

**BIRCH HILL PARK:  
A CASE STUDY**  
of  
**INTERPRETIVE PLANNING**  
by  
Leonard K. Johnson, Allen Richmond  
and  
David Combs



Agricultural Experiment Station  
School of Agriculture and Land Resources Management  
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# Birch Hill Park: A Case Study of Interpretive Planning

by

Leonard K. Johnson<sup>a</sup>

Allen Richmond<sup>b</sup>

and

David Combs<sup>c</sup>

<sup>a</sup>Land Management Officer, Alaska Division of Lands, Department of Natural Resources, Fairbanks, Alaska; formerly Assistant Professor of Resource Management, School of Agriculture and Land Resources Management, University of Alaska, Fairbanks.

<sup>b</sup>Master's Degree Candidate in Natural Resources Management, School of Agriculture and Land Resources Management, University of Alaska, Fairbanks.

<sup>c</sup>Post-Graduate Student, School of Agriculture and Land Resources Management, University of Alaska, Fairbanks.



## Foreword

Public outdoor recreation agencies at all levels are becoming increasingly aware of the need for interpretation as an integral part of their total program. In recent years many parks have experienced rapid growth in attendance at their visitor centers, ranger talks, demonstrations, and guided walks. More and more people expect some form of interpretation—signs, displays, nature trails, living history, etc.—in outdoor recreational areas.

Faced with increasing pressure on their resources, parks and recreation agencies across the country are turning to interpretive specialists for assistance. Interpreters “tell the story” of an area and its resources. The results are improved awareness, understanding, and appreciation on the part of those who visit and use outdoor recreational areas. Thus, interpretation is a public service which heightens visitor enjoyment, encourages wise resource use, and helps agencies communicate their resource-management responsibilities to the public.

Effective interpretive programs do not just happen. They require careful planning and genuine commitment on the part of the managing agency. Once underway, the interpretive effort should receive continuing support and be subject to periodic review and evaluation so that it will continue to best serve the interests of the public.

The following case study is intended for parks and recreation or other agencies contemplating the initiation of an interpretive program. It should also be of interest to individuals, organizations, and the general public concerned about interpretation in outdoor recreation and other leisure settings. This study was funded in part by the Agricultural Experiment Station and the Instructional and Public Service program of the School of Agriculture and Land Resources Management, University of Alaska.

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# Introduction

The Fairbanks North Star Borough Parks and Recreation Department is responsible for the planning, acquisition, development, improvement, and maintenance of lands and facilities to meet the community's needs for park and open space lands in accordance with established standards.<sup>1</sup> Current department emphasis is on sports facilities and programs. Some small neighborhood parks and the Growden Park and Picnic Area are the only significantly developed areas in which organized sports are not emphasized.

Birch Hill Park was acquired to expand the spectrum of recreational resources and opportunities available to borough residents. Cross-country skiing, both competitive and recreational, is an important winter activity, but the area's size and its natural environment provide for a variety of other uses. The park has a summer youth camp, and planned developments will enhance the opportunities for visitors of all ages to picnic, hike, and study nature.

This paper presents a direct contribution to the diversification of the borough's recreational program

by highlighting the interpretive resources and opportunities of the park and by making specific recommendations for the implementation of an interpretive program. The interpretive plan proposed here can be integrated with the comprehensive development planning for Birch Hill Park now underway at the Parks and Recreation Department.

Preliminary research for this study was done as a University of Alaska class project in the spring semester of 1976. The students in LR 493, Interpretive Services, developed basic information on the natural and cultural resources of Birch Hill and its surrounding region. They also identified policy gaps and provided general guidance for interpretation in the park.<sup>2</sup> The plan presented here is a follow-up to that work. Additional fieldwork and library research have been done to supplement the earlier effort, and the implementation aspects have been made more specific with regard to the trail and visitor center recommendations. The process followed in this study is adapted from Perry J. Brown's Procedures for Developing an Interpretive Master Plan.<sup>3</sup>



# The Interpretive Planning Process

The interpretive planning process is divided into four sections: Area Overview, Agency and Area Policy, Audience Analysis, and Resource Inventory. The Area Overview contains a general description of Birch Hill Park and its regional setting. Parks and Recreation Department policies relevant to interpretation are identified, and some policy recommendations are made in the section on Agency and Area Policy. The Audience Analysis summarizes basic information on the borough population, and provides additional guidance for the selection and implementation of interpretive resources and media. The Resource Inventory section contains more detailed information about the natural and cultural resources in and around Birch Hill Park, as well as a set of significance criteria related to the area's interpretive potential.

## AREA OVERVIEW

Located on the northeastern outskirts of Fairbanks, the park occupies 440 acres of land on the northern and western slopes of Birch Hill (Figure 1).

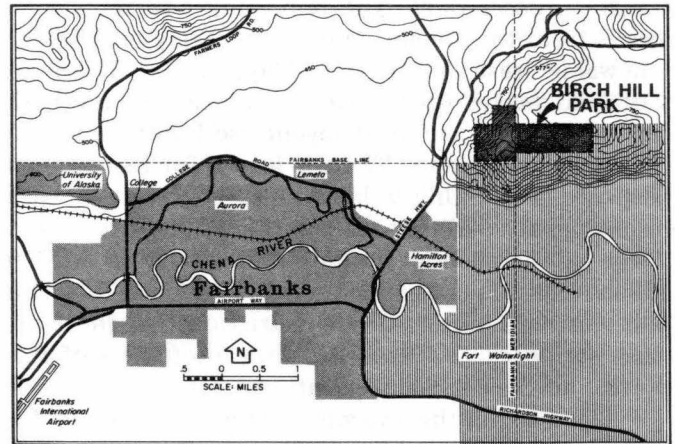


Figure 1: FAIRBANKS AREA MAP

An improved gravel access road off of the Steese Highway Bypass, puts the park within a ten-minute drive from downtown Fairbanks. The area is readily accessible to most of the borough population and can be expected to receive heavy use when fully developed. The roads are maintained all year, so that the park can be used in winter as well as summer.

The land comprising the park (Figure 2) was obtained by lease from both the state and federal governments. The 200-acre portion located on the west side of the Fairbanks Meridian was acquired by the borough from the Alaska Division of Lands on a 50-year renewable lease.<sup>4</sup> The lease was signed on

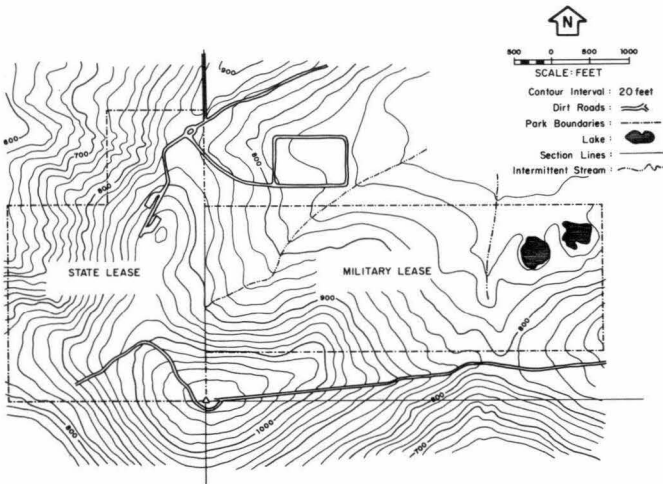


Figure 2: BIRCH HILL PARK EAST AND WEST SECTIONS

February 6, 1973, and will run through April, 2023, with the stipulation that the land be used for recreational purposes only. The remaining 240 acres were leased from the Department of the Army on a 5-year renewable lease approved in May, 1975.<sup>5</sup> The military land makes up the eastern portion of the park and is subject to more stringent use limitations than the state-leased land. Though leased for recreational purposes, the military land must be returned to a near-original condition upon termination of the lease. Some of the specific limitations include: no cutting of trees, trails no wider than four feet, and no permanent structures. These restrictions and the short time period of the lease limit the usefulness of this portion of the park for recreational development.

Except for the overnight camping program for youth at Camp Bear Track, the park is operated by the Fairbanks North Star Borough Parks and Recreation Department as a day-use area. During the winter, activity is centered on the advanced cross-country ski trail. Though designed primarily as a racing trail for the borough school system's athletic programs, it receives a significant amount of use by the general public on weekends. The trail was used as the site of the 1977 Junior North American Ski Championships, hosted by the borough. During the summer months,

supervised activity is limited to the operation of Camp Bear Track, beginning in mid-June and running weekly until mid-August. Hikers and picnickers make casual use of the park since there is no established summer program for the general public.

There are many features, both natural and man-made, within and surrounding the park which can be incorporated into an interpretive program. Birch Hill, elevation 1,097 feet, is the highest point on the ridge forming the eastern boundary of the Fairbanks basin, and is predominantly forested with aspen, birch, and spruce. These woods are a representative part of the most extensive forest in North America, the boreal forest. Among the man-made features is the old Gold Trail, which was built in the early 1900's. It crossed the park on the western slopes of Birch Hill and then followed the ridges north to the gold camps in the Yukon-Tanana Uplands. Two other features of interest are the Birch Hill Bench Mark and the Bureau of Land Management Fire Tower, both located on the summit. The bench mark is the initial point on which



BIRCH AND SPRUCE STANDS

all surveying in the Fairbanks area is based, and the fire tower is one of only two such towers located in the Fairbanks Fire District and offers a commanding view of the Fairbanks basin.

### AGENCY AND AREA POLICY

The Parks and Recreation Department has no explicit policy statement regarding interpretive facilities, activities, or programs. Such efforts fall within the general responsibility of the department as identified above. At the agency level, the existing policy is:

To fulfill the basic need of the community for park and open space lands in accordance with established standards, the Parks and Recreation Department is charged with the responsibility to plan, acquire, develop, improve and maintain such land. Contingent upon these five responsibilities is the added obligation to administer a comprehensive, diversified, all-age, year-round program of active and passive recreation activities.<sup>6</sup>

In line with this policy, it is recommended that the Parks and Recreation Department add the following statement of purpose regarding interpretive programs:

To develop interpretive programs which will promote public awareness of the environmental and historical heritage of the Fairbanks North Star Borough, in order that these values may be preserved for future generations.

In order to guide interpretive planning and implementation at Birch Hill Park, two additional policy statements will relate the recommended agency policy to specific activities in the park. It is recommended that the area policies specifically applicable to Birch Hill Park be:

1. To develop an interpretive program which will expand public knowledge and appreciation of interior Alaska's boreal forest system as it exists in the park.
2. To develop an interpretive program which will relate man's use of natural resources to the historical development of the Fairbanks area.

These policy statements indicate the basic interpretive themes for Birch Hill Park: (1) the interior environment, (2) the historical development of the Fairbanks area, and (3) man's use of natural resources in this region. The overall interpretive program will identify the significant components of the natural environment and relate these to the historical development of the region by considering man's use of

natural resources and his impacts on them. The context will be limited primarily by the resources viewable in or from the park.

### AUDIENCE ANALYSIS

One of the most important categories of information taken into consideration during the interpretive planning process deals with the characteristics and composition of the anticipated audience. In this case, it is the population of the Fairbanks North Star Borough.

Data covering the entire borough are scarce, but a 1976 study conducted by Jack Kruse of the Institute of Social and Economic Research (University of Alaska) provides some basic information about the Fairbanks area population.<sup>7</sup> A representative sample of the population was obtained and interviewed in an effort to identify their socioeconomic characteristics, selected needs, values, perceptions, and attitudes toward outdoor recreation opportunities in the Fairbanks community. This study is particularly valuable since its target population is also the expected primary source of visitors to Birch Hill Park.

The report found that the Fairbanks population is generally young and well educated, with an average age of 27, and with 13 years of schooling. This indicates that the general level of interpretive presentations in the park should be geared for visitors with a high school education. Some adjustments may be necessary where a younger audience is of primary concern. For example, supplemental material might be provided to teachers bringing elementary and junior high school students on educational field trips.

The desires and needs of the population examined in Kruse's study reveal a definite need for and appreciation of the outdoor experience. The report found that 46% of those interviewed rated the proximity of a wilderness environment as one of the main reasons why they came to Fairbanks. This was rated second of the three most important reasons given. The other two were: the chance to be independent or start something new, 50%; and curiosity about Alaska, 45%. Respondents also felt that the natural environment was the characteristic of the community which had been most adversely affected by construction of the trans-Alaska oil pipeline. Those who lived in Fairbanks prior to 1973 were asked to rate the adequacy of existing natural outdoor recreation opportunities before pipeline construction began. Fifty-nine per cent said that this was the best aspect of the community while only 8% considered it to be the

worst. The 1976 ratings for existing opportunities represent an overall decline: fewer respondents (38%) felt that the opportunities were the best aspect of the community while more (19%) felt that it was the worst. These results indicate a need for improvement of the natural outdoor recreation opportunities in the Fairbanks area.

Finally, the study produced some information on population mobility which can be used to support the development of an interpretive program. Examination of the length of residence among the civilian population, including military personnel living off base, revealed that 41% of those surveyed moved to Fairbanks in the three years prior to the study. When this percentage is applied to the entire borough population, it is seen that more than 17,000 people fall into this category. Many of these people can be expected to have only a limited knowledge of the region's natural and historical heritage; therefore, they might appreciate the information that would be provided by an interpretive program.

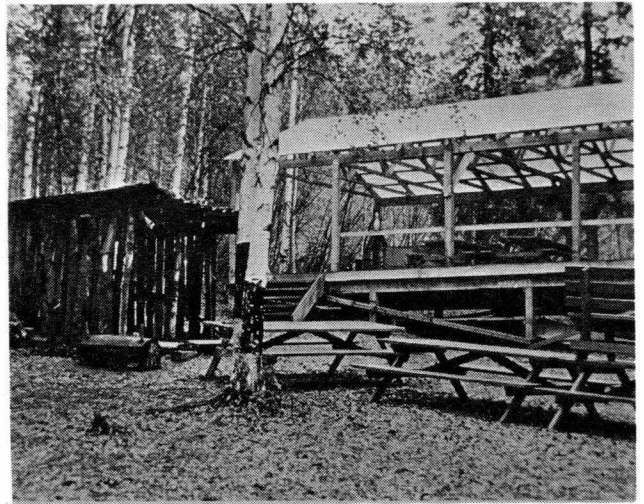
There is currently no public facility or program which offers people a combined historical and environmental orientation to the borough. The closest approximation to this type of interpretation is provided by private enterprise. The riverboat "Discovery" offers a narrated tour of the Chena River from Fairbanks downstream to the Tanana River. This tour presents a program on the river environment and early development of the area. Facilities such as Alaskaland and the University of Alaska Museum, and events such as the annual Golden Days celebration, cover only the early history of Fairbanks.

A self-guiding trail has been constructed with funds from the National Bicentennial Committee and the Alaska Conservation Society by the Alaska Department of Fish and Game and the Alaska Division of Parks Youth Conservation Corps at Creamer's Field on College Road. Built primarily as a nature trail, it directs the visitor's attention to the ecological features—both vegetative and wildlife—typical of lowland areas in interior Alaska while also pointing out the historical farming activities which were carried out there.<sup>8</sup> However, these programs are few in number and limited in scope, indicating that a well-developed interpretive program for Birch Hill Park would be a welcome and well-used addition to the recreational opportunities in the borough.

Another aspect of audience analysis is the identification of the various groups or categories of people who will be using the park. These data were compiled through on-site observation and interviews with Parks and Recreation Department personnel by participants

in the initial study. The information has been used to identify five groups of potential park users.

**Camp Bear Track:** This category consists of children attending the camp, who are between the ages of 9 and 13, with the 10- to 12-year age groups predominating. During the period when the camp is operating, this group will most probably be the source of the heaviest amount of use for the interpretive program.



GROUP SHELTER AT CAMP BEAR TRACK

**Vue Crest Subdivision and Other Neighboring Residents:** Included in this group are all the residents living on the slopes of Birch Hill and along the Steese Highway to Chena Hot Springs Road, as they comprise the majority of the present casual users of the park. Their proximity to the area means that they will continue to be a large source of visitation to the park. Use by this group has been found to be year around, with summer activity consisting of picnics and walks through the forest. It also serves as a play area for their children.

**Fairbanks Residents:** This group contains the major portion of the borough population as well as military families. The major factor which will influence this group's use of Birch Hill Park will be the distance they



PICNIC SITE NEAR UPPER PARKING LOT

will have to travel to reach it. This applies to the military families in that they will have to enter the park by the same route as the general public, since there is little likelihood that the military authorities will open the road leading to the summit for general use. Another reason for including these families in this group is that they exhibit characteristics of mobility similar to those of that 41% of the borough population referred to above.

**School Groups:** This category will be made up of school children on educational field trips to the park in late summer and early fall, and athletic teams making use of the ski trail during the winter. An interpretive program would be especially suitable for an outdoor educational experience during the first and last weeks of the school year.

**Visitors:** At present, nonresidents are an insignificant user group. A few visitors may accompany local residents to the area, but its lack of known major attractions keeps the park from having much use of this type. This group might become a significant source of visitation if an interpretive program were implemented.

Identification of these groups has helped in planning the interpretive program in that they indicate the amount and timing of possible usage and, therefore, the requirements for facilities and staffing.

## RESOURCE INVENTORY

Resource identification is the most important step in the planning process, as the available resources provide the basis for the interpretive program. Without a thorough knowledge of the resources within and surrounding the park, it is impossible to develop an effective program. Good information allows for the intelligent selection of significant interpretive features to meet the overall goals for the program. The resources in this section have been selected as being of significance to an interpretive program based on one or more of the following criteria:

1. The resource is a prominent feature of the landscape or natural environment, and is likely to be seen by visitors.
2. The resource is an important constituent of the boreal forest complex.
3. The resource has importance in the historical development of the Fairbanks area.
4. The resource demonstrates man's use of or effect on the environment of interior Alaska.
5. The resource would be appreciated if brought to the attention of park visitors.

The resources selected for use in the interpretive program can be grouped into two broad categories, environmental and historical. The principal environmental resources to be interpreted are the dominant vegetation types of the boreal forest, the climate of interior Alaska, and the major geologic features of the Fairbanks region. Some interrelationships between man and these resources are noted, with more emphasis on cultural development discussed in the category of historical resources. Three factors—gold mining, agriculture, and the military—are identified as particularly significant to the historic growth of Fairbanks and are therefore selected for interpretation in the park. Other natural resources such as wildlife, or historical resources such as the trans-Alaska pipeline, were considered for their interpretive values. Some have received mention in the text or have been recommended for supplemental roles in the interpretive program, but they are secondary to the resources identified as best meeting the significance criteria for Birch Hill Park.

### Environmental Resources:

**The Boreal Forest Complex.** The forest community of Birch Hill contains some of the most widely distributed tree species in North America. Their ranges are transcontinental, stretching from central Alaska through Canada and the Great Lakes Region to New England. Four of the six major species

common to interior Alaska grow in the park—namely, quaking aspen, paper birch, black spruce, and white spruce (Figure 3). (Larch and balsam poplar are

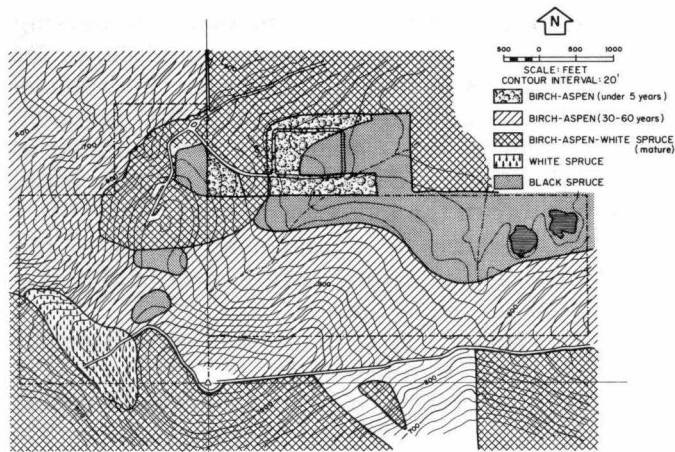


Figure 3. DOMINANT TREE SPECIES OF BIRCH HILL PARK

lowland species not found in the park.<sup>9</sup>) The stands in the park are typical of those found on many upland slopes in the region. Relatively pure stands of each species can be found on Birch Hill, but the forest is primarily a mixture of all four, with birch and aspen predominant.

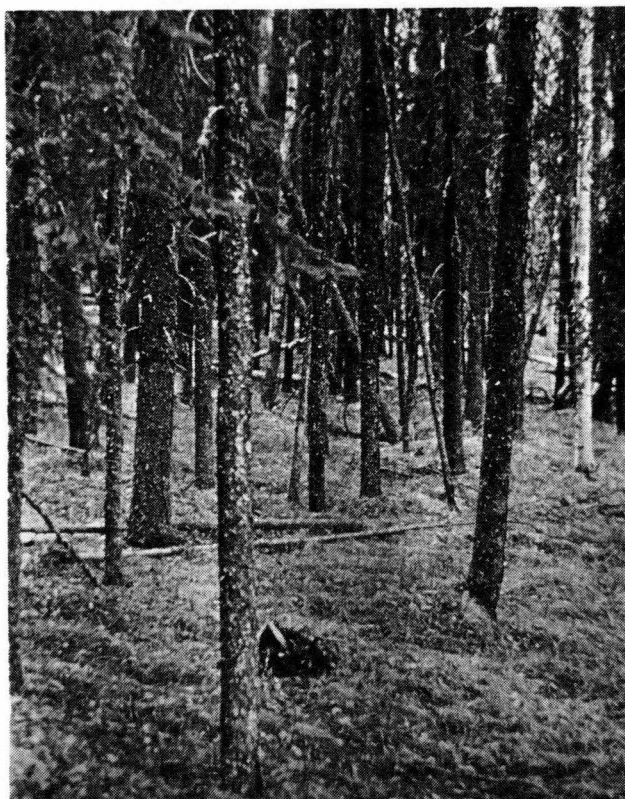
This kind of forest is representative of the first regrowth of trees in the natural process of reforestation after fire has burned an area. Field research has found evidence in the form of fire-scarred trees that the area was burned over in the not-too-distant past, although the exact date has not been determined. Since many visitors will be interested in knowing when the most recent fire occurred, further research should be done to identify this date.

Birch and aspen predominate in the early years after many fires on upland sites because of their regenerative characteristics. Both species are able to send up new sprouts if portions of the burned trees survive, with birch sprouting from the stump and aspen sprouting from root systems.<sup>10</sup> These characteristics are not shared by the spruces which rely almost entirely on seed production to regenerate. Another advantage which birch and aspen have over other tree species is the production of large quantities of wind-blown seed which are easily carried onto a burned area. Although only a small percentage of the seeds will germinate, their quantity makes it possible to establish a large population of young trees which far outnumbers the less prolific spruces. Once estab-

lished, the aspen and birch grow very rapidly and soon have overtopped the slower-growing white spruce.

The areas of the park which have stands of pure black spruce or mixed white spruce and birch have reached the late stages in forest succession. This occurs as the slower-growing, somewhat more shade-tolerant spruces eventually overtop the shorter-lived and less shade-tolerant birch and aspen. The forest will continue to mature until a fire burns it again. Both early and late successional stages are present in the park.

Fire is not the only cause of destruction of large amounts of forest. Early settlers and miners cleared extensive areas of the forest to meet various needs. Large tracts of forest and sometimes whole valleys were denuded to supply fuel for thawing the ground so that the gold-bearing gravels could be worked by the miners.<sup>11</sup> If not cut for use, the timber was cleared from large areas to make way for agriculture. Some of these early farms and other areas cleared of trees and later abandoned are now covered with new



BLACK SPRUCE



growth as the natural reforestation process covers the signs of man's former activity in the region. Examples of this process can be found just outside the boundaries of Birch Hill Park.

All of the tree species in the park have played an important role in the development and growth of Fairbanks, as their products have been used throughout the area. Birch and white spruce were used as firewood, building materials, mining timbers and railroad ties during the Gold Rush, and are still widely used for some of these purposes. Although not as important nor used as heavily, aspen and black spruce have served as sources of firewood and building materials.

The understory vegetation of the upland forest also has a variety of uses. Dominated by alder and willow thickets and a ground cover of berries and mosses, this vegetation includes such species as the highbush cranberry, Labrador tea, prickly rose, and dwarf blueberry. The fruit and sometimes the entire plant serve as food for many of the animal species which use the park. The berry producers served as a source of food for the early settlers and miners and are still used by local residents for making jellies and jams.

The portion of forest within the boundaries of the park is not extensive enough to sustain a large resident population of animals, but it is a well-used part of the territory of various species. During the winter, numerous tracks can be seen, ranging from those of such small game as ermine, hares, and grouse, to those as large as moose. While conducting this resource inventory, one of the authors observed a spruce grouse on the summit and a moose near the old access road. Parks and Recreation Department personnel also stated that a black bear was shot near Camp Bear Track during the camping season in 1976.<sup>12</sup> Foxes and red squirrels can also be assumed to be present as they are frequently seen on land adjacent to the park. There are numerous bird species present in the summer, and some, such as chickadees, grouse, ravens, and woodpeckers, are resident all year. References such as the Peterson field guides to birds and mammals and The Alaska-Yukon Wildflower Guide are valuable sources of information on the wildlife and vegetation resources that can be expected to be found in the park. More field work should be done during the summer and perhaps in midwinter to identify additional opportunities for the interpretive program.

**The interior climate.** The climate will be discussed as it relates to the maintenance of the forest complex, and to man's use and development of the land.

The amount of precipitation, which falls as rain and snow, is one of the remarkable aspects of the Fairbanks climate. The newcomer is surprised to learn that he is living in a rather dry climate, since the vegetation he sees is quite different from that present in the more familiar, arid portions of the United States. Fairbanks receives an average of only 12 inches of precipitation per year, with 63% falling as rain during the summer months and the remainder as snow.<sup>13</sup> One of the impressions that leads people to miscalculate the amount of local precipitation is that during the summer the lowland areas seem always to be covered with water. The main reason why so much water is present is that most of these areas are underlain by a layer of permanently frozen, impermeable ground called permafrost, which causes the water table to be "perched" close to the surface.<sup>14</sup>

The temperature range for Fairbanks is quite wide (165° F). The lowest official temperature recorded was -66°F in January; the highest is 99°F, which has occurred in both June and July.<sup>15</sup> Such wide temperature ranges are characteristic of the continental subarctic climate and are also found in such similar areas as Siberia and parts of Canada.<sup>16</sup> Although interior Alaska generally has the hottest weather in the state, the mean annual temperature at Fairbanks is a chilly 26°F.<sup>17</sup>

Low annual precipitation and temperature do not preclude agriculture in Alaska's interior. Nearly 8 inches of the annual precipitation occurs during the May-September growing season. The long hours of daylight during the nearly 90 days of the frost-free season provide more solar energy for Alaskan crops and vegetables than is available during the same period to agricultural regions farther south. This favorable precipitation and temperature regime has long made interior Alaska famous for its gigantic cabbages weighing forty pounds and more.

**Geology.** The first geologic studies of the Fairbanks area were aimed at the location and extraction of mineral deposits, primarily placer and hardrock gold.<sup>18</sup> In 1958 the United States Geological Survey published the first geologic map of the area.<sup>19</sup> Based on a combination of mining company information and field research, it provided descriptions of the geologic formations to be found.

The Tanana Lowlands to the south of Birch Hill are made up of undifferentiated masses of loess, silt,

sand, and gravel deposited by wind and water during the Pleistocene. Prior to this epoch, the Tanana Valley was probably more hilly than today's landscape, and the buttes visible to the south are believed to be the tops of buried hills. Immense alluvial fans have covered the previous valley floor, which may be some 500 feet below the present surface. These fans are formed by deposits resulting from ice and water erosion of the Alaska Range. This process is still occurring, but at a much slower rate than that associated with the Ice Age.

The formation of the alluvial fans northward from the Alaska Range has deflected the course of the Tanana River against the uplands on the north side of the valley. The lack of glaciation in the Yukon-Tanana Uplands meant that the sediment loads of the northern tributaries were too small to form alluvial fans. These streams remain relatively silt free; although high organic matter content gives them a characteristically dark color.

The general geologic composition of the Yukon-Tanana Uplands is well represented in the park as three constituents are present—Birch Creek schist, Fairbanks loess, and perennially frozen silt (Figure 4).

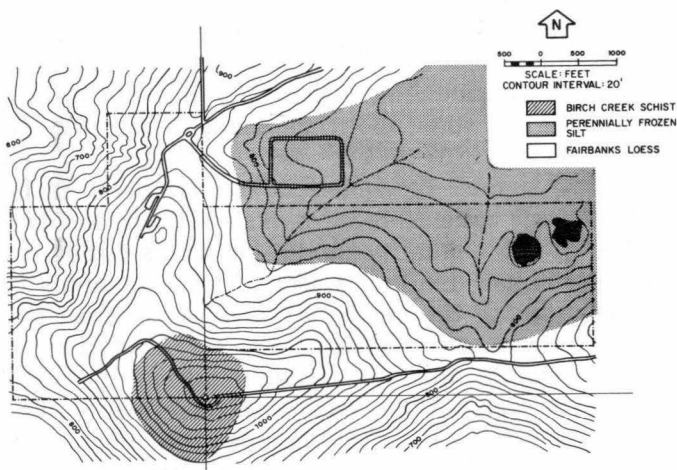


Figure 4: GEOLOGY OF BIRCH HILL PARK

The summit of Birch Hill is an outcropping of thinly covered Birch Creek schist. The schist is brown in color, and in most areas where it is exposed, it is very weathered and of a granular consistency.

The entire park is covered by a layer of Fairbanks loess, varying in depth from 3 feet on the summit to 60 feet on the middle and lower slopes. The loess is brown to tan in color and is made up of very fine particles of glacial silt deposited by wind

during the major glaciations. In some places in the region it reaches depths of more than 180 feet. On windy days this dust can be seen blowing from exposed silt bars in the Tanana River. Loess presented a problem to miners who were confronted with the necessity of removing it in order to get at the gold-bearing placers.

Much of the silt in valley bottoms and along the lower slopes of hills in the Fairbanks area is perennially frozen (i.e., permafrost). These discontinuous frozen silts are 3 to more than 250 feet thick and come within 18 to 48 inches of the surface. The deposits can contain large amounts of ground ice in the form of wedges, lenses, and irregular masses as large as 55 feet in diameter.<sup>20</sup> Organic matter, including the remains of plants and animals of the Ice Age, is prevalent in the silts. The frozen flesh, bones, and tusks of woolly mammoths and mastodons were often found during mining operations. No such discoveries have been recorded for Birch Hill, but perennially frozen silt occurs in the park near the two lakes on the military parcel.

Wherever it occurs, permafrost is a hindrance to development. It tends to melt when the insulating vegetative layer is removed, as often happens in the construction of buildings and roads. The thawing process is slow, but within a few years structures can begin to sink or sag into the ground. Roads built over permafrost sometimes look like giant washboards in as little time as one year. Fortunately, the subarctic permafrost is discontinuous in the Fairbanks area, and many locations are free of this problem. There are several theories as to when the permafrost was formed, with most holding that it formed during the Ice Age and its present range is controlled by the climate.<sup>21</sup>

#### Historical Resources:

This portion of the resource inventory includes the development of the Fairbanks area. It is presented in the form of a brief history, showing the factors which shaped the city's growth. The discussion focuses on gold mining, agriculture and the military presence.

**Gold mining.** The gold rush at the turn of the century has received more attention than any period in Fairbanks' history. This is only natural, as gold mining has played such an important role in establishing and developing the area. During the late 1800's and early 1900's, gold was the lure which drew people to Alaska, and finally to Fairbanks, site of the last stampede.

The founding of Fairbanks was a speculative venture on the part of an ex-convict turned trader named E. T. Barnette.<sup>22</sup> The site where he finally established his trading post in August of 1901, was not the one on which he had planned when his party set out on the steamer Lavelle Young for the upper Tanana River. He had intended to set up his post at Tanacross on the path chosen for the Valdez-Yukon road, but shallows on the Tanana and Chena Rivers forced him to a halt. Though it seemed at first to be a poor place to set up, the rich gold strike by Felix Pedro in July 1902 improved the situation considerably. No one could have known at the time that this strike was the start of a mining era that would last for more than 50 years and would cause Fairbanks to become the second largest city in the state.

Once the news of the strike spread, stampedeers from the older gold camps at Dawson, Nome, and Circle began to move into the valleys north of what was then known as Barnette's Post. The early hopes of the gold seekers were frustrated when gold did not flow from the ground in the quantities expected, and many left the newly named town of Fairbanks in 1903. It was not until 1904 that gold began to be produced in sizable amounts, and by 1905 the Fairbanks fields were outproducing the Klondike. At the peak of this first phase of the gold-mining era, between 1906 and 1909, the mines were producing at a rate in excess of nine million dollars per year.<sup>23</sup> After this high, the fields began a steady decline over the next 15 years.

The decline was related to the accessibility of the gold placers. Unlike earlier discoveries in which the gold was fairly close to the surface, the gold in the Fairbanks area was deeply buried under large quantities of frozen material. The decline meant that the easily accessible deposits were running out, and it was too difficult for the goldpan-and-sluice-box miner to work the large quantities of low-grade gravels which remained. These conditions drove many of the early miners away and opened the way for the more expensive dredges of the second mining era.<sup>24</sup>

This second period covered nearly 40 years, beginning in 1923 with completion of the Alaska Railroad. The new transportation link reduced the cost of supplying the mining operations with fuel by making it economical to bring large amounts of coal from the Nenana Field. The reduced costs made it possible to import the large dredges to work the deeper gravels. Gold-mining efforts were also helped by a rise in the price of gold from \$20.67 to \$35.00 per ounce. This increase made more areas available which could be profitably worked by the dredges.

Fairbanks was Alaska's primary producer of gold after World War II and through the early 1960's.<sup>25</sup> Gold production declined over the whole period until finally, in 1963, the last dredges were shut down.<sup>26</sup> By then, the value of the gold produced could not cover the increasing operating costs of the dredges.

Interest in mining has picked up since the 1975 decision to decontrol gold ownership. This allowed the sale of gold at world market prices. During the 1930's the federal government had made it illegal for citizens to sell gold, other than jewelry gold, to anyone except the government mint. Thus, the government controlled the price of American-produced gold. The present world price of gold is over \$200 per ounce, a value that allows the working of some previously marginal claims.

During both periods of mining activity, Fairbanks served as the supply center for operations in Alaska's interior. It survived competition for this role in the early days of development because Judge James Wickersham established it as the judicial center for the region.<sup>27</sup> If he had not done so, the city of Chena, located on the Tanana River below the mouth of the Chena River, would probably have become the dominant city of the area. Its location on the Tanana River gave it better docking facilities than those at Fairbanks. Also, it was the terminus of the Tanana Valley Railroad which served all of the gold camps. But Fairbanks soon outgrew Chena and took over the supply of the camps by both rail and road. The main road north from town led up Birch Hill and crossed what is now the park just below the summit. This Gold Trail connected all of the outlying mining camps with Fairbanks.<sup>28</sup>

**Agriculture.** During the early years of the gold rush, another "industry" arose which was to play a significant role in the growth of Fairbanks. Disenchanted gold seekers are reported as being the first to turn to agriculture as a means of making a living in the North.<sup>29</sup> There was always a need for food in the mining camps, and the interior climate and soil conditions combined to make for excellent farming. The success of these early farmers was glowingly extolled in a 1916 publication of the Fairbanks Commercial Club. This "Descriptive of Fairbanks" was designed as an informational brochure "to correct some of the wrong impressions about life in the Interior."<sup>30</sup> In doing so it also encouraged agricultural development in the region.

Mining is not the sole resource on which Fairbanks depends, for the Tanana Valley, in which it is centrally located, contains more than two

million acres of agricultural lands. The lower part of this valley, from the Delta to the Yukon, is one of the most fertile tracts in Alaska and of its agricultural importance there is no question. While the district may not be expected to raise products that will be valuable for export, under present conditions, success enough has been attained by local farmers to demonstrate that they can grow grains and vegetables sufficient to the needs of the entire territory.

The success attending the work at the government experiment farm, located a few miles from town, indicates that oats, rye and barley can be successfully ripened, as well as certain varieties of wheat.

Practically all kinds of vegetables are grown as prolifically as in the most favored of the states. While cattle raising has not been carried on to any great extent there is no doubt of its feasibility. Already the local dairy industry has attained a healthy growth.

Homesteads are still available within a few miles of the town.<sup>31</sup>

Agricultural development followed the discovery of gold so closely that in 1906, one year after full-scale production of gold began, an Agricultural Experiment Station was established at Fairbanks to assist in developing good farming practices. In 1921, the University of Alaska began as the College of Agriculture and School of Mines and offered more information about agricultural development to farmers in the area. This process of expansion continued into the mid-1930's, and established Fairbanks as the early farming center of the state.<sup>32</sup>

With the improved transportations network of the 1920's, farm produce imported from the lower 48 states became competitive with that grown locally, and farm production in the area began to decline. In the 1930's farming development in the Matanuska Valley also began to compete successfully and took some markets away from the farmers around Fairbanks. Agriculture has continued in the Fairbanks area to this day, but it is on a small scale and limited to local consumption. Birch Hill Park does not contain any lands which were formerly in agricultural production, but it does have several areas from which past and present farming operations can be viewed.

**Military.** The third factor of interpretive value to the park is the military presence in the interior and its role in the development of the Fairbanks area. The military period began in 1940 with the initial construction of Ladd Army Airfield, which is now called Fort Wainwright. The base was established in an effort to expand the defenses of Alaska in response to the growing threat of war with Japan,<sup>33</sup> as well as serving as the turnover point for more than 8,000 lend-lease aircraft which were given to the Russians for use against the German invasion of the Soviet Union.<sup>34</sup> American pilots flew the planes from factories in the continental United States to Fairbanks, where they were turned over to Russian pilots who then flew them over the Bering Sea to Siberia. This method of supply reduced by 15% the distance these planes would have to have traveled had they gone by the Murmansk Convoy route across the Atlantic. It also reduced the losses of planes and pilots to enemy attack, as the route was entirely under the control of the Allies. Accidents, however, claimed the lives of numerous Russian pilots and their aircraft during the supply operation.

At the conclusion of the war, military strength was expected to be cut back at the base. The advent of the Cold War with Russia, however, meant that Ladd Air Force Base was to serve as the home of fighter interceptors guarding the northern approach to the United States. In 1962 the base was transferred to the Army and was renamed Fort Wainwright in honor of General Jonathan M. Wainwright, the "Hero of Bataan."<sup>35</sup> The military presence in Alaska has served as a vital part of the Fairbanks economy, particularly after gold dredging ceased in the early 1960's. Only recently, with the reduction of troop strength and the development of the trans-Alaska pipeline, have the impact and relative economic contribution of the presence of the military begun to decline.

Fairbanks has a history of a boom-and-bust economy, but the continuing military and governmental activity, as well as the construction of the trans-Alaska pipeline and other developments have encouraged the community's growth. Otherwise Fairbanks might well have become just another ghost town of the mining era.

The summit of Birch Hill provides an outstanding, panoramic view of the city. This represents a unique opportunity for the interpretation of the historical development of Fairbanks.

# The Interpretive Plan

The Birch Hill Interpretive Plan is divided into four sections: objectives, programs, implementation and evaluation. The objectives provide guidelines for program development and the selection of interpretive methods and media. The program section is a general discussion of the thematic aspects of the self-guiding trails and interpretive displays. More detailed recommendations concerning interpretive media such as signs, displays, and brochures as well as a part-time interpreter are presented in the implementation section. The section also includes some estimates of construction and operational costs. Evaluation is the final section of the Interpretive Plan, and it provides some general guidance for internal evaluation as well as stressing the importance of public contact and feedback.

## OBJECTIVES

The objectives of the interpretive programs at Birch Hill Park are derived from the agency and area policies discussed earlier. The objectives also take into account the resources available and the selected interpretive themes for the park. The following objectives are the basis for the program elements discussed in the next section.

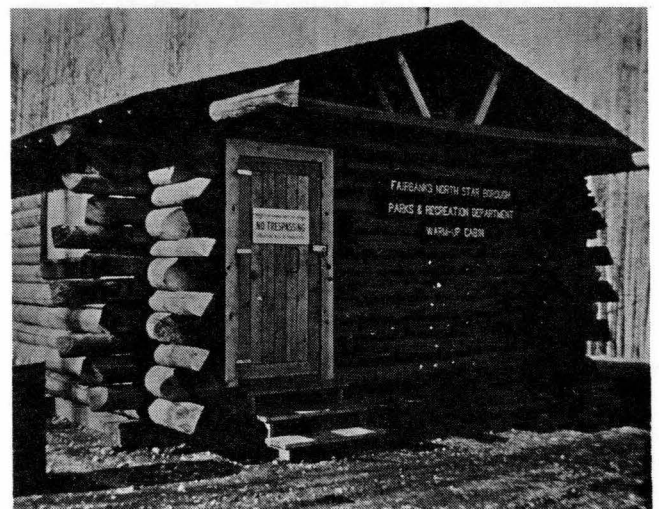
1. The park should provide visitors with an enjoyable outdoor experience which they will wish to repeat.
2. On leaving the park, visitors should have a better knowledge and appreciation of:
  - a. the historical development of the Fairbanks area.
  - b. the environment in which they live, with regard to the:
    - 1) boreal forest
    - 2) climate of interior Alaska
    - 3) geology of the Fairbanks region
  - c. man's use of and effect on his environment

## PROGRAMS

There are two main components to the interpretive programs proposed for Birch Hill Park: the display cabin and the self-guiding trail system. Augmenting these are recommended printed materials and presentations by a part-time interpreter.

### Cabin:

The display cabin will provide an orientation to the park, its resources and facilities. Interpretive materials in the cabin will supplement the presentations associated with the trail system by providing additional historical background on the Fairbanks area. The developmental factors (gold mining, agriculture, and the military) will be emphasized and related to the natural resources of the region.



RECOMMENDED DISPLAY CABIN

The cabin will also serve as the initial contact point and trailhead for users of the self-guiding trail system. Here, information on the three trails will be made available, and a part-time attendant (interpreter) will be on hand to answer questions about the park and its resources. The cabin displays, interpreter, printed brochures, and trail system will constitute a multimedia interpretive program designed to enhance visitors' understanding and enjoyment of the area.

### Trail System:

The proposed trail system is the primary interpretive element in the Birch Hill Park program. The enjoyable atmosphere of the trails' natural setting provides a pleasant context for the educational aspects of interpretation. The living-forest system available for firsthand examination and enjoyment is easily augmented by maps, books, and displays. Furthermore, the trails and the cabin break the park's resources into identifiable and manageable units and provide visitors with a variety of experiences. The three trails are each named for a dominant feature: Black Spruce Trail, Birch Trail, and Summit Trail. Figure 5 is a map of the trail system.

The Black Spruce Trail is a loop of 0.6 mile over flat-to-gently sloping terrain, and of the three, it is the easiest to walk. Both natural-environment and historical elements are presented on this trail. Various aspects of the black-spruce ecosystem and the early regenerative stages of plant succession in the upland forest, as well as some geologic and soil resources are interpreted on this trail. Agricultural development

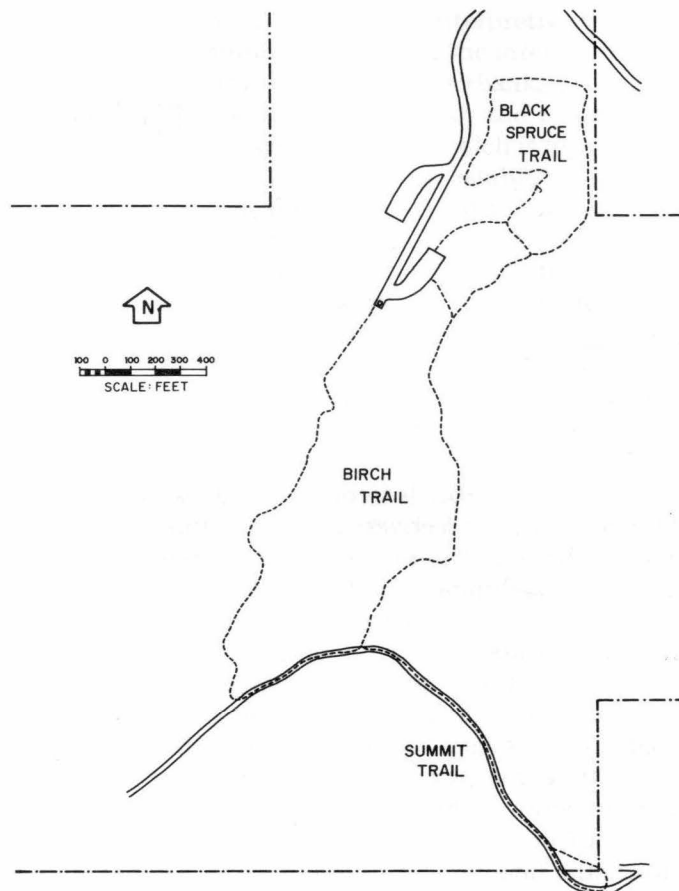
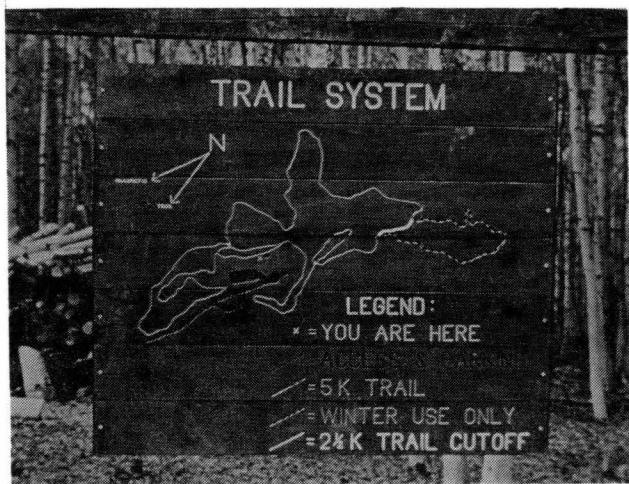


Figure 5: THE BIRCH HILL PARK TRAIL SYSTEM

and urban expansion provide additional subject matter for the Black Spruce Trail, as views of farming along Farmer's Loop Road and subdivision construction on the slopes of Birch Hill and elsewhere are readily available.

Birch Trail is also a loop, covering some 1.2 miles of hilly terrain. Being longer and more hilly, it is a more challenging walk than the Black Spruce Trail. Interpretation for Birch Trail focuses on the birch and aspen forest system. Climatic information is related to the forest system on this trail, and historic interpretation is confined to an identified segment of the old Gold Trail to the mining camps north of Fairbanks.

Summit Trail is a short spur that branches from the southern portion of Birch Trail and climbs steadily to the top of Birch Hill. Although it is the shortest, this trail is the most demanding as it rises 150 vertical feet in just .5 mile.



TRAIL SYSTEM MAP

Summit Trail is actually an existing service road, which is used by government, military, and Parks Department vehicles and personnel. As the road receives increasing use by park visitors, they and the various official users are likely to come into increasing conflict. Initially, therefore, no interpretive sites are recommended for development along this route. As funds and manpower become available for new trail construction, Summit Trail should be relocated into the woods paralleling the service road. At the same time additional interpretive resources could be identified and sites established on the trail. These would also serve to encourage rest pauses along this relatively steep route.

The outstanding interpretive opportunity afforded by Summit Trail is the excellent panorama of Fairbanks, the Tanana Valley, and the Alaska Range seen from the top of Birch Hill. From a vantage point atop the military radio towers on the summit, visitors have a commanding view of the broad patterns resulting from man's interaction with the natural landscape. Here is the ideal spot from which to interpret the historical development of Fairbanks.

### IMPLEMENTATION

This section contains general guidance and specific recommendations concerning the display cabin, trail design and layout, and estimates of implementation costs.

#### Cabin:

The log cabin used as a warm-up hut by cross-country skiers in the winter, and presently located at the park road terminus, is recommended for summer use as the display cabin. The only other building in the park, the "timer's shack," was rejected for display use because it is divided into two small rooms unsuitable for exhibits and it lacks sufficient windows for natural lighting. The latter is an especially important consideration since electricity is not included in the development plans for the park at this time. The warm-up hut is a single-room log cabin with a floor size of approximately 16' x 20'. Its five windows and two doors provide adequate natural lighting for the proposed exhibits. The recommended displays will consist of temporary panels on which the interpretative materials will be mounted. This will facilitate removal and storage during the winter so as not to interfere with the use of the cabin as a warm-up hut for skiers. Five display sections are suggested: three folding panels, one corner display, and a map table. The folding displays labeled P<sub>1</sub>, P<sub>2</sub>, and P<sub>3</sub> in Figure 6 will each consist of two sheets of 3/8" plywood,

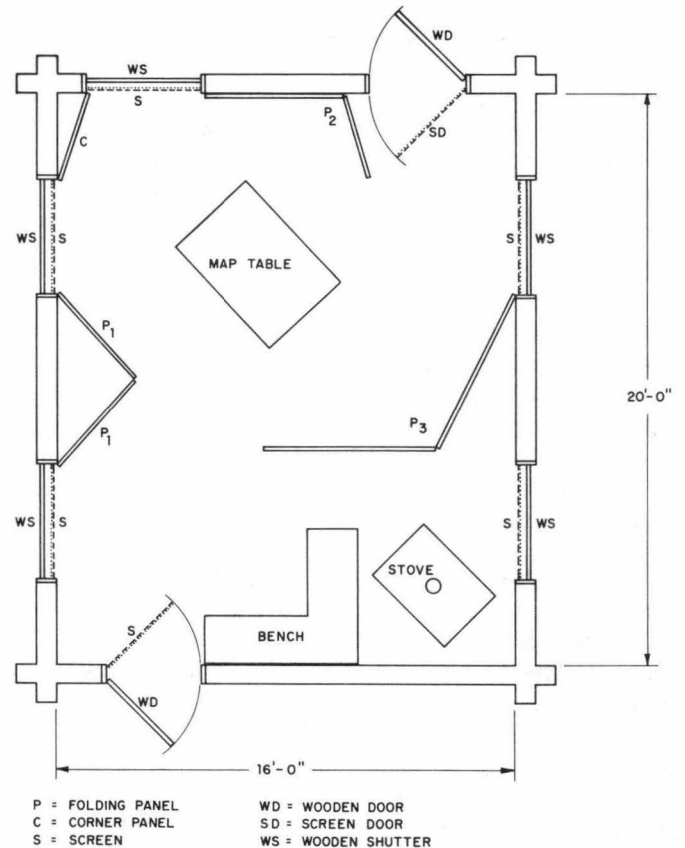


Figure 6: PROPOSED FLOORPLAN FOR THE DISPLAY CABIN.

joined by hinges. The panels of P<sub>1</sub> will be 4' x 7', while those of P<sub>2</sub> will be 3' x 7' and 5' x 7'. Two 6' x 7' sections will comprise P<sub>3</sub>. The corner display (C) will be a single sheet of 3' x 7' plywood. The map table should be 54" x 40", 40" high, with a 3/8" plywood top and 2" x 4" legs with bracing.

The floor plan will allow sufficient room for visitors to move around and to view the displays. The display area will not make use of the entire floor space of the cabin because there is a wood stove in one corner. Benches could be provided near the stove for a rest area.

The display layout makes use of the natural illumination available as the panels are at angles to the windows and doors. Use of natural lighting requires that all of the windows and doors to the cabin be left open during the time that the displays can be viewed, which will require the addition of insect screens. White or some other light-reflective color on the panels will help brighten the cabin's interior.

The displays will consist of photos, maps, and written descriptions of the historical development of Fairbanks presented chronologically. Each segment of the display should be mounted on white cardboard backing to make changes and rearrangements easier to accomplish. The table will consist of a map with numbered interpretive messages referring to locations on it.

The cabin could also serve as an informational site for the borough. Parks and Recreation Department programs and other announcements might be posted on a bulletin board. Points of interest such as the University of Alaska Museum and the nature trail at Creamer's Field could be identified on a wall map so that the visitor could see their locations in relation to Birch Hill Park.

Since the exhibits will be portable and easily vandalized, it is proposed that the cabin be open only when the interpreter (or other park personnel) is present. The best schedule for the cabin's being open to the public cannot be determined until data on visitation and use of the interpretive resources are available. As this information takes at least one season to develop, it would be too expensive to initiate the program with a full-time interpreter. Therefore, it is recommended that the display cabin be manned 3 to 4 hours per day on weekdays and 4 to 5 hours per day on weekends and holidays, with the hours varying (but posted) until a suitable arrangement is developed.

The interpreter might be more broadly identified as a park ranger since his duties could be a combination of interpretation, patrol and enforcement, and minor maintenance of grounds and facilities. Interpretation might constitute 40-50% of his duties. Naturally, he would be expected to become thoroughly familiar with the interpretive elements of the cabin and trail system, as well as have or develop knowledge about the history and natural environment of the area. Upon special request, he could also conduct guided walks on the trail as a service to educational or other groups.

Due to scheduling and the long daylight of Alaskan summers, there will be times when park visitors may find the cabin closed to them. As a supplement to the interpretive trail programs during these times, a brochure should be made available to visitors which would cover the material presented in the cabin. People could take the brochure along on their walks and keep it as a memento when they leave.

**Trail System:**

The interpretive trail system makes use of the existing cross-country ski trails (Figure 7). Some additional clearing of trees and trail construction is

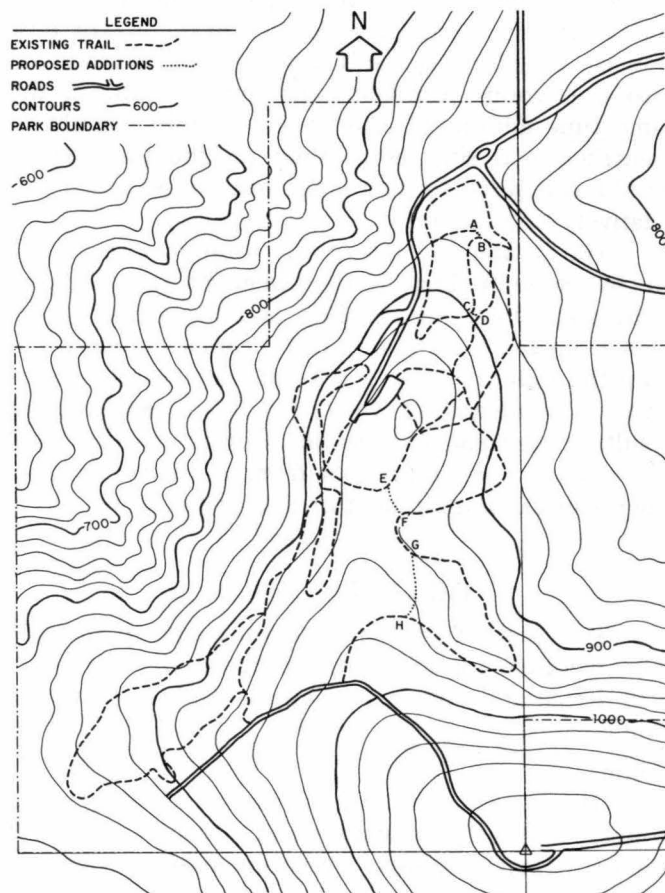


Figure 7: RECOMMENDED TRAIL MODIFICATION

needed. Segments AB and CD on the Black Spruce Trail require two small clearing cuts of five-foot width. These cuts will shorten the trail, and by making it a continuous, one-way loop, they will improve traffic flow. Cuts EF and GH are on the overlapping portions of Birch and Summit Trails and serve to bypass portions of the ski trails which are too hilly for easy walking and are not needed for the interpretive program. Removable log barricades can be used at all of these points to direct visitors along the desired route.

Once the new segments have been cleared, improvement of the trail surface should be undertaken. Of the three, Black Spruce Trail will need the most work since the spruce roots in the mossy ground





### CROSS-COUNTRY SKI TRAIL

cover make a very hummocky and difficult walking surface. Stumps and roots should be removed to a four-foot width on all trails. The remaining natural ground cover could act as the trail surface, although it will eventually become compacted by use. Alternatively, the trail could be graveled to a width of four feet and a depth of six inches, without removing any roots or stumps. This would provide drainage, making the trails drier after rains, but it may be less desirable in terms of aesthetics, expense, and late- and early-season ski use. Birch and Summit Trails require little initial surfacing work because their leaf mulch forms a good walking surface. The two sections which cross through black spruce stands will need treatment similar to that adopted for the Black Spruce Trail. Erosion will be an important concern in the more sloping portions of the trails. Water bars or other water diversion measures may be required to prevent erosion where the trails are not surfaced. Whatever construction or maintenance procedures are used, it should be remembered that most of the trail system serves a dual purpose: summer walking and winter skiing.

Since the trails are primarily self-guiding, interpretation can be of two main types: marker-leaflet, or sign-in-place. The marker-leaflet method presents the interpretive message in the form of a pamphlet which refers to numbered posts along the trail. It is the less expensive method to initiate and maintain. However, modifications may result in additional costs for redoing the brochure. The sign-in-place method gives on-the-spot interpretation without concern for the availability of pamphlets. The signs give more flexibility than the brochures, but are subject to more costly vandalism. The sign-in-place procedure is recommended for the Birch Hill Park trail system with one additional modification. The sign face should be removable from the permanent post for winter storage and to facilitate replacement when needed.

Detailed survey of the resources along the trails in terms of the interpretive themes and elements identified previously will be the basis for selecting sign locations. A list of suggested topics for trail-side interpretation is shown in Table 1, and the numbers are keyed to the locations on the trail map shown in Figure 8. A typical sign is shown in Figure 9. The

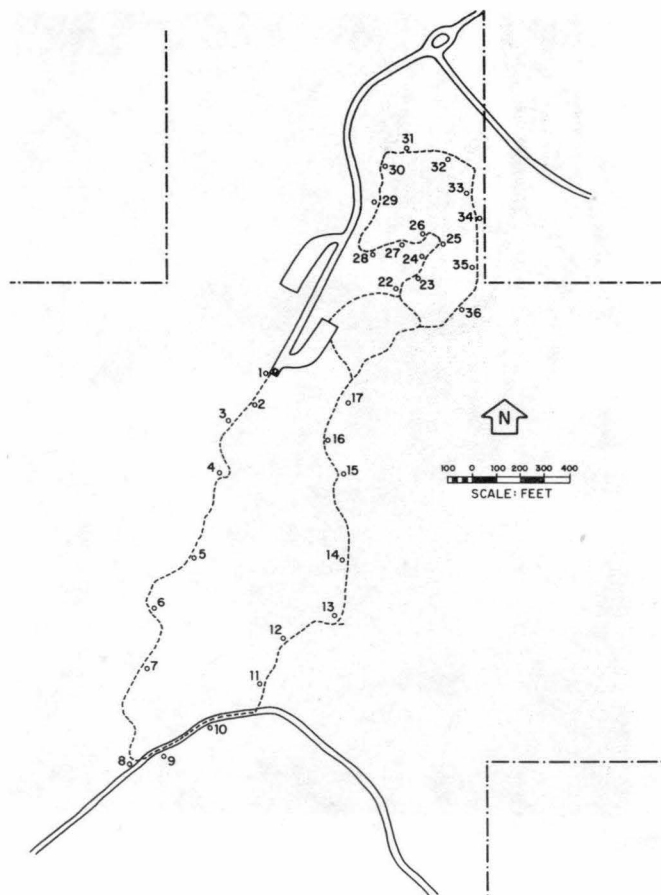


Figure 8: POTENTIAL INTERPRETIVE SITES

TABLE 1: SUGGESTED INTERPRETIVE TOPICS FOR THE TRAIL SYSTEM\*

Birch Trail

Site	Topic
1	Trail introduction
2	Birch identification (paper and black birch)
3	Aspen identification
4	Understory constituents
5	White spruce identification
6	Wildfires and the boreal forest
7	Man's use of birch, aspen and white spruce
8	"Wolf" Tree (gnarled birch)
9	The Gold Trail
10	Road construction and alder-willow thickets
11	Tree burls
12	Natural forest clearings
13	Animals found in the park
14	Tree disease and decay (examine bracket fungi on trees)
15	Young birch (an early stage of tree succession)
16	Birch and aspen regeneration
17	Climate of the interior
18**	Prickly rose
19**	Highbush cranberry
20**	Lowbush cranberry
21**	Horsetail rushes

Black Spruce Trail

Site	Topic
22	Trail introduction
23	The distinct change from a birch to black spruce stand
24	Black spruce identification
25	Understory constituents (compare to birch understory)
26	Black spruce regeneration
27	Black spruce root system
28	Wildlife use of the black spruce stand
29	Farming in the region (as seen from the park)
30	Witches' Broom and other forest disease
31	Soils of the park
32	Man's use of black spruce
33	Growth rate of black spruce
34	Regeneration of cleared uplands
35	Fire management in the spruce forest
36	Black spruce (as a component of the boreal forest)
37**	Labrador tea

\*Numbers refer to locations on map, Figure 8.

\*\*Sites not identified on map. Positioning of these signs will be dictated by the location of most representative example. All understory species are widespread along each trail.



TREE BURLS

6" x 6" treated wood should be buried or cemented as needed for permanent installation with 3 ft. extending above ground. The sign base is a 12" x 18" sheet of 3/4" plywood, with two 12" pieces of 2" x 4" providing a framing mount for bolting the sign to the post. The post and sign base should be painted "earth colors" to blend with the natural setting. The inter-



REMNANTS OF AN ABANDONED SHELTER

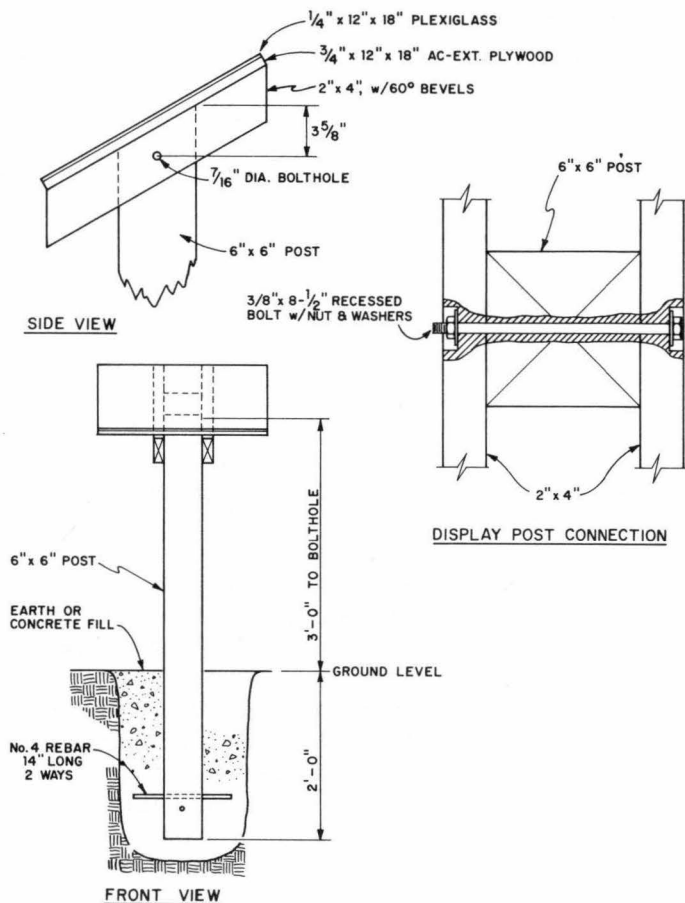


Figure 9: PROPOSED TRAIL SIGN CONSTRUCTION

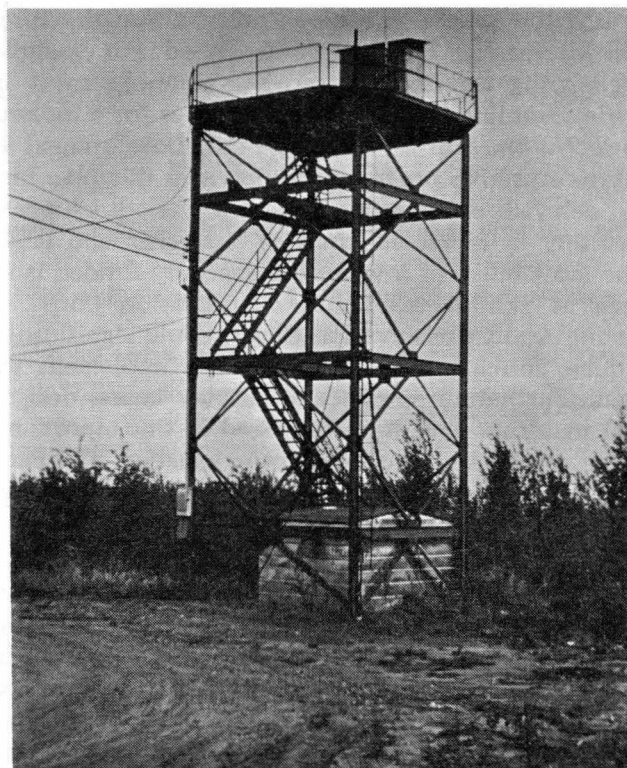
pretive message on the sign should consist of photos, drawings, diagrams, etc., plus a statement produced in-house with a good-quality lettering kit, or at a commercial printing shop. Weathering and vandalism can be inhibited by covering the materials with a clear sheet of plexiglass, 1/4" or thicker, attached with screws and sealed from moisture with caulking or some type of gasket. A more durable and very professional-looking result can be obtained by preparing signs of anodized aluminum. These are more expensive to produce, but are desirable in the long run. In the initial stages of program development, however, it is suggested that the plexiglass-covered sign be adopted.

Since the posts are to be permanent and the trails are used by skiers during the winter, each interpretive site should have the sign positioned to avoid being an obstruction or hazard, as well as to be conveniently observed and read. In some cases setting the sign off to the side of the trail with a place for

observers to stand out of the pathway will mean a small widening of the trail; in other instances a larger clearing might be desirable, as for example, for a panoramic overlook or similar viewpoint, or to provide an occasional trailside bench to pause and relax awhile. In most cases benches should be located away from interpretive signs, and they should be appropriately rustic to match the setting.

Interpretation on the summit of Birch Hill is based on using the existing radio tower (Bldg. T-1192) because it provides an outstanding view of Fairbanks, the Tanana Valley, and the Alaska Range not obtainable elsewhere in the region. Although the Bureau of Land Management fire tower and the United States Geological Survey benchmark are significant features at the summit, they are insufficient in themselves to justify the Summit Trail, while the view from the radio tower is more than enough reason for this spur to be developed.

The radio tower would require remodeling for use as a visitor observation platform, but the basic structure appears sound and would probably be less expensive to modify than constructing a new one as



RECOMMENDED VIEWING TOWER

currently indicated in Parks and Recreation Department planning.<sup>36</sup> If the platform is constructed just below the existing deck, a number of advantages will result. For example: no additional roof will be needed; the existing stairway ends at this point and would otherwise need extending; the structural framework is already in place for attaching the platform and any safety features (e.g., chainlink fencing); and the radio antenna is out of sight (and reach) of the observation area. An investigation of the tower and suitable designs for its modification along with cost estimates should be undertaken by professional engineers.

There is a constraint on using the tower: the Bureau of Land Management is unwilling to allow public access because of a concern about liability or injury.<sup>37</sup> Since the federal government has no plans to use the tower, it could be released back to the military, which could then lease it to the borough for use by the Parks and Recreation Department.<sup>38</sup> The location and potential savings associated with using this structure, rather than building a new one, recommend that this possibility be given careful consideration.

#### Cost Estimate:

There are a number of decisions to be made before the precise costs of implementing the Birch Hill Interpretive Plan can be identified. For example, engineering and administrative evaluations must be made regarding the various alternatives for a lookout tower at the top of Summit Trail. Development of the interpretive programs proposed in this plan may be delayed or scheduled over a period of years, resulting in increased costs of materials and labor. The availability of low-cost or specially funded labor such as volunteers, Youth Conservation Corps, or Young Adult Conservation Corps, could significantly reduce anticipated expenditures to implement the plan. Furthermore, sign and display types, designs, and materials have been discussed in this report, but those noted are indicative, not exhaustive. The Parks and Recreation Department could easily select different (and more expensive) materials and designs.

Trail and cabin improvement, signs, displays, brochures, a part-time interpreter, and one year of operation are the bases for estimates of the costs of implementing the interpretive program at Birch Hill Park. Developments are estimated at current costs for the minimally acceptable standards discussed previously. Expenditures associated with the proposed Summit Trail lookout tower are not included in the implementation budget. The following items are included in the estimates:

1. Fifty historic photographs and a rare 1908 map of the Fairbanks area reproduced for display purposes.
2. Portable exhibits for the cabin developed to the minimum standards recommended above (see page 15).
3. Minor improvement to the cabin and trail system exclusive of graveling the trails (see page 15).
4. Forty trail displays using posts, plywood, and plexiglass (see page 19).
5. Two thousand interpretive brochures.
6. Part-time interpreter for 16 weeks (14-week season, Memorial Day to Labor Day, 1-week orientation, and 1-week review session).
7. Allowance for facilities repair and replacement.

The allowance for facilities repair and replacement is difficult to assess since it depends on such uncertainties as weather, use, and vandalism. Vandalism can be expected to be a major cost factor in recreation areas in or near population centers.<sup>39</sup> Fairbanks North Star Borough Parks and Recreation Department personnel note that some vandalism has occurred at Birch Hill Park already,<sup>40</sup> but the area is too new to identify trends or anticipate future expenditures for such damages. Vandalism of equipment and facilities in the department's inventory fluctuates greatly from year to year, making prediction risky at best. Therefore, an arbitrary rate of 10% of the initial construction cost has been used to estimate the cost of facilities repair and replacement for the first year's use.

The interpretive program can be developed and operated for one year for \$10,500. This includes \$7,000 for initial developments having useful life expectancies greater than one year, and \$3,500 for the first year's operational expenses. A more detailed breakdown of anticipated expenditures is shown in Table 2.

## EVALUATION

Improvements in interpretation generally enhance the quality of recreation experiences at natural and historical areas.<sup>41</sup> A planned, continuous evaluation of interpretive media and methods provides information to managers so that they can upgrade their programs and provide more satisfactory experiences for their visitors. The two main elements of an evaluation program are feedback and objectives.

Feedback is the information flowing from visitors to managers indicating how well the operation is going. Objectives are the criteria against which this

TABLE 2: ESTIMATED COST TO IMPLEMENT AN INTERPRETIVE PROGRAM AT BIRCH HILL PARK

Activity	Labor <sup>a</sup> \$	Materials <sup>a</sup> \$	Total <sup>a</sup> \$
<b>CONSTRUCTION</b>			
<b>Cabin</b>			
Screens for doors and windows (16 hrs P <sup>b</sup> )	150	100	250
<b>Displays</b>			
Photo and maps Boards, benches, & table (80 hrs P)	750	250	950
<b>Brochures</b>			
Write-up (120 hrs T <sup>c</sup> )	750		750
Printing (1,000)		300	300
<b>Trail System</b>			
<b>Black Spruce &amp; Birch Trails</b>			
40 Displays (160 hrs T <sup>d</sup> , 160 hrs P)	2,350	1,000	3,350
Write-up (120 hrs T)	750		750
Trail clearing & improvement (80 hrs T <sup>d</sup> )	400		400
<b>Subtotal</b>	<b>5,150</b>	<b>1,850</b>	<b>7,000</b>
<b>OPERATION (First Year)</b>			
<b>Staffing</b>			
Interpreter/Caretaker (400 hrs T)	2,500		2,500
<b>Maintenance and Restock</b>			
Facilities repair and replacement estimated at 20% of initial cost	450	250	700
1,000 Brochures		300	300
<b>Subtotal</b>	<b>2,950</b>	<b>550</b>	<b>3,500</b>
<b>TOTAL</b>	<b>8,100</b>	<b>2,400</b>	<b>10,500</b>

<sup>a</sup> All estimates rounded to nearest \$50.

<sup>b</sup> Labor costs for permanent employees (P) are figured at \$7.72 per hour with 20% added for FICA, retirement program, and unemployment compensation insurance. Budgeted cost per hour, \$9.26.

<sup>c</sup> Labor costs for temporary employees (T) are figured at \$5.82 per hour with 6% added for FICA. Budgeted cost per hour, \$6.17.

<sup>d</sup> Temporary labor costs for these jobs are figured at \$4.79 per hour with 6% added for FICA. Reflects cost of manual labor obtained from YCC. Budgeted cost per hour \$5.08.

same performance is measured. The interpretive objectives listed previously (see page 13) provide general guidance for evaluating the program at Birch Hill Park. These may need restating in terms of the behavior a visitor may express as a result of interpretation.<sup>42</sup> For example, an objective might read: to enable the visitor to describe the birch-aspen ecosystem in general and the particular relationship it has with wildfire.

Once the objectives are clearly defined, appropriate feedback procedures can be designed to monitor the effectiveness of the interpretive program in

achieving those objectives. For example, visitors can be tested by the exhibits themselves, using teaching machines that record answers or electrical quiz boards.<sup>43</sup> Questionnaires and structured interviews are other means of obtaining feedback. Less formal methods such as the (apparently) unstructured interview, or informal personal contact may be used as well.

A fundamental objective of all Parks and Recreation Department activities is the enhancement of visitor enjoyment. This was stated above (page 13) as, "The park should provide visitors with an enjoyable

outdoor experience which they will wish to repeat". Any feedback procedures that are adopted should also seek to measure visitor enjoyment or satisfaction. For example, a questionnaire might include questions such as: what exhibit did you enjoy the most; how interesting was the pamphlet for the self-guiding trail; do you plan to visit the display cabin again this summer; what improvements are needed in the trail system; etc.

Feedback mechanisms and other evaluation techniques such as observations and visitor comments can provide administrators with information beyond the question of achieving interpretive objectives. Levels of use, periods of peak visitation, and types of activities can be obtained from a systematic evaluation program. Preferences can be expressed for non-interpretive facilities and recreation opportunities such as picnic sites and horseback-riding trails. Background information on visitors can be obtained to help managers understand the people they are serving.

The types and amount of information sought will depend on the evaluation objectives and constraints such as limited manpower, money and time. It is recommended, however, that a minimum evaluation effort include systematic observation and personal contact by the interpreter on the job, supplemented by a questionnaire or "suggestion box" available when the area is unsupervised.<sup>44</sup>

As an integral part of the interpretive program, evaluation should be planned from the beginning. But as with the program itself, evaluation should not be cast in concrete. Modifications in the Birch Hill Park interpretive program are the expected and intended result of regular evaluation. Agency personnel will need to be alert to changing needs, innovative interpretive techniques, and new opportunities or means to achieve the program's goals. At the same time they should seek to adjust their evaluation procedures to obtain the best possible feedback from the users of Birch Hill Park.

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