

**Perceived Conflict with Off Leash Dogs
at Boulder Open Space and Mountain Parks**

Sponsored by the City of Boulder Open Space and Mountain Parks and conducted by

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Executive Summary

- This study described the extent to which visitors to the City of Boulder Open Space and Mountain Parks (OSMP) evaluated 11 human-dog interaction variables as problems.
- Data for this project were obtained from on-site surveys ($n = 951$) conducted at 16 OSMP locations during the summer of 2006. Sampling occurred at trailheads that provide access to trails allowing dogs to be managed under voice and site control.
- Questions related to perceived conflict examined 5 *direct* (e.g., dogs jumping on visitors) and 6 *indirect* (e.g., dogs causing wildlife to flee) human-dog interactions.
- We operationalized perceived conflict as: (a) no conflict, (b) interpersonal conflict, (c) social values conflict, and (d) both interpersonal and social values conflict.
- Summary of Key Conflict Findings
 1. All behaviors were thought to be a “slight” to “extreme” problem by some portion of the survey respondents. The most problematic behaviors were owners not picking up after their dog, dogs causing wildlife to flee, dogs jumping on a visitor, dogs pawing a visitor and dogs flushing birds.
 2. Although some statistical differences existed between (a) dog guardians versus non-dog guardians, (b) individuals who walk their dogs at OSMP versus those who do not, and (c) frequency of dog walking at OSMP, the magnitude of these differences was small.
 3. Nearly three-quarters (73%) of the respondents (14% – social values conflict; 59% – interpersonal and social values conflict) experienced some form of conflict with off leash dogs or their guardians at the OSMP locations studied.
- Recommendations
 1. The current implementation of the Voice and Sight Tag (VST) program is a necessary first step at reducing human-dog interaction conflict at areas managed by OSMP, but it may not be sufficient to eliminate conflict.
 2. To obtain a VST tag, visitors must view a video and agree to control their off leash dogs in a manner described in the video. Not included in the registration process, however, is a behavioral component where individuals demonstrate that their dogs are under voice and sight control. One recommendation would require individuals to not only watch the video, but also pass a written test and a physical demonstration of their ability to control their dogs.
 3. Resolving the social values conflict will require continued education efforts of both dog guardians and non-dog guardians by the City of Boulder OSMP. A brochure and / or a video for non-guardians explaining the goals and objectives of the VST program, as well as appropriate behaviors of off leash dogs may help in this regard. If education efforts are not effective, a reduction in the number of trails allowing off leash dogs may be necessary.
 4. Formal education programs and formal sanctions (e.g., fines, loss of voice and sight privileges) may not be sufficient for resolving the interpersonal conflict. Part of the responsibility needs to be shouldered by OSMP visitors. Over three-quarters (78%) of the respondents believed that “it is OK for a visitor to say something to a dog owner who does not have his or her dog under control.” Agency encouragement of such informal sanctions, when combined with the formal sanctions, may promote a higher quality experience for all visitors.
 5. The VST program should be periodically monitored to determine whether conflict is being reduced.

Table of Contents

	Page
Acknowledgements	i
Executive Summary	ii
Table of Contents	iii
List of Tables	iv
List of Figures	iv
Introduction	1
Study Context and Objectives	3
Methods	3
Sampling design	3
Variables measured	4
Results	5
Descriptive findings	5
Perceived problem behavior	5
Beliefs about off leash dogs	10
Perceived conflict	11
Visitor clusters: Perceived conflict	13
Discussion	20
Summary of findings	20
Implications for OSMP	20
References	22

List of Tables

Table		Page
1	Survey locations	4
2	Perceived problems associated with human-dog interactions	6
3	Perceived problems associated with each behavior by dog guardians	7
4	Perceived problems associated with each behavior by dog walkers at OSMP	8
5	Perceived problems associated with each behavior by frequency of walking dogs at OSMP	9
6	Beliefs about off leash dogs	10
7	Perceived conflicts associated with human-dog interactions	12
8	Visitor clusters: Perceived conflict	13
9	Perceived problems by conflict clusters	14
10	Demographics by conflict clusters	15
11	Frequency of visitation by conflict clusters	16
12	Dog guardian indicators by conflict clusters	17
13	Activities by conflict clusters	18
14	Beliefs about off leash dogs by conflict clusters	19

List of Figures

Figure		Page
1	Conflict evaluations	2

Introduction

Researchers have analyzed recreation conflict for over four decades (e.g., Graefe & Thapa, 2004; Lucas, 1964). Although most researchers have examined interpersonal (i.e., goal interference) conflict (e.g., Jacob & Schreyer, 1980; Schneider, 2000), others have introduced and explored social values (i.e., social acceptability) conflict (Carothers, Vaske, & Donnelly, 2001; Vaske, Donnelly, Wittmann, & Laidlaw, 1995; Vaske, Needham, & Cline, 2007).

Interpersonal conflict occurs when the presence or behavior of an individual or group interferes with the goals of another individual or group (Jacob & Schreyer, 1980). A skier, for example, may experience interpersonal conflict if he or she is cut off by or collides with a snowboarder (Vaske, Dyar, & Timmons, 2004). Most recreation research has focused on interpersonal conflict between different activity groups such as non-motorized and motorized watercraft (Lucas, 1964; Shelby, 1980), skiers and snowboarders (Thapa & Graefe, 2003; Vaske, Carothers, Donnelly, & Baird, 2000; Vaske et al., 2004), hikers and mountain bikers (Carothers et al., 2001; Ramthun, 1995), hunters and non-hunters (Vaske et al., 1995), and cross-country skiers and snowmobilers (Jackson & Wong, 1982; Knopp & Tyger, 1973; Vaske et al., 2007).

Social values conflict occurs between groups who may not share similar norms / values about an activity (Ruddell & Gramann, 1994; Vaske et al., 1995). Unlike interpersonal conflict, social values conflict is defined in the literature as conflict that can occur even when there is no direct contact between the groups (Carothers et al., 2001). For example, although encounters with llama packing trips may be rare, individuals may philosophically disagree about the appropriateness of using these animals in the backcountry (Blahna, Smith, & Anderson, 1995).

A study at Mt. Evans, Colorado examined the distinction between interpersonal and social values conflict (Vaske et al., 1995). Interpersonal conflict between hunters and wildlife viewers was minimized due to the region's topography and management regulations separating the two activity groups. Conflict experienced between the groups was primarily attributed to differences in value orientations regarding the appropriateness of hunting and wildlife viewing. Nearly all of the non-hunters did not observe hunting-associated behaviors (e.g., see hunters, see animals be shot), yet still perceived social values conflict with hunters. Carothers et al. (2001) examined interpersonal and social values conflict among mountain bikers and hikers. Hikers were more likely to report both interpersonal and social values conflict than bikers.

In these investigations, perceived conflict was operationalized by combining responses from two sets of questions. First, individuals indicated how frequently events happened to them during their visit. In the Mt. Evans study (Vaske et al., 1995), events included three non-hunting (see people feed wildlife, disturb / harass wildlife, and see dogs chase wildlife) and three hunting (see hunters, hear guns being fired, and see animals being shot) situations. Responses were analyzed as "observed" (i.e., at least once) or "did not observe" the event (i.e., never saw). Second, respondents evaluated the extent to which they perceived each event to be a problem. Items were coded on a scale from "not a problem" to "extreme problem." For analysis purposes, responses were recoded into two categories ("no problem" or "problem").

Combining the frequency of occurrence (observed, not observed) variables with the corresponding perceived problem (no problem, problem) variables for each respondent produced conflict typologies with three possible attributes. Individuals who observed or did not observe a given event, yet did not perceive it to be a problem were considered to have experienced no conflict (i.e., no interpersonal or social values conflict). Those who never saw a given event, but believed that a problem existed for the event were considered to be expressing a conflict in social

values. Conversely, those who witnessed a particular event and believed that it had caused a problem were judged to be indicating interpersonal conflict.

These procedures used to operationalize “no conflict” and “social values conflict” are conceptually clear (Carothers et al., 2001; Graefe & Thapa, 2004; Vaske et al., 1995). If recreationists do not consider a situation / event to be a problem, regardless of whether or not it is observed, no conflict is apparent. If an individual does not observe an existing situation, but believes that it is problematic, the conflict stems from his or her social values. Conceptual problems, however, may arise when differentiating interpersonal from social values conflict. People who observe a situation / event *and* judge it to be a problem may be expressing interpersonal, social values, or both types of conflict. Recognizing this conceptual shortcoming, Vaske et al. (2007) further classified respondents in the interpersonal conflict cell (Figure 1) based on their agreement with the statement “just knowing that snowmobilers (or skiers) are in the area bothers me.” Individuals who were initially identified as having interpersonal conflict, yet agreed that just knowing snowmobilers (or skiers) were in the area bothered them, were reclassified as having *both* interpersonal and social values conflict. Respondents who disagreed with this statement were considered to be reporting only interpersonal conflict.

The current study used the refinements developed by Vaske et al. (2007) for defining visitors as experiencing (a) no conflict, (b) interpersonal, (c) social values or (d) both interpersonal and social values conflict. Individuals in the “interpersonal and social values conflict” cell indicated that they observed a given situation, perceived that situation to be a problem, and *agreed* with the statement “Just knowing that off leash dogs are allowed in Open Space and Mountain Parks (OSMP) areas is a problem for me, even if I never see them.” Individuals in the “interpersonal conflict” cell indicated that they observed a given situation, perceived that situation to be a problem, and *disagreed* with the statement “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them.”

Figure 1. Conflict evaluations

		Perceived Problem	
		No	Yes
Observed	No	No Conflict	Social Values Conflict
	Yes	No Conflict	Interpersonal and Social Values Conflict ¹
			Interpersonal Conflict ²

¹ Individuals in this cell indicated that they observed a given situation, perceived that situation to be a problem, and *agreed* with the statement “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them.”

² Individuals in this cell indicated that they observed a given situation, perceived that situation to be a problem, and *disagreed* with the statement “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them.”

The distinction between interpersonal and social values conflict is important because of the associated management implications. Three general strategies have been recognized for dealing with conflict: (a) zoning, (b) education, and (c) adopting alternative management strategies (Graefe & Thapa, 2004; Vaske et al., 1995). When conflict stems from interpersonal interactions, zoning incompatible visitors to different locations can be effective. When the source of conflict is a difference in values, intensified education efforts are often necessary, but may not be effective in changing basic beliefs. If social values conflict at OSMP is substantial, management may need to consider either (a) eliminating off leash dogs in all areas or (b) reducing the number of trails where off leash dogs are allowed.

Study Context and Objectives

The City of Boulder OSMP Visitor Master Plan identifies conflict reduction as a key objective. One specific type of potential conflict involves the presence of dogs in areas managed by OSMP and the impact of dog behaviors on the visiting public. Dog guardians, for example, that allow their dogs to be off leash may not be in control of their animals and may be less likely to clean up after their pets. Visitors who are intolerant of the presence and / or behavior of pets in natural areas are likely to evaluate these situations as unacceptable.

In response to this situation, OSMP has initiated a Voice and Sight Dog Tag Program (VST). Under the VST program, visitors wishing to have their dogs off leash and under voice and sight control are required to have a tag visibly displayed on their dogs. To obtain a tag, a visitor must view a video describing the requirements of voice and sight control and complete a registration form. Visitors not registered in the program or who do not have a tag on their dog must keep their dog on leash while visiting OSMP and other City of Boulder properties where voice and sight control applies. One objective of the VST program is to decrease conflict involving dogs on OSMP properties.

During the summer of 2006, OSMP conducted an observational study to evaluate visitors' compliance with observable aspects of existing dog regulations, including the voice and sight ordinance. The OSMP observational study also evaluated the level of conflict involving dogs on their properties. The study described in this document complements the OSMP observational investigation by evaluating visitor perceptions of conflict with dogs off leash in the City's Open Space and Mountain Parks. The study involved an on-site survey and addressed the following issues:

1. Visitors' reported frequency of observing 11 specific dog / guardian behaviors (e.g., dogs approaching visitors uninvited, guardians not picking up after their pets).
2. The extent to which visitors perceive the presence and / or behavior of dogs to be a problem at locations managed by OSMP.
3. The type (interpersonal vs. social values) and magnitude of conflict that currently exists among OSMP visitors.

Methods

Sampling Design

Data for this project were obtained from on-site surveys ($n = 951$) conducted at 16 locations managed by the City of Boulder Open Space and Mountain Parks during the summer of 2006 (Table 1). Representatives from OSMP distributed the self-administered surveys. Surveys were randomly distributed during July (43%), August (49%) and early September (8%). Both

weekdays (47%) and weekends (53%) were included in the sample. Surveys were administered in the morning (44%), midday (32%) and evening (24%). Sampling occurred at trailheads that provide access to trails allowing dogs to be managed under voice and site control.

Variables Measured

The one-page survey included general questions related to: (a) frequency of visitation, (b) dog ownership, (c) activities participated in on the day the individual was interviewed, (d) demographics (sex, age, education, place of residence), and (e) beliefs about off leash dogs at OSMP.

Table 1. Survey locations

Survey locations	Number	Percent
East Boulder – Gunbarrel	53	6
East Boulder – Teller Farm	21	2
Dry Creek	79	8
Bobolink	72	8
South Boulder Creek at EBCC	31	3
Marshall Mesa	66	7
Greenbelt Plateau	12	1
Doudy Draw	18	2
South Mesa	107	11
Shanahan Ridge	52	5
Chautauqua	216	23
Sanitas	64	7
Foothills	15	2
Sage	44	5
Eagle	53	6
Gregory Canyon	48	5
Total	951	100

Questions related to perceived conflict examined 11 specific behaviors that could potentially create conflict for OSMP visitors. This list of behaviors was developed collectively from input provided by OSMP and interested citizen group representatives. For presentation purposes these items were arranged into *direct* and *indirect* human-dog interactions. The direct behaviors involved situations where dogs interacted with visitors other than their guardians. In the indirect behaviors, the dog interacted with the guardian, wildlife or other dogs, or the guardian failed to pick up after their dogs.

The direct behaviors included:

- Dogs jumping on a visitor
- Dogs pawing a visitor
- Dogs licking a visitor
- Dogs sniffing a visitor
- Dogs approaching uninvited

The indirect behaviors included:

- Owners not picking up after their dogs
- Dogs causing wildlife to flee
- Dogs flushing birds
- Owners repeatedly calling their dogs
- Dogs off trail
- Dogs “play” chasing another dog

To address issues related to perceived conflict, respondents indicated the extent to which they considered each of the 11 behaviors to be a problem at OSMP. The response categories for these questions were “not at all a problem” (0), “slight problem” (1), “moderate problem” (2), and “extreme problem” (3). For some analyses and consistent with past research (Carothers et al., 2001; Vaske et al., 1995, 2007), these variables were recoded into two categories (“no problem” or “problem”). Combining the frequency of occurrence on a typical visit (observed, not observed) variables with the corresponding perceived problem (no problem, problem) variables for each respondent produced conflict typologies with the four possible attributes: (a) no conflict, (b) interpersonal conflict, (c) social values conflict, and (d) both interpersonal and social values conflict.

Results

Descriptive Findings

Fifty-six percent of the sample was female and 44% male. Half of the respondents were between the ages of 31 to 50, with another quarter over 50. The average age was 42 years old. A third of the sample held a bachelors degree and 53% had attended some graduate school or held masters or doctoral / professional degrees. Nearly half of the sample (48%) lived within the city limits of Boulder.

A quarter of the sample had visited OSMP locations two years or less; over a third (38%) had been visiting more than 10 years. The average number of years visiting OSMP locations was 11. Forty-one individuals (4%) had been visiting for more than 30 years. About a quarter (26%) of the individuals in the sample had made between 1 and 10 visits to OSMP locations within the past 12 months. On the other extreme, 38% had made more than 90 visits during the previous year. The average number of visits per year was 92 and ranged from 1 to 365 visits. A third of the respondents had made between 1 and 3 visits during the past month. Another third had visited 4 to 10 times, and a third had made more than 10 visits in the last month. The average number of visits was 10 per month and the range was from 1 visit to more than 31 visits.

Over half (54%) of the respondents were dog guardians. Of these individuals, 71% owned one dog and another quarter owned two dogs. Over half (56%) walk their dogs two or more times per week at OSMP areas. The average number of dogs per dog walker was 1.35.

Fifty-six percent were not visiting OSMP with a dog on the day they completed the survey; about a third were visiting with one dog and about a tenth (11%) with 2 or 3 dogs. On the day the respondent was interviewed, over a quarter (28%) considered their activity to be walking a dog. More than half (57%) were walking or hiking without a dog and a fifth (21%) were runners (Note: since respondents could check more than one activity, percentages do not sum to 100.)

Perceived Problem Behavior

All behaviors were thought to be a slight to extreme problem by some portion of the sample (Table 2). The most problematic behaviors were owners not picking up after their dog, dogs causing wildlife to flee, dogs jumping on a visitor, dogs pawing a visitor and dogs flushing birds.

Across all 11 potential problem behaviors, “owners not picking up after their dogs” was considered to be an “extreme problem” by 57% of all respondents (Table 2). Almost all (91%) individuals rated this behavior as at least slightly problematic. Only 10% indicated that they had observed this behavior on the day they completed the survey.

Among the other “indirect” behaviors, “dogs causing wildlife to flee” (35%) and “dogs flushing birds” (24%) were also evaluated as extreme problems, with about three quarters indicating that

these behaviors were slightly to extremely problematic. These behaviors, however, were only observed by 3% and 2%, respectively, on the day they were interviewed.

Nearly half of the respondents rated “dogs off trail” (47%) and “dogs ‘play’ chasing another dog” (44%) as problematic to at least some extent. A third observed dogs off trail and nearly a fifth reported seeing dogs play chasing another dog.

Among the five “direct” human-dog interaction variables, “dogs jumping on a visitor” was considered an extreme problem by 35% of the respondents; 82% rated this behavior as at least a “slight problem.” “Dogs pawing a visitor” was considered a problem (slight to extreme) by three quarters of the visitors. Both of these behaviors, however, were observed by only 3% or less of the respondents on the day the survey was completed.

Dogs approaching another visitor uninvited and dogs sniffing a visitor were seen as a problem (slight to extreme) by two thirds and half of the visitors, respectively. These two behaviors were observed by about a fifth of the respondents on the day they were surveyed.

Table 2. Perceived problems associated with human-dog interactions

	Extent of Problem <i>if</i> Behavior Occurs ¹				Percent Observing Behavior Today
	Not at all a problem %	Slight problem %	Moderate problem %	Extreme problem %	
For dogs off leash:					
Indirect interaction					
Owners not picking up after their dogs	9	12	22	57	10
Dogs causing wildlife to flee	23	20	22	35	3
Dogs flushing birds	28	26	22	24	2
Owners repeatedly calling their dogs	30	39	22	9	12
Dogs off trail	53	29	13	5	32
Dogs “play” chasing another dog	56	26	13	5	18
Direct interaction					
Dogs jumping on a visitor	18	22	25	35	3
Dogs pawing a visitor	24	26	26	24	2
Dogs licking a visitor	35	30	19	16	6
Dogs approaching uninvited	32	32	20	16	19
Dogs sniffing a visitor	48	29	14	9	18

1. Cell entries are row percents

Tables 3 through 5 examine the relationships between each of the potential problem behaviors and three dog guardian variables. In addition to tests of statistical significance (χ^2), we used Cramer’s *V* to compare the strength of the relationships. A value of .1 on this effect size statistic can be considered a “minimal” relationship (Vaske, Gliner, & Morgan, 2002). A Cramer’s *V* of .3 is considered “typical” and effect sizes of .5 or greater are “substantial” relationships.

Compared to non-dog guardians, dog guardians were slightly less likely to evaluate “owners not picking up after their dogs,” “dogs causing wildlife to flee,” “dogs flushing birds,” and “owners repeatedly calling their dogs” as problems (Table 3). Although larger percentage differences were observed between guardians and non-guardians in terms of “dogs off trail” and “dogs play chasing another dog,” and there were statistical differences between the two groups, all of the relationships can be characterized as “minimal.” In other words, there are differences between dog guardians and non-dog guardians for the six indirect interaction perceived problem variables, but the differences are small.

Table 3. Perceived problems associated with each behavior by dog guardians

	Dog Guardian		χ^2	<i>p</i> -value	Cramer's <i>V</i>
	No (<i>n</i> = 431) (%)	Yes (<i>n</i> = 509) (%)			
Indirect interaction					
Owners not picking up after dogs			18.53	< .001	.141
Not at all a problem	7	10			
Slight problem	10	14			
Moderate problem	19	26			
Extreme problem	64	50			
Dogs causing wildlife to flee			14.72	< .002	.126
Not at all a problem	21	24			
Slight problem	18	22			
Moderate problem	19	24			
Extreme problem	42	30			
Dogs flushing birds			37.64	< .001	.201
Not at all a problem	25	31			
Slight problem	21	29			
Moderate problem	20	24			
Extreme problem	34	16			
Owners repeatedly calling dogs			33.61	< .001	.190
Not at all a problem	25	33			
Slight problem	34	43			
Moderate problem	27	18			
Extreme problem	14	6			
Dogs off trail			66.98	< .001	.267
Not at all a problem	39	64			
Slight problem	34	24			
Moderate problem	19	8			
Extreme problem	8	3			
Dogs "play" chasing another dog			41.11	< .001	.209
Not at all a problem	46	64			
Slight problem	30	24			
Moderate problem	19	8			
Extreme problem	5	4			
Direct interaction					
Dogs jumping on a visitor			15.23	< .002	.128
Not at all a problem	15	20			
Slight problem	19	25			
Moderate problem	25	25			
Extreme problem	41	30			
Dogs pawing a visitor			19.70	< .001	.146
Not at all a problem	20	26			
Slight problem	24	28			
Moderate problem	25	27			
Extreme problem	31	19			
Dogs licking a visitor			31.26	< .001	.183
Not at all a problem	28	41			
Slight problem	29	31			
Moderate problem	22	17			
Extreme problem	21	11			
Dogs approaching uninvited			34.91	< .001	.193
Not at all a problem	27	36			
Slight problem	28	35			
Moderate problem	22	18			
Extreme problem	23	11			
Dogs sniffing a visitor			67.66	< .001	.268
Not at all a problem	37	57			
Slight problem	28	30			
Moderate problem	21	9			
Extreme problem	14	4			

Table 4. Perceived problems associated with each behavior by dog walkers at OSMP

	Do you walk your dog at OSMP areas?			χ^2	<i>p</i> -value	Cramer's <i>V</i>
	No (<i>n</i> = 78) (%)	Yes (<i>n</i> = 431) (%)	Do Not Own a Dog (<i>n</i> = 431) (%)			
Indirect interaction						
Owners not picking up after dogs				19.22	.004	.102
Not at all a problem	12	10	7			
Slight problem	14	14	10			
Moderate problem	22	26	19			
Extreme problem	52	50	64			
Dogs causing wildlife to flee				15.63	.016	.092
Not at all a problem	27	24	21			
Slight problem	19	23	18			
Moderate problem	26	23	19			
Extreme problem	28	30	42			
Dogs flushing birds				40.87	< .001	.147
Not at all a problem	31	31	25			
Slight problem	27	29	21			
Moderate problem	19	25	20			
Extreme problem	23	15	34			
Owners repeatedly calling dogs				39.10	< .001	.144
Not at all a problem	24	35	25			
Slight problem	42	43	34			
Moderate problem	25	16	27			
Extreme problem	9	6	14			
Dogs off trail				78.69	< .001	.203
Not at all a problem	54	66	39			
Slight problem	26	24	34			
Moderate problem	10	8	19			
Extreme problem	10	2	8			
Dogs "play" chasing another dog				55.16	< .001	.170
Not at all a problem	51	67	46			
Slight problem	23	24	30			
Moderate problem	17	6	19			
Extreme problem	9	3	5			
Direct interaction						
Dogs jumping on a visitor				16.99	.009	.096
Not at all a problem	22	20	15			
Slight problem	27	24	19			
Moderate problem	20	26	25			
Extreme problem	31	30	41			
Dogs pawing a visitor				21.26	.002	.107
Not at all a problem	27	26	20			
Slight problem	33	28	24			
Moderate problem	22	28	25			
Extreme problem	18	18	31			
Dogs licking a visitor				33.42	< .001	.133
Not at all a problem	41	41	28			
Slight problem	34	31	29			
Moderate problem	12	18	22			
Extreme problem	13	10	21			
Dogs approaching uninvited				39.46	< .001	.144
Not at all a problem	28	38	27			
Slight problem	36	35	28			
Moderate problem	19	17	22			
Extreme problem	17	10	23			
Dogs sniffing a visitor				70.88	< .001	.192
Not at all a problem	57	57	37			
Slight problem	29	30	28			
Moderate problem	6	10	21			
Extreme problem	8	3	14			

Table 5. Perceived problems associated with each behavior by frequency of walking dogs at OSMP

	Frequency of Walking Dogs at OSMP			χ^2	<i>p</i> -value	Cramer's <i>V</i>
	Never (<i>n</i> = 78) (%)	1 to 4 Visits per Month (<i>n</i> = 146) (%)	2+ Visits per Week (<i>n</i> = 285) (%)			
Indirect interaction						
Owners not picking up after dogs				1.94	.925	.044
Not at all a problem	12	11	10			
Slight problem	14	16	13			
Moderate problem	22	24	27			
Extreme problem	52	49	50			
Dogs causing wildlife to flee				7.08	.314	.083
Not at all a problem	27	29	21			
Slight problem	19	21	24			
Moderate problem	26	18	26			
Extreme problem	28	32	29			
Dogs flushing birds				3.94	.684	.064
Not at all a problem	31	32	30			
Slight problem	27	30	29			
Moderate problem	19	22	26			
Extreme problem	23	16	15			
Owners repeatedly calling dogs				7.05	.316	.084
Not at all a problem	24	31	37			
Slight problem	43	47	41			
Moderate problem	24	16	16			
Extreme problem	9	6	6			
Dogs off trail				25.55	< .001	.168
Not at all a problem	54	55	72			
Slight problem	26	32	20			
Moderate problem	10	10	6			
Extreme problem	10	3	2			
Dogs "play" chasing another dog				15.87	.014	.135
Not at all a problem	51	63	69			
Slight problem	23	25	23			
Moderate problem	17	8	6			
Extreme problem	9	4	2			
Direct Interaction						
Dogs jumping on a visitor				3.35	.764	.057
Not at all a problem	22	23	19			
Slight problem	27	25	23			
Moderate problem	20	25	27			
Extreme problem	31	27	31			
Dogs pawing a visitor				2.10	.910	.045
Not at all a problem	27	26	25			
Slight problem	33	29	27			
Moderate problem	22	27	29			
Extreme problem	18	18	19			
Dogs licking a visitor				4.59	.597	.066
Not at all a problem	41	40	41			
Slight problem	34	33	30			
Moderate problem	12	20	17			
Extreme problem	13	7	12			
Dogs approaching uninvited				7.50	.277	.087
Not at all a problem	28	40	37			
Slight problem	36	32	37			
Moderate problem	19	15	18			
Extreme problem	17	12	8			
Dogs sniffing a visitor				9.38	.153	.096
Not at all a problem	57	56	57			
Slight problem	29	31	30			
Moderate problem	6	7	11			
Extreme problem	8	6	2			

For the direct interaction perceived problem variables in Table 3, more of the non-dog guardians felt each of the behaviors was a moderate to extreme problem than the dog guardians, and there were statistical differences between the two groups. However, similar to the indirect interaction variables, the strength of these differences was generally minimal.

In general, the evaluations given by dog guardians who do not walk their dogs at OSMP were similar to those who do walk their dogs at OSMP (Table 4). Once again, the effect size was “minimal” (i.e., Cramer’s $V \leq .203$).

Among the dog guardians (Table 5), the frequency of walking their dogs at OSMP did not statistically influence their evaluations of problem behaviors. The one exception to this pattern was “dogs off trail” where 8% of the respondents who visited 2+ times per week rated the behavior as a moderated or extreme problem, compared to 13% of those who walk their dogs 1 to 4 times per month, and 20% of those who never visit with their dogs. Although these distributions were statistically different, the effect size was .168 (i.e., a minimal relationship).

Beliefs about Off Leash Dogs

Consistent with perceived problem measures, 91% of the respondents agreed with the statement “It bothers me when dog owners do not pick up after their dogs” (Table 6). Over three-quarters agreed that “Dog owners who *cannot* control their dogs off leash *should not* be allowed to visit OSMP areas with their dogs off leash” and that “It is OK for a visitor to say something to a dog owner who does *not* have his or her dog under control.” Seventy-five percent, however, felt that “Most dog owners are responsible individuals who keep their dogs under control at OSMP areas.” Over three quarters disagreed that “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them” and over half enjoyed watching dogs off leash at OSMP areas.”

Table 6. Beliefs about off leash dogs ¹

	Disagree	Neutral	Agree
Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them	78	13	9
The behavior of off leash dogs is a problem at OSMP areas	60	20	20
I do <i>not</i> think that there are any real impacts from off leash dogs at OSMP areas	42	25	33
I enjoy watching dogs off leash at OSMP areas	17	25	58
It's OK that off leash dogs use OSMP areas as long as they do <i>not</i> affect me	17	20	63
Most dog owners are responsible individuals who keep their dogs under control at OSMP areas	9	16	75
Dog owners who <i>cannot</i> control their dogs off leash <i>should not</i> be allowed to visit OSMP areas with their dogs off leash	10	13	77
It is OK for a visitor to say something to a dog owner who does <i>not</i> have his or her dog under control	6	16	78
It bothers me when dog owners do <i>not</i> pick up after their dogs	2	7	91

1. Cell entries are row percents

Perceived Conflict

Consistent with past research (Vaske et al., 2007), perceived conflict was initially operationalized by combining the frequency of observing (observed vs. not observed) each of the 11 human-dog interaction variables on a typical visit with the corresponding perceived problem (no problem, problem) variables. This first step produced 11 conflict variables with three possible attributes (i.e., no conflict, interpersonal conflict, social values conflict). Step two further differentiated individuals in the interpersonal conflict category according to their responses to “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them.” Individuals who *disagreed* with this statement were considered to have experienced only interpersonal conflict. Respondents who *agreed* with the belief statement were judged to have experienced both interpersonal and social values conflict. This additional classification produced four options for each of the 11 human-dog interaction variables (i.e., no conflict, interpersonal conflict, social values conflict, and both interpersonal and social values conflict).

Among the indirect interaction variables, 50% of the respondents reported interpersonal conflict for “owners not picking up after their dogs” (Table 7). In other words, these individuals observed this behavior and judged the behavior to be a problem. Thirty-five percent did not observe this behavior but considered it to be a problem (i.e., social values conflict). Only 8% reported no conflict with owners not picking up after their dogs, and 7% were in the combined “interpersonal and social values” conflict category. For “dogs causing wildlife to flee” and “dogs flushing birds,” the modal response category was social values conflict (54% and 55%, respectively). The most frequent response for “owners repeatedly calling their dogs” was interpersonal conflict (46%). “Dogs off trails” and “dogs ‘play’ chasing with another dog” were generally considered “no conflict” (47% and 55%, respectively).

Among the direct interaction variables (Table 7), social values conflict was the modal response for “dogs jumping on a visitor” (48%), “dogs pawing a visitor” (56%), and “dogs licking a visitor” (39%). In other words, these respondents were not observing these behaviors, but considered them problems if they were to occur. No conflict was the modal category for “dogs sniffing a visitor” (48%) and about one-third (31%) were in the interpersonal conflict category for this variable.

Table 7. Perceived conflicts associated with human-dog interactions

	Respondents	
	Number	Percent
Indirect interactions		
Owners not picking up after their dogs		
No conflict	63	8
Interpersonal conflict	422	50
Social values conflict	290	35
Interpersonal & social values	63	7
Dogs causing wildlife to flee		
No conflict	181	22
Interpersonal conflict	170	20
Social values conflict	448	54
Interpersonal & social values	37	4
Dogs flushing birds		
No conflict	218	26
Interpersonal conflict	126	15
Social values conflict	455	55
Interpersonal & social values	28	4
Owners repeatedly calling their dogs		
No conflict	235	28
Interpersonal conflict	392	46
Social values conflict	157	19
Interpersonal & social values	59	7
Dogs off trail		
No conflict	442	47
Interpersonal conflict	290	30
Social values conflict	59	6
Interpersonal & social values	66	7
Dogs "play" chasing another dog		
No conflict	462	55
Interpersonal conflict	211	25
Social values conflict	116	14
Interpersonal & social values	49	6
Direct interactions		
Dogs jumping on a visitor		
No conflict	135	16
Interpersonal conflict	254	31
Social values conflict	402	48
Interpersonal & social values	45	5
Dogs pawing a visitor		
No conflict	183	22
Interpersonal conflict	152	18
Social values conflict	462	56
Interpersonal & social values	35	4
Dogs licking a visitor		
No conflict	282	34
Interpersonal conflict	180	22
Social values conflict	322	39
Interpersonal & social values	41	5
Dogs approaching uninvited		
No conflict	258	31
Interpersonal conflict	389	46
Social values conflict	127	15
Interpersonal & social values	64	8
Dogs sniffing a visitor		
No conflict	395	48
Interpersonal conflict	258	31
Social values conflict	126	15
Interpersonal & social values	48	6

Visitor Clusters: Perceived Conflict

Cluster analyses were performed on the 11 human-dog conflict variables (Table 8). A series of cluster analyses ranging from 2 to 4 group solutions were conducted. A 3-group solution provided the best fit for the data. To validate this solution, we randomly sorted the data and conducted a cluster analysis after each of 3 random sorts. These additional analyses supported the solution identifying three distinct groups of individuals.

Cluster 1 (27% of respondents) generally reflected a “no conflict” segment (9 of the 11 variables). These individuals had not observed the behaviors and did not consider the behaviors to be a problem.

Individuals in the second cluster (14%) consistently expressed a “social values conflict.” These individuals had not observed the behaviors, but thought that the behaviors would be a problem if they were to occur.

Cluster 3 (59% of respondents) reflected a combination of interpersonal and social values conflict. Two of the indirect behaviors (dogs causing wildlife to flee, dogs flushing birds) and two of the direct behaviors (dogs jumping on visitors, dogs pawing visitors) represented a conflict in social values. The remaining seven variables in this cluster of individuals were interpersonal conflicts. In other words, these respondents had observed the behavior and considered the behavior to be a problem.

Table 8. Visitor clusters: Perceived conflict

	Cluster 1 No Conflict	Cluster 2 Social Values Conflict	Cluster 3 Both Interpersonal and Social Values Conflict
Indirect interaction			
Owners not picking up after their dogs	Interpersonal	Social Values	Interpersonal
Dogs causing wildlife to flee	No Conflict	Social Values	Social Values
Dogs flushing birds	No Conflict	Social Values	Social Values
Owners repeatedly calling their dogs	No Conflict	Social Values	Interpersonal
Dogs off trail	No Conflict	Social Values	Interpersonal
Dogs “play” chasing another dog	No Conflict	Social Values	Interpersonal
Direct interaction			
Dogs jumping on a visitor	Interpersonal	Social Values	Social Values
Dogs pawing a visitor	No Conflict	Social Values	Social Values
Dogs licking a visitor	No Conflict	Social Values	Interpersonal
Dogs approaching uninvited	No Conflict	Social Values	Interpersonal
Dogs sniffing a visitor	No Conflict	Social Values	Interpersonal
Percent of sample	27%	14%	59%

Understanding this 3-group solution is facilitated by Table 9. For example, a majority of individuals in cluster 1 checked no conflict for 10 of the 11 variables. The modal response for cluster 2 involved some form of social values conflict (either as the sole source or in combination with interpersonal). Respondents in cluster 3 (interpersonal and social values conflict) typically expressed more conflict across all 11 items than those in the other two clusters.

Table 9. Perceived conflict by conflict clusters

	Type of Conflict ¹			χ^2	<i>p</i> -value	Cramer's <i>V</i>
	No Conflict	Social Values Conflict	Interpersonal Social Values Conflict			
Indirect interaction						
Owners not picking up after their dogs				412.42	< .001	.566
No conflict	25	0	2			
Interpersonal conflict	52	6	60			
Social values conflict	23	41	38			
Interpersonal & social values	0	53	0			
Dogs causing wildlife to flee				584.80	< .001	.636
No conflict	71	3	4			
Interpersonal conflict	17	0	26			
Social values conflict	12	66	69			
Interpersonal & social values	0	31	1			
Dogs flushing birds				557.77	< .001	.608
No conflict	80	7	7			
Interpersonal conflict	10	0	21			
Social values conflict	10	70	71			
Interpersonal & social values	0	23	1			
Owners repeatedly calling their dogs				483.16	< .001	.596
No conflict	61	3	19			
Interpersonal conflict	34	6	61			
Social values conflict	5	41	20			
Interpersonal & social values	0	50	1			
Dogs off trail				413.49	< .001	.568
No conflict	79	9	48			
Interpersonal conflict	20	15	45			
Social values conflict	1	20	7			
Interpersonal & social values	0	56	1			
Dogs "play" chasing another dog				418.25	< .001	.561
No conflict	85	13	51			
Interpersonal conflict	12	4	36			
Social values conflict	3	39	13			
Interpersonal & social values	0	44	0			
Direct interaction						
Dogs jumping on a visitor				616.96	< .001	.652
No conflict	57	1	2			
Interpersonal conflict	29	0	38			
Social values conflict	14	59	60			
Interpersonal & social values	0	40	0			
Dogs pawing a visitor				607.77	< .001	.674
No conflict	72	2	5			
Interpersonal conflict	15	0	24			
Social values conflict	13	67	71			
Interpersonal & social values	0	31	0			
Dogs licking a visitor				535.83	< .001	.597
No conflict	81	4	21			
Interpersonal conflict	13	0	30			
Social values conflict	6	60	49			
Interpersonal & social values	0	36	0			
Dogs approaching uninvited				498.23	< .001	.610
No conflict	61	2	24			
Interpersonal conflict	33	5	62			
Social values conflict	6	37	14			
Interpersonal & social values	0	56	0			
Dogs sniffing a visitor				465.66	< .001	.582
No conflict	84	7	41			
Interpersonal conflict	14	6	44			
Social values conflict	2	44	15			
Interpersonal & social values	0	43	0			

1. Cell entries are column percents

Respondents' sex was related to the type of conflict that visitors experienced (Table 10). More males were in the "no conflict" (30%) and "social values" conflict (15%) clusters than females (24% and 12%, respectively). More females were in the interpersonal and social values conflict cluster (64%) than males (55%). The strength of the relationship, however, was only minimal (Cramer's $V = .089$).

Similarly, there was a weak statistical relationship between age and conflict cluster membership. Individuals in the social values conflict cluster were slightly older ($M = 45.69$) than those in the other two clusters ($M = 41.07$ and 41.59). In general, individuals with more formal education were more likely to report some form of conflict than those with less formal education. There was no statistical relationship between either place of residence variable and cluster membership.

Table 10. Demographics by conflict clusters

	Type of Conflict ¹			χ^2	<i>p</i> -value	Cramer's <i>V</i>
	No Conflict	Social Values Conflict	Interpersonal & Social Values Conflict			
Sex				6.50	.039	.089
Male	30	15	55			
Female	24	12	64			
Age				23.15	.026	.118
< 20	32	10	58			
21 to 30	26	13	61			
31 to 40	33	6	61			
41 to 50	22	15	63			
51 to 60	24	18	58			
61 to 70	26	24	50			
> 70	27	27	46			
Mean age	41.07	45.69	41.59			
Education				18.60	.046	.108
High school or less	43	8	49			
Some college	35	8	57			
College graduate	28	15	57			
Some graduate school	28	11	61			
Masters degree	21	13	66			
Doctoral / professional degree	21	20	59			
Place of Residence				.038	.981	.007
Within Boulder city limits	26	14	60			
Outside city limits	27	13	60			
				.419	.981	.016
Within Boulder city limits	26	14	60			
Within Boulder County	28	14	58			
Outside Boulder County	26	13	61			

1. Cell entries are row percentages

When analyzed as a crosstabulation, each of the frequency of visitation variables (number of years visiting OSMP, number of visits during the past 12 months, number of visits during past month) was related to type of conflict (Table 11). When the visitation indicators were treated as continuous variables in an Analysis of Variance, however, only number of visits during the past 12 months and number of visits during the past month were statistically significant. In these later analyses, individuals expressing social values conflict visited less frequently than those in the other two clusters.

Table 11. Frequency of visitation by conflict clusters

	Type of Conflict ¹			χ^2 or <i>F</i> -value	<i>p</i> value	Cramer's <i>V</i> or <i>eta</i>
	No Conflict	Social Values Conflict	Interpersonal & Social Values Conflict			
Number of years visiting OSMP				26.03	.011	.128
1 st year	31	25	44			
1 to 2 years	24	15	61			
3 to 5 years	32	10	58			
6 to 10 years	29	8	63			
11 to 20 years	26	13	61			
21 to 30 years	20	12	68			
More than 30 years	21	28	51			
Mean	10.14	12.14	11.15	1.48	.229	.059
Number of visits during past 12 months				19.56	.012	.106
1 to 10 visits	28	20	52			
11 to 30 visits	25	15	60			
31 to 90 visits	22	12	66			
91 to 180 visits	29	9	62			
181 to 365 visits	31	9	60			
Mean	104.01 ^a	63.34 ^b	97.27 ^a	6.04	.002	.117
Number of times visited OSMP during past month				26.20	.010	.124
1 visit	27	23	50			
2 to 3 visits	19	18	63			
4 to 5 visits	28	12	60			
6 to 10 visits	28	9	63			
11 to 20 visits	26	12	62			
21 to 31 visits	35	8	57			
More than 31 visits	44	6	50			
Mean	11.95 ^a	7.79 ^b	10.27 ^c	6.75	.001	.124

1. Cell entries are row percentages

All four of the dog guardian variables were statistically related to type of conflict (Table 12). Current dog guardians expressed less conflict than non-guardians. Non-dog guardians were more likely to express social values conflict. A majority of both groups, however, were in the interpersonal and social values cluster. The effect size for this relationship approached “typical.”

As the number of dogs owned and the number of dogs with the individual on the day they were interviewed increased, membership in the no conflict cluster also increased. The Cramer’s *V* for these relationships, however were only .118 and .186, respectively.

Visitors who never walk their dog at OSMP locations were more likely to report social values conflict than those who walk their dogs at OSMP. About a third of all three groups (never, 1 to 4 visits per month, 2+ visits per week) were in the no conflict cluster. Roughly two-thirds of respondents in these latter two groups were in the interpersonal and social values conflict cluster (Cramer’s *V* = .174).

Table 12. Dog guardian indicators by conflict clusters

	Type of Conflict ¹			χ^2	<i>p</i> -value	Cramer’s <i>V</i>
	No Conflict	Social Values Conflict	Interpersonal & Social Values Conflict			
Are you currently a dog guardian?				62.59	< .001	.263
No	22	23	55			
Yes	31	6	63			
Number of dogs currently owned				11.19	.025	.118
1	30	5	65			
2	29	5	66			
3+	50	18	32			
Number of dogs with you on today’s visit				64.90	< .001	.186
No dogs	23	21	56			
1 dog	31	3	66			
2+ dogs	38	5	57			
Frequency of walking dogs at OSMP				23.33	< .001	.174
Never	31	18	51			
1 to 4 visits per month	30	6	64			
2+ visits per week	31	2	67			

1. Cell entries are row percentages

Four of the six activity participation variables were statistically related to conflict cluster membership. Findings for walking a dog on the day the person completed the survey (Table 13) paralleled the results for walking a dog in general at OSMP locations (Table 12). People who were walking / hiking, bird watching, or wildlife viewing were more likely to be in the social values conflict cluster than those who were not participating in these activities. There was no relationship between participation in running or bicycling and cluster membership. All of the Cramer *V*’s were minimal.

Table 13. Activities by conflict clusters

	Type of Conflict ¹			χ^2	p-value	Cramer's V
	No Conflict	Social Values Conflict	Interpersonal & Social Values Conflict			
Walking Dog				51.91	< .001	.214
No	25	18	57			
Yes	33	2	65			
Walking / Hiking				18.20	< .001	.142
No	31	8	61			
Yes	24	18	58			
Running				4.50	.105	.069
No	27	15	58			
Yes	28	9	63			
Bicycling				.035	.983	.006
No	27	13	60			
Yes	26	14	60			
Bird Watching				6.67	.036	.088
No	28	13	59			
Yes	16	22	62			
Wildlife Viewing				14.08	.001	.125
No	28	13	59			
Yes	11	25	64			

1. Cell entries are row percentages

Eight of the nine beliefs about off leash dogs were statistically related to conflict cluster membership (Table 14). The one exception was “It is OK for a visitor to say something to a dog owner who does *not* have his or her dog under control.”

Given that the statement “Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them” was used in the construction of the conflict clusters, it was not surprising that this variable was “substantially” related to cluster type (Cramer's V = .540)

Over a third of the individuals who agreed with “The behavior of off leash dogs is a problem at OSMP areas” were in the social values conflict cluster, compared to 20% of those who were neutral and 3% who disagreed with this statement. Over half of the people who disagreed with the statement “I enjoy watching dogs off leash at OSMP areas” were in the social values conflict cluster, compared to 11% who were neutral and only 3% who agreed with the statement.

Consistent with the overall percentages for the conflict clusters (59% – mixed interpersonal and social values, 14% – only social values, 27% – no conflict), the modal responses on the belief statements (Table 14) were generally in the interpersonal and social values cluster. Taken together, these findings provide a measure of validation for the cluster groups.

Table 14. Beliefs about off leash dogs by conflict clusters

	Type of Conflict ¹			χ^2	p-value	Cramer's V
	No Conflict	Social Values Conflict	Interpersonal & Social Values Conflict			
Just knowing that off leash dogs are allowed in OSMP areas is a problem for me, even if I never see them				322.25	< .001	.540
Disagree	30	5	65			
Neutral	25	9	66			
Agree	1	95	4			
The behavior of off leash dogs is a problem at OSMP areas				148.40	< .001	.301
Disagree	34	3	63			
Neutral	21	20	59			
Agree	10	37	53			
I do <i>not</i> think that there are any real impacts from off leash dogs at OSMP areas				52.69	< .001	.172
Disagree	19	21	60			
Neutral	27	13	60			
Agree	36	4	60			
I enjoy watching dogs off leash at OSMP areas				207.06	< .001	.383
Disagree	6	52	42			
Neutral	25	11	64			
Agree	34	3	63			
It's OK that off leash dogs use OSMP areas as long as they do <i>not</i> affect me				134.74	< .001	.318
Disagree	9	47	44			
Neutral	29	10	61			
Agree	31	6	63			
Most dog owners are responsible individuals who keep their dogs under control at OSMP areas				49.37	< .001	.190
Disagree	15	39	46			
Neutral	20	20	60			
Agree	29	9	62			
Dog owners who <i>cannot</i> control their dogs off leash <i>should not</i> be allowed to visit OSMP areas with their dogs off leash				25.22	< .001	.123
Disagree	38	8	54			
Neutral	40	6	54			
Agree	23	16	61			
It is OK for a visitor to say something to a dog owner who does <i>not</i> have his or her dog under control				2.76	.599	.040
Disagree	31	11	58			
Neutral	30	10	60			
Agree	26	14	60			
It bothers me when dog owners do <i>not</i> pick up after their dogs				9.90	.042	.070
Disagree	37	0	63			
Neutral	39	9	52			
Agree	26	14	60			

1. Cell entries are row percentages

Discussion

Summary of Findings

This study sought to describe the extent to which OSMP visitors evaluated six indirect and five direct human-dog interaction variables as problems. All behaviors were thought to be a “slight” to “extreme” problem. The most problematic behaviors were owners not picking up after their dog, dogs causing wildlife to flee, dogs jumping on a visitor, dogs pawing a visitor and dogs flushing birds. Although some statistical differences existed between (a) dog guardians versus non-dog guardians, (b) individuals who walk their dogs at OSMP versus those who do not, and (c) frequency of dog walking at OSMP, the magnitude of these differences was small.

Following previous research (Vaske et al., 2007), we operationalized perceived conflict for each of 11 human-dog interaction variables as: (a) no conflict, (b) interpersonal conflict, (c) social values conflict, and (d) both interpersonal and social values conflict. Cluster analyses on the 11 interaction variables suggested that a 3-group solution best described the data. Cluster 1 (27% of respondents) generally reflected a “no conflict” segment (9 of the 11 variables). These individuals had not seen any of the human-dog behaviors and judged the behaviors as “not at all a problem.”

Individuals in the second cluster (14%) consistently expressed a “social values conflict.” These individuals had not observed the behaviors, but thought that the behaviors would be a problem if they were to occur. Cluster 3 (59% of respondents) reflected a combination of interpersonal and social values conflict. Two of the indirect behaviors (dogs causing wildlife to flee, dogs flushing birds) and two of the direct behaviors (dogs jumping on visitors, dogs pawing visitors) represented a conflict in social values. The remaining seven variables in this cluster of individuals were interpersonal conflicts. In other words, these respondents had observed the behavior and considered the behavior to be a problem.

Although some demographic and participation variables were statistically related to membership in the three clusters, the strength of all these relationships was minimal. Eight of the nine belief statements regarding off leash dogs were statistically related to conflict cluster membership and the effect sizes were generally larger.

Implications for OSMP

The City of Boulder Open Space and Mountain Parks implemented a Voice and Sight Tag (VST) Program in 2006. This program requires guardians to watch a video about voice and sight control, register with OSMP, and display a voice and sight tag on off leash dogs at selected areas managed by OSMP. Given that nearly three-quarters (73%) of respondents experienced some form of conflict (14% – social values conflict; 59% – interpersonal and social values conflict) with off leash dogs or their owners at the OSMP locations studied in this report, the VST program represents a necessary first step in reducing conflicts created by human-dog interactions.

Because the VST program is new, some of the conflict reported here may be lessened as more visitors understand the objectives of the program and adhere to the legal mandate. In our opinion, however, the current VST rules and regulations may not be sufficient to eliminate human-dog conflict. For example, to participate in the program, visitors must view a video and agree to control their off leash dogs in a manner described in the video. Voice and sight control, however, is a subjective issue. What constitutes control by one visitor may not reflect control by another. Not included in the registration process is a behavioral component where individuals

demonstrate that their dogs are under voice and sight control. Similar to obtaining a driver's license where the person must pass both a written exam and a driving exam, one recommendation would require individuals to not only watch the video, but also pass a written test and a physical demonstration of their ability to control their dogs. Before moving to this extreme, however, the VST program should be periodically monitored to determine whether conflict is being reduced.

Some of the conflict noted in this report reflected purely social values conflict (14%). Social values conflict occurs when visitors do not observe a given set of behaviors, but believe that such behaviors are problematic. Resolving this type of conflict will require continuing the education effort for dog guardians (e.g., the video associated with the VST program). Additional education efforts designed to inform the non-dog guardians about the VST program and its goals and objectives should also be implemented.

If these education efforts are not effective in eliminating conflict, a change in management direction may be necessary. In 2006, for example, the management percentages for 130 miles of trail were: (a) 70% voice and sight, (b) 20% leash, (c) 6% voice in sight in trail corridor, (d) 3% leash seasonally, and (e) 1% no dogs. These percentages may need to be adjusted to reduce conflict.

The majority of conflict (59%) represented a mixture of social values and interpersonal conflict. Interpersonal conflict occurs when the behavior is observed and judged as unacceptable. Formal education programs and formal sanctions (e.g., fines, loss of voice and sight privileges) may not be sufficient for resolving these interpersonal conflict issues. Part of the responsibility needs to be shouldered by OSMP visitors. As reported here, 78% of the respondents believed that "it is OK for a visitor to say something to a dog owner who does not have his or her dog under control." Agency encouragement of such informal sanctions, when combined with the formal sanctions, may promote a higher quality experience for all visitors.

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