BIG HILL SPRINGS PROVINCIAL PARK

Mini Master Plan

Alberta
RECREATION, PARKS AND WILDLIFE
Parks Division

BIG HILL SPRINGS PROVINCIAL PARK

MINI MASTER PLAN

1976

Regional Park Planning
Planning and Design Branch

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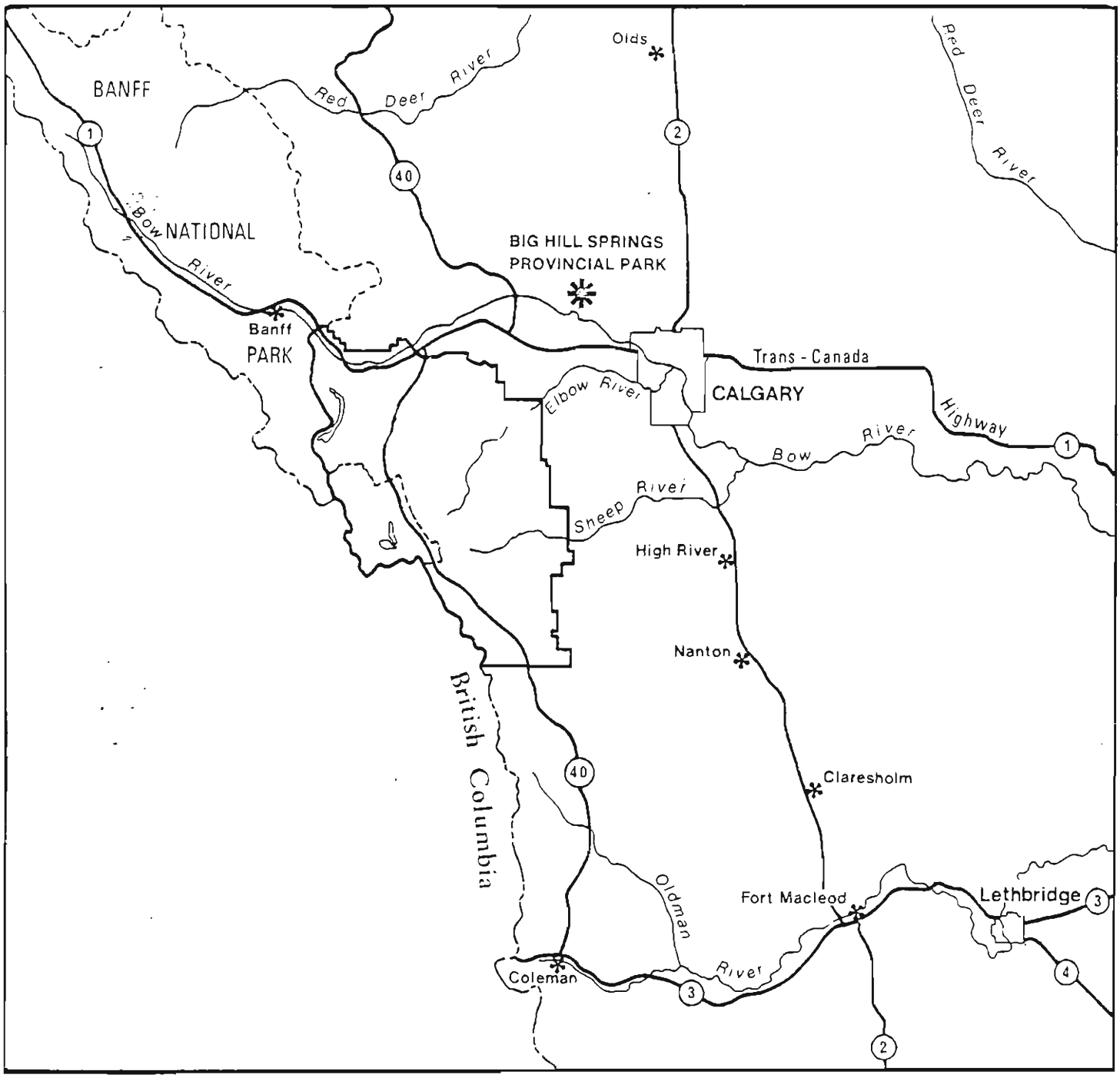
1.0 INTRODUCTION

Big Hill Springs Provincial Park is located in Big Hill Creek Valley north of Cochrane, in part of Section 29, Township 26, Range 3, West of the 5th Meridian. The park, which covers 63 acres, is situated in the lower end of Big Spring Coulee, a coulee emanating from the Big Hill Creek Valley.

As the park's name suggests, large springs are the origin of Big Spring Creek and coulee. The park is located in the fescue grassland-aspen groveland biogeographic region. Variability of topography and aspect in Big Spring Coulee cause a remarkable number of distinct biotic environments.

Big Hill Springs Park is located approximately 9 miles north of Cochrane. It is accessible from Highway 922 and also from an access road located just east of Cochrane on Highway 1A (Fig. 1).

At present, Big Hill Springs Provincial Park park is developed to include both camping and day-use experiences and, as a result of a combination of the lack of direction with regard to development and the limited activity area, considerable degredation of the resource has taken place.



BIG HILL SPRINGS REGIONAL LOCATION

2.0 SUMMARY OF THE PROBLEMS AND RECOMMENDATIONS

A matrix approach to analyzing the problems in Big Hills Spring Provincial Park was used. The results indicate four major problem cause areas. These include (1) the resource and its physical condition, (2) program (planning), (3) design, and (4) park operation and management.

The problems can be grouped into four categories which include: (1) resource degredation, (2) rowdyism, (3) lack of control, and (4) conflicts with other land uses and private land. A full discussion of the problems and an anlaysis of these problems is included in Section 4.3.

The following list contains a summary of recommendations made to alleviate these problems.

2.1 Policy

2.1.1 That Big Hill Springs Provincial Park be designated as a Preservation Park and be classified as such.

2.1.2 That the springs which are the name sake of the park be acquired.

2.1.3 That steps be taken to control land use and development in the entire Big Hill Creek Valley south of the park.

2.1.4 That the park master file (Big Hill Springs Provincial Park General) be regenerated.

2.1.5 That the Education/Interpretation program for the park take into consideration and work in close liaison with the Calgary Board of Education.

2.2 Program

2.2.1 That the park be planned in a manner which would allow it to be operated as a "point of interest" and/or "nature study area".

2.2.2 That the concept of a scenic/historic circle tour originating and ending in Calgary be investigated.

2.3 Design

2.3.1 That a ranch style, architecture theme be adopted and developed in the park.

2.3.2 That all steps necessary to enhance the park's appearance within the architectural theme be taken.

2.3.3 That central firepit(s), be provided.

2.3.4 That consideration be given in the areas of site planning and site design to allow for a small group picnic area.

2.4 Operations

2.4.1 That the park be operated as a "point of interest" type park.

2.4.2 That the park offer an educational experience as opposed to a day-use experience.

2.5 Resource Management

2.5.1 That park fences be relocated to more effectively control recreational and agricultural use in the area.

3.0 PARK DIRECTION

3.1 Park Classification - PRESERVATION

The park should be classified as a preservation area.

3.1.1 Rational - Although the area is quite small, the primary purpose in the establishment of the area as a park is to protect and conserve its natural features. Development of educational and inter pretive features will of course limit the develop ment of recreational facilities and programs.

3.2 Park Goal

3.2.1 To preserve and interpret the natural features of the park area. The park goal will direct all park activities including planning, design, development and operations of the park. This goal will be strived for in all management pro cedures and operatives undertaken within the park.

3.3 Park Objectives

3.3.1 Preservation

The primary objective of this park will be to protect and conserve its biological and geological features.

3.3.2 Resource Management

Resource Management Programs will be directed at protecting and conserving the natural values of the area and rehabilitating sites degraded by past recreational and agricultural use.

3.3.3 Recreation

As indicated by the park goal, the primary role of the park is not to provide active recreational opportunities, but rather to preserve and interpret the natural features. The emphasis of any program at Big Hill Springs should be on the interpretation of the natural and cultural history of the area. Since the area possesses limited recreational resources and capabilities, the provision of any facilities should be secondary to and supportive of the interpretive program. The development objective for the park will be to promote facilities necessary to the operation of the park as a "point of interest" or "nature study" area.

4.0 RESOURCE CAPABILITY AND ANALYSIS OF THE EXISTING SITUATION AND PROBLEMS

4.1 Resource Capabilities*

As indicated by the classification, goal and objectives chosen for the park, the resources at Big Hill Springs Provincial Park are most suited to the goals of education and interpretation.

A diversity in the topography and vegetation of the area in combination with its unique geological phenomena and cultural and historical resources indicate good potential for interpretive purposes.

Because of the lack of area suited to recreational development and because of the aforementioned resources, the entire park area is recommended for facilities supporting educational and interpretive development.

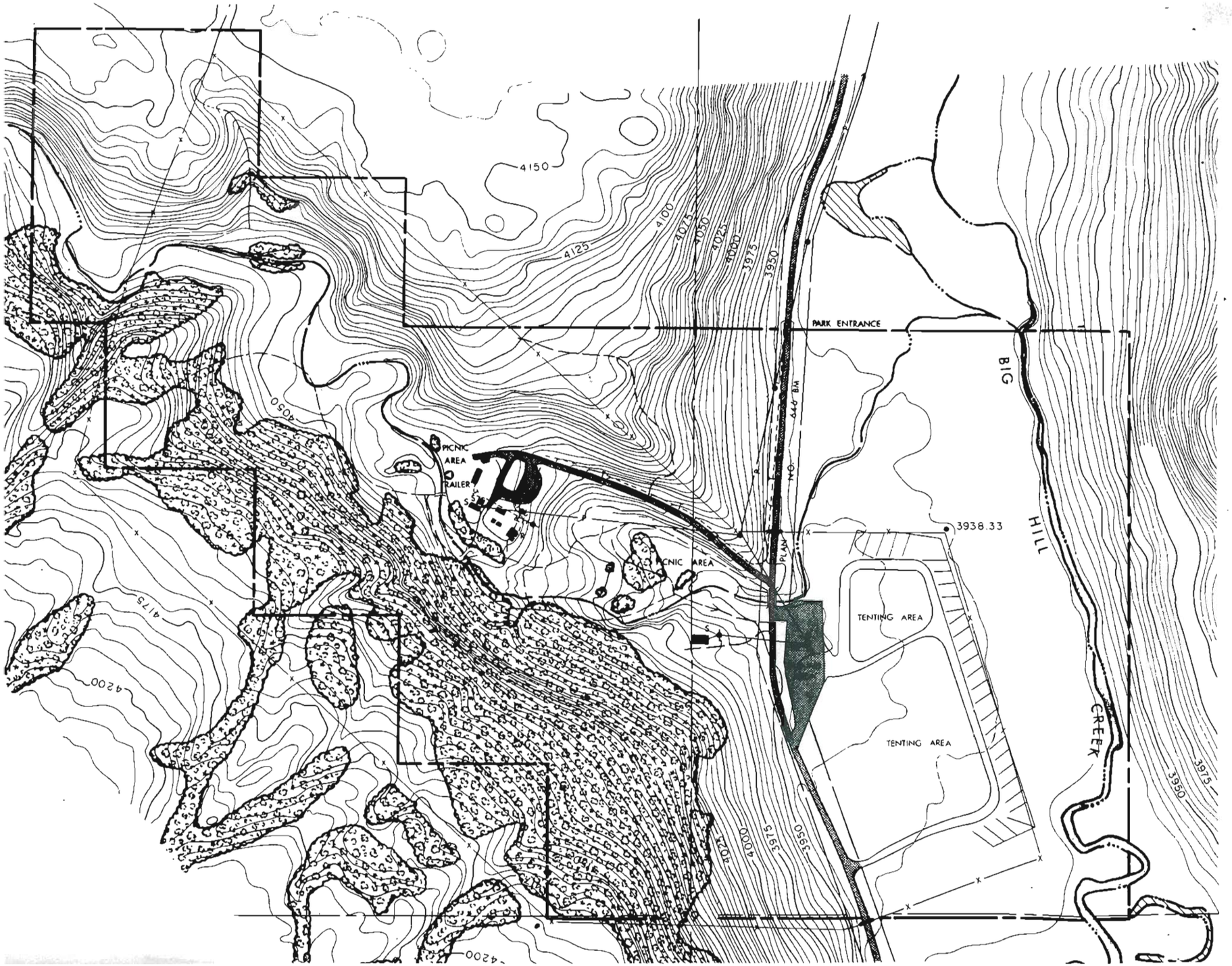
4.2 Existing Situation

4.2.1 Land Use

The bottomland is presently developed as a campground and parking area with two sets of double combination toilet units and one shelter. This facility area is fenced. The fence lines do not correspond with the legal boundary as can be seen on the existing situation map Figure 2; this situation is been described in Section 8.2.2 - History.

This bottomland area is unsightly due to a field of barrier posts, white fence posts, an insensitive siting of buildings, and visible power and telephone lines.

(*) A complete listing and description of the Resource appears in the Appendix.



BIG HILL SPRINGS PROVINCIAL PARK

scale: 1" = 200'
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EXISTING SITUATION

TREE COVER

figure 2

The lower bench and surrounding side hill area has one picnic shelter and two single toilet sites in the stream area as well as a labyrinth of path and trails. There is limited development in this area.

The upper bench area has been utilized as an administration maintenance and residence site. However, in constructing access up to this area, an ugly scar was made on the landscape; an exposed cutbank. The development in this upper area is very disjointed and is too close to the stream area. The upper side hill area of the coulee can sustain only limited development. A formalized loop trail system has been constructed here during summer of 1975.

4.2.2 Resource Conditions

Big Hill Springs' attractiveness and its hasty development as a destination park has resulted in serious overuse due to its area limitations and the fragility of the resource which, justifiably, rate the park at a low capability for outdoor recreation.

Indiscriminate and uncontrolled visitor movement has severely degraded the natural resources of the park and creates trespass problems on adjacent private lands. The most critical resource degradation has occurred in Big Spring Coulee where, due to inadequate trails, visitors wandering at will damaged the stream course vegetation, initiating extensive erosion along the steep north-facing slopes.

Problems arise in the bottomland area not only with cattle grazing outside of the fence but also within the park boundary: the stream banks have been severely trampled and left exposed to erosion. Overgrazing has also left the park area to the south of the campground fence very hummocky.

There are problems with cattle crossing the ineffective texas gates into the developed park area. In addition, considerable compaction has occurred in the area near the two stone fireplaces; many trails radiate from them and obvious cutting of shrub species for weiner sticks has occurred.

There seems to be a problem with introduced plant species. A resource management plan should recommend removal of these, (e.g. Colorado - Blue Spruce, large patches of thistles).

4.2.3 Market Analysis

The majority of users of Big Hill Springs Park are Calgarians. This applies to both campers and day-users. From a management point of view, the users' motivation for travelling to Big Hill Springs is more important than their place of origin.

Although no survey exists which indicates user motivation, it appears from both field staff comment and observation that the users can be categorized as follows:

(1) Short-term/destination campers - those people taking advantage of the park due to its close proximity to Calgary, affording an opportunity for spontaneous camping trips to enjoy a good break in the weather. Once at the park, the user finds few recreational opportunities.

(2) Day-users - a category for users taking advantage of a "quiet shady" spot away from a hot noisy day in the city. The general consensus of the Planning Team is that these people used the park between two and five hours and are the most desirable group for this environment.

YEAR - 1972/73

Patronage	72,421
Vehicles	12,104
Truck Campers	
Tents	828
Trailers	1,398
TOTAL	2,226

* Camper Nights	2,226 x 4	= 8,904
* Day User Days	72,421 - 8,904	= 63,517

Note (1) Permit counts are close to accurate
(2) Patronage and vehicle counts could be erroneous

4.2.4 Regional Perspective

A number of other recreation opportunities exist in the area of Big Hill Springs. These include two private campgrounds between Big Hill Springs and Calgary; namely, a KOA site and Happy Valley. Two Alberta Transport sites are located north of the park, one at the Boterel turnoff, and one east of Cremona. One municiplé park is located to the northwest of Silver Springs. One other provincial park, Bragg Creek, is located 30 miles to the south.

The facilities in the region around Big Hill Springs Park serve a role identical to that of Big Hill Springs and consequently have the same problems of over use and misuse.

An area which Provincial Parks, administers to the west of Big Hill Springs has been suggested as an Outdoor Education Centre and is known as Wild Cat Hills or Austin Ranch. This is presently under study.

4.3 Problem Analysis

In studying the existing situation in Big Hill Springs Provincial Park an identification of problems was undertaken. It was found that all the problems could be categorized, as mentioned previously, into four general areas. These areas are (1) resource degredation (2) Rowdyism, (3) lack of control, and (4) conflicts with other land uses and private lands.

The causes were also categorized and all fit under one of the four following headings; (1) physical features, (2) program, (3) Design, and (4) Operation.

A matrix (Table 1) was compiled, indicating the problems and their causes. The information in the matrix played a large role in establishing the Park concept plan and because of this, the recommendations reflect the information found in the matrix.

TABLE I - PROBLEM ANALYSIS MATRIX

MANAGEMENT PROBLEMS	CAUSES PHYSICAL FEATURES	PROGRAM	DESIGN	OPERATION
Resource degradation	-sensitive vegetation -severe slopes -high water table -limited park area	-inappropriate program -lack of program -cattle grazing	-bisected by through country road -lack of formalized and properly constructed trail	-incomplete and inappropriate construction
Rowdyism	-lack of natural recreation opportunities -proximity to Calgary	-lack of program -traditional park use		-lack of training to handle problem
Lack of Control		-lack of program	-bisected by through country road	-management philosophy
Conflicts with other land uses and private land	-lack of natural recreation opportunities in park and rock outcrops	-conflict with cattle grazing and recreation	-limited park area	-lack of public information

5.0 DEVELOPMENT CONCEPT PLAN

The Resource Capability section of this report indicates that because of the diversity of natural and cultural resources in the park and the park area, the goal stated in the Park Direction section is valid for the development of Big Hill Springs Provincial Park.

The concept plan developed for this park must meet these goals and objectives and guide how the resources can be utilized to meet the goal. Because development in this park has already been undertaken which does not fall within the stated goal of the park, this development must also be considered in the plan.

5.1 Park Zoning

The Concept Plan (Figure 3) has considered these elements and zoned the park accordingly. One facility area has been set out and the remainder of the park area is set aside for preservation of the resource.

The Facility Zone will contain a parking lot for about thirty vehicles, a "park" exhibit center, sanitary facilities, picnic facilities, central fireplaces and the necessary ancillary facilities to complement and connect these other facilities. Also supplied will be a walking/interpretive trail and an access road.

The preservation zone will contain the remainder of the park area and will, over time, require considerable rehabilitation work. Details on this will be supplied in a Resource Management Plan.

The Zoning Map is depicted as Figure 4. One area is identified on the Zoning Map for facility development. The specific programs to be contained in each area are as follows:

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scale 1" 200'
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CONCEPT PLAN

AREA 1 Removal of all development.

AREA 2 Exhibit & facility area.

AREA 3 Parking, administration & facility area.

figure 3

5.2 Park Concept

The Preliminary Development Plan illustrates these facilities on the Concept Plan (Figure 4).

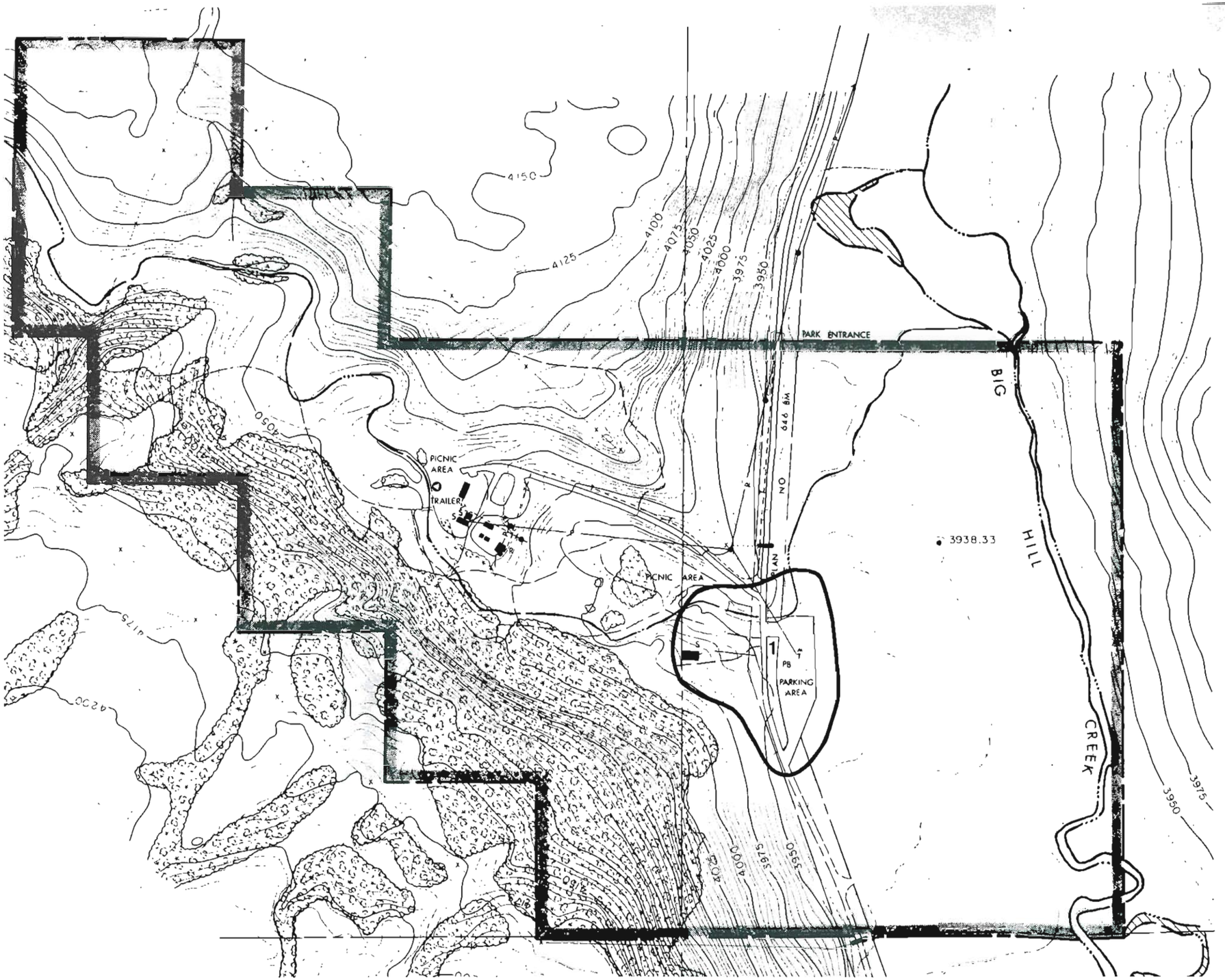
A parking lot for approximately twenty-five (25) vehicles should be developed here. Consideration should be given to supplying adequate turn around space for a bus. One double combination vault privy will be supplied adjacent to the parking area.

This unit will alos contain the "park visitor centre" which will be a trail head exhibit area, allowing some picnic facilities; tables and waste cans. An area for small groups will be provided in the area now occupied by the two stone fireplaces. Walk-ways (surfaced) and a stairway from the parking area to the "park visitor centre" will also be provided.

Landscaping and rehabilitation of this area will be necessary.

The remainder of the park will be designated as restricted use area and will contain a trail system, allowing the public to enjoy the area, yet allowing the managers to preserve it.

Several areas of the Restricted use area will need rehabilitation to be brought back to a near natural condition. These areas are also indicated on the Concept Plan.



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scale: 1" 200'
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ZONING

PRESERVATION ZONE

1

FACILITY ZONE

figure 4

5.3.1 Development Guidelines

(1) Remove existing camping and day-use facilities including stoves, fire pits, barrier posts, playground apparatus, power lines and lights, bottomland privies, the kitchen shelter and the telephone booth.
(2) Upgrade interpretive trails to confine visitor use to these defined trails.
(3) Replace privies.
(4) Relocate all administration facilities.
(5) Upgrade entrance.
(6) Construct timber stairs to visitor centre from parking lot.
(7) Prepare and erect new signs.
(8) Relocate and reclaim existing parking lot.

(1) Provide limited support facilities:
- up to 30 parking spaces.
- water outlet and four pairs of garbage cans.
  * - 10 picnic tables - bottomland.
  * - 5 picnic tables - exhibit.
  - small staff administration building and a small storage building.
  - 1 1/2 miles of interpretive trails.

(*) - anchor all picnic tables

5.3.2 Planning Guidelines

5.3.2.1 Interpretation and Education

(1) Develop an educational/interpretive plan related to the natural features, to resource conservation and to the rehabilitation program.

(2) Develop an interpretive trail program with trail guides and interpretive stations.

(3) Develop interpretive exhibits.

(4) Encourage and assist nature study by schools and environmental groups.

5.3.2.2 Operations and Management Guidelines

(1) The Park should be seasonally staffed by an interpreter/ranger based out of Fish Creek.

(2) The Park should be maintained by a work crew originating out of Fish Creek.

(3) The Park should be managed as a preservation area/wayside stop.

5.3.2.3 Resource Management Guidelines

(1) Restrict use of sensitive areas:
- close trail on south side of creek.
- remove picnic tables from creek area.
- relocate fences to prohibit cattle grazing on Park land.

(2) Remove privies adjacent to creek in administration area.

(3) Rehabilitate south side of creek, road to administration site, administration site and bottomland area.

(4) Repair cattle gates.

6.0 RECOMMENDATIONS

6.1 Policy; it is recommended:

6.1.1 That the present Big Hill Springs Provincial Park be designated as a Preservation Park.
Implications - This will require the removal of most of the day-use and all of the camping facilities provided and necessitate the development of an educational/interpretive program with associated facilities and operational support.

6.1.2 That the springs which are the park name-sake be acquired.
Implications - Negotiations with the landowner will be necessary. Difficulty can be anticipated, as past experience has demonstrated the owner's reluctance to discuss this matter.

6.1.3 That steps be taken to control land use in the entire valley.
Implications - Some mechanism such as the designation of the land as Restricted Development Area or acquisition of the land will be necessary to protect and preserve the natural qualities of the valley from further encroachment by degrading land uses.

6.1.4 That the park master file be regenerated.
Implications - This will allow for a central collection of any material which exists on Big Hill Springs Park. A certain amount of additional research, consolidation and reproduction of material may be required.

6.1.5 That the Education/Interpretation programs relationship with the Austin Ranch Calgary Board of Education be determined. Conservation, education and public information/education programs should be established.

6.1.6 That control of development and use of the Big Hill Creek Valley be taken to eliminate present conflicts - investigate acquisition of additional land (i.e. rock outcrop east of park)

6.2 Program; it is recommended:

6.2.1 That the park be operated as a "point of interest" and/or "nature study area".
Implications - The park will perhaps be a unique entity in the system as it would not be a day-use park in the traditional sense, but would be similar to the educational/interpretive facility at the Kananaskis Forest Experimental Station. A public information program will be required and schools and naturalists organizations will be encouraged to utilize the park in their programmes.

6.3 Design; it is recommended:

6.3.1 That a theme for a park architecture be developed to enhance the sense of arrival. The gate structure should be improved, power poles and lines should be removed and facilities should be screened or located out of view.

6.3.2 That central fire pits be provided for at a standard of 1/25 patrons in conjunction with a small group picnic area.

6.4 Operations; it is recommended:

6.4.1 That a cost/benefit approach to park operation be adopted.

- establish monitoring and evaluation procedures for park use in order to relate visitation and use to operating and resource management needs and costs.

6.4.2 That day use facilities be removed and that a change from day use programs toward education and interpretive programs related to natural and human history be adopted.

6.4.3 That fuel wood and fireplaces will not be provided or permitted in the park except in the small group area.
Implications - Although this is a break in tradition, the park concept and practical aspects of cost and control warrant consideration of this policy.

6.5 Resource Management; it is recommended:

6.5.1 That park fences be relocated to control recreational and agricultural use to facilitate use of park land for park purposes.

6.5.2 That a Resource Management Plan be compiled.

6.6 Inventory; it is recommended:

6.6.1 That a geological inventory (surficial bedrock) be carried out for the park and park area.

6.6.2 That a soil survey for the park be carried out.

6.6.3 That an inventory of both aquatic and terrestrial fauna be carried out.

7.0 IMPLEMENTATION

Implementing the Mini-Master Plan for Big Hill Springs Provincial Park began in the fall of 1977.

A table has been set up to show an overview of how the capital was spent, how far each project has progressed and what capital funds will be necessary to complete the projects in the 1978-79 construction season.

Table 2. Implementation

	Expenditure 1977	% Complete	Estimated Expenditures 1978
1. relocate and surface trail	3,100	30	3,000
2. construct interpretive platforms	2,200	15	10,000
3. construct parking lot	2,300	90	1,000
4. construct double combination toilet building			9,000
5. convert shelter to information building			15,000
6. construct stairs to information center	375	15	(material purchased need installed)
7. relocate administration/ shop/residence center			2,000
8. construct entry gates	200	15	3,000
9. replace site furnishings			*

* to be done through table replacement program

To complete implementation of the plan negotiation to relocate the boundary fences and a resource management plan will have to be completed. Funding for both these projects will have to be allocated upon their completion.

Implementation of this Mini-Master Plan is being completed under the guidanceof the Site Development Plan. Figure 5 (found in pocket at back).

8.0 PARK RESOURCES

8.1 Biophysical Resources

8.1.1 Topography

The topography at Big Hill Springs is highly variable; the park area is composed of a wide flat stream bed and a relatively steep tributary stream valley. Due to a series of limestone outcrops, there are several terrace like levels to the tributary valley.

8.1.2 Geology

This region of Alberta is underlain by clastic sedimentary rocks of Cretaceous age which were deposited in an environment which fluctuated between marine and continental conditions. No geological resource survey has been completed for this park but the outcrops are reported to be limestone, indicating marine deposition. It is not known which particular formation these rocks belong to.

Structurally, the area is part of the Western Alberta Plains: generally gently dipping strata with little folding or faulting.

The general area is blanketed with thin, hummocky, ground moraine. Recent alluvial and colluvial deposits would be expected in the park in the lower stream floodplain and at the bases of steep slopes, respectively.

8.1.3 Soils

The park lies in the that part of Alberta characterized by soils of the Thin Black Soil Group. Soil types within the park have not been identified. According to the soil capability studies of the Canada Land Inventory, the soils in the ravines and bottomland portion of the park are Class 6 due to very severe slope or drainage constraints for agriculture. The upland plateau soils are Class 5 due to unfavourable climate. As regard the park, this survey indicates the problems associated with managing and maintaining a durable ground cover: low productivity, susceptibility to erosion and probably to compaction as well.

8.1.4 Vegetation

The vegetation in the park and surrounding area maybe grouped as follows:

(a) Fescue Grasslands

1) Dry Grassland - occupies plateau upland; some grazing
2) Grassland with Shrubby Cinquefoil - creek area; heavily overgrazed
3) Moist Grassland - lowland areas back from creek; trampling and some grazing.

(b) Wet Shrublands

4) Grazed Wet Willow and Poplar Meadow
5) Silverberry Community
6) Willow thickets
   - Generally found along creek edges and on low floodplain areas; subject to extensive grazing impact.

(c) Mesic Shrublands

7 & 8) Low Shrubland Community - found on

9) Tall Willow Community - occurs at edges of aspen woodland

(d) Forest Communities

10) Aspen Woodland - occupies north-facing slopes

11) Spruce Woodland - occupies steep north-facing slopes

12) Balsam Poplar - small patches along side coulee

13) Mixed aspen-white Spruce - on north-facing slopes

In addition, the park contains large areas of weedy cultivated lawn grass and some unvegetated rock outcrops. A listing of the species in the park can be found in Appendix I-A.

8.1.5 Fauna

The variety of vegetation, particularly the areas of shrubby growth, and the presence of the stream valleys provides considerable range of wildlife habitat. One might expect prairie species such as the western meadowlark, badger and coyote; shrubby wetland and water species such as the cedar waxwing, song sparrow, red-winged blackbird and mink; dry shrubland species such as the clay-coloured sparrow; and woodland species such as the black-capped chickadee, kinglets and robins. Because of the small size of the park, it is likely that none of the habitats available is extensive enough to support a viable population of even small birds or mammals in isolation; but, a few acres might be contributed to the regional habitat for that species. Appendix I-A includes a list of the fauna recorded in the park by the Ecological Survey in 1972.

8.1.6 Sensitive Areas

The entire park is somewhat fragile from the point of view of recreation development. However, there are some areas suitable for development primarily confined to the bottom land.

8.2 Cultural Resources

8.2.1 Archaeology

Within Big Hill Springs Provincial Park there are three archaeological sites and two prehistoric camp or kill sites. In addition, numerous sites have been reported in the park's vicinity. It is quite possible that the park is located on a large buffalo jump or kill site. Evidence of butchered and broken bone occurs at all construction and disturbed areas. Although some visitors know of their existence and have on occasion asked permission to "dig for bones", the sites have only been moderately disturbed. Many artifacts, including projectile points and scrapers, have been removed from the park by visitors.

Three factors suggest that this area was a habitation/kill site with an extended history of occupation:

i) the availability of spring water year round.
ii) the proximity of a drop/off cliff affording an ideal buffalo jump.
iii) shelter within the north and east-facing wooded slopes.

8.2.2 History

Between 1950 and 1956 the provincial government operated a fish hatchery located on Big Spring Creek in the park. All that remains of this enterprise is the concrete foundation pond in the Creek. Additional information related to the park and regional history is available from the Historical Survey (Appendix I-B).

APPENDIX I: FAUNAL SPECIES LIST

BIRDS

Note: * - summer residents, probably nesting in or near the Park. These are the combined observations from those visits made in 1972, as well as those of previous years.

Great Blue Heron	Ardea herodias
*Mallard	Anas platyrhynchos
*Pintail	Anas acuta
*Blue-winged Teal	Anas discors
*Baldpate (American Wigeon)	Mareca americana
Wood Duck	Aix sponsa
*Cooper's Hawk	Accipiter cooperii
*Red-tailed Hawk	Buteo jamaicensis
*Swainson's Hawk	Buteo swainsoni
*Kestrel	Falco columbarius
*Ruffed Grouse	Bonasa umbellus
*Killdeer	Charadrius vociferus
*Wilson's (Common) Snipe	Capella gallinago
*Great Horned Owl	Bubo virginianus
*Yellow-shafted Flicker	Colaptes auratus
Yellow-bellied Sapsucker	Sphyrapicus varius
Downy Woodpecker	Dendrocopos pubescens
*Western Wood Pewee	Contopus sordidulus
*Least Flycatcher	Empidonax minimus
Tree Swallow	Iridoprocne bicolor
*Barn Swallow	Hirundo rustica
Cliff Swallow	Petrochelidon pyrrhonota
Rough-winged Swallow	Stelgidopteryx ruficollis
*Black-billed Magpie	Pica pica

*Common Crow	Corvus brachyrhynchos
*Black-capped Chickadee	Parus atricapillus
Red-breasted Nuthatch	Sitta canadensis
Catbird	Dumetella carolinensis
*Robin	Turdus migratorius
Mountain Bluebird	Sialia currucoides
*House Wren	Troglodytes aedon
*Rock Wren	Salpinctes obsoletus
*Ruby-crowned Kinglet	Regulus calendula
*Cedar Waxwing	Bombycilla cedrorum
Bohemian Waxwing	Bombycilla garrula
Starling	Sturnus vulgaris
*Red-eyed Vireo	Vireo olivaceus
*Yellow Warbler	Dendroica petechia
Myrtle Warbler	Dendroica coronata
Audubon's Warbler	Dendroica auduboni
*Yellowthroat	Geothlypis trichas
Wilson's Warbler	Wilsonia pusilla
*Western Meadowlark	Sturnella neglecta
*Red-winged Blackbird	Agelaius phoeniceus
*Baltimore Oriole	Icterus galbula
*Brown-headed Cowbird	Molothrus ater
Pine Grosbeak	Pinicola enucleator
Pine Siskin	Spinus pinus
*American Goldfinch	Spinus tristis
White-winged Crossbill	Loxia leucoptera
*Savannah Sparrow	Passerculus sandwichensis
*Vesper Sparrow	Pooecetes gramineus
Slate-colored Junco	Junco hyemalis
Oregon Junco	Junco oreganus
Tree Sparrow	Spizella arborea
*Chipping Sparrow	Spizella passerina
*Clay-colored Sparrow	Spizella pallida
*Lincoln's Sparrow	Melospiza lincolnii

*Song Sparrow	Melospiza melodia
Lapland Longspur	Calcarius lapponicus
Snow Bunting	Plectrophenax nivalis

Mammals

Richardson's Ground Squirrel	Citellus richardsonii richardsonii
Pocket Gopher	Thomomys talpoides
Mink	Mustela vison
Badger	Taxidea taxus
Coyote	Canis latrans

Reptiles

Garter Snake	Thamnophis sp.

10.2 ANNOTATED CATALOGUE OF THE PLANTS

This list was compiled on only two trips to the Park in the first half of the growing season and cannot be considered complete, although most species are listed herein. Nomenclature is according to Moss (1959) for the vascular plants and according to Hale and Culberson (1966) and Crum et al. (1965) for the non-vascular plants. Taxonomically difficult groups have been left at the genus level.

Vascular Plants

Bladder Fern (Cystopteris fragilis): Scarce, on rocky outcroppings in spruce woods.

Creeping Juniper (Juniperus horizontalis): Common in dry exposed areas as well as dry woodland.

Ground Juniper (Juniperus communis): Occasional in woods.

White Spruce (Picea glauca): The leading tree species of the more protected slope areas.

Wheat Grass (Agropyron sp.): Grassland and woodland.

Awnless Brome (Bromus inermis): Introduced weed of disturbed areas.

Reed Grass (Calamagrostis sp.): Occasional throughout.

Hairy Wild Rye (Elymus innovatus): Common in woodlands.

Rough Fescue (Festuca scabrella): A leading species in native grassland areas, where grazing is not occurring with any severity.

Timothy (Phleum pratense): Introduced weed of disturbed ground.

Bluegrass (Poa sp.): Occasional throughout.

Sedge (Carex spp.): Common in wet places.

Small-fruited Bulrush (Scirpus microcarpus): Scarce, along Big Hills Creek.

Wire Rush (Juncus balticus): Abundant in wet areas; a leading species.

Fairy-bells (Disporum trachycarpum): Occasional in rich woodland areas.

Western Wood Lily (Lilium philadelphicum): Prevalent in open woodland and grassland areas.

Star-flowered Solomon's-seal (Smilacina stellata): Common in wooded and semi-wooded areas.

White Camas (Zygadenus elegans): Fairly common in grassland habitat.

Blue-eyed Grass (Sisyrinchium montanum): Occasional in moist grasslands.

Northern Green Orchid (Habenaria hyperborea): Scarce, in wet meadows.

Balsam Poplar (Populus balsamifera): The dominant tree of the slope areas.

Willow (Salix sp.): Common in wet meadows along creeks.

Common Nettle (Urtica gracilis): Occasional in wet places.

Bastard Toad-flax (Comandra pallida): Fairly common in moist grasslands.

Yellow Umbrella-plant (Eriogonum flavum): Fairly common on dry exposed hillsides.

Bistort (Polygonum bistortoides): Occasional at woodland edges.

Narrow-leaved Dock (Rumex mexicanus): Occasional in wet meadows.

Western Dock (Rumex occidentalis): Scarce, in wet meadows.

Water Birch (Betula occidentalis): Occasional in wet woodlands.

Sandwort (Arenaria sp., incl. A. lateriflora & A. capillaris): Scarce, on dry hillsides, and thickets.

Mouse-ear Chickweek (Cerastium arvense): Common in grassland.

Long-stalked Chickweed (Stellaria longipes): Scarce, in wet woodlands.

Red and White aneberry (Actaea rubra): Fairly common, in woodland.

Canada Anemone (Anemone canadensis): Occasional in wet woodland.

Windflower (Anemone multifida): Fairly common, in grassland and woodland edges.

Prairie Crocus (Anemone patens): Very common, in grasslands.

Blue Columbine (Aquilegia brevistyla): Occasional in rich woods.

Tall Larkspur (Delphinium glaucum): Occasional in rich woods.

Tall Buttercup (Ranunculus acris): Common, introduced weed of grazed areas.

White Water Crowfoot (Ranunculus circinatus): Abundant, along Big Hill Creek.

Creeping Buttercup (Ranunculus cymbalaria): Common in wet areas.

Macoun's Buttercup (Ranunculus macounii): Occasional, in wet places.

Veiny Meadow Rue (Thalictrum venulosum): Common, in rich woodland.

Wormseed Mustard (Erysimum cheiranthoides): Uncommon, in aspen woods.

Stinkweed (Thlaspi arvense): Occasional, on disturbed ground.

Alum-root (Heuchera richardsonii): Uncommon, in grasslands.

Grass-of-Parnassus (Parnassia palustris): Prevalent in wet meadow along Big Hill Creek.

Gooseberries and Currants (Ribes sp., incl. R. oxyacanthoides): Occasional in woodland and thickets.

Saskatoon-berry (Amelanchier alnifolia): Fairly common around woodland edges.

Wild Strawberry (Fragaria virginiana): Common in woodland.

Yellow Avens (Geum allepicum): Uncommon, in wet places.

Old Man's Whiskers (Geum triflorum): Very common in grasslands.

Silverweed (Potentilla anserina): Occasional, sometimes abundant, in wet places.

White Cinquefoil (Potentilla arguta): Uncommon, in thickets.

Early Cinquefoil (Potentilla concinna): Fairly common, in grasslands.

Shrubby Cinquefoil (Potentilla fruticosa): Common, especially in grazed grassland.

Graceful Cinquefoil (Potentilla gracilis): Occasional in grassland.

Choke Cherry (Prunus virginiana): Prevalent along woodland edges.

Prickly Rose (Rosa acicularis) and Common Wild Rose (Rosa woodsii): Very common in forested areas and at the edges of those areas.

Wild Red Raspberry (Rubus strigosus): Occasional in woodland.

Milk Vetch (Astragalus agrestis): Occasional in grassland.

Hedysarum (Hedysarum alpinum): Occasional in wooded areas.

Wild Sweet Pea (Lathyrus ochroleucus): Very common in aspen woods.

Alfalfa (Medicago sativa): Introduced plant of disturbed areas.

Late Yellow Loco-weed (Oxytropis campestris): Common, in grasslands.

Golden Bean (Thermopsis rhombifolia): Very common, in grasslands.

White clover (Trifolium repens): Abundant introduced weed of disturbed areas, prevalent in wet meadow by campground.

Wild Vetch (Vicia americana): Common in aspen woods.

Wild White Geranium (Geranium richardsonii) and Sticky Purple Geranium (Geranium viscosissimum): Common in wooded areas and at their edges.

Early Blue Violet (Viola adunca): Common in wooded areas.

Bog Violet (Viola nephrophila): Common in wet woodlands, and especially the wet meadow.

Western Canada Violet (Viola rugulosa): Common in aspen woods.

Silver-berry (Elaeagnus commutata): Forms thickets on slopes or areas with sandy soil.

Canadian Buffalo-berry (Shepherdia canadensis): Prevalent in woodlands.

Fireweed (Epilobium angustifolium): Woodlands.

Cow Parsnip (Heracleum lanatum): Common in wet wooded areas.

Meadow Parsnip (Zizia aptera): Common in wet grassland and woodland.

Red Osier Dogwood (Cornus stolonifera): Occasional in rich woods along streams.

Common Pink Wintergreen (Pyrola asarifolia): Common in rich woodland.

Common Bearberry (Arctostaphylos uva-ursi): Prevalent under conifers.

Moss Phlox (Phlox hoodii): Abundant in grasslands.

Stick-seed (Hackelia floribunda): Occasional in aspen woods.

Blue-bur (Lappula echinata): Introduced weed of disturbed sites.

Puccoon (Lithospermum ruderale): Occasional in ungrazed grassland.

Wild Mint (Mentha arvensis): Common along Big Hill Creek.

Common Yellow Paint-brush (Castilleja septentrionalis): Grassland habitat.

Elephant Head (Pedicularis groenlandica): Fairly common in wet meadow.

American Brooklime (Veronica americana): Uncommon, along Big Hill Creek.

Common Plantain (Plantago major): Introduced weed of disturbed ground.

Northern Bedstraw (Galium boreale): Common in woodlands and moist ungrazed grassland.

Twining Honeysuckle (Lonicera dioica): Common in rich woodlands.

Snowberry (Symphoricarpos albus): Fairly common in aspen woods.

Buckbrush (Symphoricarpos occidentalis): Often forms thickets on slopes adjacent to woodland or on other protected sites.

Bluebell(Campanula rontundifolia): Common on disturbed ground and in grasslands.

Common Yarrow (Achillea millefolium): Common throughout.

False Dandelion (Agoseris glauca): Fairly common in grasslands and woodland.

Pussy-toes (Antennaria sp., incl. A. Parviflora: Common in grazed or exposed grassland habitat.

Pasture Sagewort (Artemisia frigida) and Prairie Sagewort (Artemisia ludoviciana) plus other Artemisia sp.: Very common, especially in grazed areas.

Smooth Aster (Aster laevis) and other Aster sp.: Common in woodlands and on disturbed ground.

Golden Aster (Chrysopsis villosa): Common on exposed sites.

Thistle (Cirsium undulatum): Uncommon, in disturbed habitat.

Fleabane (Erigeron sp.): Prevalent in woodland clearings.

Gaillardia (Gaillardia aristata): Uncommon, in grasslands.

Groundsel (Senecio sp.): Woodlands.

Goldenrod (Solidago sp., incl. S. gigantea and S. missouriensis).

Common Dandelion (Taraxacum officinale): Common on disturbed ground.

Non-Vascular Plants

Mosses:

Plagiomnium cuspidatum

Hylocomium splendens

Pylaisiella polyantha

Lichens:

Usnea sp.

Caloplaca sp.

Candelaria concolor

Candelariella vitellina

Lecanora sp.

Lecidea sp.

Parmelia sulcata

Peltigera sp.

Physicia aipolia

Xanthoria sp.

10.3 HISTORICAL SURVEY

BIG HILLS SPRINGS HISTORY

Author Unknown

Big Hill Springs Provincial Park is situated in the beginnings of the foothills. It is some 25 miles west and north of Calgary, at about the line where the dry, treeless prairie begins to crinkle up to the Rocky Mountains. Big Hill Creek flows down from the north, down a steep narrow valley, to the Bow River, which it enters by the town of Cochrane. About 10 miles north of Cochrane Big Hill Creek is joined by a side-coulee from the west, called Bigspring Creek, or Big Hill Springs Creek, an all-year stream fed by a series of springs which gush from the lip of the coulee near its head. Essentially, the coulee of Bigspring Creek forms the area of Big Hill Springs Park.

Set below the surrounding table land, Big Hill Springs has been a kind of refuge from the prairie for various kinds of plant and animal life -- and for human beings as well. The Indians used it as a buffalo jump, the white man has made great use (perhaps over-use) of the water there, it has been the site of picnics and the like every since the Calgary area began to be settled. As a park, it has been used for day-tripping, overnight camping, and by school children for field trips. It has been the site for such esoteric enterprises as a creamery and a fish hatchery.

Big Hill Springs is one of the smallest of the provincial parks, a mere 63 acres. Despite its size, however, it is and has been a busy place, and it will be even busier in the future.

This is ranching country. The area around Big Hill Springs and south across the Bow River is the site of what was known as the "golden age of ranching" in Alberta. It was first opened for settlement in 1881, when the federal government issued regulations respecting the granting of grazing leases in the Northwest Territories. The area west of Calgary was cut up like a large pie. A Montreal syndicate headed by Senator Matthew Cochrane took the largest slice; originally this group had applied for "all the land west of the fifth meridian to the Rocky

Mountains from the present town of Airdrie"[1], but they were limited by the letter of regulation, which held single leases to 10,000 acres (at that they got away with 109,000 acres).

This was the famous Cochrane Ranch (the town of Cochrane, Alberta was apparently named for Senator Cochrane, although there is no evidence that the senator was ever west of Ottawa). It was a big scheme, and its failure, due to a combination of bad management and the Alberta winter, is probably the main reason for the end of the "golden age of ranching". The Cochrane Ranch included the land south and west of Big Hill Springs. The springs were actually located in the lease of a Major E.M. Baynes, who held a tract of 55,000 acres, approximately half the size of the Cochrane Ranch. The Cochrane group did try to raise cattle of their land, but there is no evidence that Baynes did. According to a report in the Toronto Globe of 11 December 1882[2], Baynes had exactly six horses on his 55,000 acres. On the other hand, Baynes turns up, in October of 1882, at a settlers protest meeting where "after a few pointed remarks, (he) moved the ... resolution, which was unanimously accepted."[3] The gist of this resolution was that the government had set aside too many large tracts of land, that the best agricultural land was tied up in Indian reserves and town reserves and big leaseholds like the Cochrane Ranch (and, incidentally, Major Baynes), and that the settlers coming into the area had no place to settle.

This Major Baynes is a hard man to pin down. By the end of 1882 he had disposed of his land, transferring the lease to a certain M.J. Browning of Montreal, who may or may not have been connected with the Browning who was on the board of directors of the Cochrane Ranch Co. Later, Baynes was involved as a middle man in a lease transfer from Allan Patrick to the Mount Royal Ranch. These are one or two strands in the web woven by land speculators such as Major Baynes, a web which effectively conceals the use and ownership of the land around Big Hill Springs. It is not inconceivable that the entire area was under the sway of the Cochrane Ranch during the period from 1883 to 1996. In 1896 the federal government ended the large leasehold program and cancelled all the leases.

In 1887, a Mr. Brealy reported that he had a lease on section 29-26-3-W5th, the location of Big Hill Springs, and that he had built a house and stables on that section.

The former owner or leaseholder is not identified. Mr. Brealy wanted to buy this land but the Deparment of the Interior was unable to sell it as school land. Brealy may have rented the land from the British American Ranch Co. (successor to the Cochrane Ranch), and in 1896 he renewed his tenure with the government. Somewhat earlier than this, however, in 1891 D.M. Radcliff built Alberta's first commercial creamery, apparently in the coulee of Big Hill Springs. The old township registers record this (undated) notation: "D.M. Radcliffe and associates to lease this section for ten years. Dairy purpses."[4] The section in question is 29-26-3-W5th. This creamery is mentioned in various places. The Glendale Women's Institute, for example, calls it a creamery and cheese factory, and claims that power was obtained from the waterfalls at Big Hill Springs.[5] The Glenbow Foundation denies that cheese was made there. They quote a 1950 master's thesis to the effect that "Production amounted to 50 pounds of butter per day during the summer months . . . The finished product was sold to the Hudson's Bay Company who shipped it by express to Vancouver."[6] According to another source, the creamery supplied cream and butter to the Northwest Mounted Police, to railway construction gangs, and to the town of Calgary.[7] It is not known when this creamery ceased operation. There is no trace of it in the coulee today.

During the period 1905-7 most of the land in section 29-26-3-W5th was acquired by D.P. McDonald. A tract of some 15 acres in the extreme northwest corner of the section was purchased by Ernest Perrinaud, presumably for the springs ensuring a year-round water supply. There seems to be no records of correspondence concerning these transactions. The Perrinaud acreage is still held separately from the rest of the section.

D.P. McDonald was a settler of some substance in the Big Hill area. From Scotland, he came to Canada with his family in 1886, and made a rapid rise in the cattle business; manager of the Mount Royal Ranch in 1892, and owner of the ranch by 1900. He was best known as a breeder of horses, but he used the land around Big Hill Springs for haying, and as a camp for wintering newly-weaned calves. In the 1920s McDonald turned this section over to P. Burns and Co. in return for haying rights on the land. When D.P. McDonald died in 1944, the Burns company assumed full title to the land; they sold the block surrounding Big Hill Springs (but not, apparently, the coulee itself) to John Boothby, a long-time resident of the area.

The site of the present provincial park has long been used for recreation by the residents of the district. Writing about the 1920s, Mrs. Gladys Hayness of the Glendale Women's Institute says: "We never had holidays, but during the summer we would go to Big Hill Springs and have a picnic. It was a favourite spot and there were always a few cars there from Calgary."[8] All that has substantially altered since those days, is the number of cars from Calgary.

According to the records, the provincial government first showed an interest in Big Hill Springs in 1941. In that year the site was investigated with a view to establishing a trout hatchery there, possibly at the urging of local fish and game associations. In former times, this stream had been known as a good trout producer, but trampling and overgrazing by cattle had caused it to deteriorate. The biologist found that, while the water was chemically correst for raising trout, the heavy spring floods and their attendant difficulties, made the proposition "a bit risky".[9]

The land was transferred to the government in 1945. There is no clear indication of how negotiations began or who initiated them. The first record we have is an interdepartmental memorandum dated 10 June 1944;[10] this indicates that the land in question was involved in a land transfer between the Burns Foundation and D.P. McDonald (or more likely this estate, McDonald having died in 1944). The Burns Foundation determined to donate what is now the park area to the province, but the situation was further complicated by the fact that they sold the surrounding land to John Boothby. Mr. Boothby was concerned that his cattle should continue to have access to the water of Bigspring Creek, at one of the places where the water does not freeze in the winter. Mr. Boothby wanted an access lane along the roadway; this would have divided the area into two parts, which the government was reluctant to allow for the administrative difficulties it would have caused. And so it went. Nor is the issue completely settled even yet. At present Mr. Boothby is dickering over a land transfer which would alter the park boundaries slightly, removing the park entirely to the west of Big Hill Creek.

The hatcheries project did not get underway until 1950, when two buildings, a hatchery and a residence, were erected. Like many government projects, this hatchery was a qualified failure. During the winter of 1951-52, a fisheries employee named Cecil Barnhardt lived at the site, in an experiment to see if fish eggs could be matured there over the winter months. It is an incredible saga.[11] Barnhardt had to contend with loneliness, blizzards, snow-blocked roads that prevented him from getting the coal he needed, silt in the water that constantly threatened the fragile eggs, a fire that nearly burned down the hatchery, and which he had to put out himself, and even an owl that tried to carry off his dog. In the end he was rewarded with moderate success: an acceptable number of the eggs survived. However, the civil servants in Calgary and Edmonton decided that the end did not justify the means, and the overwintering experiment was abandoned.

There is not much correspondence concerning the end of the trout hatchery. One memorandum, dating from 1954, indicates that all of the fish had been killed when the pond froze to the bottom, "for which some fault in our construction is undoubtedly to blame."[12] Be that as is may, it seems clear that the trout hatchery project was abandoned by 1956. During this final year of fisheries jurisdiction, a boy scout troop was permitted to use the area in return for maintaining the buildings and keeping the land clean.[13] They informed the Parks Division that Big Hill Springs was visited by people from the Calgary-Cochrane area by the hundreds. They felt that the area should be inspected with a view to making it a provincial park.

Since the establishment of the park, the Fish and Wildlife Division has had a plan for stream improvement on Big Hill Creek. The improvement proposals included fencing the stream banks to prevent grazing and trampling by livestock, with gravelled lands provided for water access; and the planting of willows and other cover types to provide shade and stabilize the banks.[14] There are no recorded easements giving the Fish and Wildlife Division access to the stream below the park, and indeed, there is no record of this project having been initiated as yet.

Big Hill Springs Provincial Park was established by Order in Council 1792/57 on 22 November 1957. Previously the site had been inspected by C.H. Harvie, who reported that it was 'one of the prettiest locations that I've seen in several years and one that would be a creditable acquisition to the provincial parks."[15] The one drawback to the site was the access road, a dirt road of some nine miles which was not an all-weather roadway, although it was suggested that Municipal District 44 would "probably assist" in making improvements once a park was established in the area.[16] Big Hill Srpings was made a provincial park as a direct result of Mr. Harvie's report. No petitions were received from the public.

Development of the park began in 1958. At that time there were two buildings in the area, relics of the fisheries project. The hatchery was torn down and the timber and accoutrements sold for scrap. The other building was refitted as the park warden's residence. Additional facilities for camping and day-use were constructed in 1958. The following year a parking lot was prepared, and two picnic shelters and a utility building were erected. Subsequent development has been of a minor nature, consisting primarily of annual additions to the existing facilities. At present these facilities include the two picnic shelters and 110 tables, 30 tent units and 20 random trailer units. No electricity is provided. There are, in addition, no constructed pathways in the park. This is because of the small area involved and because of the fragility of some of the eco-systems found there; the lack of pathways has caused some friction between visitors and the park warden.

Access to the park area is via highway 1A, which is presently a four-lane divided highway between Calgary and Cochrane. The park itself can be entered from either the north or south. The south road, which follows Big Hill Creek from Cochrane, is the most heavily used in this regard. The northern access connects with a new road on the east-west correction line two miles north of the park; however, local farmers have been trying to have this road closed as it is too heavily used in the summer (this also relates to John Boothby's proposed land exchange). Generally speaking, access is still a difficulty: the park is considered inaccessible in bad weather. The municipality has urged that the road be paved, but although it is slated for improvement as a park road(#116), it is well down on the list of priorities.

It is debatable, in fact, whether access to Big Hill Springs should be improved. As a park, it has pretty nearly reached the saturation point; any greater influx of visitors could permanently damage it. Before making Big Hill Springs easier to get to, the government should probably explore the possibility of expanding the park boundaries, which have not changed since the park was established.

Footnotes.

1. MacDougall, The Cochrane Ranch, 1881-94, fn. 13.
2. Ibid., appendix.
3. Ibid.
4.
5. Taming the Prairie Wool, p. 130.
6. Prevey, Development of the Dairy Industry in Alberta. pp. 20-21, quoted in a letter from the Glenbow Foundation, 10 August 1972.
7. Wilk, One Day's Journey.
8. Op. cit., p. 66.
9. LSR file #B 92C, Big Hill Creek, report of E.B. Cunningham.
10. Ibid.
11. Ibid.
12. Ibid.
13. PPB, Big Hill Springs general file, 16 October 1957.
14. LSR file #B 92C, report of E.B. Cunningham.
15. PPB, Big Hill Springs general file, 17 May 1957.
16. Ibid.
17.

11.0 Appendix II Plan Approval

MINI-MASTER PLAN APPROVAL

We have reviewed the following plan for Big Hill Springs Provincial Park and herewith endorse it in principle. This plan will serve to provide the direction for the development, management and operation of the park.

Implementation of the plan will commence April 1, 1977. The term of the plan will be of five year duration until March 31, 1982. At the expiry date of this plan, a review will be undertaken to evaluate and re-assess the plan in light of the current situation.

J. E. Potton
Assistant Deputy Minister
Parks

Donn E. Cline
Director
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