strategies

	Percent Support (%) [a]
Do not change anything / keep things as they are now	65
Provide more trails designated only for people on foot (hike, walk, jog)	53
Better inform visitors about appropriate behavior	47
Provide trails designated only for mountain biking	45
Provide more technical / challenging trails	45
Provide trails designated only for horseback riding	34
Provide directional trails (e.g., uphill only, downhill only)	22
Require that dogs be kept on leash	19
Increase presence of management personnel	8

[a] Cell entries are percentages (%) of users who 4 "somewhat support" or 5 "strongly support."

Willingness to Pay for Access. Recent budget constraints have made it challenging to manage the McDonald-Dunn Forest and accommodate recreation use without deteriorating the natural environment and user experiences. Several questionnaire items, therefore, examined the extent that current users would be willing to pay for access to this forest under various payment mechanisms (e.g., donations, endowments, user fees), their support and opposition to these mechanisms, and their expectations for any onsite improvements in return for any payments. Users were first asked if they had ever paid use fees for recreation on any local, private, state, and / or federal lands. Table 18 shows that 83% of users have previous experience paying fees to access these types of lands and only 14% do not have experience paying these types of user fees.

Table 18. Opinions about paying for recreation and management at this forest

	Percent (%)
Ever paid fees to recreate on local, private, state, federal land	
Yes	83
No	14
Unsure	3
What users think pays for recreation at McDonald-Dunn [a]	
Timber harvest from forest	65
Grants and subsidies	50
Gifts and donations	47
State taxes	47
Unsure	29
Local taxes	21
Federal taxes	16
Should users help pay for recreation at McDonald-Dunn	
Unsure	37
Yes	34
No	28

[a] Percentages do not sum to 100% because respondents could check more than one.

Respondents were also asked what they thought currently pays for recreation management at the McDonald-Dunn Forest. Table 18 shows that the largest proportions of respondents believed that timber harvest (65%), grants and subsidies (50%), gifts and donations (47%), and state taxes (47%) pay for recreation management at this forest. Fewer respondents thought that local (21%) and federal taxes (16%) pay for recreation management at this forest or were unsure (29%). It is clear that there is some confusion among users about what sources actually currently pay for recreation management at the McDonald-Dunn Forest.

Users were also asked if they believed that recreationists should help pay for recreation management at the McDonald-Dunn Forest. Table 18 shows that respondents were relatively divided with 37% saying that they were "unsure" if users should pay, 34% said "yes" users should pay, and the smallest proportion of respondents said "no" users should not pay (28%).

Table 19. Most preferred method of payment to use this forest

	Percent (%)
Voluntary money donation	54
Mandatory annual (year) use fee / pass	36
Mandatory seasonal use fee / pass	6
Mandatory daily use fee	4

Respondents were asked to report their preferred method of payment to use the McDonald-Dunn Forest for recreation if they were ever asked to pay a fee in the future. Table 19 shows that the highest percentage would prefer to do so with a voluntary donation (54%). If a fee was mandatory, the most preferred method would be an annual (i.e., yearly) use fee or pass (36%), whereas few users would prefer a seasonal use fee or pass (6%) or a daily fee (4%).

Table 20. Support and willingness to pay types of recreation use fees this forest

	Support [a]	Willing to pay [b]	Amount willing to pay [c]		
			Average	Median	Mode
Mandatory contribution [d]					
Mandatory annual (year) use fee / pass	39	76	35.98	25.00	20.00
Mandatory seasonal use fee / pass	31	67	20.98	20.00	10.00
Mandatory daily use fee	12	50	2.76	2.00	2.00
Voluntary contribution [e]					
Voluntary money donation	87	83	30.80	20.00	5.00
Volunteer time to help management (e.g., trail maintenance)	87	--	--	--	--
Endowment (e.g., sponsor / name a trail)	79	--	--	--	--

[a] Percent who 4 "support" or 5 "strongly support."
[b] Percent indicating that they would be willing to pay a dollar amount over USD $0.
[c] Amount (USD $) for respondents willing to pay a dollar amount over USD $0.
[d] Overall, 28% of respondents support a mandatory fee, but 80% are willing to pay a mandatory fee.
[e] Overall, 93% of respondents support a voluntary contribution.

Respondents were asked the extent that they would support or oppose various alternative payment mechanisms to access the McDonald-Dunn Forest and help cover costs to manage this

forest. In total, 93% of users supported some type of voluntary contribution (Table 20). Users overwhelmingly supported voluntary money donations (87%), volunteering to help management (e.g., trail maintenance; 87%), and endowments (e.g., sponsor, name, or adopt a trail; 79%). Approximately, 83% of users would be willing to voluntarily donate some dollar amount with users willing to donate an average of $31, although the most frequently mentioned donation amounts were $5, $20, $50, and $100.

Table 20 also shows that only 28% of users supported a mandatory fee, but 80% understand the need and are willing to pay this type of fee. Some mandatory fee structures, however, were more strongly supported than others. The most strongly supported mandatory fee was an annual (i.e., yearly) use fee or pass that was supported by 39% of users, but 76% were willing to pay this type of fee. The average amount that users would be willing to pay for an annual fee or pass is $36 with the most common listed amounts of $20, $25, and $50. In addition, 31% of users supported a seasonal use fee or pass, but 67% were willing to pay this type of fee. The average amount that users would be willing to pay for a seasonal fee is $21 with the most common listed amounts of $10, $20, and $25. The least supported mandatory fee would be a daily use fee (12% support) and 50% would be willing to pay a daily fee. The average amount that users would be willing to pay for a daily fee is $2.76 with the most common listed amounts of $2, $1, $5, and $3.

Table 21. Beliefs about paying a use fee at this forest

Paying a use fee to recreate at McDonald-Dunn Forest would …	Percent Agree (%) [a]
… cause me to expect better maintenance of facilities / services	61
… make me feel like I would be helping to protect this forest	59
… make me feel good because I would be helping to cover costs to manage recreation in this forest	57
… cause me to expect more facilities / services in this forest	48
… cause me to still recreate in this forest, but less often	38
… make recreating in this forest too expensive for me	20
… improve my enjoyment of this forest	15
… make me more willing to comply with the rules / regulations	14
… cause me to stop recreating in this forest altogether	13

[a] Cell entries are percentages (%) of users who 4 "somewhat agree" or 5 "strongly agree."

The majority of users believed that paying a fee at the McDonald-Dunn Forest would cause them to expect better maintenance of facilities and services (61%), make them feel like they would be

helping to protect this forest (59%), and make them feel good because they would be helping to cover costs to manage this forest (57%; Table 21). Approximately 48% of users believed that a fee would cause them to expect more facilities and services in this forest. Fewer users believed that a fee would cause them to recreate in this forest less often (38%), make recreating in this forest too expensive (20%), improve their enjoyment (15%), make them more willing to comply with rules and regulations (14%), or stop recreating in this forest altogether (13%).

Although many users expressed that they would be willing to pay some type of fee to access and recreate at the McDonald-Dunn Forest, many of these users also said that they would expect more facilities and services and better maintenance of these amenities in return for paying a fee. To explore this issue in greater detail, the questionnaires also included a "choice experiment" to measure tradeoffs that users would make between paying a fee and expecting the current levels of facilities and services or more and improved amenities (e.g., parking, toilets, trash cans, number of trails, trail information signs). Choice experiments are one of many stated preference nonmarket valuation tools that are used for estimating economic values for a set of attributes of a good, which in this case is the McDonald-Dunn Forest. Choice experiments are based on utility theory where each individual is assumed to maximize his or her utility by choosing the alternative that provides him or her with utility greater than or equal to utility derived from any other alternative in the choice set *C*. The random utility maximization framework is used to model individual choices, assuming that utility is composed of a systematic measurable component (*v*) and a random component (*e*):

$$U_j = v(x_j, m_j; \beta) + e_j$$

where U_j is utility for the alternative *j*, x_j is a vector of attributes associated with alternative *j*, m_j is the cost of the alternative *j*, β is a vector of preference parameters to be estimated, and e_j is a random zero mean error term. Typically, utility is assumed to be linear-in-parameters:

$$U_j = \Sigma \beta_k x_{jk} + \beta_m m_j + e_j$$

where β_k is the preference parameter for attribute *k*, x_{jk} is attribute *k* in alternative *j*, and β_m is the parameter on the cost of alternative *j*.

By differentiating U_j, the preference parameter estimates (β's) represent marginal utilities: $\beta_k = \partial U / \partial x_k$. The estimated parameter on the cost of an alternative (β_m) measures the marginal change

in income; thus $-\beta_m$ is interpreted as the marginal utility of money. Given that marginal utility of an attribute and marginal utility of money are estimated, an implicit price for each attribute can be recovered through marginal rates of substitution: $MRS_{km} = \beta_k/\beta_m = (\partial U/\partial x_k)/(\partial U/\partial m_j)$.

Data for the random utility model are derived from user choices among competing alternatives. Essentially, the choice experiment has respondents choose the most preferred alternative from a choice set, including an option to not choose (i.e., prefers or derives the highest relative utility from the status quo versus any alternative). This choice format focuses respondents on tradeoffs that they must make when choosing among alternatives with implicitly different attributes. The probability that a respondent chooses alternative *i* over a competing alternative *j* is:

$P(i|C) = P(U_i>U_j) = P(v_i+e_i > v_j+e_j)$

If the error components *e* are assumed to be identically and independently distributed as a type I extreme value distribution, then the probability of choosing alternative *i* can be estimated using a conditional multinomial logit model:

$P(i|C) = \exp(v_i) / \Sigma\exp(v_j) = \exp(\Sigma\beta_k x_{ik} + \beta_m m_i) / \Sigma\exp(\Sigma\beta_k x_{jk} + \beta_m m_j)$

The choice experiment profiles used in the questionnaires included two alternatives (i.e., "I prefer Option 1," "I prefer Option 2") and an "I prefer neither" alternative. Respondents were asked to choose the alternative that they most preferred from each profile provided. Design of the profiles and alternatives was based on consultation with forest managers and a need to keep the design as simple as possible to avoid excessive respondent burden because design complexity increases exponentially with more attributes or factors and levels in each choice alternative. The choice experiment design included five facility / service factors:

- Parking.
- Toilets at trailheads.
- Trash cans.
- Trail direction / information signs.
- Number of trails.

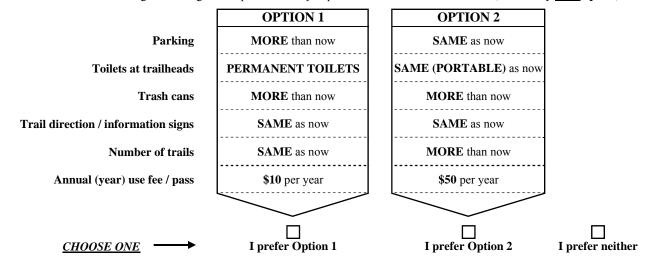Two levels were used for each factor:

- Same as now.
- More than now.

The exception to these factor levels was for toilets where the levels were "same (portable)" or "permanent / vault toilets." To measure tradeoffs among these factors and levels and willingness to pay, a cost factor of "annual (year) use fee / pass" was included with four levels ($5, $10, $25, $50) and the implied cost of the "I prefer neither" alternative was $0. It is important to note that this design only models qualitative increments in facilities and services.

A full factorial design involving all of these factors and levels would produce $2^5 * 4^1 = 128$ possible combinations or profiles. If each profile contains two pairs of alternatives (plus the neither alternative), then 64 unique profiles would have needed to be evaluated. Asking each respondent to make 64 separate choices would involve far too much burden for an onsite survey. Even using an equal block design with a single split would still overburden respondents with 32 separate choices. To reduce respondent burden, therefore, a smaller subset of profiles was created using an orthogonal fractional factorial design. Fractional factorial designs reduce the number of profiles needed to capture variation in choices across alternatives. For this study, an efficient fractional factorial design resulted in 16 alternatives. These alternatives plus the neither alternative were randomly paired to derive eight unique profiles each with three options (alternatives *i, j, neither*). Figure 5 shows an example profile from the questionnaire.

Figure 5. Example choice experiment profile

Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only *ONE* option)**

	OPTION 1	**OPTION 2**
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**MORE** than now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**SAME** as now	**MORE** than now
Annual (year) use fee / pass	**$10** per year	**$50** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

These eight profiles were then blocked into two equal groups, resulting in two versions of the questionnaire with four profiles each. Respondents were asked to choose their most preferred

alternative (or the neither alternative) for each of four profiles. Respondents were also instructed to make their choices in each profile independent of choices made in other profiles in the questionnaire. Empirical evidence suggests that respondents do make their choices in each profile independent of each other, at least in a statistical sense.

Data for this choice experiment were comprised of 1,009 respondents making four choices each for a total of 4,036 choices. These choices were made from among 12,108 alternatives grouped into three alternatives per profile. Given each level ("same" or "more") of each factor is coded as either 0 or 1, then one level for each must be omitted from the model to avoid perfect collinearity (i.e., "the dummy variable trap"). The "same" level for each attribute, therefore, was omitted and a conditional multinomial logit model was used to estimate improvements (i.e., "more" of) in each attribute. Table 22 provides results of this multi-attribute statistical model and all attributes were statistically significant except trash cans. In other words, all of the factors were important to respondents in their tradeoffs except trash cans. The overall cost attribute was also statistically significant and negative, as expected (i.e., preference for paying the annual fee declines as fee amount increases). Attributes with positive utility effects, in decreasing strength of preference were: number of trails, trail direction / information signs, and permanent toilets at trailheads. The two attributes that were associated with disutility, or negative preferences, were parking and trash cans (statistically insignificant). In other words, the most important factor in user tradeoffs was number of trails followed by trail signs, whereas the least important factor was trash cans.

Table 22. Choice model results

Attribute	β utility	Standard error	*p*-value	Implicit annual fee price ($)
Parking (more)	-0.141	0.410	0.001	-4.03
Toilets at trailheads (permanent)	0.275	0.051	0.000	7.86
Trash cans (more)	-0.081	0.053	0.130	-2.31
Trail direction/information signs (more)	0.407	0.062	0.000	11.63
Number of trails (more)	0.733	0.051	0.000	20.94
Annual use fee/pass	-0.035	0.002	0.000	----
N	4034[a]			
Log-likelihood	-3993			

[a] Two profiles were dropped due to no choice being identified

The implicit prices show the same relative strength of preference given that they are the ratio of the marginal utility of a facility attribute to the marginal utility for a fee. Implicit prices further

reflect the tradeoffs between individual attributes and represent the relative importance of each attribute. However, the implicit prices measure willingness to pay for the underlying change in each attribute while holding all other attributes constant. Respondents were willing to pay the most per year for more trails (number of trails = $20.94). Next, they were willing to pay $11.64 for more trail direction / information signs, followed by $7.86 for permanent toilets at trailheads. Respondents would receive disutility to the amount of -$4.03 per year for more parking and -$2.31 for more trash cans. Clearly, more trails and signs are preferred in return for paying a fee.

Table 23. Total utilities and annual fee payments for all possible choice profiles

Parking	Toilets at trailheads	Trash cans	Trail direction / information signs	Number of trails	Total β utility	Implicit annual fee price ($)
Same	Permanent	Same	More	More	1.415	40.43
Same	Permanent	More	More	More	1.334	38.12
More	Permanent	Same	More	More	1.274	36.40
More	Permanent	More	More	More	1.193	34.09
Same	Same (Portable)	Same	More	More	1.140	32.57
Same	Same (Portable)	More	More	More	1.059	30.26
Same	Permanent	Same	Same	More	1.008	28.80
More	Same (Portable)	Same	More	More	0.999	28.54
Same	Permanent	More	Same	More	0.927	26.49
More	Same (Portable)	More	More	More	0.918	26.23
More	Permanent	Same	Same	More	0.867	24.77
More	Permanent	More	Same	More	0.786	22.46
Same	Same (Portable)	Same	Same	More	0.733	20.94
Same	Permanent	Same	More	Same	0.682	19.49
Same	Same (Portable)	More	Same	More	0.652	18.63
Same	Permanent	More	More	Same	0.601	17.18
More	Same (Portable)	Same	Same	More	0.592	16.91
More	Permanent	Same	More	Same	0.541	15.46
More	Same (Portable)	More	Same	More	0.511	14.60
More	Permanent	More	More	Same	0.460	13.15
Same	Same (Portable)	Same	More	Same	0.407	11.63
Same	Same (Portable)	More	More	Same	0.326	9.32
Same	Permanent	Same	Same	Same	0.275	7.86
More	Same (Portable)	Same	More	Same	0.266	7.60
Same	Permanent	More	Same	Same	0.194	5.55
More	Same (Portable)	More	More	Same	0.185	5.29
More	Permanent	Same	Same	Same	0.134	3.83
More	Permanent	More	Same	Same	0.053	1.52
Same	Same (Portable)	Same	Same	Same	0.000	0.00
Same	Same (Portable)	More	Same	Same	-0.081	-2.31
More	Same (Portable)	Same	Same	Same	-0.141	-4.03
More	Same (Portable)	More	Same	Same	-0.222	-6.34

Table 23 presents the total utility scores and amount willing to pay for an annual fee / pass for all possible combinations and profiles. Results show that users would be willing to pay the highest annual fee ($40.43) pending that the current parking and trash cans are retained, but new permanent toilets are provided at trailheads, more trail direction / information signs are installed, and more trails are created in this forest. Again, the most important factor in respondents' tradeoffs was number of trails and this was demonstrated further with the highest 13 fee amounts ($20.94 to $40.43) being related to increasing the number of trails. Given that the average amount that users would be willing to pay for an annual fee or pass is $36 (Table 20), managers could assume that most users would expect to encounter at least new permanent toilets at trailheads, more trail signs, and more trails in return for this type and amount of fee paid.

More explicit management relevant descriptions of attributes would be needed to measure specific quantifiable changes in amenities (e.g., implicit price per permanent toilet at a given location). To derive this information, another questionnaire would be needed that almost solely focuses on a choice experiment because adding attribute levels (e.g., actual numbers of trails and / or trail miles by type [walk, bike, horse, multiple use]) including decrements in amenity levels would increase the complexity of design and analysis, questionnaire length, and overall costs.

Section Summary. Taken together, results in this section showed that:

- Almost all users responded correctly by selecting Oregon State University / College of Forestry (82%) when asked what agency or organization is currently responsible for managing this forest. A few respondents were unsure (11%), 4% selected Oregon Department of Forestry, and the remaining 4% selected other agencies.

- The largest percent of users supported not changing anything at this forest and keeping things as they are now (65%), but a majority supported providing more trails designated only for people on foot (e.g., hike, jog; 53%). Almost half of users supported providing better user information about appropriate behavior (47%), providing more trails only for mountain biking (45%), and providing more technical or challenging trails (45%). Only 34% of users supported providing trails designated only for horseback riding, 22% supported directional trails (e.g., uphill, downhill only), 19% supported requiring dogs be kept on leash, and only 8% supported increasing the presence of management personnel.

- Users were asked if they had ever paid use fees for recreation on any local, private, state, and / or federal lands, and 83% had previous experience paying fees to access these types of lands and only 14% did not have experience paying these types of fees.

- Users were also asked what source(s) they thought pays for recreation management at this forest. In total, 65% selected timber harvest, 50% selected grants and subsidies, 47% selected state taxes and gifts and donations, 29% were unsure, 21% selected local taxes, and 16% selected federal taxes. It is clear that there is some confusion among users about what sources currently pay for recreation management at this forest.

- Users were divided on whether they thought that recreationists should help pay for recreation management at this forest, as 37% were unsure, 34% believed that users should pay, and 28% believed that users should not pay.

- If users are ever asked to pay a fee to visit this forest in the future, the highest percent (54%) would prefer to do so with a voluntary donation. If a fee was mandatory, the most preferred method of payment would be an annual (i.e., yearly) use fee or pass (36%), whereas few users would prefer a seasonal use pass (6%) or a daily fee (4%).

- Support was high for voluntary contributions (93%), as 87% supported voluntary money donations and volunteering time to assist management, and 79% supported endowments (e.g., sponsor / name a trail). In addition, 83% of users were willing to pay a voluntary money donation, with an average donation of $30.80 and a median donation of $20.00. The most common listed donation amounts were $5.00, $20.00, $50.00, and $100.00.

- Only 28% of users supported a mandatory fee, but 80% understood the need and would be willing to pay this type of fee. Some fee structures, however, were more strongly supported than others. The most supported mandatory fee was an annual (yearly) use fee or pass, which was supported by 39% of users and 76% were willing to pay this fee type. Average willingness to pay an annual pass was $35.98, with the most common amounts of $20.00, $25.00, and $50.00. In total, 31% supported a seasonal use fee or pass, but 67% were willing to pay this fee. Average willingness to pay a seasonal pass was $20.98, with common listed amounts of $10.00, $20.00, and $25.00. The least supported fee was a daily fee (12% support) and only 50% were willing to pay this fee. Average willingness to pay a daily fee was $2.76, with common amounts of $2.00, $1.00, $5.00, and $3.00.

- The majority of users believed that paying a fee to recreate at this forest would cause them to expect better maintenance of facilities / services (61%), make them feel like they would be helping to protect this forest (59%), and make them feel good because they would be helping to cover management costs (57%). Approximately 48% of users believed that a fee would cause them to expect more facilities and services. Fewer users believed that a fee would cause them to recreate at this forest less often (38%), make recreating at this forest too expensive (20%), improve their enjoyment (15%), make them more willing to comply with regulations (14%), and stop recreating at this forest (13%).

- A choice experiment was used to measure user tradeoffs between paying an annual fee / pass and expecting more and improved facilities and services. The most important factor in respondents' willingness to pay an annual fee was number of trails followed by trail signs, whereas the least important factors were parking and trash cans. Respondents were willing to pay the most per year for more trails (number of trails = $20.94). Next, they were willing to pay $11.64 for more trail direction / information signs followed by $7.86 for permanent toilets at trailheads. Respondents would receive disutility to the amount of -$4.03 per year for more parking and -$2.31 for more trash cans. Users would be willing to pay the highest annual fee ($40.43) pending that the current parking and trash cans would be retained, but new permanent toilets would be provided, more trail direction / information signs would be installed, and more trails would be created in this forest.

Sociodemographic Characteristics of Users

There were relatively equal proportions of females (51%) and males (49%) at the McDonald-Dunn Forest (Table 24). The average age of users was 45 years old, and the largest proportions were 50 to 59 years old (28%) and 40 to 49 years old (20%). Almost none of the groups visiting contained a child under 16 years old (8%). Users were highly educated with the most having an advanced degree beyond a four year degree (e.g., masters, Ph.D., medical, law; 43%) or a 4-year college degree (e.g., bachelors, 37%) as their highest education achieved. Most users (82%) are not currently students and only 18% are students. In total, most users live in Corvallis (71%) or Albany (9%) with the largest proportion 1 to 5 miles from this forest's boundary (43%) although 21% live within one mile of the boundary. Annual household income of users averages $64,000 with the largest proportions earning $30,000 to $69,999 (32%) or $70,000 to $109,999 (28%).

Table 24. Sociodemographic characteristics of users

	Percent (%)
Gender	
Female	51
Male	49
Age	
Less than 20 years old	4
20 – 29 years	16
30 – 39 years	18
40 – 49 years	20
50 – 59 years	28
60 – 69 years	11
70 + years old	3
Average age (mean years)	45
Children in group (under 16 years)	
0 (none)	93
1 child	4
2 children	3
3 or more children	1
Education	
Advanced degree beyond 4-year degree (e.g., MS, PhD, MD, Law)	43
4-year college degree (e.g., BS, BA)	37
2-year associates degree or trade school	10
High school diploma or GED	8
Less than high school diploma	1
Currently a student	
No	82
Yes	18
City or town where currently live	
Corvallis	71
Other [a]	16
Albany	9
Philomath	2
Adair Village	2
Proximity of residence to nearest boundary of McDonald-Dunn	
Adjacent (next to forest)	4
Within ½ mile	6
Within 1 mile	11
1 to 5 miles	43
More than 5 miles	36
Annual household income before taxes	
Less than $30,000	20
$30,000 to $69,999	32
$70,000 to $109,999	28
$110,000 to $149,999	12
$150,000 or more	9
Approximate average (mean $)	$64,000

[a] Other locations included Salem, Eugene, Dallas, Independence, Lebanon, Monmouth, and Portland.

Section Summary. Taken together, results in this section showed that:

- Users are relatively evenly split between females (51%) and males (49%).

- The average age of users is 45 years old. The largest proportions are 50 to 59 years old (28%) and 40 to 49 years old (20%); 16% of users are 20 to 29 years old and 18% are between 30 and 39 years old. Few groups contain children under 16 years old (8%).

- Users are highly educated, as 37% have earned a four year college degree (e.g., bachelors) as their highest level of education achieved and 43% have an advanced degree beyond a four year degree (e.g., masters, Ph.D., medical, law). Most users are not currently students (82%), as only 18% are students.

- Most users live in Corvallis (71%) or Albany (9%), with 21% living within 1 mile of this forest's boundaries, 43% living one to five miles from this forest, and 36% living five or more miles away.

- Annual household income of users averages approximately $64,000 with the largest proportions earning $30,000 to $69,999 (32%) or $70,000 to $109,999 (28%).
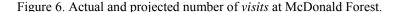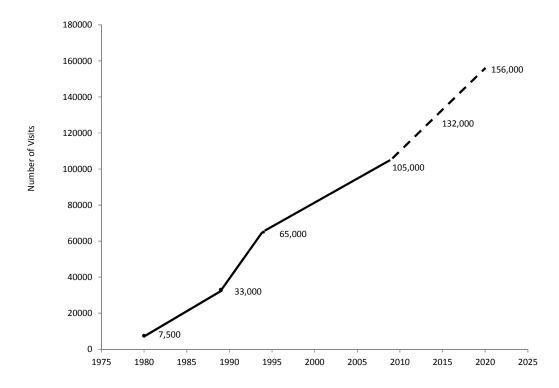
Use Level Estimates

As stated in the methods section earlier, onsite counts of users exiting the McDonald Forest (not the Dunn Forest) were recorded using hand held counters during all sampling dates and times to estimate forest use levels. Estimates for the number of *visits* were calculated based on the number of users counted per weekday (Monday through Friday), weekend (Saturday, Sunday, holidays), time of day (morning and afternoon, daylight hours only), and sampling site location (i.e., five main access gates). Calculations were based on average number of people counted per hour, which was then extrapolated out by number of hours per day (daylight hours only) for each day, week, and season. Spring and summer calculations were based on an 11 hour day, and fall and winter calculations were based on a 9.5 hour day.

Based on this approach, the total number of *visits* estimated for the McDonald Forest between October 2008 and September 2009 (one year) was 105,000 plus or minus 10% (i.e., 94,500 to 115,500). The highest proportion of visitation was in spring and summer (56%) and the lowest was in fall and winter (44%). The highest proportion of visitation was at Peavy Arboretum (34%)

followed by the Lewisburg Saddle (25%), Oak Creek (25%), Jackson Creek (8%), and Highway 99 entry gates (8%). It is important to note that these estimates are conservative and do not include the Dunn Forest, additional visits made by users during non-daylight hours, or people accessing this forest using secondary or unauthorized access points (e.g., adjacent properties).

Previous studies have also estimated visitation at this forest. Annual use levels have grown from an estimated 7,500 visits in 1980 to 33,000 in 1989 (Finley, 1990) to 65,000 visits in 1994 (Wing, 1998; Wing & Shelby, 1999) to 105,000 in 2009. This growth in visitation is strongly correlated (adjusted R^2 = .998) with the increasing population of the Corvallis area (e.g., 40,960 in 1980, 44,757 in 1989, 49,473 in 1994, 54,462 in 2009). Based on the relationship between the Corvallis area population and the number of visits to the McDonald Forest, the unstandardized regression coefficient predicts that for each additional new resident in the Corvallis area, the number of visits to this specific forest increases by 6.47. These estimates can be used to project future visitation to this forest based on growth rates. Figure 6 shows the number of visits to this forest between 1980 and 2009, and projects that visits will likely conservatively increase (plus or minus 10%) to approximately 132,000 (i.e., 118,800 to 145,200) by 2015, and 156,000 (i.e., 140,400 to 171,600) by 2020 based on current population growth rates for this area.

Figure 6. Actual and projected number of *visits* at McDonald Forest.

The number of *visitors* can also be estimated for the McDonald Forest between October 2008 and September 2009 (one year) based on relationships between this number of visits and the frequency of visitation reported by each user in the questionnaire. As stated earlier, repeat visitation is high with over 36% of users visiting at least twice a week, 18% once a week, and 19% visiting two or three times a month. The remaining 28% visit once a month or less. Based on this repeat visitation and researcher counts of visits, it is estimated that 11,702 separate individuals visited this forest in 2008-2009 plus or minus 5,851 (i.e., 5,851 to 17,553 visitors).

These use estimates could be combined with users' reported willingness to pay an annual fee or pass (Table 20) to calculate potential revenues that could be generated by an annual fee program at this forest. These calculations were based on the median reported willingness to pay an annual fee ($25), adjusting for the proportion who is willing to pay this fee (76%), and correcting by a factor of two for possible hypothetical bias (i.e., lack of experience a person may have in specifying a price for a commodity that has no tradition for being priced, such as a recreation use fee) and strategic bias (i.e., users deliberately overstating or understating true willingness to pay). In total, revenues generated from an annual fee or pass charged to each *visitor* would be approximately $111,170 plus or minus $55,585 (i.e., $55,585 to $166,755). Similar to other fee programs (e.g., Northwest Forest Pass, State Parks Pass), if only one person in each group was required to have an annual pass, revenues generated from an annual fee or pass charged to each *group* would be approximately $59,450 plus or minus $29,725 (i.e., $29,725 to $89,174).

Section Summary. Taken together, results in this section showed that:

- The total number of *visits* estimated for the McDonald Forest between October 2008 and September 2009 (one year) was 105,000 plus or minus 10% (i.e., 94,500 to 115,500). The highest proportion of actual visitation was in spring and summer (56%) and the lowest was in fall and winter (44%). The highest proportion of visits was at Peavy Arboretum (34%) followed by the Lewisburg Saddle (25%), Oak Creek (25%), Jackson Creek (8%), and Highway 99 entry gates (8%). These estimates are conservative and do not include the Dunn Forest, visits made by users during non-daylight hours, or people accessing this forest using secondary or unauthorized access points (e.g., adjacent properties).

- Annual use levels have grown from an estimated 7,500 visits in 1980 to 33,000 in 1989 (Finley, 1990) to 65,000 visits in 1994 (Wing, 1998) to 105,000 in 2009. This growth in

visitation is strongly correlated (adjusted R^2 = .998) with the increasing population of the Corvallis area (e.g., 40,960 in 1980, 44,757 in 1989, 49,473 in 1994, 54,462 in 2009). Based on the relationship between the Corvallis area population and the total number of visits to the McDonald Forest, the number of visits to this forest increases by 6.47 for each additional new resident in the Corvallis area. Visits are likely to conservatively increase (plus or minus 10%) to approximately 132,000 (i.e., 118,800 to 145,200) by 2015, and 156,000 (i.e., 140,400 to 171,600) by 2020 based on population growth rates.

- Based on the high amount of repeat visitation reported by users in the questionnaires and researcher counts of visits, it is estimated that 11,702 separate individuals (i.e., *visitors*) visited this forest in 2008-2009 plus or minus 5,851 (i.e., 5,851 to 17,553 visitors).

- Possible revenues generated from an annual fee or pass charged to each *visitor* would be approximately $111,170 plus or minus $55,585 (i.e., $55,585 to $166,755). Similar to other fee programs (e.g., Northwest Forest Pass, State Parks Pass), however, if only one person in each group was required to have an annual pass, revenues generated from an annual fee or pass charged to each *group* would be approximately $59,450 plus or minus $29,725 (i.e., $29,725 to $89,174).

MANAGEMENT RECOMMENDATIONS

Based on these results, the following broad recommendations, in no particular order, are proposed for future planning and management of recreation use at the McDonald-Dunn Forest:

- This forest is visited by many people (approximately 105,000 *visits* ± 10% [94,500 to 115,500]; approximately 11,702 separate *visitors* ± 5,851 [i.e., 5,851 to 17,553]), many of whom live in Corvallis and other nearby communities, visit frequently (e.g., 36% visit at least twice a week), and have been visiting this forest for a long time (e.g., 46% for 10 or more years). Many residents and users also live adjacent to this forest's boundaries. It is clear that this forest is important to the lives of many residents and plays a pivotal role in the local community. If population trends continue rapidly diversifying and urbanizing, this forest will likely play an even greater role in the community in the future, so it will be critical for forest managers to work closely with users and the local community in any planning and management efforts, and disseminate information about this forest to the

community. It is also recommended that recreation and its management be a much higher priority at this forest primarily because it is through recreation at this forest that many residents are able to experience forests and have the potential to learn about and appreciate these areas. This forest is also part of the fabric of the community and adds to the quality of life of residents through the provision of ecosystem services.

- In total, 93% of groups visiting the McDonald-Dunn Forest did not contain a child under the age of 16. Current nationwide trends show rapidly declining youth visitation and recreation in natural settings, and increasing child health concerns (e.g., obesity, attention deficit disorder). Managers should consider collaborating more with existing public and private programs (e.g., REI's Peak Program, Oregon Recreation and Park Association's Outdoor Seekers and Activity Passport) to enhance child and youth visitation at this forest, thereby providing opportunities for them to learn about and experience forests, increase their physical activity and improve their physical and mental health, and increase the visibility and importance of this forest, the college, and the university.

- Almost all users were aware that the College of Forestry at Oregon State University is currently responsible for managing this forest. It is important, therefore, for managers to continually seek information about and input from users, and then incorporate this input into future planning and management to ensure a transparent decision making process and also enhance the reputation and community perception of the college and university. Many users, however, appear to be unaware of where the recreation program funding currently comes from. Users should be made aware that their recreation experiences are subsidized through active timber management at the forest.

- Almost all users traveled to this forest in a motorized vehicle, so parking is important and should be considered in planning and management. Managers should, however, exercise caution because 73% of users were satisfied with the amount of parking at this forest and the choice experiment showed that parking was associated with disutility in that users would pay $4.03 per year just to keep the current amount of parking and not add more.

- Over half of users brought dogs with them to this forest, so it will be important to ensure adequate facilities to accommodate dogs and their owners (e.g., pick up bags, signs specifying regulations or restrictions). This is important because only 57% of users were

satisfied with the amount of dog waste / excrement at this forest. Managers should exercise caution if they ever consider implementing a policy that dogs are kept on leash given that only 19% of users supported this strategy.

- Almost all users were satisfied with their experiences and the conditions at this forest, and almost all forest attributes were in the "keep up the good work" category, indicating that users thought staff and managers were doing a good job managing this forest. Satisfaction, however, was lowest for the amount of horse waste / excrement, horse trailer parking, timber harvesting, and presence of management personnel. Managers may need to evaluate these issues to ensure that the forest is meeting user needs. Managers should also consider monitoring attributes such as the amount and quality of trailhead signs with information and regulations, directional signs on trails and roads, safety from logging and forestry operations, and amount of dog waste / excrement because these issues were highly important for users, but they were only slightly satisfied with these characteristics.

- Users considered the most important characteristics at this forest to be opportunities to experience nature and escape crowds, amount of litter, scenic views, number of trails and trail maintenance, trailhead and directional signs, and safety from logging and forestry operations. Managers should ensure that future planning, management, and monitoring focuses on these issues so that conditions and experiences do not deteriorate.

- There was evidence of substantial conflict among some activity groups, especially among mountain bikers, horseback riders, and other groups. Spatial or temporal zoning (e.g., more activity specific and less multiuse trails, more activity specific times of visitation) followed by additional funding for monitoring and enforcement would likely help to mitigate this conflict and improve user experiences. Providing trails designated for specific activity groups was supported by many current users. In addition, zoning some mountain bike trails by experience level similar to the approach used at alpine ski areas (e.g., green for novices, black diamond for experts) may help to reduce some of the conflict that is occurring between mountain bikers and other mountain bikers.

- The largest percent of users supported not changing anything and keeping things the same at this forest, but a majority also supported more trails designated only for people on foot and almost half supported providing better visitor information about appropriate

behavior, providing more trails only for mountain biking, and providing more technical or challenging trails. Managers may want to consider some or all of these strategies.

- Visitation is expected to increase up to 145,200 visits by 2015 and 171,600 by 2020, so increasing funding of the recreation program will likely be necessary as demand rises.

- Given the declining budgets for recreation management at the McDonald-Dunn Forest, there is a need to identify and implement alternative funding sources that could generate additional revenue and recover some costs. A mandatory fee (annual, seasonal, daily) is *not* recommended for multiple reasons. First, although upward of 76% of users would be willing to pay a mandatory fee, less than 40% actually support the idea of implementing this type of fee. Although users would pay a mandatory fee, implementing this fee could reduce community support of recreation management at this forest. Second, the costs of implementing, administering, collecting, monitoring, and enforcing mandatory fees are high and would likely result in limited or no return on investment. Third, this forest has a permeable boundary with multiple adjacent private residences and several secondary and unauthorized access points, so monitoring and enforcing a fee would be challenging and require increased personnel and associated costs. Fourth, users' stated willingness to pay (e.g., 76% willing to pay an annual fee, average of $36) are likely exaggerated by hypothetical and strategic bias. Hypothetical bias is related to the lack of experience a respondent may have in specifying a price for a commodity that has no longstanding tradition for being priced, such as a recreation use fee at an urban forest. Strategic bias occurs when a respondent deliberately overstates (i.e., make the fee so high that nobody but the respondent can afford it so they have the area to themselves) or understates true willingness to pay (i.e., make the fee so low that they could easily afford it). Fifth, state statute ORS 105.682 (http://www.leg.state.or.us/ors/105.html), which limits liability for any personal injury, death, or property damage when providing free access to lands for recreation and other activities (i.e., "the owner makes no charge for permission to use the land") could be voided with a mandatory access fee. Charging a fee for parking, however, may be one alternative at some of the access points, but this should be verified with city and county officials and university legal counsel before possible implementation.

- It is recommended, however, that managers increase the ability for users to make voluntary contributions. In total, 87% of users supported the idea of voluntary donations, 83% were willing to donate, and this was their most preferred method of payment. Many users were willing to donate, but expressed concerns that they did not know how and where to donate. It will be important to provide extensive public education informing users about: (a) how and where to donate; (b) the rationale and need for donating (e.g., implications of reduced funds for recreation management); and (c) that all donations collected will be retained and reinvested in this forest's management. Methods for collecting donations must be convenient and easily accessible, visible, and secure. Placing donation boxes at main entry points may be possible, but theft, vandalism, and collection costs and time may be prohibitive. Other options such as access gate / trailhead signs, media articles or advertisements, direct mailings, door-to-door campaigns at adjacent residences, and occasional in-person contacts at entry points requesting donations may be useful. Given that this forest is important to the lives of many residents and plays a pivotal role in the local community, managers should also strongly consider exploring a targeted and aggressive campaign to attract endowments and / or foundation accounts for both structural attributes (e.g., adopt a trail, trail connectors) and personnel (e.g., endow positions). Managers could also attract more public or special events similar to the current 50km trail run (e.g., mountain bike events, concerts in the woods) that could generate financial support through sponsorships and increased visibility for the forest, college, and university. Finally, managers should also consider a possible cost share or tax arrangement with the city or county given that the McDonald-Dunn Forest plays an important role enhancing: (a) community benefits and quality of life, (b) alternative recreation opportunities that complement city and county opportunities, (c) property values with incremental increases in property tax revenues, and (d) health and safety (e.g., safe off-street parking, toilets and garbage cans for waste and litter).

- Appendix A is a listing of verbatim open-ended positive comments and negative comments and suggestions for improvement of the McDonald-Dunn Forest. Many of these comments may provide insights for future planning and management. The most common comments, in no particular order, focused on the: (a) amount of dog and horse excrement, (b) appropriateness of a fee system, (c) willingness to voluntarily donate

money to this forest as long as users were told how and where to donate, (d) conflict with mountain bikers and horseback riders, (e) desire for more trails, (f) need for more signs and interpretive material, (g) dogs off leash and concerns about potential leash laws, and (h) forestry practices and logging operations in this forest.

REFERENCES

Bruyere, B. L., Rodriguez, D. A., & Vaske, J. J. (2002). Enhancing importance – performance analysis through segmentation. *Journal of Travel and Tourism Marketing, 12*, 81-95.

Finley, M. (1990). *McDonald Forest: A case study in the use of the recreation opportunity spectrum planning framework in a near-urban forest*. Unpublished masters thesis, Oregon State University.

Graefe, A. E., & Thapa, B. (2004). Conflict in natural resource recreation. In M. J. Manfredo, J. J. Vaske, B. L. Bruyere, D. R. Field, & P. J. Brown (Eds.), *Society and natural resources: A summary of knowledge* (pp. 209- 224). Jefferson, MO: Modern Litho.

Hendee, J. C. (1974). A multiple-satisfaction approach to game management. *Wildlife Society Bulletin, 2*, 104-113.

Manning, R. E. (2010). *Studies in outdoor recreation: Search and research for satisfaction* (3rd ed.). Corvallis, OR: Oregon State University Press.

Mitra, A., & Lankford, S. (1999). *Research methods in park, recreation, and leisure services*. Champaign, IL: Sagamore.

Needham, M. D., & Rollins, R. (2009). Social science, conservation, and protected areas theory. In P. Dearden & R. Rollins (Eds.), *Parks and protected areas in Canada: Planning and management* (3rd ed.) (pp. 135-168). Don Mills, ON: Oxford University Press.

Thapa, B., & Graefe, A. R. (2003). Level of skill and its relationship to recreation conflict and tolerance among adult skiers and snowboarders. *World Leisure, 45*, 15-27.

Vaske, J. J. (2008). *Survey research and analysis: Applications in parks, recreation and human dimensions*. State College, PA: Venture.

Vaske, J. J., Beaman, J., Stanley, R., & Grenier, M. (1996). Importance performance and segmentation: Where do we go from here? *Journal of Travel & Tourism Marketing, 5*, 225-240.

Vaske, J. J., Carothers, P., Donnelly, M. P., & Baird, B. (2000). Recreation conflict among skiers and snowboarders. *Leisure Sciences, 22*, 297-313.

Vaske, J. J., Donnelly, M. P., Wittmann, K., & Laidlaw, S. (1995). Interpersonal versus social values conflict. *Leisure Sciences, 17*, 205-222.

Vaske, J. J., Needham, M. D., & Cline Jr., R. C. (2007). Clarifying interpersonal and social values conflict among recreationists. *Journal of Leisure Research, 39*, 182-195.

Wing, M. (1998). *Using a geographic information system (GIS) to monitor recreation impacts in a forest setting*. Unpublished PhD dissertation, Oregon State University.

Wing, M., & Shelby, B. (1999). Using GIS to integrate information on forest recreation. *Journal of Forestry, 97*, 12-16.

APPENDIX A: OPEN-ENDED COMMENTS

Positive Comments

- Keep up the good hard work. This is a wonderful resource.
- I love McDonald forest.
- Love this place.
- We love the improved trails.
- Thanks for letting us use the forest.
- I think OSU is doing a good job managing use.
- I like having the various types of trails.
- Love it here, thank you.
- Thank you for letting people use the forest.
- It is good the way it is.
- I ride in McDonald forest almost every day and think it is the best things this town has.
- McDonald forest has value even to those who do not enter (green belt etc.).
- I love the forest and you do good keeping it up to date.
- I love this forest.
- Management does a commendable job already. We have not experienced a lot of problems.
- Awesome place to visit and run every day.
- I have been impressed by the level of management thus far and really enjoy using the forest.
- This is my favorite place to hike in Corvallis area.
- I have found bike riders almost without exception pleasant and this is also true of horse riders. There are very few problems of any kind.
- I like the way things are, I don't think there is a large need for change.
- I love these forests and trails better than any other place around.
- Don't fix it, it isn't broken.
- I like the freedom here compared to places like Bald Hill.
- Leave it the way it is.
- Please leave management and current operations exactly as they are. Don't change please.
- Keep up the good work.
- Great maintenance of this forest.
- My parents live adjacent to the forest and I grew up playing in McDonald on the trails. It has been a valuable resource for us.
- Thank you for the trails.
- Love old growth trail.
- I haven't seen a more maintained and organized trail system in a long time.
- I love it the way it is.
- I like it as is.
- Thanks for allowing me to express my opinions.
- I have been very impressed with overall quality of management of facilities.
- I absolutely love this forest, especially that it's not filled with tons of people; we need a place to get away.
- Why is there a need to change anything? Leave it wild like it is now.
- I love the forest.
- I appreciate the trail upkeep. Nice work.
- Thank you for providing a multi-use forest. We thoroughly enjoy our visits.
- Thanks for asking.
- Nice place, very few problems experienced.
- This forest is a huge asset to community, together with McDonald forest is one of the reasons we live here.
- Thank you.
- I love and appreciate being next door to this forest. It has a great trail system and fairly light use. We walk our dog off leash here which is very important to us.
- Great resource.

- We live adjacent to the forest and come here with friends and family and love the fact that pets can go off leash and there are no fees.
- We deeply appreciate all the work that goes into keeping this place the way it is; thank you.
- I walk my two well behaved dogs a minimum of six days per week all year around here.
- As a horse back rider I appreciate the forest, thanks.
- I love this forest; it's the best.
- I like the forest just as it is.
- I appreciate having the forest at my disposal; thank you, especially when I think I hardly see anyone else.
- Love this place.
- Great trails and forests.
- Thank you for conducting this survey.
- I appreciate the forest and the opportunity to walk my dog off leash.
- Thank you.
- I love this forest.
- Thanks.
- The forest is a great place to go jogging; we've had a lot of fun here.
- I really appreciate this area and try to be a cooperative, thoughtful user; thank you, OSU.
- Enjoy the place as it is; really needs no change.
- Very peaceful because no motorized vehicles today.
- The saddle area is awesome.
- We are so blessed to have such nice trails so close.
- I think kudos should go out to the people in charge of maintaining the trails - very nice; I love it here.
- I love these well maintained trails; thanks.
- The forest is wonderful.
- This is the greatest place I've ever repeatedly walked my dogs.
- Love this place and the views.
- I love this forest.
- Have always greatly appreciated the as a "public" entity, even if state owned.
- I love the forest.
- Thanks for this opportunity to provide feedback.
- We love it. Don't change anything.
- I like and appreciate the area, great for dogs and kids.
- Great place to hike and very beautiful.
- These trails are the best place to run.
- Love walking in the forest.
- These are the most user-friendly trails I've ever been on, thank you.
- Great trails.
- I enjoy the forest as is. I am not the type of person who likes "pretty" trails.
- I like things as they are.
- Please keep it like it is.
- I feel very safe walking here alone.
- Please keep things the same. I love your forest, keeps me sane.
- I love McDonald forest.
- Love it as it is.
- Mac and Dunn forests are wonderful resources.
- We are so fortunate to live in an area with so many wonderful trails to enjoy!
- I think you're doing a great thing.
- Thank you for keeping the forest off leash for dogs. It is a life saver and very enjoyable for all species.
- I like it just as it is; not overly developed.
- Facilities are perfect, I wouldn't change anything.
- We appreciate recent trail improvements.
- I like the forest and its layout.
- Leave it alone; it is great and there are plenty of services now.

- I enjoy coming out to McDonald forest.
- Great place to hike.
- We just started coming and have had a great time.
- Access is convenient and trail condition is adequate as well as parking.
- I love using this forest to run in, there are so many trails.
- McDonald forest is an invaluable resource for our community.
- I am always amazed at the bikers' courtesy and trail etiquette.
- I love McDonald forest just as it is.
- The unspoken rule of the forest is faster bigger users have the right of way; walkers, joggers step to the side as bikers and horse people carefully pass and express verbal thanks.
- Thank you for the most wonderful forest experience.
- Always love my time at Peavy.
- These lovely forests are my and my two dogs main recreation and exercise. We come to several trail heads, about 310 days a year.
- The forest is a big part of my family's life.
- I am quite pleased with nearly all aspects of the forest.
- Great place with great trails and forest.
- Thank you for your service and interest in keeping McDonald useful and functioning in many capacities.
- Lovely forest.
- Trails are generally well maintained.
- Very few conflicts with hikers, bikers, equestrians.
- We come here because we love it.
- We use this forest for getting exercise and dog walking.
- I love this forest. Thank you for doing this survey to get our input.
- I love this forest and policies in place and have never had a bad experience.
- I feel so lucky to have this "in my back yard."
- The park is fine in almost every way.
- I am privileged to have a recreation forest nearby.
- I love access to this forest.
- The best thing about Corvallis.
- This is a great facility.
- I really enjoy being able to use the forest for recreational purposes.
- Nice job improving the trails.
- I enjoy the forest very much. I've never had any problems with people or animals.
- I love the forest. Some of the most pleasurable moments I have had in Oregon since retiring here in 2000, have been on my horse in McDonald-Dunn.
- It's a beautiful place especially for free. I hope it never changes.
- I love the forest just as it is.
- I love this forest, thank you.
- We love coming here to "re-create" (recreation).
- Love, love, love, hiking, moved here from Mt. Hood and I am glad there is such an awesome place nearby.
- McDonald-Dunn forest is a great place to hike.
- We are spoiled having access to such a great place.
- Appreciate having this facility close to Albany and Corvallis.
- I like the way the forest is managed for study, timber, old growth, and recreation.
- I love the forest.
- This is a great place.
- I love this forest, it is an amazing resource for so many.
- Great experience.
- Most who use these trails are respectful of them and others.
- Chris Jackson is doing a terrific job.
- I love this forest; thank you for all you do.
- We absolutely love the research forest.

Negative Comments and / or Issues for Improvement

- Dogs off lease okay - but owners should have more control.
- Please pursue all volunteer management options before imposing fees.
- No more parking.
- More trails.
- More signs.
- Don't worry about toilets or trash.
- The timber harvesting is fine.
- The College of Forestry makes a lot of money on timber harvest. To charge for recreation is ludicrous.
- Advertise the forest to undergrads at OSU better, as most don't know of its existence.
- More parking and portable toilets.
- Would like to see more trails.
- More public education please.
- I have thought for a long time there should be at least a voluntary fee.
- Biggest problem is dog waste.
- I am a dog owner, but notice many people do not clean up their dog's poop.
- More trails would be good.
- Less poop.
- I think many people would pay more if we have a voice in forest management.
- My only complaint is people not picking up after their dogs.
- If fee is charged, it should not just be a user fee.
- Would prefer not to pay for use, but probably will if I have to.
- Provide opaque trash bags (a la oak creek) for dog poo.
- Put up signs reminding dog owners to pick up after dog.
- Provide interpretive material to go with trails.
- More signs would be most important to me.
- More upkeep of trail maintenance.
- The heavy (copious) use of herbicides along the trail/ road is unhealthy and needs to change.
- I like it that people are bagging their dogs excrement, but it would be nice if they carried out the bags.
- Better trail markings.
- Volunteering in place of fees.
- If you institute a leash law/ rule, I will never visit this area again. Lack of rules makes this place worth coming to.
- I strongly oppose fees of any kind because fees exclude from this forest, and from all our national parks, the very people who need the most.
- I am opposed to a fee.
- Create trails for hikers and equestrians to support diverse forest use, but do not restrict use or create a fee.
- Log some more.
- I think designating specific trails for specific uses would decrease my enjoyment here.
- Having a trash can up beyond the parking lot some more would be nice.
- We don't need to be forced to pay for things we don't want.
- I would go elsewhere if there was a fee.
- Horse poop can be annoying.
- Any way to get people to understand that they need to pick up dog waste; it is a hazard and unpleasant.
- I come here often and the only times crowds are an issue is weekends, springtime, or events.
- Pick up ribbons when done.
- No need to gravel the roads.
- Keep horses off hiker only trails.
- Should let people know more about why the forest is so healthy (good forest practices).
- Would prefer studies in sustainable/ selective cuts forestry over clear cuts
- I love dogs but there are too many that are out of control; I've been knocked down by dogs, threatened.
- Find creative ways to raise money, but no mandatory fee.
- Allowing dogs off leash is extremely important.

- Don't identify research areas.
- I think a daily usage fee would exclude some people from enjoying the forest; volunteer donations would be a better idea.
- My only concern is a dog off leash, which I see every visit.
- More services, parking, signs, will only increase the demands on the forest and encourage use and costs.
- I would gladly pay a use fee, but would not want additional services, toilets, signs, etc.
- Leave it a wild gem, don't make it into a park.
- I bike here a lot; we need more mountain bike trails.
- Horseback riders need to pick up after their horses.
- Dog owners should keep dogs on leash unless they can control them.
- Before agreeing to a fee system, I would like to see a clear demonstration of rising costs - where is this being spent? I would also like to see evidence that fee revenues would support more than the fee administration and collection process.
- When logging operations cover trails, the trails are never restored; this is a sad loss. I suggest active promotion of volunteer trail building/ work events.
- We don't need more toilets, trash cans, personnel, etc., just some dirt trails in the woods.
- I don't want a use fee, but would pay one if necessary.
- Everybody should have access to the forest regardless of their financial state.
- I would do trail maintenance if organized.
- I prefer no payment use. However I understand the need in which case I prefer annual or seasonal low fee because a daily use fee is a hassle.
- I trailer my horse from Salem two or three times a year and I would like better trailer parking.
- Doggie bags with a garbage can about 100 feet up the trail would eliminate lots of "poop" problems.
- Instigating fees would cost more to administer than you would gain.
- Recreationists don't want the trails graveled heavily and don't appreciate 1" gravel on Patterson road.
- I bring classes of students to the forest. A fee would make it much more difficult to have field trips to Peavy Arboretum
- As an OSU Forestry grad, I think I have a unique perspective and view of the forest in terms of providing a local recreation resource.
- Would like to know where results of this survey will be posted.
- I prefer the McDonald-Dunn forest be kept in its natural state as much as possible.
- More parking would be safer and encourage more visitors. I think.
- I want existing trails to be better marked but don't want more trails.
- I feel that mountain bikes erode the trails over time. I can't say I know this for horseback riders but I would assume the same.
- The trails are very well maintained and if need be we'd be willing to pay for that.
- We wish to say we care about the level of timber harvesting.
- Voluntary donation to support.
- Please engage local youth and children to help maintain and take care of the trails and forest.
- Encourage more volunteers to do small tasks.
- Payment as donations allow for tax deductions and is a preferred option.
- Please all public lands to be enjoyed free of cost to all.
- Administration costs of mandatory payment may not be worth the hassle for public or OSU.
- Dogs on leash or at least under control of owner.
- My biggest concerns are the lack of trails and erosion of trails from mountain bikers.
- I strongly oppose daily fees! Total pain in the ass to implement and enforce. Fear funds would go to other purposes via county/ state poorly financed.
- No fees please.
- Dog waste is the only issue.
- Scheduled nature events for youth. Or spring plant ID maybe for minor contribution.
- I might come less often if my dog has to be leashed.
- Mountain bikers and horseback riders utilize Starker, Roseburg, and Boise Cascade land (and entry points) so should be able to use OSU's.
- I would hate to see it become more crowded.

- Horses should pay more due to more damage to trails.
- Improve directional signs.
- Don't like dog people leaving bags of excrement alongside of trail.
- Mandatory fees ok for parking, zero fees for alternative transport, decrease fees for trail maintenance.
- More signage on the trails (especially "unauthorized").
- I never hike on weekends because it is too crowded.
- More trails needed.
- Dogs that growl or bark angrily at me are a problem. It is about 1 dog out of every 15 and out of them those that are really scared (angry) 1 out of 10 could be a dangerous.
- On Rd. 600 (Patterson rd.) a lot of evidence of dogs, mud trails, and poop; not good.
- Parking is a problem at end of Jackson Creek and cars speeding is an issue too.
- No fees please.
- I strongly oppose paying to use public land when I know my use is very low impact and non-consumptive.
- The School of Forestry should know they are not a private sector entity.
- I see little stewardship in management of the Richardson tract.
- If you start charging for access, users will want input on environmental abuses (clear cutting, herbicide).
- We don't need more infrastructure. Need less infrastructure.
- Use volunteers when needed.
- Gravel roads are paid from timber harvest and are there to enable tree cutting.
- Only real complaint is that a few mountain bikers do not obey signs (trail closed) and are rude.
- We use the forest every day and have noticed that some maps are not up to date.
- Sell shirts, caps, support stickers.
- Better trail maps at head of trial.
- Strongly support annual fees and more difficult mountain]biking trails.
- I support a seasonal pass but I would hate a daily fee.
- Keep dogs off-leash.
- The trails down by Peavy are confusing, not marked well and trailhead maps there stink, so I don't go back.
- Less management and maintenance would be nice.
- It would be nice to remind bicyclists to slow down when approaching dogs.
- I prefer the low key atmosphere at present, but would be willing to work and pay for use.
- I believe in a dog's right to a life off leash (provided they are properly trained and responsive).
- I bring poop bags and pack it out whether or not there's a garbage can at the trailhead.
- Can we get some picnic tables?
- Don't charge.
- See a lot of dog droppings on trail and even stepped in some.
- Dog poop that isn't picked up on the trail; I would like it at least kicked off the trail if not put in a bag and taken out.
- Keep the trails usable.
- Control the bike use.
- There must be low income provisions in any fee system.
- Residents of the city proper should receive discounted or free admission because we provide free and reduced cost city services to OSU (and fire support and EMS to the forest), we collectively lessen our climactic footprint by choosing to live in an urban center rather than a rural area (but we need a natural outlet), and Mac-Dunn is our only option reasonably accessible by foot, bike or public transportation.
- Fee preference or waiver for those who access the forest without a motor vehicle.
- Encourage low footprint recreation.
- The only thing I would really change is more signs on trails (like street signs needed at each intersection).
- I would stop recreating if dogs must be kept on leash; it's the main draw for our household.
- It would be great if there were trash cans at the gates so I wouldn't have to bring my dog's poop back to town and throw it away.
- Less management and less rules.
- Many of the top OSU forest managers (Lysne, Salwasser) are hypocrites; I have been involved in forestry issues for more than two decades and they have broken their promises to the public time and time again. There is still a lot of distrust of them and their motives / agendas in the wider community.

- Main requests: more markings at trail intersections, spray poison oak along trails.
- Please do not charge us to use this forest.
- All I really want is improved signage at intersections on all trails.
- I'd like to see more support for adding unofficial mountain bike / running trails to a master map.
- I am not opposed to a use fee as long as it is not required by schools or other government agencies.
- Don't change anything for access to McDonald-Dunn; leave it as is, free access to everyone year round.
- Don't limit trails to a specific group.
- Start a "friends of the forest" volunteer group.
- Horses should be required to use the pouch on the back and discouraged from shoveling out trailers at parking area.
- Would like to see more trails like Dan's (like to the top of Mcculloch Peak) that are year round.
- Don't trust OSU with funds, at least not until Lysne is gone because cutting of timber accelerated after measure 5 to backfill and cover CoF fees which is simply wrong. College of Business doesn't sell their computers to pay fees. College of Pharmacy doesn't make drugs to offset fees. Why should CoF be able to exploit resources to cover fees?
- This forest needs to embrace recreationists and realize that big research grantors are simply not going to finance research in an area so impacted by recreation, so make the recreation pay for itself.
- Please, if you pit gravel on a trail, try to compact it. Unexpected loose gravel can cause loss of control on the bike and/or skidding and is probably causing more damage to the trails.
- More trails, more trails, more trails.
- Information sign at top of power line to Dimple Hill (right now, there is no scale, direction, etc).
- I have noticed a few bike tracks on powder house/sect. 36 loop trail.
- More trash cans and permanent toilets.
- We would really enjoy mile markers on the trail for jogging/ running.
- I pay plenty of state taxes to cover my use (no fees does not mean 'free').
- A few more trash cans along the homestead trail loop might help on the bagged dog poop problem.
- If there is a fee system, it should be free for students, kids, and frequent users.
- I use it regularly and would be willing to pay, but it would not be fair or it would be deprive others of this great asset.
- Road and trail drainage poorly designed (culverts undersized) causing erosion, and not at the base of fill.
- Keep it the way it is and I will gladly give an annual donation or volunteer hours.
- I strongly believe dogs should be on leash, for safety of others, owners, and forest.
- Too much logging out in Dunn. It makes me sad.
- Refraining from using crossbow chemicals on roadsides would be appreciated.
- Charge if you must but enforce loosely. Do you honestly think you can mandate this and enforce it over this large an area? Go with voluntary and you'll make more.
- I believe that this area should not have a day use fee and should be available to all; a fee doesn't belong.
- I vote to make this onto a mountain park for Corvallis with shelters, more trails, signs, etc.
- Need information on how to ensure vehicle safety at trailhead.
- I really enjoy not paying, but would pay to visit whatever the amount if necessary to keep open.
- Let's keep this forest open for the community.
- Rarely hike national forest after fee pass installed, so I would be concerned with any fees here.
- More waste bins for dog waste.
- The only improvements I care about are more trash cans, more toilets and for animal owners to clean up.
- If they do charge people for using, then have an option to waive the usage fee through volunteer hours or something similar.
- If you're going to charge, start with voluntary donations first and see what happens.
- I have had problems with dogs and dog owners.
- I would be willing to donate money to a recreational fund if I knew about it.
- No pay please.
- I feel that all dogs should be on a leash at all times and personnel should be available for enforcement.
- Willing to donate, just tell me where and how.
- Please don't charge a thing.

- Just like the Oregon beaches which my father (OSU professor) worked for it is important to have access for all regardless of ability to pay; the freedom to enjoy this resource is so important to the health and well-being of us all.
- Just like Oregon should have a sales tax so all who use the resources pay, so should it be for the forest.
- I have volunteered in the forest in the past and prefer to help in this way.
- Get rid of damn wild mountain biking punks.
- It's nature (free) not a theme park.
- If you decide to charge here there should be a way for public to influence management.
- I support improvements if they are truly needed.
- I would like more short trails connecting the road systems.
- Hopefully you'll come up with an easy approach to solve the funding problem.
- Tax dollars and logging should pay for recreation use of this public resource.
- Maybe an extra trail or two.
- How would a fee be enforced/ regulated with so many access points?
- I strongly oppose charging fees for access to public land.
- Suggest posting voluntary donation info on kiosks.
- It's sad to see all of the tree cuttings.
- I would pay more money in donation/ fee to shift the balance towards a diversified forest (i.e., selective harvest vs. clear-cutting).
- I would like to continue coming out free of charge.
- The logging has at times presented problems for people using this forest for recreation.
- The available maps are poor.
- I would feel safer if this was a leash only area.
- The College of Forestry needs to work on getting independent funding. A user fee is a regressive tax that will inhibit the poor from coming into the woods.
- Please do not over regulate the forest.
- Port-a-potties are fine, don't need bathrooms.
- If a person desires asphalt, signs, rules, leashes, police and porcelain toilets they can go to a city park.
- Clear cutting by College of Forestry demonstrates lack of foresight and imagination; as is this desire to implement fees.
- This forest is part of why we live here, so we would pay for to keep it open if necessary.
- Do not make leashes mandatory; I have been walking here daily for 2 years and have not seen any problems with dogs off leash.
- If we charge I would feel badly about people who couldn't afford it being excluded.
- Don't log.
- No more roads.
- I would pay an annual fee if there were more mountain bike specific trails.
- Trails need better marking.
- The clear-cuts are horrible and reduce my happiness when using the forest. If you charge money, I will expect it to stop.
- Stop hunting.
- I strongly oppose a fee.
- Set up a trust fund and make it open to the public.
- Stop cutting down the trees at an unsustainable rate.
- Should waive recreation fee for people under 18 years of age.
- Allow receipts from daily passes to count toward annual pass fee.
- I was just thinking today that I love not having to buy a pass to come here and I just don't see what services would justify a fee.
- If you have not looked into it I feel strongly that you should see about adding onto the Oregon/ Washington recreation pass. I feel it is understandable to need to pay for forest use, but really appreciate only having to deal with one fee where it is easy to purchase a tag when I to the BLM office to get it annually (one stop for all recreation). I don't mind paying extra for use at more locations. I just want to take care of it all at once.
- Invasive weeds, including false brome, are all a huge problem. Interpretive signs may help encourage people to clean shoes and pets.

- I don't see a need for permanent toilets or garbage service that are expensive and require maintenance.
- I think special interest groups like mountain bikers and trail runners would (and do) pitch in on trail building and maintenance.
- Why no mention of hunters' usage of the forest on signs (safety)?
- While I am willing to pay an annual fee, this would seem labor intensive to enforce. Parking passes on cars would be easy, but what about those running or biking into the forest?
- Please keep the forest open to us to enjoy.
- If anything just charge an annual or season fee; we (I) are willing to pay.
- Implementing leash requirements for dogs would prevent us from using trails.
- Strongly oppose daily fees, most users live in the community.
- I am concerned that permanent vault toilets would be smellier and dirtier. The portable toilets are great and I can always find parking.
- I would pay if there was an assurance of less logging.
- In Alaska they have an annual fee for trails. I don't know if it is mandatory, but each year sponsors receive a zoo-like sticker. They are different each year and people love having them.
- Charging a user fee here may increase the use of Benton County Parks and increase the need for more parking at places like Bald Hill.
- There are a handful of discourteous pedestrians with dogs.
- Please do not require a leash on dogs; it will greatly detract from experience.
- Keep pricing passes low.
- Consider Northwest Forest Pass price for so many locations only for $30 a year.
- We understand the dilemmas posed to everyone involved.
- Would be nice to have more trails/ parking or wildlife.
- Dog feces are a big problem on trails near Oak Creek trailhead.
- My only real complaint is bikers wearing headsets. They're "somewhere else" and cannot hear or see you when wearing ear sets and going downhill fast, I nearly had a collision two weeks ago.
- I would hate to see limited use because of fees. At least try to have volunteers first (would also increase community pride).
- I hope you do not impose mandatory fees, but have optional fees, so that those with lower incomes can come.
- Bikes tear up the trails and increase the maintenance.
- Can only monitor on vehicles parked at a trailhead.
- Don't change it or over manage it; no improvements necessary.
- We are on a fixed income and would rather volunteer than pay to use the forest.
- Little management is best. Don't add fees just to create bureaucracy. The way it is fine.
- Please don't require leashes.
- Would prefer to find alternate funding sources so all could enjoy
- If people cannot control their dogs greeting/ jumping on people they should be on leashes.
- Please don't "city-fy" it too much, we like it rustic.
- Fees are regressive. Taxes should be used to support the forest just like the city parks.
- We don't need new rules, facilities, or parking lots.
- Money spent should be used for park maintenance only.
- People should pick up after their dogs more; I think this is mainly an issue with runners with dogs.
- No drastic changes needed.
- If a fee is necessary, cover the park's costs then stop.
- Do not like horse waste on trails.
- Only suggestion is a better detailed trail map and trail markers for side trails because a lot are missing.
- I don't see the need for more management; encourage volunteers. Allow volunteerism in lieu of use fees.
- Leave it alone. Less is more and don't over manage
- If a fee is instituted, I think it should be higher for horses and bikers because maintenance would be higher.
- I wish McDonald Forest was better managed for control of invasive plants.
- I think the costs of administering these proposed fees will make the whole deal unfeasible.
- Some bikers need to be educated about horses. In the past two weeks I've had more unsafe encounters with bikes on my horse than in the past five years.
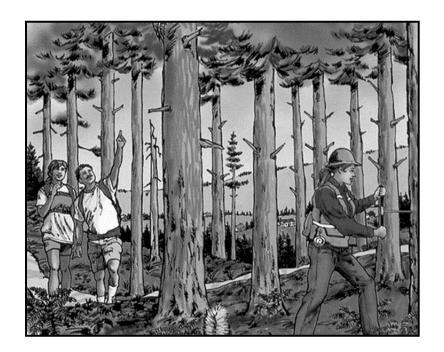- I'd like to keep the use spontaneous (no fees) to give all a chance to discover the forest.

- Let the community know how we can help and let us know how to donate.
- I do pay a fee - taxes that go to higher education (OSU). Isn't recreation management a degree and as such the school should provide the costs for maintenance not users.
- Sad you have to use defoliant/ pesticide.
- Go easy on the timber harvesting.
- The only complaints I have are no trash cans and horse waste. I pack out my dog's waste. The horseback riders need to do the same.
- I would be willing to pay up to $100.00 a year for an annual permit. If you're going to do this you should also have a daily use fee. If you don't have a daily fee what is my incentive to buy an annual permit?
- A voluntary pay station would be my recommendation.
- I am against mandatory fees because of the effect I fear they will have on users less fortunate financially than myself and the casual users that just want to de-stress with a short stroll over in the forest after work, or a quick family picnic. A possibility might be to have a temporary surcharge on equestrians and bikers, since we are the ones that need the more durable tread and cause the most damage to the trails.
- One thing that would increase my enjoyment of it would be more explanatory signs about what is going on and on-going in different areas in terms of management practices, experiments, etc.; the non-recreational aspects of the forest.
- Please no fees.
- Try to coordinate with the state and work out a deal to include McDonald Forest in the state pass because paying will be less popular if not bundled with something people who hike already pay for like the state of federal passes.
- I have been accosted by forestry students here.
- My one wish would be a toilet by lake.
- Horse riders should be required to clean up horse droppings or use a bag that catches the poop because riding through it is just gross, plus it can transport unwanted organisms and plants.
- I would like to see more organized events to help take care of the trails, and hopefully free up funds for other purposes.
- I would hate to see access limited due to money and fees.
- It's very important to me that this location remains dog friendly.
- Bikes don't respect trail signs and cause lots of damage.
- Open up lodge to weddings again to augment money.
- No fees. If more services or trails require fees, then leave things the same.
- I have finally found some great mountain bike trails, but it is tough to get to them with lots of climbing, so more mountain bike trails please.
- If McDonald forest was not available to me, I would move to another town with similar recreation / proximity to town.
- The dog poop is one the biggest problems; it ruins the experience.
- Sometimes Corvallis airport flight school planes are busy/ noisy overhead.
- Just don't attract/ aggravate the cougars; let them be.
- Label the lovely wooden map at junction of forest discovery trail.
- I have a concern that a mandatory fee would eliminate use by youth and lower income.
- I love that it's wild; don't make it into a fruffy park.
- Start with voluntary tax deductible donation and try it for a year.
- It's scenic, I am not interested in you clearing so people have view.
- Would pay more if it was tax deductible donation just like public broadcasting. I would leave in my will.
- I like the forest wild; I do not want a manicured park. It's a forest and it's rugged, so don't fruffy it up.
- Dogs are a slight problem. People let them run, poop in the walkway and on the roads, run into people when (just out of a stream) wet.
- Mandatory fee will diminish use and create a presence of enforcement, which I do not like.
- Keep dogs off leash.
- Work with local mountain bikers to build more trails.
- We would pay a small annual fee.
- Horse riders should take much more responsibility in trail use. They are the biggest problem.
- Request help and we will help.

- More trash cans please.
- You should try having donation boxes before charging a fee.
- Please post/ publish results of this survey.
- No need for extra services, but if needed I will pay an annual use fee.
- The worst thing that could happen would be for the forest to become overcrowded.
- Don't turn this forest into Disneyland!
- I understand that fees may occur, but we prefer the existing system over more recreational use.

APPENDIX B: QUESTIONNAIRE

Recreationists' Experiences and Preferences at McDonald-Dunn Forest

Important Questions for McDonald-Dunn Forest Visitors

Please Complete this Survey and Return it to the Researcher

Participation is Voluntary and Responses are Anonymous

Thank You for Your Participation

We are conducting this survey to learn about your experiences at McDonald-Dunn Forest and your opinions about how to manage this forest. Your input is important and will assist managers. ***Please answer all questions and return it to the researcher.***

1. Please check *all* activities in which you have *ever* participated at McDonald-Dunn Forest. **(check ALL THAT APPLY)**

   ☐ *A*. Hiking or walking   ☐ *D*. Mountain biking   ☐ *G*. Horseback riding
   ☐ *B*. Dog walking   ☐ *E*. Nature viewing   ☐ *H*. Hunting
   ☐ *C*. Trail running or jogging   ☐ *F*. Bird watching (e.g., owls)   ☐ *I*. Other (please specify) _____

2. From activities in Question 1 above, what *ONE primary activity* are you participating in at McDonald-Dunn Forest *TODAY*? **(write ONE letter that matches your response)**

   Letter for *today's* primary activity _____

3. From activities in Question 1 above, what *ONE primary activity* do you *TYPICALLY* participate in at McDonald-Dunn Forest?

   Letter for *typical* primary activity _____

4. How would you rate your skill level in this activity you *TYPICALLY* participate in at McDonald-Dunn Forest? **(check ONE)**

   ☐ Beginner   ☐ Novice   ☐ Intermediate   ☐ Advanced   ☐ Expert

5. Overall, how satisfied are you with your recreation experiences at McDonald-Dunn Forest? **(check ONE)**

   ☐ Very Dissatisfied   ☐ Dissatisfied   ☐ Neither   ☐ Satisfied   ☐ Very Satisfied

6. Listed below are characteristics of McDonald-Dunn Forest. On the left, rate how *important* it is to you that each characteristic is provided at this forest. Then, on the right, rate how *dissatisfied or satisfied* you are with each characteristic at this forest. **Answer *both* the importance (on left) *and* satisfaction (on right) questions by circling numbers for *EACH* characteristic.**

| Rate IMPORTANCE | | | | | Characteristics of McDonald-Dunn Forest | Rate SATISFACTION | | | | |
Not Important	Neither			Very Important		Very Dissatisfied	Neither			Very Satisfied
1	2	3	4	5	Amount of parking for vehicles	1	2	3	4	5
1	2	3	4	5	Amount of parking for horse trailers	1	2	3	4	5
1	2	3	4	5	Toilets / bathrooms	1	2	3	4	5
1	2	3	4	5	Trash cans	1	2	3	4	5
1	2	3	4	5	Trail maps / brochures	1	2	3	4	5
1	2	3	4	5	Trailhead signs with information / regulations	1	2	3	4	5
1	2	3	4	5	Directional signs on trails / roads	1	2	3	4	5
1	2	3	4	5	Trail maintenance	1	2	3	4	5
1	2	3	4	5	Number of trails	1	2	3	4	5
1	2	3	4	5	Amount of litter	1	2	3	4	5
1	2	3	4	5	Amount of *dog* waste / excrement	1	2	3	4	5
1	2	3	4	5	Amount of *horse* waste / excrement	1	2	3	4	5
1	2	3	4	5	Presence of management personnel	1	2	3	4	5
1	2	3	4	5	Pay no fee to use this forest	1	2	3	4	5
1	2	3	4	5	Opportunity to experience nature	1	2	3	4	5
1	2	3	4	5	Opportunity for scenic views	1	2	3	4	5
1	2	3	4	5	Opportunity to escape from crowds of people	1	2	3	4	5
1	2	3	4	5	Opportunity to learn about a working forest	1	2	3	4	5
1	2	3	4	5	Timber harvesting	1	2	3	4	5
1	2	3	4	5	Safety from logging / forestry operations	1	2	3	4	5

7. What do you think *currently* pays for recreation management at McDonald-Dunn Forest? **(check ALL THAT APPLY)**

☐ Federal taxes   ☐ Local taxes   ☐ Grants and subsidies   ☐ Unsure
☐ State taxes   ☐ Timber harvest from the forest   ☐ Gifts and donations

8. Many organizations and agencies charge use fees to access and recreate on local, private, state, and federal lands.
   Have you ever paid use fees for recreation on any of these types of lands? **(check ONE)**   ☐ No   ☐ Yes   ☐ Unsure

9. Access to McDonald-Dunn Forest is currently provided free of charge, but the budget to manage recreation is declining and costs are increasing. Managers are exploring several options to help cover costs of recreation. To what extent do you oppose or support each of the following possible alternatives to help cover costs? **(circle ONE number for *EACH* alternative)**

	Strongly Oppose	Oppose	Neither	Support	Strongly Support
Voluntary money donation.	1	2	3	4	5
Mandatory daily use fee.	1	2	3	4	5
Mandatory seasonal use fee / pass.	1	2	3	4	5
Mandatory annual (year) use fee / pass.	1	2	3	4	5
Endowment (e.g., sponsor / name a trail).	1	2	3	4	5
Volunteer time to help management (e.g., trail maintenance).	1	2	3	4	5
Other (please specify) _____	1	2	3	4	5

10. What is the *maximum* amount you would be willing to pay for *each* of the following to use McDonald-Dunn Forest for recreation? **(write how much you would be willing to pay for *EACH* alternative; put "0" if you would not pay)**

Voluntary money donation $_____

Mandatory daily use fee $_____

Mandatory seasonal use fee / pass $_____

Mandatory annual (year) use fee / pass $_____

11. What would be your most preferred method of payment to use McDonald-Dunn Forest for recreation? **(check ONE)**

☐ Voluntary money donation   ☐ Mandatory seasonal use fee / pass   ☐ I am not willing to pay to use
☐ Mandatory daily use fee   ☐ Mandatory annual (year) use fee / pass   McDonald-Dunn Forest

12. To what extent do you disagree or agree with each of the following statements regarding paying a use fee to recreate at McDonald-Dunn Forest? **(circle ONE number for *EACH* statement)**

Paying a use fee to recreate at McDonald-Dunn Forest would …	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
… make me feel like I would be helping to protect this forest.	1	2	3	4	5
… make me more willing to comply with the rules / regulations.	1	2	3	4	5
… make me feel good because I would be helping to cover costs to manage recreation in this forest.	1	2	3	4	5
… improve my enjoyment of this forest.	1	2	3	4	5
… cause me to expect better maintenance of facilities / services.	1	2	3	4	5
… cause me to expect more facilities / services in this forest.	1	2	3	4	5
… cause me to still recreate in this forest, but less often.	1	2	3	4	5
… cause me to stop recreating in this forest altogether.	1	2	3	4	5
… make recreating in this forest too expensive for me.	1	2	3	4	5

13. Do you think that recreation users should help pay for recreation management at McDonald-Dunn Forest? **(check ONE)**
    ☐ No   ☐ Yes   ☐ Unsure

The next four questions each present two hypothetical management options for McDonald-Dunn Forest where:

- Amount of parking is **SAME** or **MORE** as now
- Toilets at trailheads are **SAME (PORTABLE)** as now or **PERMANENT / VAULT TOILETS**
- Number of trash cans is **SAME** or **MORE** as now
- Number of trail direction / information signs is **SAME** or **MORE** as now
- Number of trails is **SAME** or **MORE** as now
- Annual (year) use fee / pass of **$5**, **$10**, **$25**, or **$50** per year

DIRECTIONS: *For EACH question carefully read EACH option and CHOOSE THE ONE OPTION YOU MOST PREFER.*
No questions or options are the same, so answer all four questions. Make choices independent of questions preceding it.

14. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only *ONE* option)**

	OPTION 1	OPTION 2
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**MORE** than now	**MORE** than now
Annual (year) use fee / pass	**$5** per year	**$10** per year

CHOOSE ONE ⟶ ☐   **I prefer Option 1**   ☐   **I prefer Option 2**   ☐   **I prefer neither**

15. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only *ONE* option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**MORE** than now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**SAME** as now	**MORE** than now
Annual (year) use fee / pass	**$10** per year	**$50** per year

CHOOSE ONE ⟶ ☐   **I prefer Option 1**   ☐   **I prefer Option 2**   ☐   **I prefer neither**

16. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**SAME (PORTABLE)** as now	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**MORE** than now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**MORE** than now	**SAME** as now
Annual (year) use fee / pass	**$5** per year	**$10** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

17. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**PERMANENT TOILETS**	**PERMANENT TOILETS**
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**SAME** as now	**SAME** as now
Annual (year) use fee / pass	**$25** per year	**$5** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

18. To what extent do you oppose or support each of the following possible management actions at McDonald-Dunn Forest?
   (circle ONE number for *EACH* possible management action)

	Strongly Oppose	Oppose	Neither	Support	Strongly Support
Better inform visitors about appropriate behavior.	1	2	3	4	5
Provide more technical / challenging trails.	1	2	3	4	5
Provide trails designated only for mountain biking.	1	2	3	4	5
Provide more trails designated only for people on foot (hike, walk, jog).	1	2	3	4	5
Provide trails designated only for horseback riding.	1	2	3	4	5
Provide directional trails (e.g., uphill only, downhill only).	1	2	3	4	5
Require that dogs be kept on leash.	1	2	3	4	5
Increase presence of management personnel.	1	2	3	4	5
Do not change anything / keep things as they are now.	1	2	3	4	5

Version 2:

The next four questions each present two hypothetical management options for McDonald-Dunn Forest where:
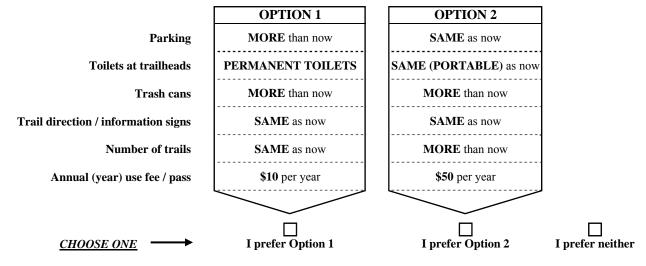
- Amount of parking is **SAME** or **MORE** as now
- Toilets at trailheads are **SAME (PORTABLE)** as now or **PERMANENT / VAULT TOILETS**
- Number of trash cans is **SAME** or **MORE** as now
- Number of trail direction / information signs is **SAME** or **MORE** as now
- Number of trails is **SAME** or **MORE** as now
- Annual (year) use fee / pass of **$5**, **$10**, **$25**, or **$50** per year

DIRECTIONS: *For EACH question carefully read EACH option and CHOOSE THE ONE OPTION YOU MOST PREFER. No questions or options are the same, so answer all four questions. Make choices independent of questions preceding it.*

14. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**SAME (PORTABLE)** as now	**SAME (PORTABLE)** as now
Trash cans	**SAME** as now	**MORE** than now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**SAME** as now	**SAME** as now
Annual (year) use fee / pass	**$5** per year	**$25** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

15. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**PERMANENT TOILETS**
Trash cans	**SAME** as now	**SAME** as now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**MORE** than now	**SAME** as now
Annual (year) use fee / pass	**$25** per year	**$50** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

16. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

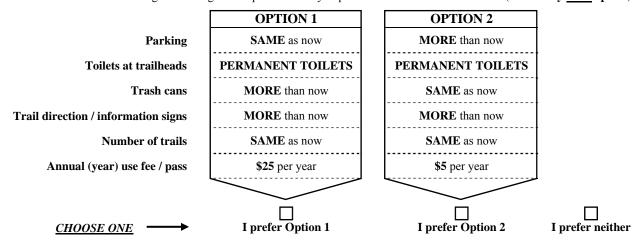|	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**SAME (PORTABLE)** as now	**PERMANENT TOILETS**
Trash cans	**SAME** as now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**SAME** as now	**MORE** than now
Annual (year) use fee / pass	**$50** per year	**$10** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

17. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**MORE** than now	**MORE** than now
Annual (year) use fee / pass	**$50** per year	**$25** per year

CHOOSE ONE ⟶   ☐ **I prefer Option 1**   ☐ **I prefer Option 2**   ☐ **I prefer neither**

18. To what extent do you oppose or support each of the following possible management actions at McDonald-Dunn Forest?
(circle ONE number for _EACH_ possible management action)

	Strongly Oppose	Oppose	Neither	Support	Strongly Support
Better inform visitors about appropriate behavior.	1	2	3	4	5
Provide more technical / challenging trails.	1	2	3	4	5
Provide trails designated only for mountain biking.	1	2	3	4	5
Provide more trails designated only for people on foot (hike, walk, jog).	1	2	3	4	5
Provide trails designated only for horseback riding.	1	2	3	4	5
Provide directional trails (e.g., uphill only, downhill only).	1	2	3	4	5
Require that dogs be kept on leash.	1	2	3	4	5
Increase presence of management personnel.	1	2	3	4	5
Do not change anything / keep things as they are now.	1	2	3	4	5

19. What is the ***ONE*** agency or organization ***currently*** responsible for managing McDonald-Dunn Forest? **(check only *ONE*)**

☐ United States Forest Service   ☐ Oregon State University (OSU) / College of Forestry
☐ United States Bureau of Land Management   ☐ Corvallis Parks and Recreation Department
☐ Oregon Department of Forestry   ☐ Benton County Parks
☐ Oregon Parks and Recreation Department   ☐ Unsure

20. During your visits to McDonald-Dunn Forest, how often ***have you seen*** the following? **(circle ONE number for *EACH*)**

	Never	Once or Twice	Sometimes	Many Times
Mountain bikers riding too fast.	0	1	2	3
Mountain bikers being rude or discourteous.	0	1	2	3
Mountain bikers not yielding the right of way.	0	1	2	3
Mountain bikers failing to give verbal warnings upon approach.	0	1	2	3
Horseback riders riding too fast.	0	1	2	3
Horseback riders being rude or discourteous.	0	1	2	3
Horseback riders not yielding the right of way.	0	1	2	3
Horseback riders failing to give verbal warnings upon approach.	0	1	2	3
People on foot (hikers, walkers, joggers) being rude or discourteous.	0	1	2	3
People on foot (hikers, walkers, joggers) not yielding the right of way.	0	1	2	3
People on foot failing to give verbal warnings upon approach.	0	1	2	3

21. To what extent do you feel each of the following is a ***problem*** at McDonald-Dunn Forest? **(circle ONE number for *EACH*)**

	Not a Problem	Slight Problem	Moderate Problem	Extreme Problem
Mountain bikers riding too fast.	0	1	2	3
Mountain bikers being rude or discourteous.	0	1	2	3
Mountain bikers not yielding the right of way.	0	1	2	3
Mountain bikers failing to give verbal warnings upon approach.	0	1	2	3
Horseback riders riding too fast.	0	1	2	3
Horseback riders being rude or discourteous.	0	1	2	3
Horseback riders not yielding the right of way.	0	1	2	3
Horseback riders failing to give verbal warnings upon approach.	0	1	2	3
People on foot (hikers, walkers, joggers) being rude or discourteous.	0	1	2	3
People on foot (hikers, walkers, joggers) not yielding the right of way.	0	1	2	3
People on foot failing to give verbal warnings upon approach.	0	1	2	3

22. In total, about how many ***years*** have you been recreating in McDonald-Dunn Forest?   _____ year(s)

23. In what ***ONE*** season do you typically visit McDonald-Dunn Forest ***MOST OFTEN***? **(check only *ONE*)**

☐ Spring   ☐ Summer   ☐ Fall   ☐ Winter

24. About how often have you visited McDonald-Dunn Forest ***in the past 12 months***? **(check ONE)**

☐ Less than once a month (less than 12 times per year)   ☐ About once a week (46 to 80 times per year)
☐ About once a month (12 to 18 times per year)   ☐ About twice a week (81 to 130 times per year)
☐ About two or three times a month (19 to 45 times per year) ☐ Three or more times a week (over 130 times per year)

25. On a typical visit, about how many ***hours*** do you spend recreating in McDonald-Dunn Forest?   _____ hour(s)

26. Do you typically bring any dogs with you when visiting McDonald-Dunn Forest? **(check ONE)**   ☐ No   ☐ Yes

Finally, we would like to ask you a few questions about yourself and your group to help us learn about the backgrounds of respondents and allow us to compare your answers with those of other respondents. You will remain anonymous.

27. ***INCLUDING YOURSELF***, how many people are accompanying you at McDonald-Dunn Forest ***today***? _____ person(s)

28. How many people in your group at McDonald-Dunn Forest ***today*** are ***under 16 years of age***? _____ person(s)

29. How did you get to McDonald-Dunn Forest ***today***? **(check ONE)**
☐ Drove motorized vehicle here   ☐ Rode bicycle here   ☐ Rode horse here   ☐ Walked / jogged here

30. Are you: **(check ONE)**   ☐ Male   ☐ Female

31. What is your age?   _____ years old

32. What is the **highest** level of education that **you** have completed? **(check ONE)**
☐ Less than high school diploma   ☐ 4-year college degree (for example: bachelors degree)
☐ High school diploma or GED   ☐ Advanced degree beyond 4-year degree (for example: masters,
☐ 2-year associates degree or trade school   Ph.D., medical doctor, law degree)

33. Are you *currently* a student? **(check ONE)**
☐ No
☐ Yes → if yes, what high school, college, or university do you attend? **(please specify)** _____

34. In what city or town do you *currently* live? **(check ONE)**
☐ Corvallis   ☐ Albany
☐ Philomath   ☐ Other (please specify) _____
☐ Adair Village

35. Approximately how far away from the nearest boundary of McDonald-Dunn Forest do you *currently* live? **(check ONE)**
☐ Adjacent (next to forest)   ☐ Within 1 mile   ☐ More than 5 miles
☐ Within 1/2 mile   ☐ 1 to 5 miles   ☐ Unsure

36. Which of these broad categories best describes your *current annual household income before taxes*? **(check ONE)**
☐ Less than $10,000   ☐ $90,000 to $109,999
☐ $10,000 to $29,999   ☐ $110,000 to $129,999
☐ $30,000 to $49,999   ☐ $130,000 to $149,999
☐ $50,000 to $69,999   ☐ $150,000 to $169,999
☐ $70,000 to $89,999   ☐ $170,000 or more

If you have any other comments, please write them here:

_____

_____

Thank you, your input is important! ***Please return this survey to the researcher***.

RESEARCHER COMPLETES THIS SECTION:
Date: _____   Time: _____   Site: _____   Version ___

APPENDIX C: UNCOLLAPSED PERCENTAGES

Recreationists' Experiences and Preferences at McDonald-Dunn Forest

Important Questions for McDonald-Dunn Forest Visitors

Please Complete this Survey and Return it to the Researcher

Participation is Voluntary and Responses are Anonymous

Thank You for Your Participation

We are conducting this survey to learn about your experiences at McDonald-Dunn Forest and your opinions about how to manage this forest. Your input is important and will assist managers. ***Please answer all questions and return it to the researcher.***

1. Please check *all* activities in which you have *ever* participated at McDonald-Dunn Forest. **(check ALL THAT APPLY)**

   94% *A*. Hiking or walking   47% *D*. Mountain biking   7% *G*. Horseback riding

   60% *B*. Dog walking   55% *E*. Nature viewing   1% *H*. Hunting

   52% *C*. Trail running or jogging   24% *F*. Bird watching (e.g., owls)   8% *I*. Other (please specify) _____

2. From activities in Question 1 above, what ***ONE primary activity*** are you participating in at McDonald-Dunn Forest ***TODAY***? **(write ONE letter that matches your response)**

   Letter for *today's* primary activity <u>see report</u>

3. From activities in Question 1 above, what ***ONE primary activity*** do you ***TYPICALLY*** participate in at McDonald-Dunn Forest?

   Letter for *typical* primary activity <u>see report</u>

4. How would you rate your skill level in this activity you ***TYPICALLY*** participate in at McDonald-Dunn Forest? **(check ONE)**

   2% Beginner   5% Novice   45% Intermediate   36% Advanced   12% Expert

5. Overall, how satisfied are you with your recreation experiences at McDonald-Dunn Forest? **(check ONE)**

   3% Very Dissatisfied   0% Dissatisfied   1% Neither   31% Satisfied   66% Very Satisfied

6. Listed below are characteristics of McDonald-Dunn Forest. On the left, rate how ***important*** it is to you that each characteristic is provided at this forest. Then, on the right, rate how ***dissatisfied or satisfied*** you are with each characteristic at this forest. **Answer *both* the importance (on left) *and* satisfaction (on right) questions by circling numbers for *EACH* characteristic.**

Rate IMPORTANCE					Characteristics of McDonald-Dunn Forest	Rate SATISFACTION				
Not Important		Neither		Very Important		Very Dissatisfied		Neither		Very Satisfied
8%	7%	25%	46%	14%	Amount of parking for vehicles	1%	5%	21%	44%	30%
59	8	24	6	3	Amount of parking for horse trailers	3	3	75	9	11
13	10	29	34	14	Toilets / bathrooms	2	8	33	38	20
8	9	25	35	23	Trash cans	3	11	34	38	15
6	7	20	44	24	Trail maps / brochures	2	11	25	42	20
3	4	14	44	35	Trailhead signs with information / regulations	2	10	23	45	20
4	4	14	43	35	Directional signs on trails / roads	3	14	27	39	18
1	2	9	45	43	Trail maintenance	1	2	9	46	43
1	2	10	41	47	Number of trails	1	6	13	44	37
1	1	5	27	67	Amount of litter	0	3	7	34	55
4	5	23	35	33	Amount of *dog* waste / excrement	4	12	27	36	21
6	8	31	32	23	Amount of *horse* waste / excrement	6	15	36	26	17
25	15	44	11	5	Presence of management personnel	1	2	52	24	21
3	3	12	17	65	Pay no fee to use this forest	1	1	10	11	78
1	1	2	17	81	Opportunity to experience nature	1	1	3	24	72
1	1	9	29	60	Opportunity for scenic views	1	3	11	32	54
0	1	4	21	74	Opportunity to escape from crowds of people	0	1	7	34	58
8	10	32	32	18	Opportunity to learn about a working forest	0	3	42	31	23
17	11	39	18	15	Timber harvesting	5	12	50	21	12
5	4	21	30	41	Safety from logging / forestry operations	1	4	31	31	34

7. What do you think *currently* pays for recreation management at McDonald-Dunn Forest? **(check ALL THAT APPLY)**

16% Federal taxes	21% Local taxes	50% Grants and subsidies	29% Unsure
47% State taxes	65% Timber harvest from the forest	47% Gifts and donations	

8. Many organizations and agencies charge use fees to access and recreate on local, private, state, and federal lands. Have you ever paid use fees for recreation on any of these types of lands? **(check ONE)**   14% No   83% Yes   3% Unsure

9. Access to McDonald-Dunn Forest is currently provided free of charge, but the budget to manage recreation is declining and costs are increasing. Managers are exploring several options to help cover costs of recreation. To what extent do you oppose or support each of the following possible alternatives to help cover costs? **(circle ONE number for *EACH* alternative)**

	Strongly Oppose	Oppose	Neither	Support	Strongly Support
Voluntary money donation.	2%	4%	9%	45%	40%
Mandatory daily use fee.	43	32	13	10	2
Mandatory seasonal use fee / pass.	26	25	18	26	5
Mandatory annual (year) use fee / pass.	24	20	17	32	8
Endowment (e.g., sponsor / name a trail).	2	2	17	44	35
Volunteer time to help management (e.g., trail maintenance).	1	2	11	46	41
Other (please specify) <u>see report</u>	1	1	6	2	5

10. What is the <u>*maximum*</u> amount you would be willing to pay for <u>*each*</u> of the following to use McDonald-Dunn Forest for recreation? **(write how much you would be willing to pay for *EACH* alternative; put "0" if you would not pay)**

Voluntary money donation	$ <u>see report</u>
Mandatory daily use fee	$ <u>see report</u>
Mandatory seasonal use fee / pass	$ <u>see report</u>
Mandatory annual (year) use fee / pass	$ <u>see report</u>

11. What would be your most preferred method of payment to use McDonald-Dunn Forest for recreation? **(check ONE)**

49% Voluntary money donation	6% Mandatory seasonal use fee / pass	10% I am not willing to pay to use
3% Mandatory daily use fee	33% Mandatory annual (year) use fee / pass	McDonald-Dunn Forest

12. To what extent do you disagree or agree with each of the following statements regarding paying a use fee to recreate at McDonald-Dunn Forest? **(circle ONE number for *EACH* statement)**

Paying a use fee to recreate at McDonald-Dunn Forest would …	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
… make me feel like I would be helping to protect this forest.	9%	12%	20%	44%	15%
… make me more willing to comply with the rules / regulations.	24	21	40	11	3
… make me feel good because I would be helping to cover costs to manage recreation in this forest.	8	9	26	44	12
… improve my enjoyment of this forest.	23	25	37	11	4
… cause me to expect better maintenance of facilities / services.	6	7	26	41	20
… cause me to expect more facilities / services in this forest.	7	12	34	32	15
… cause me to still recreate in this forest, but less often.	15	21	25	28	10
… cause me to stop recreating in this forest altogether.	37	27	23	9	4
… make recreating in this forest too expensive for me.	26	26	28	14	6

13. Do you think that recreation users should help pay for recreation management at McDonald-Dunn Forest? **(check ONE)**
    28% No   34% Yes   37% Unsure

Version 1:

The next four questions each present two hypothetical management options for McDonald-Dunn Forest where:

- Amount of parking is **SAME** or **MORE** as now
- Toilets at trailheads are **SAME (PORTABLE)** as now or **PERMANENT / VAULT TOILETS**
- Number of trash cans is **SAME** or **MORE** as now
- Number of trail direction / information signs is **SAME** or **MORE** as now
- Number of trails is **SAME** or **MORE** as now
- Annual (year) use fee / pass of **$5**, **$10**, **$25**, or **$50** per year

DIRECTIONS: *For EACH question carefully read EACH option and CHOOSE THE ONE OPTION YOU MOST PREFER. No questions or options are the same, so answer all four questions. Make choices independent of questions preceding it.*

14. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	**OPTION 2**
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**MORE** than now	**MORE** than now
Annual (year) use fee / pass	**$5** per year	**$10** per year

51%	**28%**	**21%**
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

CHOOSE ONE ⟶

15. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	**OPTION 2**
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**MORE** than now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**SAME** as now	**MORE** than now
Annual (year) use fee / pass	**$10** per year	**$50** per year

51%	**16%**	**33%**
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

CHOOSE ONE ⟶

16. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**SAME (PORTABLE)** as now	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**MORE** than now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**MORE** than now	**SAME** as now
Annual (year) use fee / pass	**$5** per year	**$10** per year

CHOOSE ONE ⟶

50%	28%	22%
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

17. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**PERMANENT TOILETS**	**PERMANENT TOILETS**
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**SAME** as now	**SAME** as now
Annual (year) use fee / pass	**$25** per year	**$5** per year

CHOOSE ONE ⟶

23%	46%	32%
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

Version 2:

The next four questions each present two hypothetical management options for McDonald-Dunn Forest where:
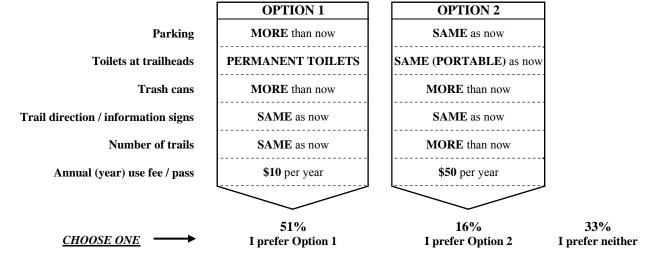
- Amount of parking is **SAME** or **MORE** as now
- Toilets at trailheads are **SAME (PORTABLE)** as now or **PERMANENT / VAULT TOILETS**
- Number of trash cans is **SAME** or **MORE** as now
- Number of trail direction / information signs is **SAME** or **MORE** as now
- Number of trails is **SAME** or **MORE** as now
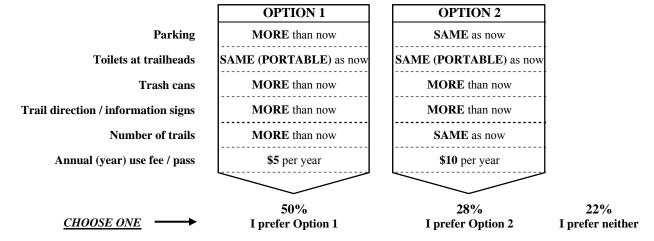- Annual (year) use fee / pass of **$5**, **$10**, **$25**, or **$50** per year

DIRECTIONS: *For EACH question carefully read EACH option and CHOOSE THE ONE OPTION YOU MOST PREFER. No questions or options are the same, so answer all four questions. Make choices independent of questions preceding it.*

14. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**
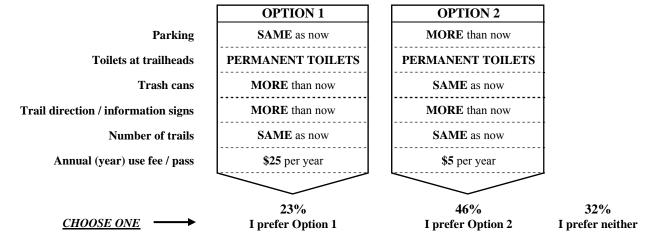
	OPTION 1	**OPTION 2**
Parking	**SAME** as now	**MORE** than now
Toilets at trailheads	**SAME (PORTABLE)** as now	**SAME (PORTABLE)** as now
Trash cans	**SAME** as now	**MORE** than now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**SAME** as now	**SAME** as now
Annual (year) use fee / pass	**$5** per year	**$25** per year

CHOOSE ONE ⟶	**80%** **I prefer Option 1**	**10%** **I prefer Option 2**	**10%** **I prefer neither**

15. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	**OPTION 2**
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**PERMANENT TOILETS**
Trash cans	**SAME** as now	**SAME** as now
Trail direction / information signs	**SAME** as now	**SAME** as now
Number of trails	**MORE** than now	**SAME** as now
Annual (year) use fee / pass	**$25** per year	**$50** per year

CHOOSE ONE ⟶	**49%** **I prefer Option 1**	**9%** **I prefer Option 2**	**43%** **I prefer neither**

16. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**SAME (PORTABLE)** as now	**PERMANENT TOILETS**
Trash cans	**SAME** as now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**SAME** as now	**MORE** than now
Annual (year) use fee / pass	**$50** per year	**$10** per year

CHOOSE ONE ⟶

8%	63%	29%
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

17. Which one of the following two management options would you prefer at McDonald-Dunn Forest? **(check only _ONE_ option)**

	OPTION 1	OPTION 2
Parking	**MORE** than now	**SAME** as now
Toilets at trailheads	**PERMANENT TOILETS**	**SAME (PORTABLE)** as now
Trash cans	**MORE** than now	**SAME** as now
Trail direction / information signs	**MORE** than now	**MORE** than now
Number of trails	**MORE** than now	**MORE** than now
Annual (year) use fee / pass	**$50** per year	**$25** per year

CHOOSE ONE ⟶

5%	62%	33%
I prefer Option 1	**I prefer Option 2**	**I prefer neither**

18. To what extent do you oppose or support each of the following possible management actions at McDonald-Dunn Forest? **(circle ONE number for _EACH_ possible management action)**

	Strongly Oppose	Oppose	Neither	Support	Strongly Support
Better inform visitors about appropriate behavior.	3%	7%	44%	38%	9%
Provide more technical / challenging trails.	2	7	46	32	13
Provide trails designated only for mountain biking.	8	14	34	31	14
Provide more trails designated only for people on foot (hike, walk, jog).	5	11	31	37	17
Provide trails designated only for horseback riding.	11	14	42	22	12
Provide directional trails (e.g., uphill only, downhill only).	13	19	46	17	6
Require that dogs be kept on leash.	40	21	20	9	10
Increase presence of management personnel.	17	25	50	7	1
Do not change anything / keep things as they are now.	2	7	26	31	34

19. What is the ___ONE___ agency or organization *currently* responsible for managing McDonald-Dunn Forest? **(check only _ONE_)**

1% United States Forest Service	82% Oregon State University (OSU) / College of Forestry
0% United States Bureau of Land Management	1% Corvallis Parks and Recreation Department
4% Oregon Department of Forestry	1% Benton County Parks
1% Oregon Parks and Recreation Department	11% Unsure

20. During your visits to McDonald-Dunn Forest, how often ___have you seen___ the following? **(circle ONE number for _EACH_)**

	Never	Once or Twice	Sometimes	Many Times
Mountain bikers riding too fast.	48%	24%	21%	7%
Mountain bikers being rude or discourteous.	72	16	9	3
Mountain bikers not yielding the right of way.	61	21	12	6
Mountain bikers failing to give verbal warnings upon approach.	50	23	18	9
Horseback riders riding too fast.	94	4	2	1
Horseback riders being rude or discourteous.	87	8	4	1
Horseback riders not yielding the right of way.	83	9	5	3
Horseback riders failing to give verbal warnings upon approach.	80	11	6	3
People on foot (hikers, walkers, joggers) being rude or discourteous.	76	16	6	2
People on foot (hikers, walkers, joggers) not yielding the right of way.	81	12	5	2
People on foot failing to give verbal warnings upon approach.	72	14	10	5

21. To what extent do you feel each of the following is a ___problem___ at McDonald-Dunn Forest? **(circle ONE number for _EACH_)**

	Not a Problem	Slight Problem	Moderate Problem	Extreme Problem
Mountain bikers riding too fast.	67%	23%	9%	2%
Mountain bikers being rude or discourteous.	80	13	5	1
Mountain bikers not yielding the right of way.	74	17	7	2
Mountain bikers failing to give verbal warnings upon approach.	70	19	9	3
Horseback riders riding too fast.	94	4	1	1
Horseback riders being rude or discourteous.	92	5	2	1
Horseback riders not yielding the right of way.	90	6	2	1
Horseback riders failing to give verbal warnings upon approach.	90	7	2	1
People on foot (hikers, walkers, joggers) being rude or discourteous.	90	8	1	1
People on foot (hikers, walkers, joggers) not yielding the right of way.	91	7	1	1
People on foot failing to give verbal warnings upon approach.	91	8	1	1

22. In total, about how many *years* have you been recreating in McDonald-Dunn Forest?   <u>See report</u>   year(s)

23. In what ___ONE___ season do you typically visit McDonald-Dunn Forest ___MOST OFTEN___? **(check only _ONE_)**

    16% Spring   52% Summer   23% Fall   9% Winter

24. About how often have you visited McDonald-Dunn Forest ___in the past 12 months___? **(check ONE)**

17% Less than once a month (less than 12 times per year)	18% About once a week (46 to 80 times per year)
11% About once a month (12 to 18 times per year)	17% About twice a week (81 to 130 times per year)
19% About two or three times a month (19 to 45 times per year)	19% Three or more times a week (over 130 times per year)

25. On a typical visit, about how many *hours* do you spend recreating in McDonald-Dunn Forest?   <u>See report</u>   hour(s)

26. Do you typically bring any dogs with you when visiting McDonald-Dunn Forest? **(check ONE)**   49% No   51% Yes

Finally, we would like to ask you a few questions about yourself and your group to help us learn about the backgrounds of respondents and allow us to compare your answers with those of other respondents. You will remain anonymous.

27. ___INCLUDING YOURSELF___, how many people are accompanying you at McDonald-Dunn Forest *today*? <u>See report</u> person(s)

28. How many people in your group at McDonald-Dunn Forest *today* are ___under 16 years of age___? <u>See report</u> person(s)

29. How did you get to McDonald-Dunn Forest *today*? **(check ONE)**

    86% Drove motorized vehicle here   6% Rode bicycle here   1% Rode horse here   8% Walked / jogged here

30. Are you: **(check ONE)**   49% Male   51% Female

31. What is your age?   <u>See report</u> years old

32. What is the **highest** level of education that **you** have completed? **(check ONE)**

    1% Less than high school diploma   37% 4-year college degree (for example: bachelors degree)

    8% High school diploma or GED   43% Advanced degree beyond 4-year degree (for example: masters,

    10% 2-year associates degree or trade school   Ph.D., medical doctor, law degree)

33. Are you *currently* a student? **(check ONE)**

    82% No

    18% Yes → if yes, what high school, college, or university do you attend? **(please specify)** <u>See report</u>

34. In what city or town do you *currently* live? **(check ONE)**

    71% Corvallis   9% Albany

    2% Philomath   16% Other (please specify) <u>See report</u>

    2% Adair Village

35. Approximately how far away from the nearest boundary of McDonald-Dunn Forest do you *currently* live? **(check ONE)**

    4% Adjacent (next to forest)   11% Within 1 mile   35% More than 5 miles

    6% Within 1/2 mile   43% 1 to 5 miles   2% Unsure

36. Which of these broad categories best describes your *current annual household income before taxes*? **(check ONE)**

    6% Less than $10,000   13% $90,000 to $109,999

    14% $10,000 to $29,999   7% $110,000 to $129,999

    15% $30,000 to $49,999   5% $130,000 to $149,999

    17% $50,000 to $69,999   2% $150,000 to $169,999

    15% $70,000 to $89,999   7% $170,000 or more

If you have any other comments, please write them here:

<u>See report</u>

Thank you, your input is important! ___Please return this survey to the researcher___.