

Recreational User Perceptions of the Bighorn: Land Management Values and Concerns, Present and Future





Alberta Wilderness Association

Prepared by

Chris Wearmouth, BA
Alberta Wilderness Association
&
Augusto Legaspi, PhD

March 2008

ALBERTA WILDERNESS ASSOCIATION

Box 6398, Station D
Calgary, AB T2P 2E1
www.AlbertaWilderness.ca
Phone (403) 283-2025

ACKNOWLEDGEMENTS

Alberta Wilderness Association would like to acknowledge the tremendous support that is given to our work. The support of our members and donors sustains AWA's efforts to ensure that Alberta's wild lands, wild waters, and wildlife retain their natural splendour and persevere for generations to come.

This study was completed with the financial support of Mountain Equipment Co-op and the Yellowstone to Yukon Conservation Initiative.



We offer special recognition and sincere thanks to Adam Ford, Joyce Hildebrand, Sean Nichols, Christyann Olson, Vivian Pharis, Heinz Unger, Stephanie Whitehead, and all the individuals and organizations, Albertan and otherwise, who are active in the Bighorn and took the time to offer their insights into the values of and concerns about this magnificent wilderness area.

EXECUTIVE SUMMARY

The Bighorn area in west-central Alberta is a pristine and important part of Alberta's Eastern Slopes. The numerous rivers winding through it bring water to more than a million Albertans, and the area provides a large and relatively intact habitat for mountain wildlife. The Bighorn presently maintains its ecological integrity primarily due to lack of development and an absence of roads. The area's primary users are recreationists looking for a wilderness or backcountry experience. The Bighorn is currently managed under Alberta's Sustainable Resource Development department, with most of the land falling under six Forest Land Use Zones, each with its own regulations and permissible activities.

In the summer of 2007, AWA conducted a survey of recreational users in the Bighorn in order to build an informed understanding of who is using the Bighorn for recreation and of users' perceptions, values and concerns regarding the area, specifically in terms of land management, present and future. AWA developed both individual- and organization-level surveys, which were disseminated through the mail and on-the-ground solicitation at campsites and trailheads, and during AWA-led hikes in the Bighorn. A total of 158 individual-level surveys (64% return rate) and 22 organization-level surveys (35% return rate) were completed. Of the individual surveys completed, 81% came from trailhead solicitation, 13% from a mail-out to AWA members, and 6% from participants on AWA-led hikes. Eighty-six percent of the completed organization surveys were mailed in to AWA, with the remaining 14% delivered through trailhead solicitation.

From the completed surveys, we are able to answer five questions that inform our understanding of users in the Bighorn.

1. Who is using the Bighorn area for recreation?
2. What are their priorities for the area?
3. What are their concerns for the area?
4. How satisfied are they with current land management?
5. What changes in land management would they like to see now and in the future?

Individual Users

Individual recreational users in the Bighorn are primarily engaged in day hiking, backpacking, fishing and equestrian activities. Twenty-four percent of users have been visiting the Bighorn for two to five years but

range from first-time visitors (the day of the survey) to long-time users (as long as 50 years, with an average of approximately 12 years). Of the individual users, 38% have participated in stewardship activities, with the top three types of stewardship being garbage cleanup, violation reporting, and trail repairs. Fifty-nine percent of individuals drive three hours or less to get to the Bighorn, and 95% of respondents can make the trip in six hours or less.

With regard to land management, individuals ranked “pristine wilderness” and “fish and wildlife habitat” as the top two priorities for the Bighorn. When asked if their experience in the Bighorn could be improved, individuals were almost evenly split, with 51% answering “yes” and 49% “no.” Forty-two of the 80 respondents who answered “yes” said that the number one hindrance to their optimal experience in the Bighorn is other recreational users, with a large number of people identifying off-highway vehicles as their primary hindrance, followed by resource extraction industries. While 51% say their experience could be improved, the majority (72%) of respondents is satisfied with current land management. However, they acknowledge there are changes they would like to see, mostly centered on management values and access. Individual users want to see increased or better management of the area to keep it pristine. Thirty-five respondents mentioned removing or lessening motorized access, the most frequently mentioned proposed change. These sentiments are consistent with respondents’ desires for the future of the Bighorn, which focus on preserving the wilderness and protecting the area.

Organization Users

The organizations contacted for the survey represent a wide range of purposes and objectives. They include self-propelled and motorized recreation clubs, hunting and equestrian outfitters, campgrounds, and education and conservation organizations. The greatest concentration of completed organization-level surveys came from seven groups located in the town of Rocky Mountain House, approximately one hour’s drive from the Bighorn area. Equestrian-related activities was listed as the most common primary purpose (5 organizations), followed by white-water sports and canoeing. Sixty-four percent of organizations are involved in day hiking, 45% in equestrian activities, and 36% each in backpacking and fishing. In terms of stewardship, 82% of the responding organizations have participated in activities; like the individual respondents, the top three activities were garbage cleanup, violation reporting, and trail repairs.

In terms of land management, organizations identified the top two priorities for the Bighorn as “a source of clean water” and “pristine wilderness.” Nineteen of the 22 organizations identified hindrances to their

optimal experience in the Bighorn, with “other recreational users” rating the highest, followed by “resource extraction industries.” Within “other recreational users,” 12 respondents identified motor vehicles and eight specifically identified off-highway vehicles as a hindrance. Satisfaction with current land management is divided evenly between those who are satisfied and those who are not, with 48% on each side; the remaining 4% has no opinion. Similar to the individual users, organizations rank management and access as the top areas of proposed changes, in particular “better or increased management” and “restricted motor access.” These were also the concerns cited with regard to the area’s future, with management identified by 16 of the 22 respondents. Of the management priorities listed in the survey, protecting the area and its wilderness as the main direction for the future was the top concern (7 organizations), with the creation of a management plan and increased enforcement of regulations falling close behind.

Significance of Findings

The results of this survey show the desire of Albertans, especially those who are actively using the Bighorn, to manage this area for the priorities of pristine wilderness, a source of clean water, and fish and wildlife habitat. The survey also shows that those active in the area identify other recreational users as the primary threat to these values and as a hindrance to their own optimal experience. It is crucial that the promotion of the Bighorn area as a backcountry recreation destination be subsidiary to the principal environmental priorities – priorities that survey participants repeatedly ranked above their own self-interest in recreation.

Alberta Wilderness Association believes that managing for these priorities would be best done through the fulfillment of the Government of Alberta’s 1986 promise of creating a Wildland protected area in the Bighorn following the general boundaries of the Prime Protection and Critical Wildlife Zones as identified in the *Eastern Slopes Policy* of 1977 (Alberta, revised 1984). The values identified by individuals and organizations surveyed coincide with the purpose of a Wildland Provincial Park: the protection of natural heritage while allowing for low-impact backcountry recreation. Many of the concerns listed by responding individuals and organizations, including recreational impacts and conflicts, could be addressed through (1) the creation of a Wildland Park, (2) adequate and effective enforcement and education about the area’s wilderness values and current regulations, and (3) an appropriately administered transition zone to the east of the proposed park that allows for the interests of motorized recreationists and industry following “best practices.”

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INTRODUCTION



Looking north across the foothills and mountains of the Bighorn from a ridge in the southern part of the area near Panther Corners. R. PHARIS

The magnificent terrain that makes up the Bighorn covers approximately 7,000 km² of Alberta's Eastern Slopes. Lying east of Banff and Jasper National Parks and west of Highway 734, it covers a significant area of this province's mountain and upper foothill regions. The Bighorn's rocky peaks and forested hills shelter the North Saskatchewan, Clearwater, and Red Deer river systems, which bring water to more than one million Albertans and to our provincial neighbours to the east. The area's slopes, meadows, and forests are abundant with the wild life of animals and plants native to the area, including grizzly, elk, and mountain orchids.

The wilderness character of the area and the region's importance to Alberta's watersheds and wildlife has long been recognized by the people of this province and across Canada. When the federal government established the Rocky Mountain Forest Reserve in 1911, including the present-day Rocky-Clearwater Forest, it recognized the importance of maintaining "conditions favourable to a continuous water supply and for the protection of animals, birds and fish" (Canada, 1927). In 1977 much of the Bighorn area was

designated as Prime Protection and Critical Wildlife Zones by the *Eastern Slopes Policy* (Alberta, revised 1984). The policy identified watershed management as the “highest priority” for the Eastern Slopes. This was later revised to identify tourism and recreation as also being “extremely important.” In the early 1980s, after the creation of Kananaskis Country, the Government of Alberta proposed to establish its northern counterpart, David Thompson Country, but the proposal went unrealized. In 1986 the Government of Alberta announced the creation of the Bighorn Wildland Recreation Area. However, despite the promise, the park was never formalized and in 2001 the government officially denied the existence of the Bighorn Wildland. In 2002 a new management strategy began, with six Forest Land Use Zones (FLUZs) designated within the area, which was named the “Bighorn Backcountry.” Each of these six FLUZs covers a specific geographic location and comes with its own regulations which specify which activities are prohibited.

Alberta Wilderness Association (AWA) has been involved in the Bighorn area for more than 40 years. Through this time, AWA has spearheaded garbage cleanup initiatives, trail maintenance crews, and research projects, and has actively sought legislative protection for the area. In 2002, following the designation of the FLUZ system, AWA saw the need to build an informed body of knowledge about the people and the recreational activities they pursue in the Bighorn. To fulfill its mandate, AWA seeks to be well-informed of Albertans’ values in regards to the province’s wilderness areas. We also believe it is important that a body of knowledge be developed for this area that can be used to educate the public, inform the government, and contribute to the work of others.



Map 1. *The Bighorn, west-central Alberta*

AWA began a five-year trail monitoring project in 2003 to observe the trends in traffic flow and measure the trail damage caused by recreational use along a 76-km trail system in the Upper Clearwater/Ram FLUZ designated for motorized and non-motorized recreation. The interim results (*The Bighorn Wildland Recreational Trail Monitoring Project: Interim Research Summary*, Alberta Wilderness Association, 2007) show an increase in the overall volume of motorized traffic as well as an increase in the illegal

traffic in the area of the trail system, which until 2002 denied motorized access through the *Eastern Slopes Policy*. Furthermore, the extent of damage to the trail system and surrounding area makes it questionable whether such high-impact recreation should be allowed to continue in this sensitive landscape that forms part of the Ram River watershed.

Considering the interim results of AWA's trail monitoring study, the question arose as to what the users themselves want to see happen in the Bighorn in terms of its present and future management.

Accordingly, AWA developed individual- and organization-level surveys with the goal of better understanding recreational users' perceptions, values, and concerns for the Bighorn area.

This goal was achieved by addressing the following objectives:

1. Identify characteristics of recreational users and their patterns of use
2. Identify the priorities of recreational users in the area
3. Identify the concerns users have for the area
4. Determine the level of user satisfaction with current land management
5. Determine what changes users would like to see now and in the future for the Bighorn

This report presents the findings of AWA's survey, which was carried out during the summer months of 2007. The perceptions arising from the recreational user study complement the behavioural observations made in the trail monitoring study. In addition, the information from the survey serves as the basis for developing a better understanding of user groups and for creating a directory of user groups and key individuals interested in the Bighorn. Through this study, AWA hopes to fulfil our larger objectives for the Bighorn:

- Derive a shared vision with other users of the Bighorn
- Determine if user groups and personnel on the Bighorn Access Management Plan Standing Committee are adequately representing the values of people who use the Bighorn
- Determine if government management objectives, regulations, and behaviour adequately represent user values
- Gain recognition among Albertans and our representative government agencies of the need for greater protection for the Bighorn, with at least an increased level of protection through the wilderness ethic of its users and at best legislated designation by the government of a portion of this area as a Wildland Provincial Park

This report, as part of AWA's work in the Bighorn, contributes to the growing body of knowledge that is validating calls for a comprehensive and integrated land-use framework in Alberta. According to Gibbins and Worbets (2005), the need for this framework is imperative for a number of reasons including the following:

- Alberta's unprecedented economic growth and increasing population
- An insufficient capacity to measure and plan for cumulative effects for site-specific developments
- Increasing recreational pressure on the landscape
- Increasing conflict between human activity and the preservation of wildlife habitat

Alberta's 2007 Land-Use Framework process included consultations with Aboriginal groups, municipal decision makers, stakeholder groups, and cross-sector forums. AWA believes this report provides important documentation of Albertan's vision and values for wilderness areas and as such should be considered within future work on the Land-Use Framework.

This report also contributes to the growing body of knowledge regarding the social values of wilderness and wildlands. Far from being an isolated study, this survey mirrors the work of Ken Cordell and his colleagues in their analysis of the United States' National Survey on Recreation and the Environment, which asked 1,900 people over the age of 15 in the U.S. about wilderness values. In "How the Public Views Wilderness: More Results from the USA Survey on Recreation and the Environment" (1998), Cordell et al. report that the values of protecting water quality, wildlife habitat, and ecosystems rank as being very or extremely important to a much larger percentage of the respondents than the value of recreational opportunities.

Similarly, in 2000 the U.S. Forest Service conducted a telephone survey to find out in part, what people thought the objectives for the management of public lands should be. Results showed that those surveyed consistently gave managing for ecosystem health a higher ranking of importance than providing multiple benefits to people (United States, 2002).

In Canada, both the federal government and Alberta's provincial government have investigated the importance of natural settings to citizens through their participation levels in outdoor recreation. These studies are primarily used for planning recreational directives and uncovering the economic value of the outdoors through recreation and tourism. Very little has been done at the governmental level to gather information about the public's perception of social and conservation values of wilderness outside of human use. This lack of understanding must be corrected if governing bodies are to appropriately manage

our wilderness areas according to the values held by the people of Alberta. This report, although it focuses on a specific region in Alberta, begins to address the lack of understanding about Albertans' perceptions, values, and concerns about our province's wild places.

When discussing the Bighorn, it is important to understand the different terms used when referencing the area. AWA uses three terms to denote different areas within the Bighorn and to identify the relation of the area to human agencies.

Map 2: Bighorn (or Bighorn Area)

AWA's Area of Concern. This is the part of the Eastern Slopes in west-central Alberta that lies east of the national park boundaries of Banff and Jasper roughly to Highway 734, and south from the Brazeau River to the vicinity of the Panther and Dormer Rivers. Approximately 7,000 km² in area.



Map 3: Bighorn Backcountry (Alberta, Revised 2007)

An area smaller than AWA's Bighorn Area of Concern as delineated by the Alberta government. The Bighorn Backcountry is the term that came out of Alberta Sustainable Resource Development's 2002 creation of six Forest Land Use Zones (FLUZs). The term implies neither legislative protection nor recognition, but is merely a convenient name for the area.



Map 4: Bighorn Wildland

Originally pledged by the Government of Alberta in 1986, the creation of a Wildland Provincial Park is AWA's vision for the Bighorn's future. The area is smaller than AWA's Area of Concern (approx. 4,000 km² with a 3,000-km² transition zone to the east) and would include the majority of SRD's Bighorn Backcountry, excluding some of the Kiska/Wilson FLUZ. AWA's proposed boundaries follow the Prime Protection and Critical Wildlife Zones as identified by the *Eastern Slopes Policy* of 1977 (revised 1984).



METHODS

Survey Development

AWA designed two surveys that could each be completed within 10 minutes, considering that most participants would be on trails or camping when approached. The two surveys were designed to be comparable in broad themes, but with specific wording for individual questions.

The central themes of both surveys were the following:

- User characteristics (Individual: frequency of visits to Bighorn, years visiting, driving time, etc.; Organization: purpose, membership, number of activities in area, etc.)
- The nature of outdoor recreation activities pursued
- Stewardship participation
- Perceptions, values, and concerns regarding land management (desired priorities, satisfaction, changes noticed and desired)

An AWA staff member conducted a trial of the individual survey with people recreating in the Ya Ha Tinda Ranch area of the Bighorn. The trial was evaluated on the basis of participants' understanding of the questions and their oral comments as they filled out the survey. Based on comments made during this trial, one question regarding recreational expenses was modified for clarity.

Survey Distribution

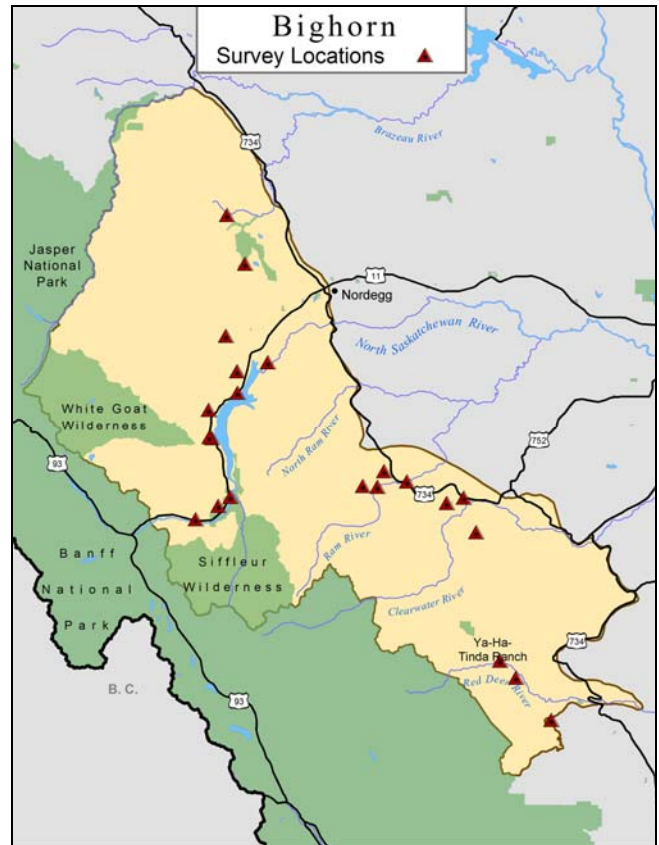
We distributed the surveys between May and September of 2007 using several methods of distribution. Alberta Sustainable Resource Development, which manages the lands of the Bighorn, was informed that AWA would be conducting a survey in the area, and they assisted by informing their staff, including local guardians, of the survey.

The primary means of distributing the individual survey was convenience sampling through on-the-ground solicitation at campgrounds, trails, and gathering places of recreational user-groups in the Bighorn. An AWA staff member handed out the surveys, mostly on the weekends, with occasional volunteer help. An Internet search assisted in identifying where trailheads used by different user groups are located (e.g., parking lots where trail users would normally start/end). The staff member drove to these staging areas and solicited those present to complete the survey. Every attempt was made to fairly

represent the different user groups within the Bighorn by seeking out as many trailheads and gathering places as possible covering the range of activities pursued.

Map 5. Locations where surveys were completed

- Abraham Lake random camping sites
- Allstones Lake Trailhead
- Bighorn Dam
- Blackstone Gap Road
- Cline Creek
- Coral Creek Trailhead
- Crescent Falls Provincial R.A.
- Cut-off Creek Forest R.A.
- Elk Creek Fish Pond Provincial R.A.
- Highway 11 random camping sites
- Hummingbird Forest R.A.
- Kinglette Lake Trailhead
- Panther River Road random camping sites
- Peppers Lake Provincial R.A.
- Pinto Lake Trailhead
- Ram Falls Provincial R.A.
- Ram Ridge Trail
- Siffleur Falls Staging Area
- Wapiabi Gap Staging Area
- Windy Point Sport Climbs
- Ya Ha Tinda (Bighorn Campground, Eagle Creek Forest R.A.)



If the trailhead was devoid of people at the time of arrival, the surveyor would wait for 5 to 10 minutes to see if anyone arrived. In some areas with numerous trails in close proximity, the surveyor drove back and forth during the day. Those who agreed to answer were given the option of mailing back the survey in a self-addressed and stamped envelope (SASE). However, no one took this option, instead opting to fill it out at the time of solicitation. When the potential participants were part of a family/couple, only one member was asked to answer. Those who answered were thanked and given a copy of AWA's book *Bighorn Wildland* when they had completed the questionnaire. In total nine days were spent actively surveying people in the Bighorn.

In addition, the survey, along with a SASE, was mailed to 106 AWA members who live close enough to the Bighorn to be users of the area. The centres where members were contacted included Sundre, Caroline, Rocky Mountain House, Nordegg, Drayton Valley, Red Deer, and three smaller surrounding communities. Surveys were also handed out to hikers who participated in three AWA-organized hikes

held in the Bighorn area during the summer. In total, two hundred and fifty individual surveys were handed out. Of the 158 returns (a return rate of 64%), 20 (13%) were mailed back and 10 (6%) were completed by participants on AWA-led hikes.

Organizational surveys were distributed during the same timeframe as the individual surveys. Using the Internet and AWA's existing contacts and knowledge of organized recreationists in the Bighorn area, a database of recreational clubs, lodges, campgrounds, and other organizations was created and the survey was subsequently mailed to them, along with the *Bighorn*

Wildland book as an offer of thanks for participation in the survey. In addition, the AWA employee who handed out the individual surveys added organizations/groups that he saw on his drives throughout the region to the database and then mailed them a survey. Sixty-three groups, lodges, and organizations were given surveys, mostly mailed out but with a few handed out during trailhead solicitation. Twenty-two, or 35%, of the organization surveys were returned.

Survey Results Evaluation

In evaluating the results of the survey, different analyses were done depending on the nature of the question and response. For questions that offered choices for answering, responses for each choice were counted and are presented here in percentage. Percentages are given in terms of total percentage (i.e., out of the total number of respondents) and valid percentage (i.e., out of the number of respondents who provided a response for the item). For questions that asked for specific quantities (e.g., number of years, amounts), the answers were computed in terms of averages for the whole set of respondents and also averages within specified ranges. Responses to open-ended questions were grouped according to similarity of themes (e.g., responses falling under the general theme of "access" when asked what is most important for the future of the Bighorn). Percentages were also computed for open-ended items.



An AWA volunteer surveys a couple enjoying the Bighorn. C. WEARMOUTH

SECTION ONE: INDIVIDUAL SURVEY

1.1 CHARACTERISTICS OF INDIVIDUALS SURVEYED

There were 158 respondents to the individual survey. Most of them, 56% (88 out of 158), visit Alberta backcountry areas three to six times a year, while slightly more than 10% visit once or twice a month (both in the summer and winter) and roughly 18% visit twice a year or less (see Table A in Appendix B for details). With regard to visits to the Bighorn, 51% (80 out of 158) visit three to six times a year while 39% (62 out of 158) visit twice a year or less (see Table B in Appendix B).

The average number of years that respondents have been going to the Bighorn area is approximately 12 years (Table 1). However, when the number of years is grouped into ranges, those who have been going for two to five years form the largest group at 24%. The remaining ranges have the same number of people (at just over 18%).

Travel time to the Bighorn for the majority of respondents (59%, or 93 out of 158) is one to three hours, the time it takes from the “gateway” communities of Sundre, Caroline, Rocky Mountain House, or Nordegg, as well as from the city of Red Deer. Another 36% (57 out of 158) take four to six hours (Table C of Appendix B), which allows for residents from the major cities of Edmonton and Calgary to reach the Bighorn. Very few of the respondents traveled more than a day or less than an hour.

When asked to specify other Alberta areas they regularly visit, respondents specified more than 55 places, indicating that collectively, they have travelled throughout Alberta (Table D). The places visited by the most number of respondents are Kananaskis, Banff, and Jasper; this is notable, as these popular destinations are special management areas, which may indicate that users are familiar with the land management practices of parks and protected areas.

Respondents were asked to estimate the amount they have invested per year in gear and travel for backcountry recreation, with gear and travel referring to things such as specialized vehicles, trailers, camping equipment, or cameras. The average for all respondents was \$12,358. Twenty-seven respondents (18% valid) spent more than \$10,000 (see Table 2). Many more respondents, 40% valid, spent an amount equal to or less than \$1,000, and 11% did not spend any money at all.

Table 1. Number of Years Coming to the Bighorn Area

Range (in years)	Number of respondents	Percentage
0-1	30	18.99
2-5	38	24.05
6-10	29	18.35
11-20	30	18.99
21 or more	29	18.35
No answer	2	1.27
Total	158	100.00

Table 2. Expenditure on Gear and Travel per Year

Dollar amount	Number of respondents	Total % (n = 158)	Valid % (n = 152)
\$ 0	17	10.76	11.18
<\$500	29	18.35	19.08
\$500-1000	32	20.25	21.05
\$1,001-2,000	14	8.86	9.21
\$2,001-5,000	24	15.19	15.79
\$5,001-10,000	9	5.70	5.92
\$10,001 and above	27	17.09	17.76
No answer	6	3.80	
Total	158	100.00	100.00

Table 3. Estimated Money Spent for the Present Trip to Bighorn Area

Dollar amount	Number of respondents	Total % (n = 158)	Valid % (n = 157)
\$0	10	6.33	6.37
\$10 or below	0	0.00	0.00
\$11-20	0	0.00	0.00
\$21-50	24	15.19	15.29
\$51-100	32	20.25	20.38
\$101-200	22	13.92	14.01
\$201-500	47	29.75	29.94
\$501-1,000	14	8.86	8.92
\$1,001-2,000	7	4.43	4.46
\$2,001-5,000	0	0.00	0.00
\$5,001 and above	1	0.63	0.64
No answer	1	0.63	
Total	158	100.00	100.00

With regard to respondents' expenses for their present trip to the Bighorn area, the average expenditure was \$382.87. This average is weighted by one respondent who spent \$14,000 for this trip. Excluding this unusual value, the average is \$295.58. The largest grouping of respondents (30%, or 47 out of 158) spent within the range of \$201-500, while 32 respondents (20%) spent \$51-100 (Table 3).

Respondents were asked to which recreational user group(s) they belonged – including all that applied to them. They were asked to answer this question in a general sense and were not asked which activity they were doing at the time of the survey. Most (59%) of the 158 respondents are involved in day hiking, while 41% are involved in backpacking (Table 4). Seven of the 10 listed activities have at least 20% of the respondents engaged in them. Other activities mentioned by respondents include rock/ice climbing, photography, snowshoeing, and caving.

Fifty of the 158 respondents (32%) belong to an outdoor activity-related group or association. Survey participants identified thirty-eight organizations. Table 5 shows a summary of the number of organizations per classification. This classification was determined by AWA staff while evaluating the data, with groupings made according to the most suitable activity. The complete list of groups/associations is in Table E of Appendix B.

Sixty of the respondents (38%) reported that they have participated in stewardship, while 79 (50%) said they have not (Table 6). If we assume those who said they plan to participate in stewardship (12%) have not done so in the past, then a large majority (62%) have not participated in stewardship. Of the 60 who have participated in stewardship, 53 (88%) engaged in garbage cleanup. This was by far the most common type of stewardship, followed by reporting violations.

1.2 LAND MANAGEMENT

1.2.1 Priorities in Land Management

Survey participants were given a list of possible land management priorities and asked to rank their top five. The average ranks (Table 7) show the priorities the respondents placed on land management. Taken across all respondents, pristine wilderness and fish and wildlife habitat are the top two indicated priorities

Table 4. Recreational User Group Involvement

Activity	Number of responses	Percent (%) (n=158)
Day hiking	93	58.86
Backpacking	64	40.51
Fishing	54	34.18
Equestrian	48	30.38
Car camping	41	25.95
Motorized recreation	39	24.68
Mountain biking	32	20.25
Hunting	27	17.09
Cross-country skiing	25	15.82
White-water sports	13	8.23

Table 5. Number of Groups/Associations per Category Represented in the Survey

Category of group/association	Number of different groups/associations
Conservation	7
Equestrian	6
Motorized	3
Non-motorized	10
Combination	2
Others	10

Table 6. Stewardship Participation and Activity Type

Stewardship participation	Number	Percentage (n = 158)
Have participated in stewardship	60	37.97
Have not participated in stewardship	79	50.00
Plan to participate in stewardship	19	12.03
Type of stewardship activity	Number	Valid % (n = 60)
Garbage cleanup	53	88.33
Reporting violations	21	35.00
Trail repairs	20	33.33
Erecting signage	8	13.33
Flora/fauna reporting	7	11.67

for the Bighorn area, while forestry is last. Table 7 also shows that by far the majority of respondents ranked pristine wilderness and fish/wildlife habitat higher than priorities such as commercial hunting and forestry.

These numbers by themselves, however, do not tell us the nature of the priority (e.g., to encourage or to remove an activity). The nature of these priorities and the actions that the respondents would like to see are gleaned from the responses to other questions (e.g., what they would like to change) and the comments respondents wrote at the end of the survey. Following are some of those comments:

On Preservation

- “Please keep this area pristine, quiet and non-commercial.”
- “Very beautiful! Would like to see it stay that way!! With limited development.”
- “Wake up, AB government – the Bighorn is a world-class destination. In any other country or province, the Government would invest in, and manage for sustainable uses, a jewel like this.”

On Preservation and Access

- “We must find ways to maintain the wilderness and still allow access to users in a variety of different ways.”

On Comprehensive Land Management

- “Very fragmented land use, this does not adequately keep those areas designated as non-OHV safe from destruction & degradation. Many people who came to enjoy the area for a few days & leave a mess for everyone else – I would like to see one big park, protected & with that, more groups would be able to organize to clean & maintain recreational areas.”

1.2.2 Satisfaction with Public Land Management

Overall, most people are either somewhat satisfied or very satisfied with public land management in the Bighorn (a combined total of 72% for all respondents) with an almost even distribution between the two levels of satisfaction (Table 8). Only 18% are either somewhat unsatisfied or very unsatisfied.

In order to better understand the specifics of individuals’ satisfaction level with land management, an analysis was done comparing satisfaction to the ranking of their top five management priorities. Those who are satisfied with land management have almost the same rankings among their priorities as those

Table 7. Ranking of Priorities for Bighorn Area (All Respondents)

Area of priority	1 st	2 nd	3 rd	4 th	5 th	Average rank*
Pristine wilderness	45	32	29	20	6	2.34
Fish and wildlife habitat	41	30	28	21	6	2.39
Equestrian	25	11	3	9	19	2.79
Motorized recreation	8	15	7	6	8	2.80
Non-motorized recreation	15	29	20	27	16	3.03
Source of clean water	13	28	43	27	14	3.03
Commercial hunting/ trapping	7	3	3	3	10	3.23
Forestry	0	2	5	6	9	4.00
Other	1	0	1	1	7	4.30

*The average rank is computed by the sum of [rank multiplied by number of respondents who gave that rank] divided by the total number of ranks for that item. Lower rank = higher priority.

Table 8. Satisfaction with Public Land Management

Satisfaction level	All respondents (n = 154)	
	Number	%
Very satisfied	54	35.06
Somewhat satisfied	57	37.01
Combined satisfied	111	72.07
Somewhat unsatisfied	17	11.04
Very unsatisfied	11	7.14
Combined unsatisfied	28	18.18
No opinion	15	9.74
Total	154	100.00

who are unsatisfied, although the range of average ranks for the former group is narrower (Table 9). The top priority for those who are unsatisfied with land management, pristine wilderness (1.93), stands out in comparison with the other priorities. This average rank is numerically much lower than that of the top priority for those satisfied – in this case, equestrian (2.22). The top priorities for those satisfied – equestrian, pristine wilderness, and fish and wildlife habitat – have close average ranks, with no one clearly standing out.

1.2.3 Proposed Changes

Respondents were asked a hypothetical question – If they could, what would they like changed? Ninety-seven of the 158 respondents (61%) provided a variety of specific answers that are better understood when grouped together into themes (Table 10). It should be noted that responses from a survey participant that fall within the same specific area of proposed change are counted once. However, a respondent giving multiple responses under the same general area of proposed change is counted once for each of the specific areas the respondent identified but only once in total for the general area under which they fall. Therefore, summary figures for general areas of proposed change should be interpreted with caution and only serve as a guide.

The top two areas mentioned were “management” and “access.” The responses under “management” centered on better enforcement of laws and better management of garbage and trails. Some of the areas identified for better/more enforcement of laws were “clamping down on abusers with greater penalties for infractions” and “meaningful protection of the area,” as well as “more fish and wildlife patrol.” However, some users may not know that such enforcement already exists. One user wrote that he/she would like land management officials to have the authority to keep people from abusing the land and poaching wildlife. This low level of public awareness points to the need for an increased enforcement presence and better information dissemination regarding the role of land management officials.

- Another general area prioritized was access. In particular, “removing/restricting of motor access” was mentioned by the most number of respondents (35 out of 97, or 36% valid) as the area in greatest need of change, across all specific areas. Although the two categories (“removal” and “restriction of access”) have been combined, most of the responses focused on removing access, especially for ATVs/quads. Other targets included 4x4s and helicopters. While clearly emphasized as a priority, the sentiment supporting

Table 9. Land Management Priorities According to Level of Satisfaction

Satisfied with land management	1st	2nd	3rd	4th	5th	Average rank*
Equestrian	9	4	0	2	3	2.22
Pristine wilderness	9	15	12	3	1	2.30
Fish and wildlife habitat	16	5	4	9	2	2.33
Motorized recreation	4	6	2	3	2	2.59
Non-motorized recreation	9	10	3	8	5	2.71
Source of clean water	4	6	17	7	3	2.97
Commercial hunting/ trapping	2	1	2	1	5	3.55
Forestry	0	2	1	2	3	3.75
Other	0	0	1	0	1	4.00
Unsatisfied with land management	1st	2nd	3rd	4th	5th	Average rank*
Pristine wilderness	17	3	0	6	1	1.93
Fish and wildlife habitat	5	9	6	3	1	2.42
Source of clean water	1	9	11	3	1	2.76
Motorized recreation	1	0	1	0	1	3.00
Equestrian	3	1	2	1	6	3.46
Non-motorized recreation	0	5	5	10	3	3.48
Commercial hunting/ Trapping	1	0	1	1	2	3.60
Forestry	0	0	1	1	1	4.00
Other	0	0	0	0	2	5.00

*The average rank is computed by the sum of [rank multiplied by number of respondents who gave that rank] divided by the total number of ranks for that item. Lower rank = higher priority.

removing motorized access was not unanimous. As one respondent remarked:

- “I would like to take my truck up to Onion Lake again! I am pissed off that a Quad can rip up the area, but my truck can’t go there anymore! What’s the difference?”

It is possible to infer from answers such as “improved trail management and maintenance” that there may be some who want access to remain the same or to increase.

“Better infrastructure” and “removal/limiting resource development” were identified as priorities by equal numbers of respondents. There was no specific example of infrastructure that was a priority. However, when it came to resource development, all who mentioned it wanted it removed or limited, with no one indicating that resource development should be increased.

Some respondents took a more comprehensive approach to the changes they would make – combining changes in management and removal of certain activities with the intent of protecting the area. The following quote best illustrates this comprehensive perspective:

- “Properly fund our responsible agencies and establish priorities as they were set out by the *Eastern Slopes Policy* – watershed, wildlife habitat and non-motorized recreation. I would protect the entire area from industrial development and motorized use.”

1.2.4 The Future of the Bighorn Area

Respondents were asked what is important for the future of the Bighorn area. Of 158 respondents, 141 (89%) provided a response (Table 11). Similar to the section on proposed changes, “management” and “access” were marked as top priorities.

Respondents have high expectations concerning area management. Sixty-two respondents (44% valid) gave responses that focus on preserving the wilderness, protecting the area, and leaving the area natural.

Representative responses include the following:

- “Keep natural habitat and grazing grounds to original conditions.”
- “Maintain wilderness, pristine areas, and wildlife areas.”
- “Keep the ecosystem intact.”

Respondents want attention given to managing land use as it relates to development, camping, and low-impact recreation. Others want to ensure that the area is kept as it is, essentially maintaining the status

Table 10. Areas of Proposed Changes

General area of proposed change	Specific area of proposed change	Number of respondents per specific area	Total % (n = 158)	Valid % (n = 97)
Management	Better/more enforcement	19	12.03	19.59
	Better management (general)	12	7.59	12.37
	Better trash/garbage management (these did not focus on the users themselves)	8	5.06	8.25
	Designated use of trails	7	4.43	7.22
	Improved trail management/better maintenance of trails	3	1.90	3.09
	Greater dedication to preserving wilderness	1	0.63	1.03
	Greater control of wolf population	1	0.63	1.03
Access	Remove/less motor access	35	22.15	36.08
	More motor access	2	1.27	2.06
	Remove/limit equestrian use	1	0.63	1.03
	Easier access to families	1	0.63	1.03
	Greater accessibility in winter	1	0.63	1.03
Better infrastructure	General	3	1.90	3.09
	Better roads	3	1.90	3.09
	Better toilets	3	1.90	3.09
	Better signage	2	1.27	2.06
	Horse corral	2	1.27	2.06
	More firewood sources	1	0.63	1.03
	More stock in pond	1	0.63	1.03
Resource development	Remove/limit resource development	15	9.49	15.46
Policy	Place the area under parks department and protection plan	3	1.90	3.09
	Follow <i>Eastern Slopes Policy</i>	1	0.63	1.03
	Combine industrial and motorized recreation footprints	1	0.63	1.03
	Turn it into a federal park	1	0.63	1.03
Users/user groups	More thoughtful users (e.g., equestrians; people clean up more)	2	1.27	2.06
	Get rid of an organization/association	1	0.63	1.03
	Encourage more responsible clubs/associations	1	0.63	1.03
Cost/funds	More funding	2	1.27	2.06
	Implement user fees	1	0.63	1.03
Keep as is	Nothing to change	2	1.27	2.06

Note: Responses that fall within the same specific area are counted once. However, multiple responses under a general area are counted once for each of the specific areas the respondent identified. Therefore, any total made for a general area of proposed change should be interpreted with caution.

quo. Such responses were considered separate from leaving the area as natural (as part of preserving the wilderness).

“Access” was another area given high priority for the future of the area. Most of the specific responses under “access” referred to limiting or removing motorized use, especially OHVs. The following response is representative of the respondents’ sentiments:

- “Controlling the off-highway vehicles so they don’t destroy the natural surroundings.”

However, some respondents wanted to ensure that the area stay accessible. One respondent wrote:

- “Trying to keep it open and accessible for future generations in better shape than we found it.”

The management dilemma of balancing wilderness values and access is exemplified by the responses suggesting a priority for keeping the area pristine while at the same time keeping it accessible. It is apparent that respondents did not view access as incongruent with maintaining the wilderness. For example, two respondents wrote:

- “Continued public access & maintain the wilderness areas as much as possible in the state they are now.”
- “Maintaining existing wildlife habitat, and 2. Providing ‘semi-pristine’ adventures for recreationists.”

Other priorities for the Bighorn include keeping the area clean and controlling industry and commerce. Some respondents want to limit the latter so as to keep the area as natural as possible. For one respondent, opening up the area to resource extraction opens the area to easy access to OHVs. Other respondents want better education for users and the companies that operate within the area as well as more respect for the area from users.

Some respondents have a comprehensive perspective in planning for the area’s future – including management, access, and protection of the wilderness.

- “A change in view and management to that which is protective of the watershed, wildlife habitat and non-motorized user priorities. The area needs and deserves protection from industry and motorized use.”
- “Sound conservation strategy, balancing industry, recreation and nature.”
- “Leave it the way it is; with less development and less regulation (i.e. provincial park, etc.)”

Table 11. The Future of the Bighorn Area

General priority area	Specific priority area	Number of respondents per specific priority area	Total % (n = 158)	Valid % (n = 141)
Management	Preserve wilderness/general protection of the area/conservation/leaving it natural	62	39.24	43.97
	Manage land use	13	8.23	9.22
	Keep it as is	9	5.70	6.38
	Better/more enforcement	5	3.16	3.55
	Better water use/watershed protection	5	3.16	3.55
	Improved trail management/better trail maintenance/more designated trails	4	2.53	2.84
	Balanced use	4	2.53	2.84
	Better management (general)	3	1.90	2.13
	Environmental stewardship	2	1.27	1.42
	Government awareness	2	1.27	1.42
	Manage resources (general)	1	0.63	0.71
	Total for management	110	69.62	78.01
Access	Limit/remove motorized use	27	17.09	19.15
	Keep it accessible	8	5.06	5.67
	Limit equestrian use	2	1.27	1.42
	Restrict access (in general)	1	0.63	0.71
	Limit hunting	1	0.63	0.71
	Stop random camping by motorized vehicles	1	0.63	0.71
	Total for access	40	25.24	28.37
Business/resource development	Limit/remove/manage commerce/tourism	9	5.70	6.38
	Limit/remove/control industry	8	5.06	5.67
	Remove/limit development (in general)	3	1.90	2.13
	Total for business/resource development	20	12.66	14.18
Cleanliness	Keep it clean	18	11.39	12.77
Education	Better education/respect	13	8.23	9.22
Others	Control natural threats	3	1.90	2.13
	Infrastructure	2	1.27	1.42
	Policy	2	1.27	1.42
	Local organization to look after the area	1	0.63	0.71
	Reduce fire suppression	1	0.63	0.71
	Keep it quiet	1	0.63	0.71
	Camping	1	0.63	0.71
	Cost	1	0.63	0.71
	Wildlife and forest area	1	0.63	0.71
	Harvesting timber	1	0.63	0.71
Scenery	1	0.63	0.71	

Note: Responses that fall within the same Specific Area are counted once. However, multiple responses under a General Area are counted once for each of the Specific Areas the respondent identified. Therefore, any total made for a General Area of Proposed Change should be interpreted with caution.

1.2.5 Changes Noticed in the Bighorn Area

Of the 158 respondents, 99 (63%) have noticed changes in the Bighorn area. Themes and concerns in the two previous sections – increased motor vehicles, degradation of the environment, and industrial development – are the most frequently mentioned changes, along with an increased number of people and increased garbage. A small number of respondents have noticed favourable changes such as less vehicle use and less garbage. (See Table 12 for the summary results of changes observed by more than one respondent. Table F in Appendix B contains the complete results, including single observations.)

One general area of change concerns personal/recreational activities. Of the 158 individual survey participants, 155 reported observing an increase of activity or access. Motor vehicles figured prominently and ATVs were mentioned most often (again, similar to the two previous sections). The effects of ATVs is emphasized by this respondent:

- “Heavy destruction of terrain by quads and other motorized vehicles causing erosion & loss of habitat for wildlife and birds. We used to see partridge, ptarmigans, etc. on regular basis when [riding] horseback until quads came. They scare away everything.”

Responses indicating an increased number of people accessing the area spoke of tourism, traffic and hikers. Only three responses (of 158) indicate decreases in the number of people, motor vehicles, and access.

Responses around the theme of the environment focus mostly on degradation of the environment and an increase in garbage. Examples of degradation include erosion and oil in the lake (from washing a motorized vehicle). Over-use and the resulting changes such as erosion are the commonly cited changes, with sources ranging from ATVs, to horses, to industries such as logging and petroleum. The following are some of the observations reported:

- “Increased erosion, stream damage and inability of old resource roads to regenerate because of over-use. In some areas like the Ya Ha Tinda/Ram-Hummingbird, increased day use by horses has become unsustainably heavy.”
- “Erosion, compaction, degradation of soils, stream banks and trail throughways.”

Although most responses focus on one or two specific observations, a few respondents mentioned a range of changes they have seen, as exemplified by the following statement:

Table 12. Changes Seen in the Bighorn Area (Summary)

General area of change	Specific area of change	Number of respondents per specific area of change	Total % (n = 158)	Valid % (n = 99)
Personal/ recreational activity	More motor vehicles	23	14.56	23.23
	More people	19	12.03	19.19
	More use (general)	8	5.06	8.08
	Camping concerns	2	1.27	2.02
Environment	Environmental degradation	19	12.03	19.19
	More garbage	11	6.96	11.11
	Less wildlife/wildlife habitat	5	3.16	5.05
	Increased in cleared areas	3	1.90	3.03
	Reduction of garbage	3	1.90	3.03
Industrial activity	Industrial development	14	8.86	14.14
Infrastructure	Better roads/easier to access	5	3.16	5.05
	Better campgrounds	3	1.90	3.03
	Better/easier trails	2	1.27	2.02
Enforcement	Less enforcement	3	1.90	3.03
	More enforcement	2	1.27	2.02
Education	Better education/respect by users	4	2.53	4.04

Table 13. Experience Can be Improved

	Number of respondents	Total %
Yes	80	50.63
No	78	49.37
Total	158	100.00

- “Usage (ATV use & damage to environment) has greatly increased/number of cleared areas (seismic lines, trails) generally increased/increased off-campground camping/less visibility of fish & wildlife or forestry patrols.”

Another respondent described the effect of these changes on his/her experience:

- “Used to be the only people you met were those that loved the area and were there to appreciate – not to ‘conquer’ it. Trails were not roads for vehicle use. No industrial use. Last time, in ’99, the industry/quad use upset me to the point I did not enjoy the trip.”

Some respondents did see positive changes in the time they have been using the Bighorn. These were seen in terms of infrastructure such as better roads, campgrounds, and trails; reduction of garbage; and better education/respect by users. Two respondents observed:

- “A new area garbage ethic has reduced the quantity of garbage at established area camps.”
- “people using areas are *becoming* more aware of damage they cause.”

1.2.6 Improvement of Optimal Experience in the Bighorn Area

Respondents were asked if their experience could be improved; responses showed an almost even split, with 50.6% saying that their experience could be improved (Table 13). Those who did say “yes” were asked to rank the top three factors that hinder their experience (Table 14). Given the wide range in the number of respondents who gave a rank for the various choices, the table is arranged according to the number of respondents who gave a rank of 1 and not according to the average ranks. The number of respondents who gave ranks to the answers not included in Table 14 is so small, compared to the top four, that the numbers cannot be considered stable. “Other recreational users” figures prominently in the ranking, as shown by a) having the most number of respondents giving it a rank, and b) having the most number of respondents ranking it as number 1. “Resource extraction industries” had the second most number 1 rankings, followed by “too little regulation.”

Respondents were asked to further specify whom they meant by “other recreational users.” Table 15 shows that motorized vehicles are the primary concern. The number indicates the number of respondents who gave this as a general response and/or who gave a specific response (e.g., those who wrote “ATV” were counted under ATV, off-highway, and motorized vehicles; but someone who wrote “motorized vehicle” was only counted under that broad category). Off-highway vehicles, especially ATVs, were on top of the minds of those who thought other users hindered their experience of the area.

Table 14. Factors that Hinder Experience

Factors that hinder the experience*	1st	2nd	3rd	Average rank**
Other recreational users	42	17	11	1.56
Resource extraction industries	21	29	6	1.73
Too little regulation	12	12	6	1.86
Commercial outfitters	7	5	16	2.32
Too much regulation	4	3	3	1.90
Wildlife	4	1	0	1.20
Conservation groups	3	2	2	1.86
Other (see Table G, Appendix B for details)	6	5	8	2.11

*The factors are arranged according to the number of respondents under rank 1.

**The average rank is computed by the sum of [rank multiplied by number of respondents who gave that rank] divided by the total number of ranks for that item. Lower rank = higher priority.

Table 15. Specifics of Other Recreational Users Hindering Experience

Type of recreational user	Number of respondents
Motorized vehicles*	43
General motorized	6
RV campers/motorhomes/trailers	4
Off-highway vehicles	34
** ATVs/quads	32
Dirt bikes	4
4x4s	1
Snowmobiles	1
Litter/garbage	9
Helicopter	2
Non-consideration of others	2
Rule breakers	1
Climbing	1
Leaving open fires	1
Not so many people	1
Hunters	1

*There were 43 unique responses under “motorized vehicles”

** This is a breakdown for those who identified more specific off-highway hindrances. Sometimes a single respondent indicated more than one specific user group (e.g., ATVs and snowmobiles) and was counted once in each subcategory but only once in off-highway and total motorized.

SECTION TWO: ORGANIZATION SURVEY

2.1 CHARACTERISTICS OF ORGANIZATIONS SURVEYED

Surveys were given out to 63 groups, lodges, and organizations with 22 returns (35% return rate). The organizations came from a wide geographical area but close to one-third came from Rocky Mountain House (Table 16). The organizations vary greatly in terms of membership size. Some respondents are businesses to which membership numbers do not apply (although most still wrote a number, albeit small, particularly from 1 to 5). The clubs and associations reported memberships ranging from 30 to 9,500 individuals.

The purposes of the organizations are also varied, with many organizations listing multiple purposes. Table 17 lists the organizations according to the primary purpose. (For a breakdown of all organizations contacted, see Table H in Appendix C.) Equestrian organizations had the highest representation, followed by white-water sports/canoe-related organizations. In terms of the recreational activities in which the organizations are involved, day hiking is the most common, followed by equestrian (Table 18).

The frequencies with which the organizations host outings in the Bighorn fall into a wide range, with five having weekly outings (even if they differ across seasons), followed by four having outings three to six times a year (Table 19). Organizations holding weekly (summer only or year-round) events do so for a wide range of purposes, including conservation, day hiking, ATV/OHV, equestrian, and commercial outfitting. During the past year, these organizations held events in 23 different locations (Table I, Appendix C). Banff, Kananaskis, North Saskatchewan River, and Porcupine Hills were the most-cited locations across Alberta, with three organizations having held events in each place over the past year.

Eighty-two percent (18 out of 22) of the responding organizations indicated that they are involved in stewardship activities (Table 20). While four organizations said they have not participated in any stewardship activity, two of them also said they are involved in providing services that could be considered stewardship such as conservation teaching youth about the environment, and providing groomed ski trails. It is interesting to note that some of these organizations are indeed involved in activities that could be classified as stewardship. This may point to the lack of a commonly accepted definition among users.

Table 16. Location of Organizations Surveyed

Geographical area	Number
Rocky Mountain House	7
Caroline	3
Calgary	2
Edmonton	2
Nordegg	2
Drayton Valley	1
Jasper	1
Markerville	1
Red Deer	1
Sundre	1
Westlock	1

Table 17. General Purpose of Organizations Surveyed

Primary purpose	Specific purpose	Number of organizations
Recreation Club		6
	Non-motorized	2
	Motorized	1
	Equestrian	1
	Water sports	2
Outfitter*		8
	Equestrian	4
	Motorized	2
	Non-motorized incl. water sports	2
	Hunting/Fishing	2
Campground/Lodge		3
Education		2
Conservation		1
Other		2

*Several outfitters have two specific purposes, such as offering equestrian trail rides and hunting expeditions. As such, some have been counted once as an outfitter and two times in specific purpose, once under each category.

The 18 organizations involved in stewardship vary – from conservation-oriented groups, to education-oriented groups, to businesses. It is interesting to note that one cannot assume that certain organizations, given their purpose and activities, will be involved or will not be involved in stewardship activities. In terms of the type of stewardship activity done by the organizations, three dominate: garbage cleanup, violation reporting, and trail repair. Also mentioned were the following:

- Surveying through traffic monitoring and field assessment of trail conditions
- Publications, awareness, and educational materials/services
- Building bridges and boardwalks
- Installing SRD washroom facilities
- Participating on the Bighorn Access Management Plan Standing Committee

2.2 LAND MANAGEMENT

2.2.1 Priorities for the Bighorn Area

Organizations were asked to rank their priorities for the Bighorn area (Table 21). The average ranks must be interpreted with caution, given that not every respondent provided a rank for all priorities. In fact, “commercial hunting/trapping” and “forestry” had very few respondents providing ranks, while “source of clean water” had the most. In fact, “source of clean water” stands out as the top priority as evidenced by having the lowest average rank and having been given a rank by almost every respondent. “Pristine wilderness” and “fish and wildlife habitat” were cited as second- and third-most important, respectively. As in this same section on individual surveys, these rankings do not indicate why these are priorities or what respondents wish to happen. However, given the answers in other sections, we can infer that respondents want to ensure that the source of clean water, pristine wilderness, and fish and wildlife habitat are kept intact. No respondent wanted to limit solely non-motorized recreation; however, equestrian and motorized recreation are both represented in both positive and negative lights, depending on the organization.

Respondents’ priorities for the Bighorn area can also be gleaned from the following written comments at the end of the surveys:

Table 18. Organization Involvement in Recreational Activities

Recreational activity	Number	Percentage (n = 22)
Day hiking	14	63.64
Equestrian	10	45.45
Backpacking	8	36.36
Fishing	8	36.36
Cross-country skiing	6	27.27
Mountain biking	6	27.27
White-water sports	6	27.27
Hunting	5	22.73
Motorized recreation	5	22.73
Car camping	4	18.18

Table 19. Frequency of Planned Outings

Frequency	Number
Weekly (summer)	3
Weekly (both summer and winter)	2
Frequent/permanent	1
Once or twice a month (summer)	1
Once or twice a month (both)	2
3 to 6 times a year	4
Twice a year or less	3

Table 20. Participation and Type of Stewardship

Participation	Number	Percentage (n = 22)
Have participated in stewardship	18	81.82
Have not participated in stewardship	4	18.18
Type of stewardship	Number	Percentage
Garbage cleanup	14	63.64
Reporting violations	13	59.09
Trail repairs	12	54.55
Flora/fauna reporting	4	18.18
Erecting signage	3	13.64
Other	3	13.64

Comprehensiveness

- “We would like to see a full protection and habitat restoration. Industrial activities, resource extraction should be stopped. No mechanized recreation ... No trapping or hunting along national park & protected area boundaries. Limited low impact development including some area accommodation and long-distance trail networks.”
- “The Bighorn was in large part included in the national park system in the past. This attests to the significance of its beauty and its importance as wildlife habitat. The area needs protection to preserve its wild character, water production and biodiversity. Industrialization along its eastern boundary is significantly reducing its natural attributes.”
- “Unless the regulators make a serious effort to protect the Bighorn it will be lost as a valuable asset for Alberta, Canada and the world. The value of wilderness areas to our economy and our mental well-being in the long term must be understood and given priority over the short-term greed of the resource extraction industries.”

Participation of All Groups

- “I have sat on the Bighorn committee for the 5 years that this committee has been in existence. I am the winter motorized representative. We, along with the local ATV club, seem to be the only user groups that have been doing lots of physical trail building, repairs and maintenance in the Bighorn area and I feel that more groups need to get physically involved.”
- “Consult our band administrator for future discussions on the Bighorn Wildland area.”

Urgency of Change

- “This valley has the opportunity to become a prototype for land use/water planning if done in the near future. The damage done by recreationists is still reversible. Other land users – resource extraction – may be closer to the critical tipping point and must be part of the planning.”

Need for Compromise in Determining Priorities

Only two individual and three organizational respondents directly mentioned a compromise, while a few more implied it. The following written comments are from organizations:

- “I recognize and respect other people’s values, compromise is absolutely necessary. I have had to compromise on some trail use issues however most of the Bighorn is a better place since the new legislation. I will not compromise my value of hunting in the Bighorn, particularly Bighorn Sheep. This is what this area first became famous for.”

Table 21. Priorities for the Bighorn Area

Priority*	1 st	2 nd	3 rd	4 th	5 th	Number of ranks given	Average rank**
Source of clean water	8	2	7	1	3	21	2.48
Pristine wilderness	4	6	4	3	2	19	2.63
Fish & wildlife habitat	3	5	4	5	2	19	2.89
Non-motorized recreation	1	5	2	5	4	17	3.35
Equestrian	4	0	1	4	3	12	3.17
Motorized recreation	2	0	2	1	2	7	3.14
Commercial hunting/ trapping	0	1	0	0	1	2	3.50
Forestry	0	1	1	1	0	3	3.00
Other:	0	1	0	0	1	2	3.50

*The priorities are arranged according to the number of ranks given.

**The average rank is computed by the sum of [rank multiplied by number of respondents who gave that rank] divided by the total number of ranks for that item. Lower rank = higher priority.

Table 22. Satisfaction with Public Land Management

Satisfaction level	Number	Total % (n = 22)	Valid % (n = 21)
Very satisfied	2	9.09	9.52
Somewhat satisfied	8	36.36	38.10
Combined satisfied	10	45.45	47.62
Somewhat unsatisfied	7	31.82	33.33
Very unsatisfied	3	13.64	14.29
Combined unsatisfied	10	45.46	47.62
No opinion	1	4.55	4.76
No answer	1	4.55	
Total	22	100.00	100.00

- “ALL user groups [need] to continue to work together in maintenance and to allow ALL users to be able to enjoy the Bighorn Area.”

2.2.2 Satisfaction with Public Land Management

For those who provided opinions, there is an even split between those who are satisfied and those who are unsatisfied with land management (Table 22). Given the small number of organizations, it is difficult to determine trends in the types of organizations that are or are not satisfied. However, the three campgrounds/lodges and the two ATV/OHV organizations are on the unsatisfied side. Organizations involved with conservation, commercial outfitters, and equestrian are represented on both sides of the question.

Similar to the individual survey results analysis, we can look at the management priorities according to the level of satisfaction (Table 23). With only 22 responding organizations, the ranks are spread out with low numbers for each ranked priority, so the results should be interpreted with caution. Given the number of respondents, arranging the priorities according to the average rank may not best represent the results. This is especially true if only one respondent gave a high rank for a priority (e.g., forestry [logging] industry in the unsatisfied group). Therefore, the priorities are arranged according to the number of respondents who gave it a rank of 1, then 2, etc. We can see that the priorities of “source of clean water” and “pristine wilderness” are in the top three of both organizations satisfied and unsatisfied with current land management.

2.2.3 Proposed Changes

With regard to change the organizations would like to see if they had the capacity to create that change, management and access are the top two priorities, just as they are for individuals (Table 24).

The following written responses represent the range of sentiment about management:

- “more on-the-ground agency presence with authority & budget to allow for more appropriate management of key resources – watershed, wildlife habitat and the protection of public lands”
- “Broad-based regulation governing motorized recreation which included input from and encouraged legitimate use of motorized recreation uses.”

Table 23. Land Management Priorities according to Level of Satisfaction

Satisfied with land management*	1st	2nd	3rd	4th	5th	Average rank
Source of clean water	3	1	4	1	1	2.70
Fish and wildlife habitat	2	3	0	1	1	2.43
Pristine wilderness	2	2	1	2	1	2.75
Equestrian	2	0	0	2	0	2.50
Motorized recreation	1	0	2	0	2	3.40
Non-motorized recreation	0	2	1	1	2	3.50
Petroleum and mineral resources development	0	1	0	1	0	3.00
Forestry (logging) industry	0	0	1	1	0	3.50
Commercial hunting/trapping	0	0	0	0	1	5.00
Other	0	1	0	0	0	1.50
Unsatisfied with land management*	1st	2nd	3rd	4th	5th	Average rank
Source of clean water	5	1	3	0	1	2.10
Pristine wilderness	2	3	3	0	1	2.44
Equestrian	2	0	0	1	3	3.50
Motorized recreation	1	0	0	1	0	2.50
Non-motorized recreation	0	3	1	4	1	3.33
Fish and wildlife habitat	0	2	3	4	1	3.40
Forestry (logging) industry	0	1	0	0	0	2.00
Petroleum and mineral resources development	0	0	0	0	1	5.00
Other	0	0	0	0	1	5.00
Commercial hunting/trapping	0	0	0	0	0	—

*The order of the land management priorities is according to the number of respondents who gave a rank of 1, then 2, etc. Given the small number of respondents, arranging the priorities according to the average rank may not best represent the results. This is especially true if only one respondent gave a high rank for a priority (e.g., forestry (logging) industry in the unsatisfied group). Therefore, the priorities are arranged according to the number of respondents who gave them a rank of 1, then 2, etc.

Access is another important priority for change, with most responses focusing on limiting or removing access. As with the responses from individual users, ATVs are singled out more than others. And again, as with the individual users' sentiments, the differences in opinion are obvious among different users. However, there is also a sentiment of ensuring that each group has its "own place" as shown in the following comments:

- "would like to have advertised the areas that ATVers *can* mud bog at, so they don't go to the Bighorn to do it"
- "Discontinue ATV use Dec. 1 - Jul. 1, increase riding areas for snowmobiling due to the very minimal impact on the ground & wildlife."
- "designated equestrian areas should be ONLY for equestrian users"
- "Ban all motorized recreation in the area west of Nordegg. Restrict wild camping to non-motorized recreation and regulate all wild camping, e.g.: no wild camping within 10km of road access."
- "We need more day use areas, upgraded camping areas for all types of users. Motor, equestrian & adventurous."

There are likewise comments that reflect combining some priorities. Examples are as follows:

- "1. Implement full legal protection, 2. Phase out all industrial & mechanical recreational access, 3. allow only sustainable tourism and non-motorized recreation"
- "bring resource development & logging to the planning table, increase enforcement resources (for education & control), increase funding to expedite planning strategies"

2.2.4 Future of the Bighorn

For the future of the Bighorn, there is a strong push to work on management (Table 25). Access comes in as a distant second. Unlike the individual responses to this question, each responding organization is only represented once in each general priority area because not one organization gave a response that could fall in more than one specific priority area within a general area. This means that no one general priority area is inflated by more than one response from one organization.

The following are representative comments, mostly referring to management, but they encompass a wider

Table 24. Areas of Proposed Change.

General area	Specific area	Number of respondents	Total % (n = 22)	Valid % (n = 20)
Management	Better/more enforcement	6	27.27	30.00
	Better management (general)	2	9.09	10.00
	Designated use trails	1	4.55	5.00
	More comprehensive plan	1	4.55	5.00
	Number of responses	10		
Access	Remove/less motor access:	7	31.82	35.00
	More motor access	2	9.09	10.00
	Restrict camping	1	4.55	5.00
	Number of responses	10		
Better/more infrastructure	General	1	4.55	5.00
	Better outhouses	1	4.55	5.00
	Better rails	1	4.55	5.00
	Bigger campsites	1	4.55	5.00
	Number of responses	4		
Resource development	Remove/limit resource development	3	13.64	15.00
	Only allow sustainable tourism	1	4.55	5.00
	Number of responses	4		
Policy	Better planning	1	4.55	5.00
	No clearcutting/controlled burning to control pine beetle	1	4.55	5.00
	Number of responses	2		
Users/user groups	More users	1	4.55	5.00
	Better education	2	9.09	10.00
	Number of responses	3		
Cost/funds	More funding	1	4.55	5.00

Note: Responses from a respondent that fall within the same specific area are counted once. However, a respondent with multiple responses under a general area of proposed change is counted multiple times according to the number of Specific Areas given. Therefore, any total made for a general area of proposed change should be interpreted with caution.

range of concerns that call for comprehensiveness, inclusion of all user groups, and realistic planning:

- “An overall land/water use plan that values sustainability and preserves some wildland for future generations.”
- “Either a realistic view of land usage and the implementation of a practical development plan or the complete protection of the area as part of Parks Canada.”
- “ALL user groups to continue to work together in maintenance and to allow ALL users to be able to enjoy the Bighorn Area.”
- “The recognition of, and management for, watershed and wildlife habitat as priorities”

One response emphasized that use of the area should be regulated in order to give the area time to recover and revitalize. Two respondents pointed out that policy enforcement should be accompanied by education of the users.

2.2.5 Changes Noticed in the Bighorn Area

Respondents were asked if their organization has noticed changes since they have been using the Bighorn area. The general trends found among individual users are found here as well. For example, the top two changes seen revolve around “personal/recreational activity” and “environment” (Table 26). Respondents have noticed an increase in motor vehicles and in people. Both individuals and organizations have noticed more environmental degradation and other negative changes than positive changes. It is interesting to note that those who mentioned environmental degradation tended to specify motorized use and industry as the causes. However, there is one difference. “Industrial activity” figured strongly among individual survey responses but not as much among those of the organizations.

The following comments represent the range of responses per general area of change:

Personal/Recreational Activity

- “Use of motorized recreation has grown at an alarming rate. All riverside areas accessible to RVs experience extreme use and are being seriously damaged. ATV trails are exploding throughout the area and are creating ecological and environmental damage.”
- “Greed – toys – lack of knowledge/respect for use of land – mud boggers, quads, dirt bikes, random campers have increased exponentially in last 6-8 years – increase in large user groups in area – commercial & non-profit adventure schools, etc.”

Table 25. The Future of the Bighorn Area

General priority area*	Specific priority area*	Number of respondents	Total % (n = 22)	Valid % (n = 21)
Management	Preserve wilderness/general protection of the area/conservation/leaving it natural	7	31.82	33.33
	Management plan	2	9.09	9.52
	Better/more enforcement (limit abuse)	3	13.64	14.29
	More regulation	1	4.55	4.76
	Designated trails	2	9.09	9.52
	Sustainability	1	4.55	4.76
	Total for management	16	72.73	76.19
Access	Limit/remove motorized use	2	9.09	9.52
	Allow all users access	1	4.55	4.76
	Public access	1	4.55	4.76
	Fewer roads	1	4.55	4.76
	Total for access	5	22.73	23.81
Resource development	Protect from commerce/tourism	1	4.55	4.76
	Limit/remove/control industry	1	4.55	4.76
	Total for resource development	2	9.09	9.52
Cleanliness	Garbage cleanup	1	4.55	4.76
Education	Better education/respect	2	9.09	9.52
Others	Regulated or very little use of the area	1	4.55	4.76
	Reduce human intervention (e.g., fire suppression)	1	4.55	4.76
	Policy	1	4.55	4.76

*No respondent identified more than one specific priority area under each of the general priority areas.

- “With the trail restrictions that are in place, this has caused more traffic on the few trails that remain, causing increased maintenance required. Trail maintenance that has been done by ATV + snowmobile clubs, has greatly improved the trail conditions”

Environment

- “The use of recreation vehicles has driven elk herds to new areas out of our traditional hunting areas. New trails are being created.”
- “There was extensive trail damage on Ranger Creek by the use of quads. Now that they are no longer allowed up there it is slowly getting better.”

Some respondents combine several changes as seen in the following:

- “ongoing encroachment by industry in the foothills section west of trunk road / increased mechanized recreation and resulting damage almost everywhere / damage from overuse (MTB + equestrian) as well as random camping”
- “More quads, more use, more people. Original pack trails are all gone with too much quad use. No common sense used on operators’ part. No common sense used by forestry. Not enough enforcement. Enforcement needs a full time job.”

2.2.6 Improvement of Optimal Experience in the Bighorn Area

Eighteen of the 22 organizations (82%) feel that their optimal experience in the Bighorn could be improved. Similar to the other ranking results from the organizations, this set of rankings is limited in that some factors have very few respondents who gave ranks. Table 27 shows the ranking of the top three factors that hinder respondents’ experience – other recreational users, too little regulation, and resource extraction industries. Considering that these are the same top three ranked by individual users, these results lend greater certainty to the conclusion that these three factors are important to the optimal experience in Bighorn. When the “other recreational users” category is broken down into specifics (Table 28), motorized recreation is, as with the individual users, at the top of organizations’ cited hindrances to their optimal experience in the Bighorn.

Table 26. Changes Seen in the Bighorn Area

General area of change	Specific area of change	Number of respondents per specific area of change	Total % (n = 22)	Valid % (n = 20)
Personal/recreational activity	More motor vehicles	10	45.45	50.00
	More people	4	18.18	20.00
	Busier/More use	2	9.09	10.00
	More random camping	2	9.09	10.00
	Greater use of some trails	1	4.55	5.00
	Less people	1	4.55	5.00
	More helicopter access	1	4.55	5.00
	More horse-drawn activity	1	4.55	5.00
	More restricted access	1	4.55	5.00
Environment	Environmental degradation	6	27.27	30.00
	More garbage	2	9.09	10.00
	Environmental degradation being reversed	1	4.55	5.00
	Flood damage	1	4.55	5.00
	Increased in cleared areas	1	4.55	5.00
	Less wildlife/wildlife habitat	1	4.55	5.00
	More predators	1	4.55	5.00
Infrastructure	Improved trail conditions	2	9.09	10.00
	Better roads/easier to access	1	4.55	5.00
	Less use of area camping	1	4.55	5.00
	New campsites	1	4.55	5.00
	More trails	1	4.55	5.00
	Too many roads	1	4.55	5.00
Enforcement	Less enforcement	4	18.18	20.00
Industrial activity	Industrial development	3	13.64	15.00
Others	Good services	1	4.55	5.00

Note: Responses that fall within the same specific area are counted once. However, multiple responses under a general area are counted once for each of the specific area the respondent identified. Therefore, any total made for a general area of change seen should be interpreted with caution.

Table 27. Factors that Hinder Experience

Factors that hinder the experience**	1st	2nd	3rd	Average rank*
Other recreational users	9	4	2	1.53
Resource extraction industries	4	5	1	1.70
Too little regulation	4	5	5	2.07
Conservation groups	1	1	1	2.00
Wildlife	0	1	1	2.50
Commercial outfitters	0	1	0	2.00
Too much regulation	0	0	1	3.00
Other	1	0	4	2.60

*The average rank is computed by the sum of [rank multiplied by number of respondents who gave that rank] divided by the total number of ranks for that item.

**Factors are arranged according to the number of rank 1.

Table 28. Specifics of Other Recreational Users Hindering Experience

Type of recreational user	Number of respondents
Motorized vehicles*	12
General motorized	4
Off-highway vehicles	8
**ATVs/quads	5
4x4s	2
Snowmobiles	1
Speedboats	1
Helicopters	2
Rule breakers	2
Horse-drawn wagons	1
Litter/garbage	1

*There were 12 unique responses under motorized vehicles.

**This is a breakdown for those who identified more specific off-highway hindrances. Some responses included more than one specific user group (e.g., ATVs and 4X4s) and were counted in both subcategories but only counted once under “off-highway vehicles” and “motorized vehicles.”

DISCUSSION

The Bighorn is a large and relatively pristine tract of this province's wilderness. Its importance for the protection of key watersheds and rich wildlife habitat was outlined more than 30 years ago in the Government of Alberta's 1977 *Eastern Slopes Policy* (revised 1984). After considerable public consultation, most of the Bighorn was designated as a Prime Protection and Critical Wildlife Zone with the intention to protect the sensitive terrain, ecological resources, and crucial habitats of fish and wildlife. As this report shows, the values identified in the policy still hold strong today in the minds of Albertans. This enduring attitude toward protecting the Bighorn must be met with appropriate management ensuring that these values, having stood the test of time, continue to be reflected in day-to-day usage. Future generations must be able to enjoy the area at least as much as do today's users. It is imperative that the Bighorn area be managed with the best practices and for the key values identified in the results of this survey, continuing the mandate set out in the *Eastern Slopes Policy* more than three decades ago.

This study was conducted to better understand the characteristics, values, and concerns of recreational users – the greatest human presence – in the Bighorn. Specifically, AWA wanted to answer the following five questions in regards to the nature and perceptions of those who recreate in the area:

1. Who is using the Bighorn area for recreation?
2. What are their priorities for the area?
3. What are their concerns for the area?
4. How satisfied are they with current land management?
5. What changes in land management would they like to see in the future?

Addressing each question in terms of the results of this study will help create a better understanding of the management directions sought by those who are actively using the area.

Who is using the Bighorn area for recreation?

Those recreating in the Bighorn come from a wide array of backgrounds. Individual users are diverse in the activities they pursue and time and money invested in the area. Some are actively involved in stewardship activities in the area while others are not, though some hope to be in the future. Organizations identified in the course of the project are present in the area for a number of reasons, from business ventures to recreation clubs. They span a wide range in characteristics such as member number and number of events held in the Bighorn. This truly is public land, with many different users active in the area, highlighting the importance of the Bighorn to Albertans.

With such a variety of users active in the Bighorn, it is important to consider how their perceptions, values, and concerns are formed. Although the study was not designed for an in-depth look at the sources of users' perceptions and/or knowledge of the issues and concerns about the area, the survey results provide a glimpse into the basis of users' views.

For those who have only been visiting the area for a short time and/or who have not invested a great deal in gear and travel, their perspective of current and future land management could be based on that which is salient for them: pristine wilderness. It is not difficult for first-time or even non-regular visitors to be awed by the expansive natural wilderness. The most visited places outside the Bighorn reported by such users are Kananaskis, Banff, and Jasper. It is possible that the respondents, especially those who are not regular or frequent visitors, have developed their perceptions based on other locations, many of which have better protection. These users might incorrectly assume that the same level of protection is in place for the Bighorn. In addition, users who are there to admire and enjoy the wilderness on a "tourist" level may not be interested or have access to all the issues and concerns surrounding the use of the Bighorn.

For those who can be said to be more invested in the area (such as those who have been visiting for more years, visit more frequently, live closer or participate in stewardship activities), there may be a different perception or satisfaction level of land management. Some such users feel that things should stay as they are in the Bighorn or that local groups are doing an adequate job as stewards of the land. Others have seen negative changes over the years and believe that different management strategies are necessary to meet their identified priorities.

As this study was not designed to probe the sources or knowledge behind users' perceptions, it is impossible to say with certainty what is driving user opinion. What is clear is that users often have clear, if diverse, priorities, concerns, and positions regarding where management should be focused presently and in the future.

What are the users' priorities for the area?

For individuals, the top two priorities are "pristine wilderness" and "fish and wildlife habitat." For organizations the top two are "source of clean water" and "pristine wilderness." Recreation values such as "non-motorized recreation," "equestrian use," and "motorized recreation" are ranked as being less important than the above conservation values. It is apparent from the results that the priorities of those actively using the area focus on protecting the wilderness character, habitat, and watersheds and that these

values are often placed above people's own personal use interests. This is consistent with the analysis of the United States' 1,900-person *National Survey on Recreation and the Environment* (Cordell et al., 1998). In this survey, greater percentages of participants rated as extremely or very important the values of protecting water quality (78.9%), protection of wildlife habitat (78.6%), and preserving ecosystems (66.5%) as compared with the values of recreation opportunities (48.9%) or providing income for the tourism industry (22.8%).

The values of wilderness protection (as primary) and recreation (as secondary) align with park or protected area status, the goal of designation being to preserve and promote the natural environment while balancing outdoor recreation and heritage tourism (Government of Alberta website). There are parks and protected areas throughout Alberta, managed provincially or federally, that protect the natural and heritage values while allowing for appropriate recreation. The participants in this survey have clearly shown that they would like a similar balance to be found in the Bighorn. The area's management must therefore hold wilderness values as its primary guiding principle with other interests being subsidiary to this priority in any management decisions.

What are the users' concerns for the area?

Individuals and organizations both cited the same top three factors that hinder their experience in the Bighorn area – other recreational users, too little regulation, and resource extraction industries. This strong agreement provides clear direction for future management goals. The use of motorized vehicles is the most-identified hindrance to users' optimal experience. Individuals and organizations alike made more negative than positive comments in regards to changes in the area over time. The focus was often on environmental degradation and participants tended to mention motorized recreation and industry as the causes. With regard to resource extraction industries, respondents want to limit or remove such industries.

Table 4 shows that the top three activities pursued in the Bighorn as identified by those individuals surveyed fall under non-motorized recreation – day hiking, backpacking, and fishing. Motorized activities (i.e., car camping and motorized recreation) came in fifth and sixth. Given these numbers, it is no surprise that a majority of the comments against recreation use is targeted at the users of motorized vehicles and that there were few comments in favour of or defending the activities of users of motorized vehicles (e.g., ATVs). As a complement to AWA's Bighorn Wildland Recreational Trail Monitoring Project conducted over the past five years, this study illustrates that users are concerned with the environmental damage caused by motorized recreation. The Trail Monitoring Project's *Interim Summary* (2007) shows that

motorized recreation is not a sustainable activity on a designated trail system within the Prime Protection Zone. Users are possibly forming their opinions after witnessing the same damage and trends in increased use and disregard for the regulations as was evident in the trail monitoring.

How satisfied are users with current land management?

Although individual users readily identified the above concerns, 72% of individuals are satisfied with the current land management. At first glance it would seem that present management practices are meeting the priorities individuals identified. However, many respondents wrote that they would like to see changes. Thirty-seven percent of respondents are “somewhat satisfied” – we take this to mean that they would like some changes but are overall happy with the strategies in place. These points bring into question what people identify as land management and whether they see a connection between their personal experience of the area and management at a higher administration level. Of those who are satisfied with land management, 14% – the highest percentage – marked “fish & wildlife habitat” as their number one priority. In comparison, 61% of those unsatisfied with current management marked “pristine wilderness” as their number one priority. As such, it is possible to say with caution that 14% of satisfied respondents are gauging their satisfaction on what they see as adequate management of fish and wildlife habitat. However, of the majority of those not satisfied with current management, it could be said that they see the failure in terms of managing for pristine wilderness.

When we examine satisfaction at an organizational level, we see equal percentages for those who are satisfied and those who are not. The average ranks of priorities in relation to satisfaction level are quite close to each other and with the small sample size it is hard to draw any firm conclusions about the relationships. Both satisfied and unsatisfied organizations ranked “source of clean water” as their number one priority; however, those who are unsatisfied gave more number one rankings. It is possible that the larger disparity in group satisfaction levels could be related to variables of time spent in the area and purpose. The longer the organization has been active in the Bighorn, the greater the opportunity to determine if the area is being managed for their priorities. Further examination of the data on this point could lend important and interesting results.

What changes in land management would users like to see now and in the future?

Protection of the Bighorn

By far, the issue of the Bighorn’s management topped people’s lists of the changes they would make and the most important factor in the area’s future. Within management, for both organizations and individuals,

the highest number of responses were directed at protecting the area and maintaining its wilderness character. This highlights how important the area is in its relatively pristine state to those who are actively enjoying it as recreationists. According to the summary results of the *Alberta Recreation Survey 2004*, 66% of Albertans rate the preservation of landscapes, plants, and animals as a “very important” benefit of provincial parks and open spaces. Another 24% rate this benefit as “important” and 5% rate it as “somewhat important.” Only 1% rated the preservation of Alberta’s landscapes, plants, and animals as being an unimportant benefit of our open spaces. With 95% of Albertans seeing the importance of preserving our natural heritage through parks and open spaces, it is vital that the agencies responsible for these areas protect their inherent natural values and extend the necessary protection to other areas such as the Bighorn in order to safeguard the natural world Albertans hold dear.

The Bighorn as a source of clean water was also identified as a priority for area users. Through the Bighorn run the source waters of the Red Deer, Clearwater, Ram, Brazeau, and North Saskatchewan rivers. Combined, these rivers bring water to over a million Albertans and continue on to the other prairie provinces. In January 2008 the Alberta Water Council recommended that the provincial government integrate water and land management in the government’s *Water for Life* policy (Alberta Water Council, 2008). “We must recognize and accept that water quality and quantity objectives are inextricably linked to land decisions in watersheds and vice-versa” (page 13). With the integration of land and water management strategies, we can protect the sources of our waters by protecting the land that surrounds them. As water becomes a key issue in Alberta, the call to protect the source waters and surrounding lands will no doubt rise in volume. Through greater protective management of the Bighorn, we move closer to successfully meeting *Water for Life*’s three goals of “Safe, secure drinking water,” “Healthy aquatic ecosystems,” and “Reliable, quality water supplies for a sustainable economy.”

Stemming from the need for proper protection of the Bighorn, another oft-mentioned issue of management was the perceived lack of enforcement of the regulations in the area. Nineteen individuals (20% valid) and six organizations (30% valid) believe that better enforcement is something that needs to be immediately addressed, and others included enforcement as an important factor in the Bighorn’s future. Comments made by users indicate that they see little on-the-ground enforcement and point to a need for government personnel to have a more visible role in the area.

With clear priorities, necessary changes, and important future considerations outlined by those active in the area, it is imperative that strategies for managing the Bighorn be led by protection of the area for its wilderness character, which is so highly valued.

Access

Respondents indicated that one of their primary management concerns is that of access for recreationists and industry. As mentioned above, motorized recreation, especially ATV use, was singled out as being a primary hindrance to others' optimal experience in the Bighorn. The ability to manage for the priorities of "pristine wilderness," "fish and wildlife habitat," and "source of clean water" could be enhanced if the degradation caused by motorized access were eliminated or limited to areas outside the sensitive areas labelled as Prime Protection and Critical Wildlife. However, although the term "multiple use" was rarely used by the respondents, some spoke for the inclusion of motorized recreation within the Bighorn and some believe that all parties must work together for the future of the Bighorn.

What is clear is that users see a conflict in the use of the area. While the intent of the Multiple Use Zone is "to provide for the management and development of the full range of available resources, while meeting the objectives for watershed management and environmental projects in the long term" (Macleod Institute, 2001), the majority of respondents do not see all types of resource use and development as compatible. This is particularly evident in Tables 14 and 15, which show that individual users see off-highway vehicles and industry as the top two factors that hinder their enjoyment of the area. Organizations identify the same factors (see Table 28). In fact, the Macleod Institute points to the need to redefine the multiple use approach: "Increased industrial development, ecotourism and leisure activities are seen as accelerating both conflicts between resource users and actual or threatened environmental depredation. Government policy is seen to be flawed to the extent that it appears to promote 'multiple use' approaches" (page 1).

Management Roles within the Bighorn

Government

Comments about the government and government agencies were mostly negative, primarily with regard to the lack of good policy and lack of enforcement. One major perception is that the area is deteriorating. In terms of the desired changes and the area's future, there is a clear desire for better policy and management that will (1) ensure the preservation of the wilderness while at the same time improving infrastructure, (2) limit access to motorized recreation, and (3) limit/remove resource extraction. On the

other hand, a few respondents pointed out that all these demands must ensure access for everyone. Respondents seem to be primarily looking to the government for leadership in management of the Bighorn and in supporting their priorities and addressing their concerns.

Business and Industry

With regard to resource companies and other businesses, the great majority of responses from both individuals and organizations support either limiting or removing resource extraction. There were very few responses about allowing sustainable businesses such as sustainable tourism. It appears the individual respondents did not see a stewardship role on the part of business. Again, although this topic was not directly addressed, it may show that the possibility of a link between companies in the Bighorn and management goals is not on the minds of users. Exploring whether users and other stakeholders see a role for companies operating within the Bighorn Area may be a future area of study.

Individual and Organizational Stewardship

Only 38% of individuals reported that they are involved in stewardship activities in the Bighorn. However, another 12% are planning on participating in stewardship activities in the future. For the 50% of individuals who have not participated in stewardship, we are unable to say whether this is because they do not see a role for individuals to help manage the land; are not heavily invested in the Bighorn area because they are infrequent or distant visitors; or are currently satisfied with land management and do not see a need for their participation. However, with half of the individuals seeing a stewardship role for themselves within the Bighorn and a portion of the remaining respondents being infrequent or distant visitors unlikely to participate in an organized stewardship activity, we can reason that individuals invested in the area see that a level of land management must come from themselves.

By comparison, over 80% of the responding organizations have participated in stewardship activities in the past. As formalized groups of people, it is more likely that stewardship would fall to organized activities under the administration of a larger body. The sentiments expressed through the survey and during the on-the-ground solicitation support the idea that many see the role of stewardship falling to the larger formal organizations. There were several compliments or supportive comments to those groups active in stewardship and some sentiment that the implementation of management strategies should fall to the local groups.

RECOMMENDATIONS

Recommendation One: Meet the management goals identified by recreational users active in the Bighorn.

Recreational users active in the Bighorn deem the natural priorities of pristine wilderness, fish and wildlife habitat, and source of clean water to be the most important priorities for the Bighorn. Furthermore, the majority of users surveyed identify these priorities above their own recreational self-interests. This current study reaffirms the priorities and their hierarchy set out more than 30 years ago in the Government of Alberta's 1977 *Eastern Slopes Policy* (revised 1984). Despite this pervasive attitude within the public towards protecting the land, water, and life of the Bighorn, in recent years government strategies seem to have focused on increasing the recreational opportunities available within the area, which has led to degradation of other values such as the identified environmental priorities. The enduring conviction in the importance of the Bighorn's wilderness character must be met with an equally firm management strategy from the Alberta government that supports the priorities and their hierarchy as identified by the province's citizens. *It is the recommendation of Alberta Wilderness Association that there should be an immediate change in management priorities for the Bighorn from the present focus on recreation to focusing on maintenance of pristine wilderness, source water, and wildlife habitat, in line with public priorities for the area.*

Recommendation Two: Designate a portion of the Bighorn as a Wildland Provincial Park.

The management priorities of the Bighorn as identified by the area's recreational users are pristine wilderness, fish and wildlife habitat, and a source of clean water, priorities mirrored by the *Eastern Slopes Policy*. In fact, the *Eastern Slopes Policy* identifies a large portion of the Bighorn as Prime Protection and Critical Wildlife Zones, with the intent of these designations being the protection of sensitive terrain, ecological resources, and the crucial habitats of fish and wildlife. AWA believes the user values and concerns outlined in this study could be addressed through the creation of a Wildland Provincial Park following the boundaries of the Prime Protection and Critical Wildlife Zones. The designation of a Wildland Provincial Park is appropriate as it protects natural heritage while allowing for low-impact recreational pursuits. The creation of such a park is not without precedent. In 1986 then-Minister of Forestry, Lands and Wildlife Don Sparrow designated the Bighorn Wildland Recreation Area. However, legislation was never put in place to support this designation. *It is the recommendation of Alberta Wilderness Association that the designation of a Wildland Provincial Park generally following the boundaries of the Prime Protection and Critical Wildlife Zones as*

outlined in the Eastern Slopes Policy be completed (see page 7 for a map of AWA's proposed Wildland).

Recommendation Three: Remove or limit motorized recreation within the Bighorn.

Highlighted in this report is the fact that many recreational users in the Bighorn desire motorized recreation to be removed or limited within the area. Allowing motorized recreation within Prime Protection and Critical Wildlife Zones is in direct opposition to the objective of these designations. While issues of recreational access need to be addressed, this should not be done at the expense of the Bighorn's ecological and wilderness significance. The majority of respondents acknowledged this primacy by identifying natural heritage priorities above their own self-interest in recreational pursuits. *It is the recommendation of Alberta Wilderness Association that motorized recreation be removed immediately from the Prime Protection and Critical Wildlife Zones within the Bighorn, as identified in the Eastern Slopes Policy. Motorized recreation could be allowed to continue, if appropriately managed, in the Multiple Use Zone east of the aforementioned sensitive ecological areas.*

Recommendation Four: Address the perceived lack of enforcement within the Bighorn.

Several recreational users surveyed have pointed to a perceived lack of enforcement of current regulations. It is important that effective and visible enforcement of current and future regulations occurs in order to ensure that management goals are met and regulations are followed by those who use the area. Active enforcement personnel have the capability to educate the public, penalize offenders, and minimize conflicts between users, supporting management goals through an on-the-ground presence. *It is the recommendation of Alberta Wilderness Association that a greater capacity at the provincial government level be given for an increase in the number of enforcement personnel and visible patrols in order to regulate users of the Bighorn, including issuing penalties for offenders.*

Recommendation Five: Respond to the need for better education about natural values of and existing regulations in the Bighorn.

Along with effective enforcement of regulations, adequate education of Bighorn users is needed to support the area's management goals. With a proper understanding of values, interests, and regulations, users are better able to assist as stewards of the Bighorn through their own actions. Enforcement personnel and other stewards of the area must be empowered through their own learning

and appropriate support materials in order to inform others of the value of the Bighorn's wilderness character, wildlife habitat, and watersheds. As well, adequate education about management strategies and regulations provides users with an understanding of appropriate conduct and activities, and helps minimize conflict. *It is the recommendation of Alberta Wilderness Association that a comprehensive education component, including active educators and support material, be developed so that users come to understand the values of the area and how these values are related to the area's management.*

Recommendation Six: Address the lack of adequate representation of wilderness and conservation values on the Bighorn Access Management Plan Standing Committee.

As the results of this survey show, wilderness and conservation values are the highest priority for users in the Bighorn. Yet at the present moment, and indeed since its inception, the Standing Committee for the area has not carried a representative from the conservation or wilderness protection sector outside a government biologist and land management officer. Several recreational user groups have members on the committee without this being balanced by those whose interest lies in the minimizing of recreational impacts and in wilderness protection. It is imperative that the Standing Committee include adequate representation of wilderness and conservation priorities, especially as these priorities have been identified by so many who are active in the Bighorn. *It is the recommendation of Alberta Wilderness Association that the Bighorn Access Management Plan Standing Committee be more representative and that at least one member of the conservation community be invited to participate immediately.*

CONCLUSION

This report clearly demonstrates the importance of the Bighorn's wilderness values to the recreational users active in the area. These users believe that the top priorities in managing the area are pristine wilderness, a source of clean water, and fish and wildlife habitat. Many believe that the most important management goal for the future is the protection of the Bighorn's natural splendour and conservation-guided use. While the current Forest Land Use Zones strategy offers a token level of protection, it lacks the support of permanent and robust legislation, therefore allowing for the degradation of wilderness values through shifting priorities and lobbying by specific interest groups. As a large and relatively intact wilderness area, the Bighorn offers a vital, ecologically centered landscape, housing important watersheds. It must be managed with its continued health as the guiding principle.

Based on this survey and report, it is the recommendation of Alberta Wilderness Association that the Prime Protection and Critical Wildlife Zones of the Bighorn gain legislative protection through the creation of a Wildland Provincial Park as delineated by then-Minister of Forestry, Lands and Wildlife Don Sparrow in 1986. The creation of the Bighorn Wildland Provincial Park would meet the conservation values identified by recreational users active in the area while allowing access in an appropriately managed transition area east of the park to motorized recreationists and industry following "best practices." Further, it is the recommendation of Alberta Wilderness Association that governmental capacity be increased for visible and effective enforcement personnel in the area and the building of a strong education component to teach members of the public the value of Bighorn's wilderness character and the reasoning behind current and future regulations. Finally, we strongly recommend that the Bighorn Access Management Plan Standing Committee be more representative and at least one member of the conservation community be invited to participate immediately. Through these means, Alberta will be better able to protect the natural heritage inherent in the Bighorn and ensure that the landscape, wildlife, and water sources are secure for generations to come.

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APPENDIX A. THE QUESTIONNAIRES

Individual Survey

Alberta Wilderness Association (AWA) is conducting surveys of recreational users in Bighorn Backcountry. AWA will use the information to gain an understanding of trail user values and interests with respect to public land management and stewardship. We plan to share the results with other user groups and to collaborate to learn more.

Section A: Personal Information

1. How often do you visit backcountry areas in Alberta?

- less than once a year
- three to six times a year *(please check applicable seasons)*
- once or twice a month summer winter
- weekly summer winter
- I work in the area

2. How often do you visit the Bighorn Backcountry?

- less than once a year
- three to six times a year *(please check applicable seasons)*
- once or twice a month summer winter
- weekly summer winter
- I work in the area

3. How many years have you been coming to the Bighorn Backcountry? _____

4. Please specify other Alberta backcountry areas you regularly visit:

5. How long does it take you to drive to the Bighorn Backcountry from your home?

- less than an hour
- one to three hours
- half a day (4-6 hours)
- a full day
- more than a full day

6. Please estimate how much you invest in gear and travel (specialized vehicles, trailers, camping equipment, horses, backpacks, tents, cameras, binoculars and other expenses) per year to enjoy backcountry recreation. \$_____

7. What has this trip to the Bighorn Backcountry cost you? \$_____

8. Which recreational user groups are you a part of?

(Choose all that apply)

- | | | |
|--------------------------------------|---|---|
| <input type="checkbox"/> backpacking | <input type="checkbox"/> motorized recreation | <input type="checkbox"/> other (please specify) _____ |
| <input type="checkbox"/> fishing | <input type="checkbox"/> cross-country skiing | |
| <input type="checkbox"/> day hiking | <input type="checkbox"/> mountain biking | |
| <input type="checkbox"/> hunting | <input type="checkbox"/> equestrian | |
| <input type="checkbox"/> car camping | <input type="checkbox"/> whitewater sports | |

9. Do you belong to any outdoor activity-related groups or associations? If so, specify which groups.

Section B: Stewardship

In which stewardship activities have you participated in the Bighorn Backcountry?

(Choose all that apply)

- garbage cleanup
- trail repairs
- reporting violations to enforcement personnel
- putting up trail signs
- flora, fauna reports
- other (please specify) _____
- none
- not yet, but would like to

Section C: Land Management

1. Please rank the following priorities for the Bighorn Backcountry.

(Rank top five, with 1 being the most important to you)

- commercial hunting/ trapping
- equestrian
- fish and wildlife habitat
- forestry (logging) industry
- motorized recreation
- non-motorized recreation
- petroleum and mineral resources development
- pristine wilderness
- source of clean water
- other (please specify) _____

2. How satisfied are you with public land management in Bighorn Backcountry?

- very satisfied
- somewhat satisfied
- somewhat unsatisfied
- very unsatisfied
- I have no opinion

3. If you could, what would you change?

4. What do you believe is most important for the future of the Bighorn Backcountry?

5. What changes have you noticed, if any, in the time you have been using the Bighorn Backcountry?

6. Do you feel your optimal experience in the Bighorn Backcountry could be improved?

Yes No

If so please rank the top three factors that hinder your experience, with 1 being the greatest.

- commercial outfitters
- conservation groups
- other recreational users (*please specify*) _____
- resource extraction industries
- too little regulation
- too much regulation
- wildlife
- other (*please specify*) _____

Any other comments, concerns or suggestions?



Thank you!

Alberta Wilderness Association
Box 6398 Station D, Calgary, AB T2P 2E1
Phone Toll free 1-866-313-0713

Organization Survey

Alberta Wilderness Association (AWA) is conducting surveys of recreational users in Bighorn Backcountry. AWA will use the information to gain an understanding of trail user values and interests with respect to public land management and stewardship. We plan to share the results with other user groups and to collaborate to learn more.

Section A: Organization Information

Organization Name: _____

Address: _____

Contact Person: _____

Phone: _____

Fax: _____

Email: _____

1. What is the purpose of your organization?

2. Which recreational activities is your organization involved with?

(Choose all that apply)

- | | |
|--|---|
| <input type="checkbox"/> backpacking | <input type="checkbox"/> fishing |
| <input type="checkbox"/> day hiking | <input type="checkbox"/> hunting |
| <input type="checkbox"/> car camping | <input type="checkbox"/> motorized recreation |
| <input type="checkbox"/> cross-country skiing | <input type="checkbox"/> mountain biking |
| <input type="checkbox"/> equestrian | <input type="checkbox"/> whitewater sports |
| <input type="checkbox"/> other <i>(please specify)</i> _____ | |

3. How many members belong to your organization? _____

4. How often does your organization host planned outings in the Bighorn Backcountry?

- less than once a year
- three to six times a year *(please check applicable seasons)*
- once or twice a month summer winter
- weekly..... summer winter

5. Please list other backcountry areas in Alberta in which your organization held events during the last year:

Section B: Stewardship

Has your organization participated in stewardship activities in the Bighorn Backcountry?

- Yes *(if so, please specify)*
 - garbage clean up
 - trail repairs
 - reporting violations to enforcement personnel
 - putting up trail signs
 - flora, fauna reports
 - other *(please specify)* _____
- No
- Not yet, but we are planning to. *(please specify)* _____

Section C: Land Management

1. Please rank the following priorities for the Bighorn Backcountry.

(Rank top five, with 1 being the most important to you)

- commercial hunting/trapping
- equestrian
- fish and wildlife habitat
- forestry (logging) industry
- motorized recreation
- non-motorized recreation
- petroleum and mineral resources development
- pristine wilderness
- source of clean water
- other *(please specify)* _____

2. How satisfied is your organization with public land management in the Bighorn Backcountry?

- very satisfied
- somewhat satisfied
- somewhat unsatisfied
- very unsatisfied
- I have no opinion

3. If you could, what would your organization change?

4. What does your organization believe is most important for the future of the Bighorn Backcountry?

5. What changes have you noticed, if any, in the time your organization has been using the Bighorn Backcountry?

6. Does your organization feel your optimal experience in Bighorn Backcountry could be improved?

Yes No

If so, please rank the top three factors that hinder your experience, with 1 being the greatest.

- commercial outfitters
- conservation groups
- other recreational users (*please specify*) _____
- resource extraction industries
- too little regulation
- too much regulation
- wildlife
- other (*please specify*) _____

Any other comments, concerns or suggestions? (*use back page if necessary*)

Thank you!

AWA would like to make this survey as inclusive as possible; if you know of another organization that should participate in the survey, please let us know. Please send your completed survey as soon as possible in the enclosed self-addressed stamped envelope. We hope you enjoy the complimentary copy of *Bighorn Wildland* that we have included as a token of our appreciation.

Alberta Wilderness Association
Box 6398 Station D, Calgary, AB T2P 2E1
Phone Toll Free 1-866-313-0713

NOTE: In asking respondents how often they visit backcountry areas, several people added their own answer of twice a year or less, a category that was not included in the original surveys. It was decided to include this new categorization within the results.

APPENDIX B. TABLES OF DETAILED RESULTS FOR INDIVIDUAL SURVEYS

Table A. Frequency of Visit to Backcountry Areas in Alberta

Frequency of visit	Number of respondents	Percentage (n = 158)
Twice a year or less	29	18.35
3 to 6 times a year	88	55.70
Once or twice a month (both summer and winter)	16	10.13
Once or twice a month (summer)	12	7.59
Once or twice a month (winter)	0	0.00
Weekly (both summer and winter)	6	3.80
Weekly (summer)	3	1.90
Weekly (winter)	1	0.63
Frequent/permanent	2	1.90
I work in the area	0	0.00
Total	158	100.00

Table B. Frequency of Visit to the Bighorn Area

Frequency of visit	Number of respondents	Percentage (n = 157)
Twice a year or less	62	39.49
3 to 6 times a year	80	50.96
Once or twice a month (both summer and winter)	6	3.82
Once or twice a month (summer)	5	3.18
Once or twice a month (winter)	0	0.00
Weekly (both summer and winter)	2	1.27
Weekly (summer)	0	0.00
Weekly (winter)	1	0.64
Frequent/permanent	1	0.64
I work in the area	0	0.00
Total	157	100.00

Table C. Travel Time to Bighorn Area

Travel time	Number of respondents	Percentage (n = 158)
More than a day	3	1.90
Full day	1	0.63
4 to 6 hours (half day)	57	36.08
1 to 3 hours	93	58.86
Less than 1 hour	4	2.53
Total	158	100.00

Table D. Other Areas Regularly Visited

Area	Number of respondents	Area	Number of respondents
<i>Abraham Lake*</i>	1	Okotoks	1
<i>Athabasca/Cline*</i>	1	Oldman River	2
Banff	33	Peace River	2
Black Nugget	1	Peter Lougheed PP	1
Blackstone	1	Pincher Creek	1
Bragg Creek	2	Prairie Creek/North Prairie Creek	2
Brazeau	2	Porcupine	2
Cadomin	5	Red Deer River	1
Camp 15 Rd	1	Rocky Mountain House	5
Canmore	4	Saunders	1
Castle	6	Siffleur Wilderness	4
Chain Lakes	1	Slave Lake	2
Chief Mountain areas	1	South Buck/North Buck	1
Coal Branch	1	Suffield	1
Cow Lake	1	Sundre	2
<i>Crescent Falls*</i>	1	Twin Lakes	1
Crowsnest	3	Waiparous	5
Cypress Hills	1	Wapiabi	2
Drumheller	1	Waterton	8
Elbow Falls	1	Water Valley	1
Fish Lake	2	White Goat	4
Fort Assiniboine	1	<i>White Rabbit*</i>	1
Fox Creek	1	Willmore	8
Ghost	7	Willow Creek	1
Grand Cache	1	<i>Ya Ha Tinda*</i>	7
Harlech	1		
Jasper	24	<i>Others</i>	
Kananaskis	48	NE Alberta	1
Kakwa	1	From Manning to Grand Prairie	1
<i>Kootenay Plains*</i>	3	Areas around Calgary	1
Lakeland	2		
Lesser Slave Lake	2		
Lodgepole	1		
Livingstone	2		
McLean	1		
Middle Sand Hills	1		
Nordegg	1		
North Saskatchewan River	1		

*Areas within the Bighorn

Table E. Outdoor Activity-Related Groups/Associations

Group/Association	Category of group/association	Number of respondents
Alberta Wilderness Association	Conservation	14
Red Deer River Naturalists	Conservation	4
Sierra Club of Canada	Conservation	3
Foundation for North American Wild Sheep	Conservation	2
Canadian Parks and Wilderness Society	Conservation	1
Kerry Wood Nature Centre	Conservation	1
Trout Unlimited Canada	Conservation	1
Alberta Trail Riding Association	Equestrian	4
Alberta Equestrian Federation	Equestrian	3
South Cooking Lake Saddle Club	Equestrian	2
Banff Light Horse Association	Equestrian	1
Bowden Light Horse Association	Equestrian	1
Lacombe Light Horse Club	Equestrian	1
5th Meridian Rednecks	Motorized	3
Alberta Snowmobile Association	Motorized	2
Bighorn Heritage ATV Society	Motorized	1
Alpine Club of Canada	Non-motorized	5
Ramblers Hiking Club	Non-motorized	3
Central Alberta Mountain Club	Non-motorized	2
Hostelling International Outdoor Group	Non-motorized	2
Parkland Cross-Country Ski Club	Non-Motorized	2
Association of Canadian Mountain Guides	Non-motorized	1
Calgary Outdoor Club	Non-motorized	1
Edmonton Nordic Ski Club	Non-motorized	1
Edmonton Outdoors Club	Non-motorized	1
Red Deer Canoe and Kayak Club	Non-motorized	1
Friends of the Eastern Slopes	Equestrian, Motorized	4
Alberta Fish and Game	Fishing/hunting, Conservation	3
4-H	Other	2
Alberta Trappers Association	Other	2
Alberta Parks and Recreation Association	Other	1
Alberta Volunteer Steward Program	Other	1
Association for Experiential Education	Other	1
Canadian Environmental Association	Other	1
Canadian Parks and Recreation Association	Other	1
Edmonton Pointing Dog Club	Other	1
Friends of Willmore	Other	1
Garden Club	Other	1

Note: Fifty respondents associated themselves with a group/association.

Table F. Changes Seen in the Bighorn Area (Full Table)

General area of change	Specific area of change	No. of respondents per specific area of change	Total % (n = 158)	Valid % (n = 99)
Personal/ recreational activity	More motor vehicles	23	14.56	23.23
	More people	19	12.03	19.19
	More use (general)	8	5.06	8.08
	Camping concerns	2	1.27	2.02
	Increased off-campground camping	1	0.63	1.01
	Increased poaching	1	0.63	1.01
	Less care for low-impact activity	1	0.63	1.01
	Less motor vehicles	1	0.63	1.01
	Less people	1	0.63	1.01
	More horse-drawn activity	1	0.63	1.01
	More graffiti	1	0.63	1.01
	More home development	1	0.63	1.01
	More restricted access	1	0.63	1.01
Environment	Environmental degradation	19	12.03	19.19
	More garbage	11	6.96	11.11
	Less wildlife/wildlife habitat	5	3.16	5.05
	Increase in cleared areas	3	1.90	3.03
	Reduction of garbage	3	1.90	3.03
	Better selection for clearing areas	1	0.63	1.01
	Cleaner	1	0.63	1.01
	Lower water levels	1	0.63	1.01
	Natural changes	1	0.63	1.01
Noise pollution	1	0.63	1.01	
Industrial Activity	Industrial development	14	8.86	14.14
Infrastructure	Better roads/easier to access	5	3.16	5.05
	Better campgrounds	3	1.90	3.03
	Better/easier trails	2	1.27	2.02
	Less space	1	0.63	1.01
	More trails	1	0.63	1.01
	Roads	1	0.63	1.01
	Worse campgrounds	1	0.63	1.01
Enforcement	Less enforcement	3	1.90	3.03
	More enforcement	2	1.27	2.02
Education	Better education/respect by users	4	2.53	4.04
Others	Little has changed	1	0.63	1.01
	Minor improvements	1	0.63	1.01
	More policy/regulations	1	0.63	1.01
	More services	1	0.63	1.01
	Tags for fish	1	0.63	1.01

Table G. Other Factors Hindering Optimal Experience

Other hinder factors	Number of respondents
Lack of enforcement	2
Unmarked hiking trails	2
Weather	2
Preservation groups	2
Garbage	2
Less dogs	1
Non-accessible roads	1
Road maintenance	1
Clearcut logging	1
Commercial development	1
Dust control on roads	1

APPENDIX C. TABLES OF DETAILED RESULTS FOR ORGANIZATION SURVEYS

Table H. Purpose Breakdown of All Organizations Contacted

Primary purpose	Specific purpose	Number of organizations
Recreation club		17
	Non-motorized	5
	Motorized	7
	Equestrian	1
	Water sports	4
Outfitter		26
	Equestrian	13
	Motorized	5
	Non-motorized including water sports	4
	Hunting/fishing	9
Campground/lodge		10
Education		5
Conservation		3
Other		2

Note: Several outfitters can be classified as having two specific purposes such as offering equestrian trail rides and hunting expeditions. As such, some have been counted once as an outfitter and two times in specific purposes, once under each category.

Table I. Areas in Alberta Where the Organization Held Events in the Past Year

Other areas in Alberta	Number of organizations
Banff	3
Cadomin	1
Castle	2
<i>Clearwater*</i>	<i>1</i>
Crowsnest	1
Ghost	2
Jasper	2
Kakwa	1
Kananaskis	3
Lakeland	1
Livingstone	1
North Saskatchewan River	3
Oldman River	1
Porcupine	3
Primrose	1
Rumsey	1
Smoky	2
Suffield	1
Waiparous	2
Whaleback	1
Willmore	1
<i>Ya Ha Tinda*</i>	<i>1</i>
<i>Others</i>	
All across BC, AB, SK	1
Outside Bighorn Area	1
All across AB	1

*Areas within the Bighorn