



# **FOREST MANAGEMENT NOTE**

**Note 59**

**Northwest Region**

## **NONCONSUMPTIVE WILDLIFE RECREATIONISTS: A NEW CONSTITUENCY FOR FOREST MANAGERS**

Integrated resource management (IRM) includes forest management and is frequently related to public benefits. The Alberta government, for example, views IRM as a means "to achieve maximum benefits for Albertans, now and in the future" (Alberta Energy and Natural Resources 1983). Few attempts, however, are made explicitly to assess the impacts of forest management on the magnitude and distribution of benefits. One of the reasons is a lack of knowledge on the human dimensions<sup>1</sup> of various forest uses.

An integral part of incorporating human dimensions into resource management decisions is constituent identification (Kellert and Brown 1985). In forestry, this refers to the need for managers to identify the users of forested lands. These needs have gained increasing importance as forest companies and provincial governments strive to incorporate nontimber uses and values into IRM plans. One nontimber use that has gained recognition is wildlife-related recreation.

Traditionally, wildlife concerns in forest operations emphasized the provision of game species for hunters. Recent studies of wildlife-related

recreation, however, suggest that nonconsumptive or appreciative uses of wildlife have increased while hunting has decreased. These trends are expected to continue into the twenty-first century (Filion et al. 1992). Including the needs and concerns of this nontraditional constituency in forest management is important because nonconsumptive users are one of the most prevalent users of wildlife, generate tourism benefits from forested lands (Hvenegaard et al. 1989), and represent a potential economic and political influence for conservation (Wiedner and Kerlinger 1990). The incorporation of the needs of this group in management decisions is difficult because there is a lack of knowledge on who they are, what their wildlife activities require, and their preferences and expectations of forest and wildlife management and recreation planning (Lyons 1987).

This note summarizes results from a provincial survey on nonconsumptive wildlife recreationists in Alberta. It discusses characteristics of participants, the activities involved, requirements for wildlife viewing products, attitudes toward wildlife, and provides insight into how the needs of this constituent group can be incorporated into IRM decisions.

<sup>1</sup> Human dimensions deals with the people aspects of natural resources management. It blends sociology, psychology, communications, economics, recreation, education, anthropology, and other subjects to identify principles of human behavior concerning natural resource use. Human dimensions promotes the integration of social sciences with biology and ecology to maximize the human benefits from the management of renewable natural resources (adapted from Gigliotti and Decker 1992).



## METHODS

In 1991, the Government of Alberta commissioned a survey of Alberta residents to assess their wildlife-related recreational activities during 1990. Residents 15 years of age and older were randomly selected from 7 sample regions (Fig. 1). During an initial telephone survey, information was collected from 4518 respondents on motivations, barriers to participation, perceptions of problems facing wildlife, and socioeconomic data. A subsample of telephone respondents was selected to participate in a more detailed survey on wildlife activities. The survey was mailed to participants. A response rate of 56% was achieved resulting in 1640 usable questionnaires. Details on the administration of the

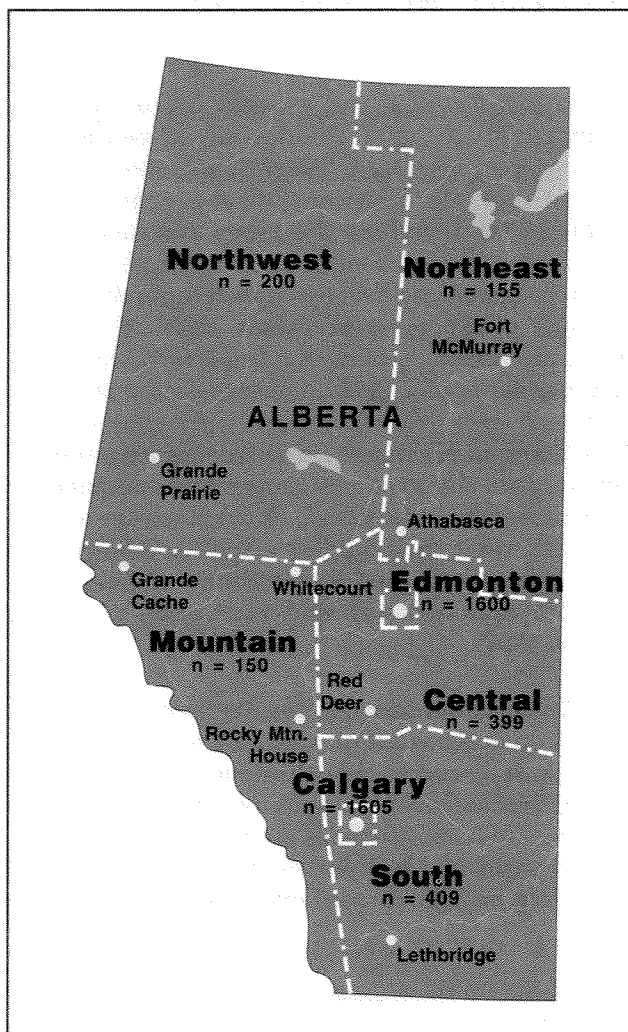


Figure 1. Survey sample regions and sample size (n). Adapted from Manecon Partnership (1991).

survey and the questionnaires can be found in Manecon Partnership (1991).

A taxonomy of nonconsumptive wildlife-related recreation was created based on viewing activities. Residential wildlife viewing included activities such as feeding, watching, studying, photographing wildlife, and maintaining shrubs or plants for wildlife around residences. A primary wildlife viewing trip was classified as a recreational outing occurring at least 1 km from home, taken for the primary purpose of encountering wildlife to watch, feed, photograph, or study. Primary trips were divided into 2 categories: short trips (<80 km from home) and long trips ( $\geq 80$  km from home), creating the distinction of tourism trips, which are generally defined as involving travel  $\geq 80$  km from home.

Wildlife viewing expertise was determined by asking respondents to rate themselves as a casual, novice, intermediate, or advanced observer. Casual was defined as someone who rarely watches wildlife. Novice was defined as an interested beginner who wants to learn more. The intermediate and advanced categories were not specifically defined. This self-reported skill rating has been a reliable measure of expertise in nonconsumptive wildlife-related recreation (Boxall and McFarlane 1993).

Motivations or reasons for participating were measured by rating the importance of 15 items that were classified as appreciative, social, conservation, achievement, or intellectually oriented. The appreciative component related to general nature appreciation, conservation related to participating in wildlife conservation activities, achievement related to improving viewing skills and seeing new species, social related to being with other people, and intellectual related to learning about wildlife.

## RESULTS

### PARTICIPATION IN WILDLIFE VIEWING ACTIVITIES

#### Residential Activities

Over 44% of the sample participated in wildlife viewing activities around their homes (Table 1). Participation was highest in the mountain region followed by central, northeastern, northwestern, and southern Alberta. Significantly fewer residents of Edmonton and Calgary reported participating.

**Table 1. Proportion of respondents (%) participating in wildlife viewing activities in Alberta during 1990**

Region (sample size)	Viewing activity		
	Residential	Trips	
		<80 km	≥80 km
Edmonton (1600)	32.0	33.4	34.7
Calgary (1605)	37.2	37.5	33.1
Mountain (150)	61.3	41.8	40.7
Central (399)	57.4	30.1	28.9
South (409)	43.6	32.2	29.5
Northeast (155)	56.8	33.1	27.7
Northwest (200)	53.5	31.0	25.0
Total (4518)	44.8	33.7	31.8

These lower proportions in urban areas probably reflect the greater availability of wildlife in rural environments.

Respondents participated in a variety of activities around the home. The most popular were watching birds (81% of residential participants); observing other wildlife (78%); photographing, painting or drawing wildlife (48%); feeding special foods to wildlife (43%); building nest boxes, feeders or other structures for wildlife (38%); and growing plants for food or shelter (25%). Less than 10% kept lists or notes on wildlife seen around the home. Residential participants tended to be older, better educated, with higher incomes than the general provincial population, and included slightly more women than men.

### Wildlife Viewing Trips

Wildlife viewing trips were popular among Albertans, with 34% of respondents taking at least one short trip and 32% taking one long trip in 1990 (Table 1). Trips were most popular among mountain region residents followed by Calgary and Edmonton residents. The proportion of urban residents taking trips reflects the lack of opportunities in urban settings and the increased time and costs required to travel to suitable habitats for viewing opportunities. Participants taking trips tended to be younger, better educated, and earned higher incomes than the general population. Men and women were about equally represented as trip takers.

Respondents spent a total of 5579 days on long trips. The mountain region captured the major portion (46%) of the market share (number of trip days) of long trips, followed by the central (12%), and southern (12%) regions (Fig. 2). The two northern regions were not frequently visited destinations, capturing less than 10% of the market. Edmontonians constituted the major market share to the northwest (55%) and central regions (42%), whereas Calgarians were the dominant market share to the southern (36%) and mountain (40%) regions. The northeast received its largest single portion from the central region (42%).

Most long trips originated from Edmonton and Calgary with the largest market share from each city going to the mountain region, followed by the central and southern regions (Fig. 3). About 9% of Edmonton's and less than 5% of Calgary's market share visited the two northern regions.

While most long trips were to protected areas such as national and provincial parks, about 32% of respondents visited nondesignated lands (land not protected from resource extraction by legislation and without facility and service developments such as campgrounds, designated trails, etc.). It is on these lands that most forest operations occur and where the industry has its greatest impact on nonconsumptive wildlife-related recreation.

Regardless of trip type, general observation of wildlife was the most frequent activity, followed by photographing, painting, or drawing wildlife. Keeping lists of species and collecting items of interest were the third most frequent activities. Less than 10% studied or made notes on the behavior of wildlife. The most sought after species were large mammals followed by any species of wildlife, small mammals, waterfowl, and birds of prey.

Based on extrapolation from the survey data, it was estimated that Albertans spent \$377 million on long trips involving the purchase of items such as accommodation and food. An additional \$206 million was spent on short trips, resulting in a total expenditure of \$583 million for wildlife viewing trips in 1990 (Manecon Partnership 1991). This figure may be high because the 1991 National Survey on the Importance of Wildlife to Canadians estimated total expenditures for these activities at \$431 million (Canadian Wildlife Service and Statistics Canada 1993).

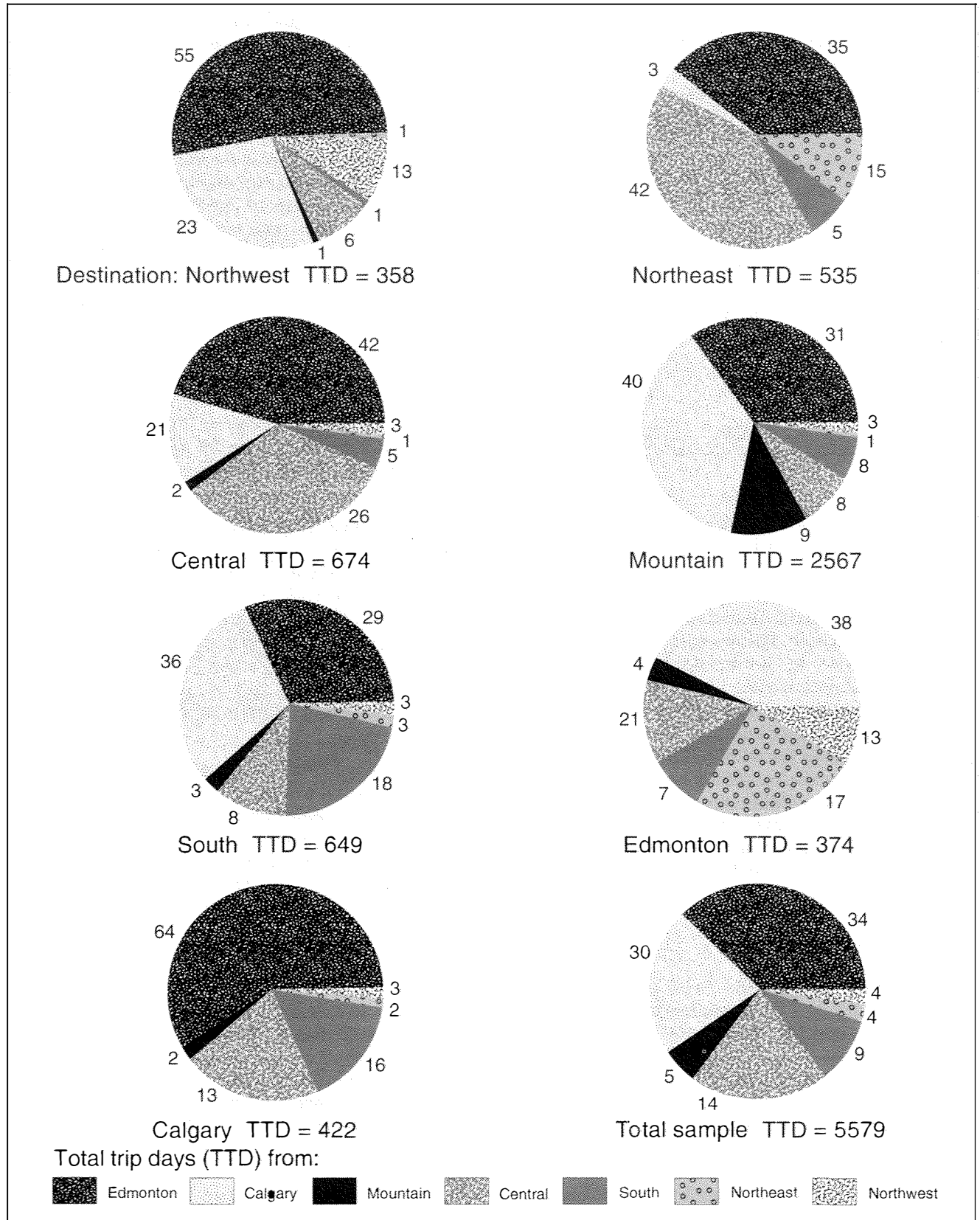


Figure 2. Regional composition (%) of total trip days (TTD) to sample regions for trips ≥80 km.

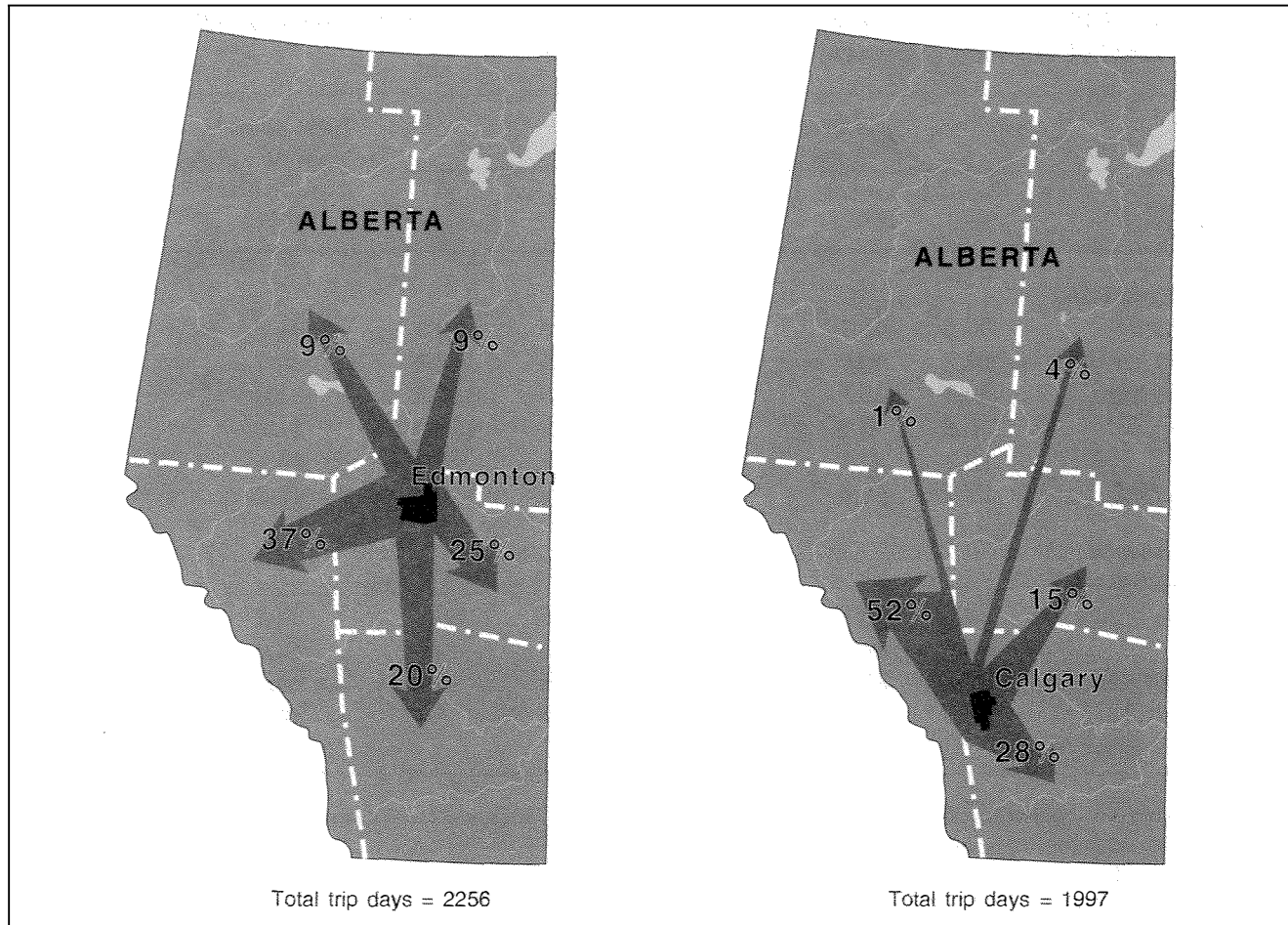


Figure 3. Distribution of trip days for trips  $\geq 80$  km by Edmonton and Calgary residents, 1990.

### Participation by Viewing Expertise

The proportion of respondents participating in all activities increased with increasing levels of expertise (Table 2). The intermediate and advanced groups were very active in all forms of wildlife-related recreation including hunting and fishing. Almost 40% of the advanced group hunted in 1990, 62% fished, and 74% birdwatched. The intermediate and advanced groups tended to be older ( $\geq 45$  years old) men whereas the casual and novice participants were primarily younger ( $< 45$  years old) women. The proportion of respondents taking trips to nondesignated lands increased with the level of viewing expertise. About 33% of the casual respondents took viewing trips to these areas compared to 67% of the advanced group. Eighty percent of participants visiting nondesignated areas were novice or intermediate; the majority of those recreating nearest forest industry operations were the least experienced.

### Potential Demand for Participation in Wildlife Viewing

Despite the large number of Albertans taking trips, a high proportion of nonparticipants revealed considerable interest in taking trips. About 40% of those who did not take a short trip and 29% of those who did not take a long trip expressed an interest in taking trips. To explore the possibility of increasing participant numbers, respondents were asked what factors prevented their participation. Personal time constraints with family or work, travel cost and travel distance, lack of information about where to see wildlife, lack of companions with whom to participate, and the cost of equipment necessary to better enjoy wildlife viewing activities were the most significant barriers to participation. It is not unreasonable to assume that the proportion of Albertans taking trips may increase in the future because some of these barriers can be overcome. The

**Table 2. Wildlife recreational activities and socioeconomic characteristics of Albertans (%) by level of viewing expertise**

Variables	Level of viewing expertise (mail survey sample size)				$\chi^2$ value <sup>a</sup>	Total sample (telephone survey sample size) (4518)	Alberta population <sup>b</sup>
	Casual (499)	Novice (598)	Intermediate (422)	Advanced (66)			
<b>Wildlife activities</b>							
Residential	34.5	45.7	58.7	72.3	70.1	44.8	na <sup>c</sup>
Trips <80 km	31.2	56.0	66.8	78.5	142.3	33.7	na
Trips ≥80 km	26.7	46.9	59.7	68.2	117.5	31.8	na
Hunting	5.6	6.2	23.6	37.9	133.9	11.6	na
Fishing	25.1	33.1	42.1	62.1	53.3	32.1	na
Birdwatching	27.1	53.3	67.9	74.2	176.7	44.2	na
<b>Socioeconomic characteristics</b>							
≥45 years of age	28.5	25.3	41.1	54.6	46.2	32.4	32.3
Female	52.6	60.2	41.0	36.4	42.6	52.0	49.9
University educated	32.1	33.0	34.5	31.8	0.7 <sup>d</sup>	28.1	20.6
Total household income ≥\$50,000	36.2	34.8	41.3	35.1	4.1 <sup>d</sup>	32.8	24.1

<sup>a</sup> Chi-square test was used to test the hypothesis that the distribution of individuals was equal across the levels of viewing expertise.

<sup>b</sup> Frequency of individuals 15 years and older (Statistics Canada 1987).

<sup>c</sup> na = not applicable.

<sup>d</sup> Not significant;  $p > 0.05$ .

forest industry could help extend viewing benefits to potential participants by supplying opportunities close to communities in which they operate and advertising these to the public.

## WILDLIFE VIEWING PRODUCTS

### Facility and Service Preferences

To assess preferences in recreational facilities and services to support wildlife viewing, respondents were asked the extent to which physical development should occur at or near viewing areas. Facilities requiring a high degree of development that may be extraneous to the viewing experience or compromise the integrity of the natural environment, such as serviced campgrounds, fixed-roof accommodation, and interpretive centers, were rated "not desirable" by the majority of respondents (Table 3). Facilities allowing a self-taught educational experience such as nature trails, interpretive signs, and interpretive brochures and guidebooks

were considered desirable. These developments require little disturbance of the natural environment, cost less than extensive capital developments, and offer an educational experience. Viewing areas close to home were more desirable than those in remote locations. Respondents liked the opportunity to see many species in one location, as well as rare and endangered species. The presence of day-use facilities and the opportunity to participate in other outdoor recreational activities such as fishing, hiking, and boating were rated as desirable by the majority of respondents. This is consistent with the finding that respondents who took viewing trips were very active in other forms of outdoor recreation. For example, 91% of respondents hiked or walked, 83% picnicked, 68% camped, 28% went horseback trail riding, and 22% canoed during 1990.

Significant differences occurred among the levels of viewing expertise on the desirability of facilities and services. The advanced group were generally less tolerant of facility and service

**Table 3. Desirability<sup>a</sup> of facilities and services at or near wildlife viewing areas by level of viewing expertise**

Facility or service	Level of viewing expertise (sample size)				F value <sup>b</sup>	Total sample mean (sample size) (1640)
	Casual (499)	Novice (598)	Intermediate (422)	Advanced (66)		
Areas within a 2-hour drive	5.0	5.4	5.1	4.8	6.1	5.2
Nature trails/interpretive signs	5.1	5.3	4.8	4.1	14.4	5.1
Day-use facilities	5.5	5.0	4.5	3.9	29.3	5.0
Directional signs	5.0	4.9	4.5	3.7	15.8	4.8
Interpretive brochures/ guidebooks	4.5	5.0	4.8	4.5	7.4	4.8
Facilities for other activities such as fishing, hiking, boating, etc.	4.7	4.8	4.5	4.5	1.1 <sup>c</sup>	4.7
Areas in remote locations	3.7	4.5	4.9	5.7	48.9	4.4
Interpretive centers	3.7	4.2	4.0	3.8	6.3	4.0
Interpretive tours	3.7	4.1	3.7	3.2	6.8	3.8
Viewing platforms or other viewing structures	3.7	4.1	3.8	3.5	6.2	3.8
Campgrounds	3.8	3.5	3.2	3.0	7.3	3.5
Restaurant services	3.6	3.2	2.9	3.0	10.8	3.2
Hotel/motel accommodation	2.9	2.5	2.3	2.8	10.8	2.6

<sup>a</sup> Mean rating on a scale of 1 to 7 where 1 = not at all desirable and 7 = very desirable.

<sup>b</sup> Analysis of variance was used to test the hypothesis that the mean ratings are equal across the levels of viewing expertise.

<sup>c</sup> Not significant;  $p > 0.05$ .

developments than their less-experienced counterparts. The advanced group preferred viewing areas in remote locations rather than within a 2-hour drive from home, whereas the other groups preferred areas close to home. No differences between the groups occurred on facilities for other outdoor activities with all groups rating this as a desirable development near wildlife viewing areas.

By incorporating simple and inexpensive products into management plans forest managers can enhance viewing opportunities on nondesignated lands. Developing products such as hiking trails, day-use facilities, and interpretive materials can assist industry and government in communicating forest management practices to users of managed forested lands.

### Reasons for Participating

The reasons or motivations for participating are an important component of the wildlife viewing

product or experience. Appreciative reasons such as enjoying the natural environment, experiencing the outdoors, and relaxing were rated by all levels of participants as the most important reasons for taking part in wildlife viewing activities followed by intellectual and social reasons (Table 4). For casual participants, only appreciative reasons were rated as important. Conservation reasons such as contributing to conservation through volunteering time, taking part in surveys of wildlife populations, or creating or maintaining food and shelter for wildlife were rated important by only the advanced group, but it was the least important reason for this group.

## ATTITUDES TOWARD WILDLIFE

### Perceptions of Wildlife Problems

Respondents were asked what they felt were the two most important problems facing wildlife in Alberta today. Loss of habitat and environmental

**Table 4. Mean<sup>a</sup> rating of reasons for participating in wildlife viewing activities by level of viewing expertise**

Reason for participating	Level of viewing expertise (sample size)				F value <sup>b</sup>	Total sample (sample size) (1640)
	Casual (499)	Novice (598)	Intermediate (422)	Advanced (66)		
Appreciative	5.3	6.2	6.3	6.5	94.3	6.0
Intellectual	3.8	5.1	5.3	6.0	175.4	4.8
Social	3.8	4.7	4.8	5.3	66.2	4.5
Achievement	3.2	4.5	4.9	5.5	134.5	4.2
Conservation	2.4	3.6	3.9	4.6	124.2	3.3

<sup>a</sup> Rated on a scale of 1 to 7 where 1 = not at all important and 7 = very important.

<sup>b</sup> Analysis of variance was used to test the hypothesis that the mean ratings are equal across the level of viewing expertise. All values are significant;  $p < 0.05$ .

pollution were cited most often. Different perceptions of problems occurred among the regions. Loss of habitat was the primary concern of residents in the southern, central, and northwest regions. Industrial and resource development was identified by a higher proportion of northwestern and Edmonton respondents. Targeting wildlife recreationists in these areas with educational campaigns could assist the forest industry in communicating how wildlife considerations are incorporated into forest management.

In addition to the perception of problems, attitudes to wildlife can be inferred from respondents' participation in wildlife conservation activities. Almost 25% of respondents donated money other than membership fees to wildlife-related organizations, 12% were members of such organizations, and 5% volunteered time to these organizations. Estimates on the level of interest among those who did not participate in conservation activities suggests that involvement could increase. For example, of those who did not participate in activities 37% were interested in creating or maintaining wildlife habitat, 35% were interested in donating money, and 32% were interested in working as a volunteer for a wildlife-related organization. Albertans have a keen interest in wildlife conservation and there is a potential for increased personal involvement. Forest companies wishing to undertake conservation projects such as wildlife population censuses and habitat improvement projects may be able to recruit volunteers and promote cooperative ventures between communities and industry.

## DISCUSSION

Nonconsumptive wildlife-related recreation is a significant leisure activity among Albertans and made a substantial contribution to the Alberta economy in 1990 with direct expenditures of about half a billion dollars. High participation rates and expenditures combined with a potential for increased participation in nonconsumptive activities indicates that wildlife is an important natural resource. The incorporation of nonconsumptive wildlife-related recreation concerns in forest management decisions will assist in diversifying the benefits received from this natural resource and may gain support for some types of intensive forest resource management that incorporate other benefits and services the forest provides. For this to occur, however, forest managers must expand their public involvement activities to include these groups. Unlike consumptive recreationists, these new constituents consist of equal numbers of men and women and most of them are highly educated, high income earners.

Most nonconsumptive wildlife-related recreation in Alberta occurs in or near residential settings. The importance of wildlife as an amenity value has seldom been recognized by planners and developers of residential areas (Shaw et al. 1985). There is substantial potential for urban forestry programs to increase opportunities for people to enjoy wildlife near their homes by becoming involved in wildlife conservation and development of housing facilities. For example, providing information on tree species that will attract wildlife, becoming involved in the



planning and development of housing facilities, the creation of green areas and wildlife corridors, and the restoration of neighbourhoods could assist in maintaining or enhancing opportunities for wildlife-related recreation in urban environments.

The provision of viewing areas on nondesignated lands presents an opportunity for the forest industry to incorporate the needs of the nonconsumptive wildlife recreationist into IRM and provides a means of communicating how forestry operations are considering wildlife in management plans. A variety of wildlife viewing products can satisfy needs of different user groups from the casual to the advanced participant. The provision and advertising of viewing opportunities close to residential centers will assist in meeting current and realizing potential demand. Minimal facility development such as self-guiding interpretive trails, day-use facilities, and a general nature appreciation experience will attract the casual and novice participant. Viewing opportunities in remote locations with no facility developments and opportunities for a variety of wildlife activities including hunting and fishing will attract primarily the advanced participant. With one-third of respondents who took long trips visiting nondesignated lands, forestry companies can play a key role in enhancing regional tourism by providing and promoting viewing opportunities.

A concern for loss of habitat and industrial and resource development impacts suggests that forestry operations are viewed as having a negative effect on wildlife. Companies wanting to attract nonconsumptive recreationists to their forest management areas in order to demonstrate sound forest management or garner public support must be sensitive to these perceptions and provide educational materials on how their forest management practices include considerations for wildlife.

## SUMMARY

Nonconsumptive wildlife-related recreation is a significant leisure activity among Albertans and contributed about half a billion dollars in direct expenditures to the provincial economy in 1990. There are several opportunities for forest management to enhance Albertans' enjoyment of wildlife. There is potential for urban forestry programs to increase opportunities for people to enjoy wildlife near their homes because most nonconsumptive

wildlife-related recreation occurs in residential settings. About one-third of people who take long trips to view wildlife visit nondesignated lands. Forest companies can play a key role in enhancing regional tourism by incorporating viewing opportunities in their management plans. Forest companies can use interpretive materials to communicate how their forest management practices include considerations for wildlife as a means of demonstrating sound forest management and enhancing public support. By considering the needs of the nonconsumptive wildlife recreationist, forest companies can enhance and expand the distribution of public benefits from forested lands.

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