

THE PUBLIC AWARENESS PROGRAM AT THE KANANASKIS
FOREST EXPERIMENT STATION, SEEBE, ALBERTA

BY

L.G. BRACE

INFORMATION REPORT NOR-X-158
JUNE 1976

NORTHERN FOREST RESEARCH CENTRE
CANADIAN FORESTRY SERVICE
ENVIRONMENT CANADA
5320 - 122 STREET
EDMONTON, ALBERTA, CANADA
T6H 3S5

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Brace, L.G. 1976. The Public Awareness Program at the Kananaskis Forest Experiment Station, Seebe, Alberta. Environ. Can., Can. For. Serv., North. For. Res. Cent., Edmonton, Alberta. Inf. Rep. NOR-X-158.

ABSTRACT

During the summer of 1975 the Canadian Forestry Service operated a Public Awareness Program at the Kananaskis Forest Experiment Station near Seebe, Alberta. Facilities included a parking lot, a Visitors' Centre with displays and an information desk, a small picnic area, and a self-guiding interpretive trail. Between June 25 and September 1, 3089 people visited the Centre and trail, where they were introduced to the use and management of forest land and resources by means of displays, illustrated trail signs, and trail exhibits. Public reaction to the program, obtained by a combination of questionnaire and interview techniques, was favorable. Total cost (construction of facilities and 1975 operating costs) was \$127 894.08. Guidelines and recommendations for future operation are presented.

RESUME

Au cours de l'été 1975, le Service canadien des forêts a dirigé un programme d'éveil au public à la Forêt expérimentale de Kananaskis, près de Seebe en Alberta. Les installations comprenaient un parc de stationnement, un centre d'étalages pour les visiteurs, en plus d'un bureau d'informations, un petit emplacement pour les pique-niques et un sentier avec pancartes explicatives. Entre le 25 juin et le 1^{er} septembre, 3089 personnes ont visité le centre et

le sentier, où elles furent initiées à l'utilisation et à la gestion des terres et ressources forestières au moyen d'étagères, de panneaux illustrés et d'exhibits le long du sentier. La réaction du public face au programme, obtenue par le truchement du questionnaire et d'interviews s'est avérée favorable. Le coût total (construction des aménagements et coût d'opération pour l'année 1975) s'est élevé à \$127 894.08. L'auteur suggère des lignes directrices et fait des recommandations pour le fonctionnement futur du site.

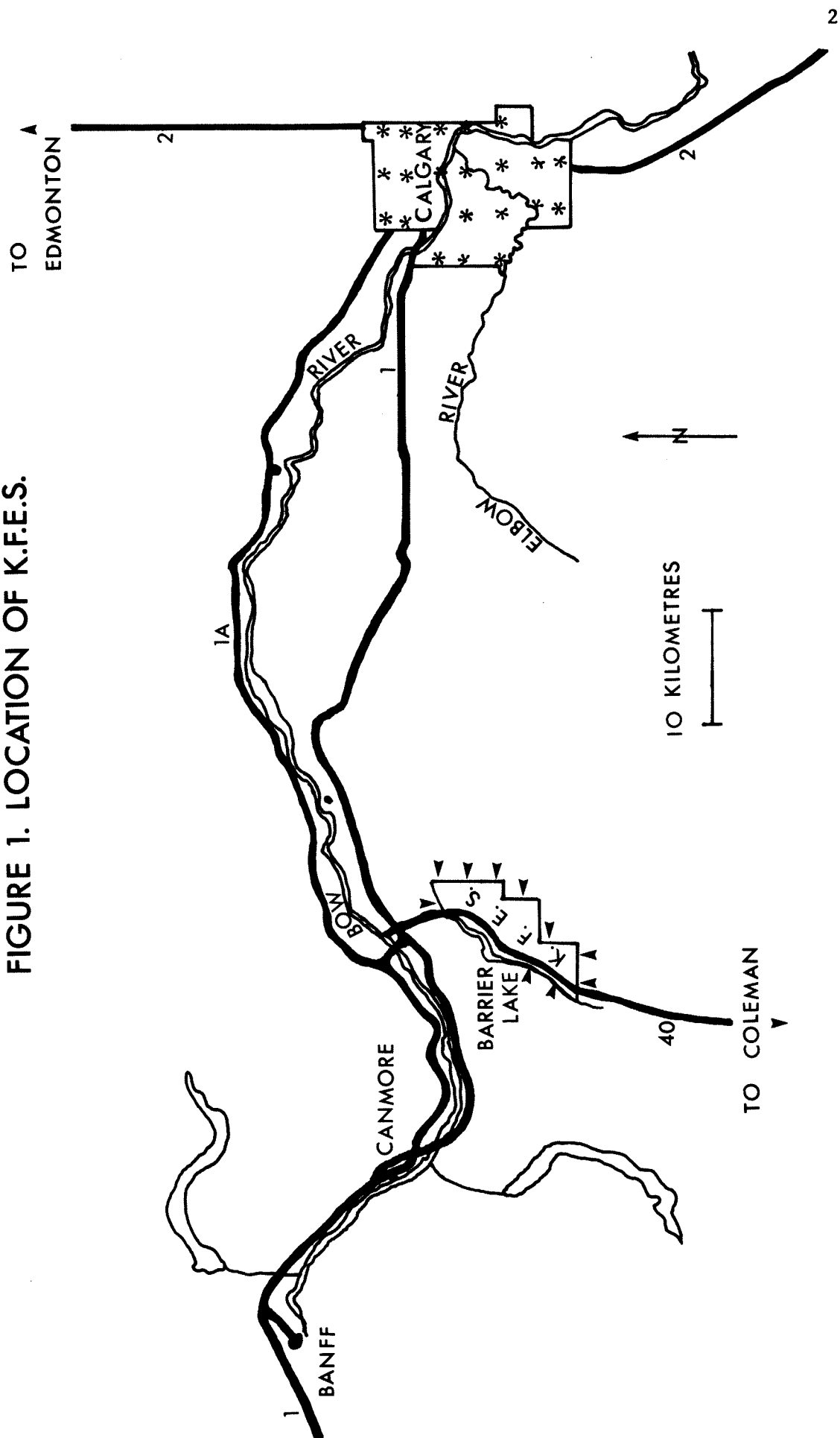
INTRODUCTION

In 1975 the Canadian Forestry Service inaugurated a Public Awareness Program at the Kananaskis Forest Experiment Station, which is a 59.6-km² (23-mile²) federal research forest located about 64 k (40 miles) west of Calgary, and 5 k (3 miles) south of the Trans-Canada Highway on highway 940 (Figure 1).

The main objective of the program is to demonstrate and interpret integrated resource use and management of a forest in the context of the management plan for the property. An assessment of interpretive programs offered in the region by Parks Canada, provincial government departments, civic governments, private individuals, and corporations indicated little risk of duplication of services by our program. In addition, the results of land use hearings held by the Alberta Environment Conservation Authority (1974) indicated considerable public concern about forest land and resources. This was a good opportunity for the Canadian Forestry Service to fill an expressed public need in the region, and plans were made to provide interpretive services to about 5000 people, mainly in family groups, by means of a Visitors' Centre and a self-guiding trail.

For the purpose of the program the working definition of "interpretation" was taken from Edwards (1968) paraphrased as follows: "Interpretation is a combination of education, information, demonstration, showmanship, guiding service and propaganda. It aims to inspire people to new understanding--by first hand experience with the subject being interpreted." Ideally, interpretation and subject matter such as resource

FIGURE 1. LOCATION OF K.F.E.S.



management involves the translation of technical language into non-technical form, resulting in the receiver becoming knowledgeable and enthusiastic about the message and experience.

PLANNING

Decisions which preceded and constrained facility planning were:

1. The theme or main objective of interpretation was established--to interpret the use and management of forest land and resources.
2. The facilities were to include a Visitors' Centre and a self-guiding interpretive trail.
3. The Visitors' Centre was to be housed in an old log cabin on the Station Headquarters site.
4. Budget limitations for construction contracts and for the contract to man the Visitors' Centre and to staff the project were set.

Initially a literature review of interpretive displays and trail design and construction guidelines was undertaken, and personnel from other Canadian Forestry Service programs and Parks Canada were consulted. Parks Canada provided facility planning and design guidelines for trails and structures such as viewing platforms.

The trail location was determined primarily by the Visitors' Centre location and was assessed for interpretive potential by a group of interested staff members from the Northern Forest Research Centre who also assisted in planning Visitors' Centre displays. In general the plan was

to present complementary information in the Visitors' Centre and on the trail, supplemented with an illustrated brochure. Interpretive material was planned for ages 10 and over. The federal policy on bilingualism was followed in the preparation of displays, trail signs, and trail brochures. The preparatory planning was done in the fall of 1973 and spring of 1974.

By May 1974 all planning and layout specifications for the Visitors' Centre, trail, viewpoint deck, trail signs, and general subjects of interpretation were complete. Figure 2 shows the layout of the Visitors' Centre and parking area and Figure 3 shows trail layout.

Trail stops were planned to include both signs and displays. Signs described native vegetation, insects, diseases, other natural agents in the forest, forest fire ecology, and fire history. Sign and display combinations explained clear-cutting of lodgepole pine, watershed areas, streamflow, and soils, featuring a walk-in soil pit. Other signs and displays describing silviculture operations, principles of lodgepole pine management, land forms, and local climate rounded out the trail program. The main viewpoint deck was designed to explain zoning of forest land for management, and the deck site was chosen to overlook a variety of zones.

FACILITY CONSTRUCTION AND COST

All new facility construction was by contract, with the exception of earthwork in the Visitors' Centre parking lot which was done by the provincial government as part of the new Kananaskis highway landscaping operation. Renovation of the old log cabin as a Visitors' Centre, including

FIGURE 2. PARKING LOT AND VISITOR'S CENTRE

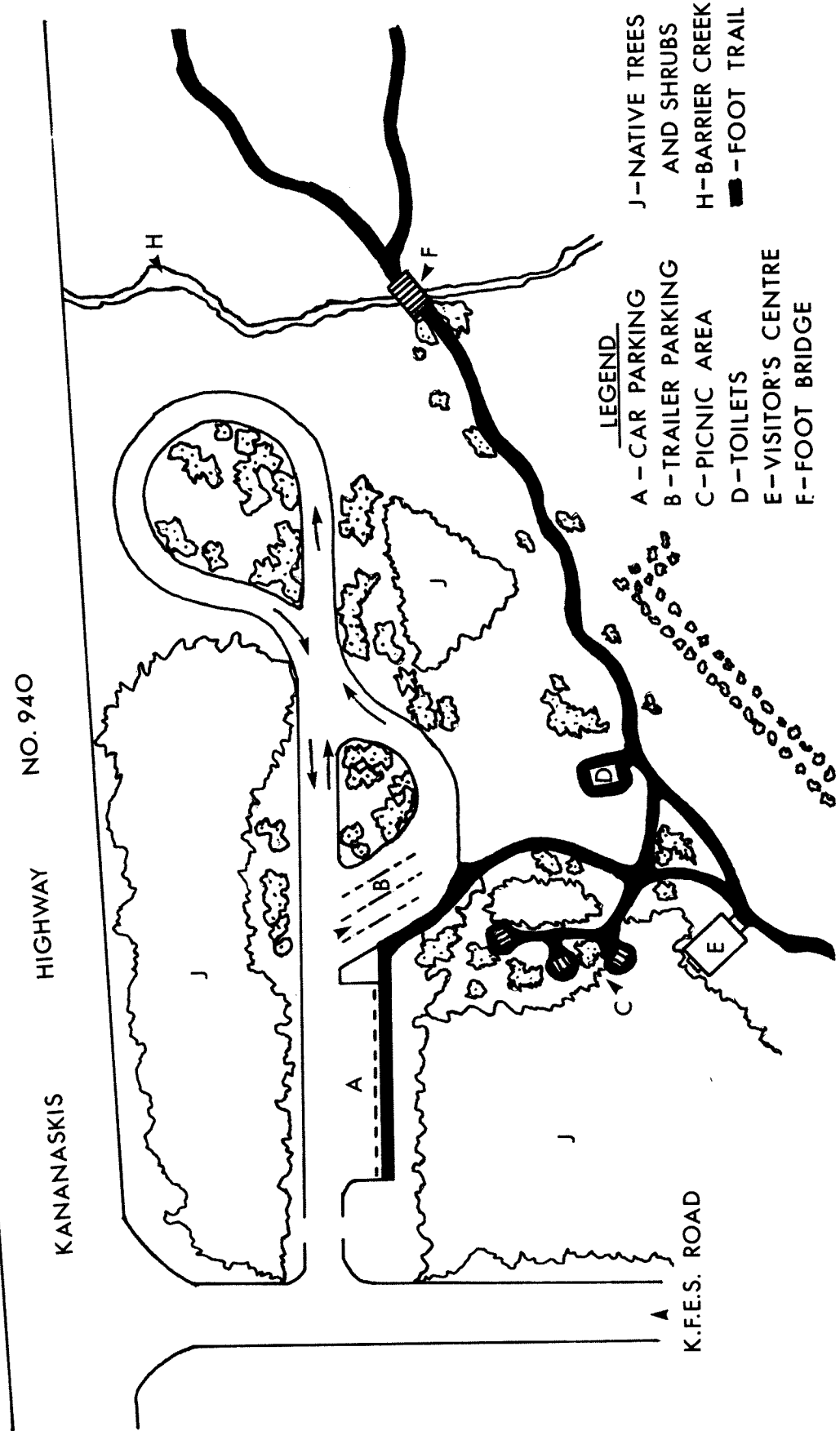
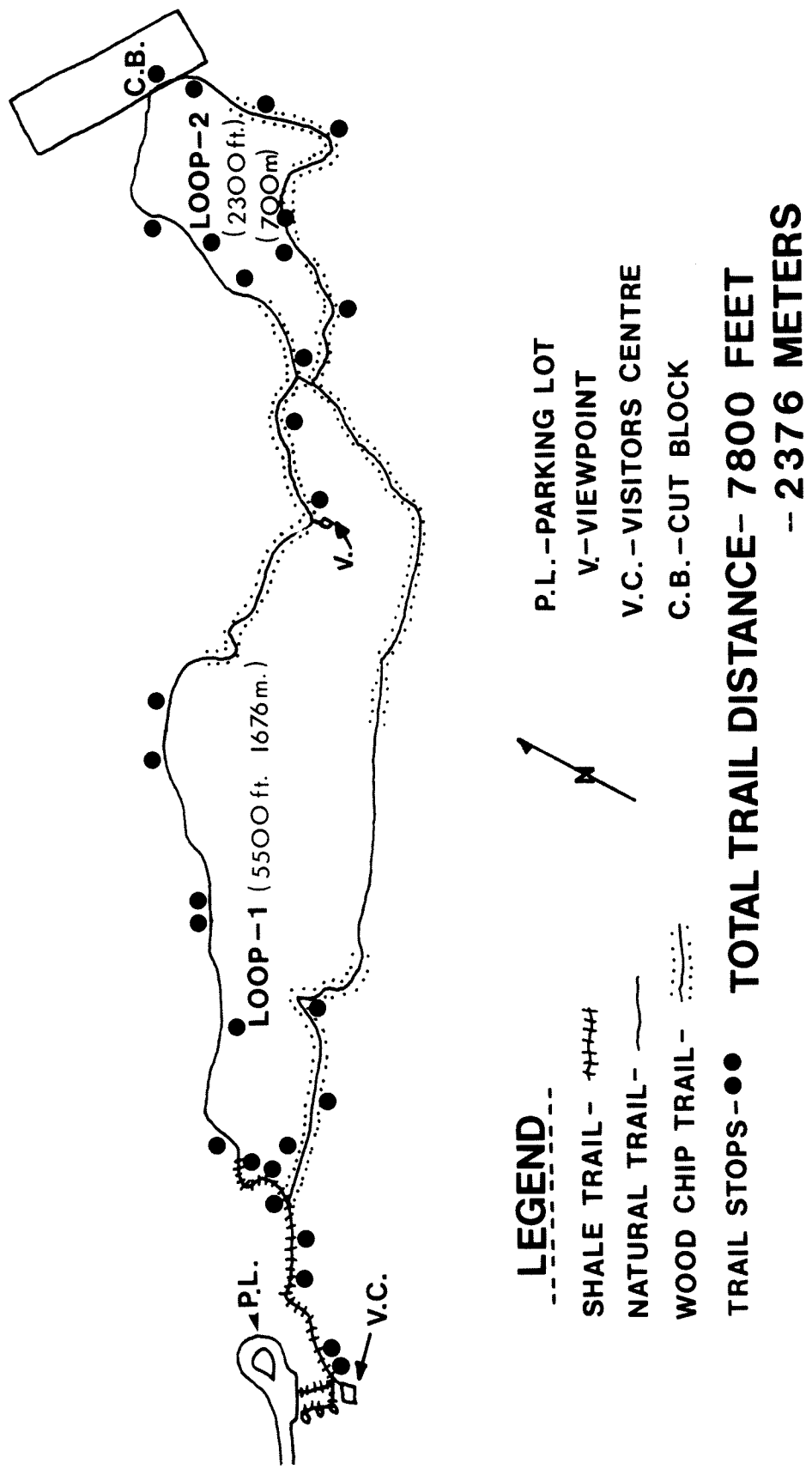


FIGURE 3. RESOURCE MANAGEMENT TRAIL K.F.E.S.



an information desk and displays, was done by a combination of contracts and staff labor.

Visitors' Centre displays were prepared mainly by different research units of the Northern Forest Research Centre, including hydrology, fire, remote sensing, and insect and disease survey. Only three display units were obtained by contract.

The main trail message was incorporated onto 32 small metal signs 25.4 cm x 38.1 cm x 0.95 cm (10 in. x 15 in. x 3/8 in.) and one large metal sign 45.7 cm x 182.9 cm x 0.95 cm (18 in. x 72 in. x 3/8 in.), the latter to be mounted on the viewpoint deck. An auxiliary sign system of wooden and plexiglass-covered signs was used for additional displays and for guiding visitors. Figures 4 to 8 illustrate trail signs and facilities.

All metal trail signs were mounted on tree sections averaging 0.60 m (2 ft) in diameter and 0.90 m (3 ft) long, using epoxy glue holding studs on the metal backs of the signs. Figure 8 illustrates such a mounting in combination with a clear-cutting display.

The viewpoint deck was constructed of local timber. All equipment and materials were moved to and from the site on a cable system, thereby confining site disturbance to the area beneath the deck. The deck surface is about 120 m² (1300 ft²) and the height 7.6 m (25 ft) above the ground.

Trail surfaces included material (no surfacing), wood chips, and shale. The trail surface was 1.2 m (4 ft) wide. Chip- and shale-surfaced trails were excavated to a depth of 10 cm (4 in.) using a small front-end loader, and surfacing was then applied. Tree cutting was



Figure 4. Example of small metal trail signs

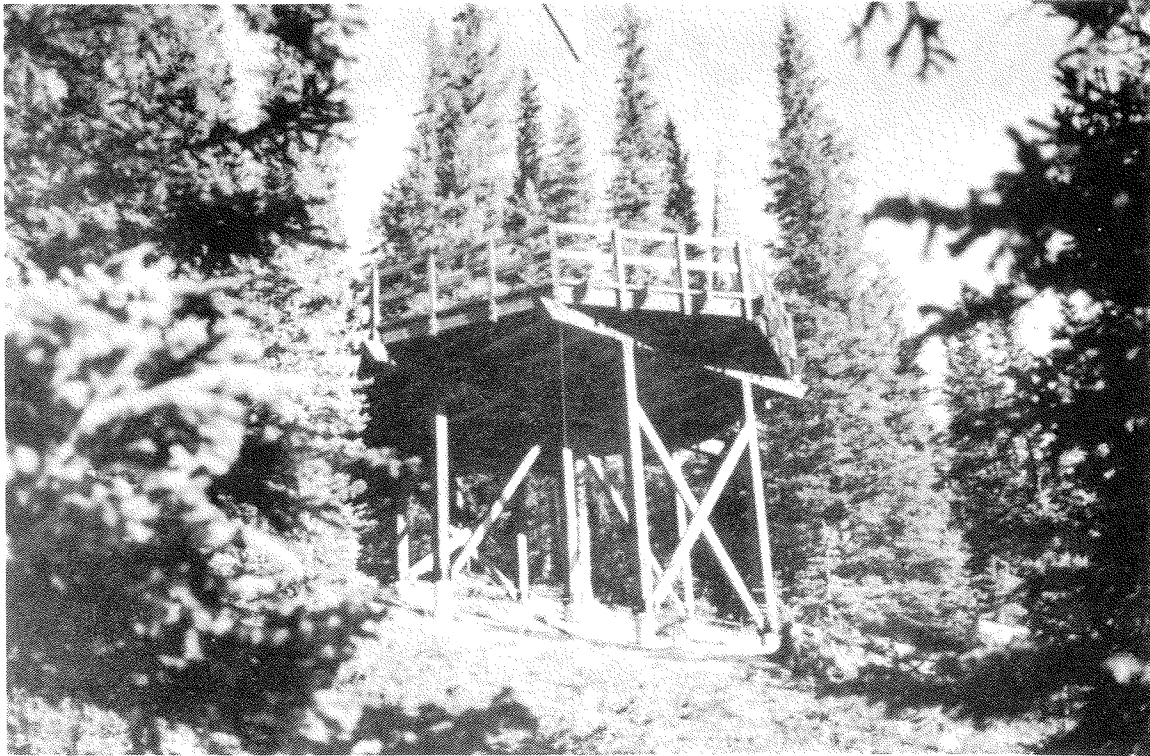


Figure 5. Viewpoint deck on the interpretive trail

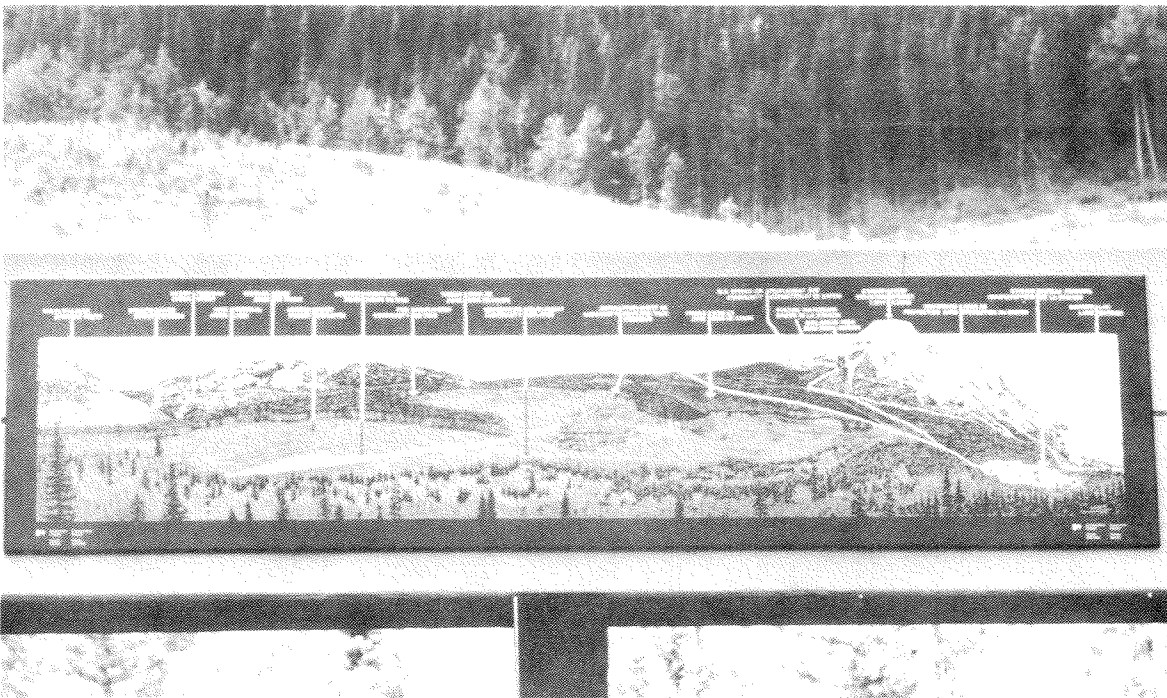


Figure 6. Large sign mounted on viewpoint deck overlooking management zones.

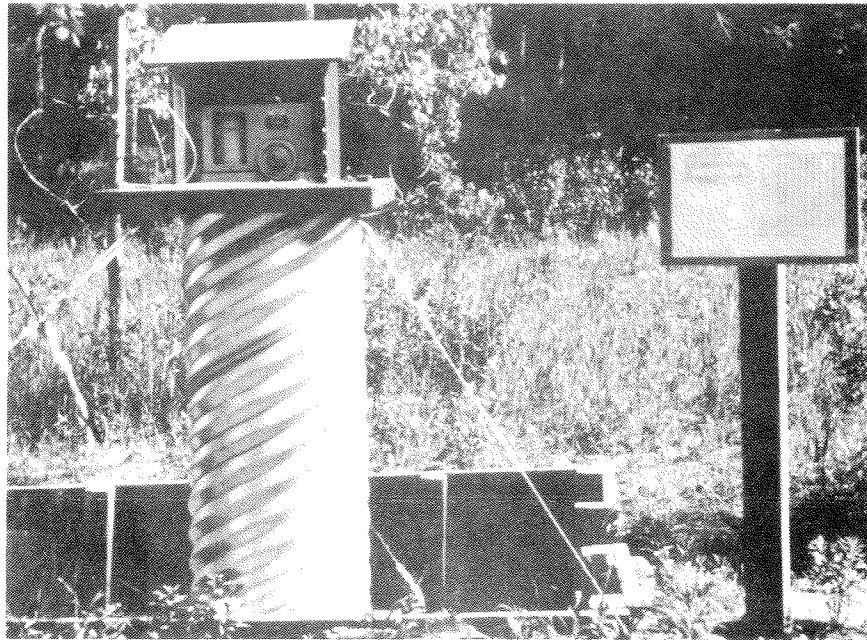


Figure 7. Weir and working stream gauge -- an example of a trail display.



Figure 8. Trail sign on mounting block, with clearcutting display in background.

kept to a minimum and construction disturbance was confined to an area 0.3 m (1 ft) wide on either side of the trail. Figure 9 illustrates a portion of the trail surfaced with wood chips. Total trail length is 2.38 k (1.48 miles).

Costs of the Public Awareness Program was \$49 509.10 exclusive of permanent staff and 1975 operating costs, which are shown separately (Table 1). Costs of construction and interpretive materials per unit of trail length were \$20 802.14 per kilometer (\$33 452.09 per mile) and 1975 operating costs exclusive of permanent staff costs were \$4118.90 per kilometer (\$6623.64 per mile). These figures compare favorably with costs presented for a 3.2-k nature trail by the Bureau of Outdoor Recreation (1973) of \$15 382.22 and \$4723.43 per kilometer. Other data were not available for comparison.

Table 2 shows trail construction and surfacing costs for Kananaskis in comparison to other areas. Comparisons within Table 2 are risky because of variations in the many factors which control costs, such as the nature of topography, soil and rock conditions, accessibility, methods and machines employed, availability of materials, and labor and contract versus non-contract prices; however, some general observations can be made. All data are assumed to include costs of trail layout, surface preparation, and surfacing (where applicable), with the exception of Montana data which are for surfacing only and are included as possible useful information for mountainous terrain. Costs do not include provision of interpretive facilities or materials. Costs were \$0.54, \$3.23, and \$2.90 per square metre for natural, wood chip, and shale surfacing respectively. The low cost of this natural



Figure 9. A portion of the interpretive trail showing wood-chip surfacing.

Table 1. Public Awareness Program Costs, 1973-1975 inclusive

	Materials	Equipment ¹	Labor ²	Contracts	Total	Percent of Total
	\$	\$	\$	\$	\$	
1. Visitors' Centre Reconstruction and Repair	434.00	100.00	1 311.00	350.00	2 195.00	4.4
2. Toilet Facilities	450.77	500.00	200.00	4 093.00	5 243.77	10.6
3. Parking Lot	-	8 420.00	-	2 970.91	11 390.91	23.0
4. Interpretive Materials Signs and Displays	590.07	111.00	1 734.00	8 198.12	10 633.19	21.5
5. Trail Construction	186.00	100.00	2 418.00	5 645.23	8 349.23	16.9
6. Viewpoint Deck Construction	256.00	300.00	3 156.00	7 985.00	11 697.00	23.6
	1 916.84	9 531.00	8 819.00	29 242.26	49 509.10	100.00
1975 Operating costs (contract)					9 802.98	
Staff costs: 1975 (grounds maintenance) ³					600.00	
1973 Professional and Technical					5 708.00	
1974 "					25 726.00	
1975 "					36 548.00	
			Grand Total		127 894.08	

¹ Equipment rental and/or government equipment assessed at commercial rental rates. Items (2) and (3) include backhoe, truck, and tractor usage at rates which include operator's wages.

² Government employees

³ Required for grass-cutting and trimming in Visitors' Centre area. Contractor provided other maintenance.

Table 2. Trail construction and surfacing costs for Kananaskis and other areas

Location	Year	Topography and Soil	Excavation		Surfacing		Width		Cost ¹ (\$)	
			Method	Depth cm	Materials & Method	Depth cm	m	ft	ft ² m ²	ft ² (1974)
Kananaskis	1974	Gently rolling sandy loam to fine sandy loam	Small front-end loader	10.16	Shale using same loader	10.16	4	1.22	4	2.90
										.27
	1974	"	"	10.16	Wood chips by hand	10.16	4	1.22	4	3.23
1974		"	Nil - Hand levelled	-	Nil - Natural	-	-	1.22	4	0.54
										0.05
Ontario ²	1970	Gently rolling loamy soil	By hand	10.16	Wood chips by hand	10.16	4	3.05	10	1.61-2.15
										0.15-0.20
West Virginia ³	1970	?	Nil - Hand levelled	-	Nil - Natural	-	-	0.91	3	2.69
										0.25
1970		?	"	-	Crushed stone by hand	5.08	2	0.91	3	4.52
										0.42
1970		?	"	-	Flagstone by hand	-	-	0.91	3	8.93
										0.83
Eastern U.S. ⁴	1973	?	"	-	Nil - Natural	-	-	0.91	3	2.69
										0.25
Montana ⁵	1972	Mountainous rocky soil (Bitterroot National Park)	Nil (trails already exist)	-	Crushed rock using machines specially designed	5.08	2	0.61	2	1.08-2.15
										0.10-0.20
										1.29-2.58
										0.12-0.24

¹ Costs were expressed per unit of area because of varying trail widths, and were brought to a common year (1974) by allowing an inflation rate of 10% per year.

² Data from Hough, Stanbury & Associates. 1970. Unpublished report prepared for the Canadian Forestry Service, Petawawa, Ontario. 79 pp.

³ Data from West Virginia Forest Service. 1970. Cost estimates of basic recreation facilities. Technical Guide V-A. 4 pp.

⁴ Data from Bureau of Outdoor Recreation (1973).

⁵ Data from U.S. Department of Agriculture. 1975. Surfacing forest trails with crushed rock. U.S. For. Serv. Equip. Dev. Cent., Missoula, Montana. Equip. Dev. Test Rep. No. 7700-5. 13 pp.

surface reflects contractor efficiency and easy terrain. Costs of both shale and chip surface trail compare favorably with those from other areas. This is due in part to the availability of a contractor with a small excavating machine capable of working efficiently in the forest, terrain, and soils of the area. Chip surfacing costs were higher than shale surfacing costs as it was necessary to carry and place the bulky chips by hand over relatively long distances, whereas shale was carried and placed by machine over relatively short distances (see Figure 3). Costs in rocky or steep terrain would be expected to be much higher if excavation were considered, but surfacing would ordinarily be added on top of the natural ground surface in such circumstances.

FIRST YEAR OF OPERATION

PERIOD AND METHOD OF OPERATION

The program was open to the public from June 25 to September 1, 1975, from 8:00 A.M. to 9:00 P.M. daily. Visitors' Centre facilities were operated by a contractor¹ and staffed by three university students, all from the Department of Forest Science, University of Alberta. They worked two regular daily shifts, from 8:00 A.M. to 2:30 P.M. and from 2:30 P.M. to 9:00 P.M. An additional shift was worked on weekends and holidays from 11:00 A.M. to 6:00 P.M., when the work load was heaviest.

The main functions of the contractor and staff were to man the information desk, supervise displays in the Visitors' Centre, and

¹ Professor P.J. Murphy, Department of Forest Science, University of Alberta, Edmonton.

obtain and assess public reaction to both the Visitors' Centre and trail. The assessment was to be based on personal contact, questionnaire results, and voluntary guest-book comments.

The questionnaire was intended specifically to obtain a general visitor profile (place of origin, type of group, occupation, age) and to obtain feedback on the success of the program. An attempt was made to obtain opinions from a broad cross section of people. Respondents were encouraged to answer questions as individuals, not by group consultation. Potential respondents were asked to return to the Centre after walking the trail or portion of it in order to fill out the questionnaire, and approximately 85% did so.

The trail itself was intended to be self-guiding, with or without the assistance of a brochure which was available at the Visitors' Centre. The contractor's responsibility on the trail was limited to a daily check of signs and trail displays, which included a fire hazard patrol. The contractor also kept the Visitors' Centre grounds free of litter and provided simple first aid as required by visitors. Littering was not a problem on the trail and vandalism did not occur. This was due in part to the excellent built-in supervision of family and mixed age-group use. There was limited use by large groups of children, such as school groups.

VISITOR STATISTICS²

Visitor statistics were obtained using a tally sheet on which was recorded the number of visitors, time of day, and estimated age

² All statistics taken from contractor's report: Phillips, B.L. and P.J. Murphy. 1975. Operation of the Visitors' Centre at the Kananaskis Forest Experiment Station - 1975. Univ. of Alberta, Dep. For. Sci. 47 pp. Unpubl.

in three broad classes. The time of the first and last visit of the day was recorded. Visitors were also categorized by main reason for their visit: a) Visitors' Centre only, b) Visitors' Centre and walking the trail, and c) information not directly related to the public awareness program. Only a very few visitors walked the trail only while the Visitors' Centre was manned.

There was a total of 3089 visitors during the period June 25 to September 1 (Table 3), well below the 5000 target figure. This shortfall was probably due to poor accessibility because of construction on 4.8 km (3 miles) of road between the Visitors' Centre and the Trans-Canada Highway, a low-profile promotional program, and the policy of discouraging group and institutional use during the first season of operation.

Sixty-four per cent of visitors came either to see the Visitors' Centre (33%) or to see the Centre and walk the trail (31%); the rest (36%) came for information not directly related to the program (Table 3). Those in the latter category most commonly wanted information on road conditions, trails, or fishing and camping areas, or requested maps or fishing licenses, which were not available at the Centre. Some people in this category subsequently walked the trail. The contractor maintained as much current information on the above topics as possible, in view of the extent of demand.

On the average there were 29.7 visitors per day on weekdays and 76.2 on weekends and statutory holidays for an average of 45.4 visitors per day (Table 4). The range was 6-156 per day, with maximum and minimum values only three days apart (Table 4). The slightly larger average

Table 3. Visitors to facilities from June 25 to September 1, 1975

Month	For Centre Only	Also Walked The Trail	Total for Both	Unclassified ¹	For Information Only	Totals
June (25-30)	-	-	122	18	44	184
July	452	352	804	-	552	1356
August	550	429	979	-	476	1455
September (1st)	36	38	74	-	20	94
Total Visitors	1038	819	1979	18	1092	3089
Percentages by Classification	33.2	30.9	-	0.6	35.3	100

¹ Unclassified visitors were those prior to setup of the formal classification system.

Table 4. Average number of visitors per day, June 25 to September 1, 1975

Time Period	No. of days	No. of visits	Averages		
			Weekdays	Weekends/ Holidays	Overall
June 25 - July 31	36	1540	29.4	73.3	42.8
August - September 1	32	1549	30.2	78.8	48.4
Total	68	3089	29.7	76.2	45.4

Range: Minimum visits per day: 6 (July 31)

Maximum visits per day: 156 (August 3)

number of daily visitors in the last half of the season may indicate more widespread knowledge of the program.

About 60% of visits occurred between noon and 4:00 P.M. (Table 5). On the average the first daily visitor arrived at 10:29 A.M. and the last at 6:55 P.M.

QUESTIONNAIRE RESULTS

A total of 260 questionnaires was completed by visitors who had walked the trail. Results were summarized by calculating percentages of responses for each possible choice for each question. Written comments were listed and frequencies tallied for each general type of comment.

People learned about the program mainly from highway signs (or saw from highway (30.8%), other people (30.7%), travel and tourist centres (15.0%), the news media (14.2%), and local camps (9.3%). Word of mouth was a significant form of advertising and suggests that people were pleased with their experience at Kananaskis and told their friends.

Visitors' Centre displays did not generate clear preferences among respondents. Preferences were: illuminated colored tree photos (20.2%), forest fire panels and tower model (18.8%), historical photographs (17.2%), watershed model (15.7%), no preference (13.1%), insect and disease photos (9.5%), inventory and management (4.3%), colored slides (0.7%), and "all" (0.5%). There appeared to be some misunderstanding about the inventory and management display due to inadequate display labelling. The relatively high rating of the static tree photo display and relatively low rating of the watershed model were unexpected in view of findings by Washburn and

Table 5. Visitors by time period¹, July 1 to September 1, 1975

Visits to:	8-10 A.M.	10-12 A.M.	12-2 P.M.	2-4 P.M.	4-6 P.M.	6-8 P.M.
Visitors'						
Centre only	15	198	280	286	160	91
Both Visitors'						
Centre and						
Trail	40	147	273	242	62	63
Total	55	345	553	528	222	154
Percentage						
of Total						
Visits by						
Period	3.0	18.5	29.8	28.4	12.0	8.3

¹ Does not include people for "Information Only".

Wagar (1972), who predict a reversal of the observed order. However these differences may not be significant as they are not large.

Visitors were generally satisfied with the trail program provided. They felt that trail length was about right (94%), that the amount of information on the signs was about right (90.0%), that the artwork on signs was helpful (95.6%), and that interpretation of the major resource topics was successful on the role of fire (96.5%), zoning for management (91.6%), reforestation (89.3%), clear-cutting (87.8%), and watershed (77.3%). The relatively low rating of the interpretation of the role of a watershed is surprising in view of the amount of effort made to interpret it, including a physical model in the Visitors' Centre, a paragraph in the brochure, a working stream gauge and explanatory sign at the bridge near the start of the trail, and delineation of a watershed on the large viewpoint deck painting. In view of the importance of watersheds in the Eastern Slopes of the Rockies the existing interpretation should be carefully assessed for weaknesses.

There was less unanimity about number of signs on the trail--about right 68.5%, not enough 30.6%. There was a clear indication of trail surface preferences--natural 48.5%, wood chips 24.5% and shale 18.0%. Only 9.0% indicated no preference. Guest book comments and personal contact indicated that wood chips were the most controversial surface type; a common adverse comment was that they were slippery. An assessment of trail wear showed that both chip and shale surfaces stood up well to traffic but that the natural surface was showing wear, including tree-root exposure, on steeper areas (slopes in excess of 8%). It appears that surfacing will be necessary

in such areas and since chips have proved cheaper and more popular than shale, they should be given preference in a surfacing program on slopes up to 12%. They tend to be less stable than shale on steeper slopes.

The Visitors' Centre was the main destination for 45.1% of visitors and 51.9% of them were on day trips. Vacations accounted for 21.8% of trips and weekends 17.3%. The percentage of day trips was lower than originally expected but should increase once highway construction is complete.

Calgary accounted for 47.2% of visitors and Edmonton 20.9%. Seventy-nine percent of all visitors were Albertans, 8.3% from elsewhere in Canada, and 13.0% were non-Canadian. Of these 8.7% were from the United States, 3.5% from Europe, and 0.4% from Africa.

The most frequent size of groups visiting, listed in decreasing order was 2, 4, 3 and 5 persons. Sixty-nine percent were 10-39 yr old. They arrived in family groups (31.0%), couples (22.0%), and groups of friends (17.0%). The remainder were singles and larger groups.

Family groups constituted a much smaller percentage of visitors than originally expected. Facilities were designed for family groups use but since the program was well received by all users there appears to be little need to change for this reason. The level of interpretive material preparation for ages 10 and over appears to be satisfactory.

PROGRAM EFFECTIVENESS

Feedback received through response to the questionnaire, direct staff contact, and guest-book comments indicates clearly that people found the Visitors' Centre and trail program both enjoyable and informative. Thus two general criteria for good interpretation were satisfied.

It is not possible to evaluate the overall program objective more explicitly than was done with percentages obtained from the questionnaire. Ideally, feedback procedures should be devised to obtain direct assessments of objectives (Field and Wagar 1973, Wagar 1972). On the basis of feedback gained from our questionnaire it seems fair to conclude that visitors learned something about forestry and resource management. However, more explicit questions would be required to go beyond this general level of inferred effectiveness to a clear statement of success or failure about specific interpretive efforts such as individual displays and trail signs. The effectiveness of trail signs in particular should be assessed as they carry a large part of the total theme. Although the program did not attract 5000 people as hoped for it is considered to have been a success in its first year of operation.

RECOMMENDATIONS

The following recommendations are made as a guide to future operation of the Public Awareness Program.

VISITORS' CENTRE AND DISPLAYS

1. Printed Material

- a) Printed material which provides background detail on topics covered in the Visitors' Centre, on the trail, and for the general region should be assembled. This could include pamphlets available from the provincial government which describe Alberta flora and fauna, and maps of road and trail systems in the area.

- b) Complete sets of the texts of trail signs should be copied and bound with a preamble describing the main theme of the trail program.
- c) Research publications displayed should be reduced in amount and selected to give a better balance of subject matter than exists at present.

2. Information Services

In view of the large percentage of casual visitors who request services not directly related to the program, highway maps and Travel Alberta information should be made available at the information desk and daily road conditions and campsite information should be provided.

3. Displays

- a) Displays should be expanded to include mounted specimens of insects, fungi, and particularly wild flowers, which visitors are especially interested in.
- b) Colored slides should be indexed and numbered so that visitors can select scenes of particular interest rather than watching an uncontrolled display of all material on the slide trays.
- c) The model fire lookout tower should be relocated outside in an appropriate natural setting to make it more realistic and increase the amount of display space available in the Visitors' Centre.
- d) Displays should be clearly labelled in a consistent manner. The inventory and management display is in particular need of reorganization and consolidation.

- e) The watershed display should be improved by adding a new description of mountain watersheds and their importance in Alberta. Technical terms such as "sediment sampling" and those on the Marmot Creek model should be defined.

TRAIL

1. Signs

- a) A more complete set of temporary signs for wild flowers, grasses, herbs, shrubs, and fungi found along the trail should be prepared to take better advantage of dynamic seasonal changes.
- b) Texts of all new signs should be kept short and simple, not exceeding 25 words unless absolutely necessary. Different sizes of lettering could be used effectively, with large lettering for titles, medium for basic information, and small for details. Color coding of French and English texts might improve readability and reduce confusion.
- c) Photo-etching or some similar use of photographic techniques should be considered for sign illustration, particularly where the subject does not lend itself to artwork.

2. Trail Information

- a) A sign describing the trail theme and a rack for trail brochures should be provided at the start of the trail for those who choose to walk the trail before going to the Visitors' Centre or use the trail when the Visitors' Centre is closed.

3. Trail Displays

- a) The watershed display at the stream gauge near the start of the trail should be improved by rewording the sign by the gauge and simplifying the hydrograph conversion presentation, if possible.
- b) The use of taped messages about land use and zoning on the viewpoint deck should be considered because taped information tends to increase retention of the message (Washburn and Wagar 1972, Wagar 1972). This has the potential to improve the effectiveness of the trail program more than any other display change.
- c) The text of the sign describing wind damage beside the trees blown down in the stand near the viewpoint deck should be improved.
- d) The silviculture display at the clear-cut should be changed by adding a set of photographs showing change over time, on a specific clear-cut area, as the forest regrows.

4. Trail Surface

- a) Wood chips should be used to surface the unsurfaced (natural) parts of the trail on slopes up to 12% where wear is developing. Deteriorating portions of unsurfaced trail on slopes over 12% should be surfaced with shale.
- b) Another section of shale surfacing should be added in an area which is distinct enough to allow visitors to distinguish it clearly from other surface types, which is not the case at present. This could alter the response to questions regarding surface preference.

ADMINISTRATION

1. Season and Users

- a) An effort should be made to accommodate school groups, which have expressed considerable interest in the program. This would involve changing the season of operation to correspond to the times most suitable for schools, probably May-June and September-October. It would also require coordinated planning with school boards for staffing, orientation of teachers prior to use, and modification or extension of the materials to be used as teaching aids in the program.

2. Hours of Operation

- a) Daily hours of operation could be shortened from 13 to 11 h and changed to a period between 9:00 A.M. and 8:00 P.M. This would involve a 35-h week, retaining two daily shifts on weekdays--9:00 A.M. to 4:00 P.M. and 1:00 P.M. to 8:00 P.M. A third shift would still be added on weekends and holidays, handled by the supervisor. The 3-h overlap in the early afternoon would improve public service at the peak visitor time and allow for cleanup or trail inspection. Also it would provide flexibility for time off in lieu of extra time spent on evenings or on weekends or statutory holidays.

3. Visitor Tally

- a) It would be desirable to obtain more accurate information about the 36% of people coming to the Visitors' Centre who were tallied as wanting information unrelated to the program. There is a risk of error in classifying visitors by the present system, and it should be revised.

4. Questionnaire

- a) If a questionnaire is to be used to measure program effectiveness during the next season of operation it should be revised. In particular questions regarding success or failure of interpretation of major resource topics on the trail should be considered with respect to both signs and trail displays.

5. Road Signs

- a) The signs on the Kananaskis highway just before the turn to the Visitors' Centre should be more explicit. Perhaps they should say Forestry Information, Displays and Forest Trail, or some similar message.

6. Day Use and Picnic Sites

The program could be more effectively promoted for day use by families and other small groups if picnic sites with provision for fires were available on the property.

7. Advertising

Because of the relatively small percentage of visitors who learned about the program through travel and tourist centers and through the media, any new promotional effort should concentrate in these areas.

ACKNOWLEDGMENTS

Special acknowledgment is extended to Mr. H. Stewart who provided technical assistance in the program, and to all staff members of the Northern Forest Research Centre who contributed their time and talents in planning and reviewing the program and providing scientific information and display

material for the trail and Visitors' Centre. Thanks are also extended to artist George Weber for his contributions to the trail sign and brochure materials and to the contract staff who operated the Visitors' Centre during 1975.

The co-operation of Parks Canada staff in Calgary and Banff, Provincial Forestry staff at the Bow-Crow office in Calgary, staff of the Bow Valley Provincial Park, and Alberta Transportation are all gratefully acknowledged.