

Chapter 23

White Goat Wilderness Area and Siffleur Wilderness Area



Assessment and Recommendations for Visitor Services

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Chapter 23: White Goat and Siffleur Wilderness Areas: Assessment and Recommendations

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Introduction

This chapter, like the sites' management plan covers both the White Goat and Siffleur Wilderness Areas. These two Wilderness Areas are large, protect similar important habitat and species, are remote and have similar small, specialized visitor populations.

The chapter consists of two sections:

Section 1: Features Summary

This is a review of key features and processes that can be found in White Goat Wilderness Area and Siffleur Wilderness Area. Visitor Services staff can use this section (plus Background Paper 2: Features Inventory: Big Picture Aspects) as a first stop for information for use in interpretation and information/orientation programming.

Section 2: Program Statements and Implementation

This is a review and recommendations for Visitor Services Programming in ten areas of core competency:

1. Research
2. Information Orientation
3. Assisting Park Management
4. Interpretation
5. Education
6. Stewardship Involvement
7. Recreation Programming
8. Collaboration and Partnership
9. Tourism
10. Marketing

Visitor Services staff can use this section to make decisions on Visitor Services programming over the next five years.

Key Constraint

Lack of staff at these two sites is the main constraining factor for developing the overall Visitor Services program at these sites. Staffing will limit what can be achieved over the next five years. In some cases core tasks can only be achieved with addition of highly skilled staff (e.g., developing and maintaining partnerships).

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Section 1

Features Summary



White Goat Wilderness Area

and

Siffleur Wilderness Area

Figure 23.1 Location of White Goat and Siffleur Wilderness Areas.



Wilderness Areas

The David Thompson Corridor contains two of Alberta's three Wilderness Areas (Siffleur and White Goat) .

General information sources about these two Wilderness Areas was limited to two documents:

- Beak Associates Consulting, 1989. *Biophysical Inventory of White Goat and Siffleur Wilderness Areas*. Alberta Recreation and Parks.
- Author Unknown, 1992. *White Goat and Siffleur Wilderness Areas Management Plan*. Alberta Recreation and Parks.

Since the release of these documents, there appears to have been no further comprehensive surveys of these sites. However, Alberta Parks staff indicate that occasionally permits are granted to researchers to conduct studies on wildlife and forest and alpine communities in these Wilderness Areas. Details were not available for this review.

White Goat and Siffleur Wilderness Areas are situated in the Rocky Mountain front ranges along the eastern boundaries of Banff and Jasper national parks. They straddle Highway #11 approximately 130 kilometres west of Rocky Mountain House (see Figure 23.1 on the facing page). They protect some of the most rugged and

spectacular mountain terrain in Alberta and encompass approximately 100,000 hectares of land (White Goat: 44,457 hectares, Siffleur: 41,214 hectares).

These two Wilderness Areas were originally established in 1961 under provisions of the Forest Reserves Act and subsequently under the Public Lands Act in 1965 and then under the Wilderness Areas, Ecological Reserves and Natural Areas Act in 1973. The legislation directs that they be protected and managed to preserve their natural beauty and safeguard them from industrial development. All forms of resource consumption and extraction are prohibited and natural processes continue relatively unaffected by human influence.

The White Goat Wilderness Area lies adjacent to Jasper and Banff national parks. The Cline River forms its southern border.

To the south, the Siffleur Wilderness Area includes most of the Siffleur River watershed north of Banff National Park.

What Are Wilderness Areas

According to the Alberta Parks website (www.albertaparks.ca/aboutparks.aspx), Wilderness areas preserve and protect natural heritage, where visitors are provided with opportunities for non-consumptive, nature-based outdoor recreation.

Alberta's three Wilderness Areas (White Goat, Siffleur and Ghost River) do not permit developments of any kind.

Key regulations include:

- travel by foot only
- collection, destruction and removal of plants and animals, fossils and objects of geological, ethnological, historical and scientific interest, are prohibited
- recreation activities permitted include nature-based recreation such as backcountry hiking, wildlife viewing and mountain climbing
- hunting, fishing and the use of horses are not permitted

Management Issues

The management plan for the White Goat and Siffleur Wilderness Areas indicates that the following issues must be addressed:

- develop a wilderness philosophy and ethic in managers and visitors to change behaviour to prevent over use. This may include:
 - identifying effective educational techniques
 - identifying, characterizing and prioritizing target audiences
 - developing methods to promote desirable wilderness behaviours
- protect natural processes in the face of increasing human pressures
- develop effective monitoring techniques for natural and cultural features and for trends in visitation and use

Management Goal and Objectives

Goal

The management plan (1992) identifies the core goal of management as:

To preserve in perpetuity natural mountain landscapes while providing opportunities for present and future generations to experience wilderness.

Key management objectives identified include:

Protection

- *To preserve and protect in a natural condition a landscape representative of the Alpine and Sub-Alpine sections of the Rocky Mountain Natural Region.*
- *To preserve and protect the natural resources and processes and the cultural resources that are found within the White Goat and Siffleur Wilderness Areas.*
- *To rehabilitate or mitigate past human influences that are incompatible with the natural wilderness condition.*

Visitor Services in Wilderness Areas

Core Guidelines for Visitor Services

The direction for approach and content of Visitor Services in the two Wilderness Areas is found in the management plan (*White Goat and Siffleur Wilderness Areas Management Plan, 1992*). Key points include:

Information/Orientation

The management plan indicates that information and interpretive services will:

- promote acceptance of Wilderness Area regulations and policies
- encourage the “no trace” camping ethic

The management plan currently states that the primary methods of providing information/orientation services will be signs at boundary locations and information kiosks at trailhead staging areas.

Interpretation

The management plan indicates that interpretive services will:

- emphasize the concept of the wilderness
- foster an appreciation and understanding of the dynamics of ecological processes

Interpretation programs on the value of the White Goat and Siffleur Wilderness Areas within the Provincial Parks System may occur at other locations within the province.

Tourism






The management plan states that the Wilderness Areas will be promoted as unique places to visit for highly skilled, self-reliant people who seek the challenge of true back-country wilderness. Commercial tourism activities that take visitors into the Wilderness Areas will only be considered where the number of visitors is very limited.

Visitor Services Guidelines

The information and interpretive service for the White Goat and Siffleur Wilderness Areas will ensure that visitors and non-visitors:

- develop methods to promote desirable human behavior in Wilderness Areas
- understand and appreciate the intent and meaning of the Wilderness Area and display appropriate attitudes and behaviours
- are aware of rules and policies that regulate their activities within the Wilderness Area
- have access to information of specific interest about (within) the area

White Goat Wilderness Area Main Features

-  Wilderness Area
-  Kootenay Plains Ecological Reserve
-  River
-  Glacier
-  Informal Back Country Route suggested by Alberta Parks

0 1 2 3 km

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White Goat Wilderness Area

Introduction:

The White Goat Wilderness Area covers the northern half of the Cline River watershed including the Cataract Creek and McDonald Creek Valleys which are separated by the Cloister Mountains. The alpine areas include glaciers and icefields (see Figure 23.2). The Wilderness Area has several mountain peaks exceeding 3000 metres:

- Mount Stewart 3,312 metres
- Cirrus Mountain 3,215 metres
- Mount McDonald 3,151 metres).

The management plan indicates that the Wilderness Area's alpine valleys are important winter and summer ranges for a small herd of woodland caribou.

The main access to the Wilderness Area is the Cline River Staging Area on Highway#11. As well as providing access to the Wilderness Areas, the staging area are access points for other recreational trails (e.g., hiking, equestrian riding, fishing). Parks Canada manages trails that access the Wilderness Area along Highway 93 (e.g., Nigel Pass Trail, Sunset Pass Trail).

Features Review

Geology

Mountains

The White Goat Wilderness Area lies at the division of the front and main ranges of the Rocky Mountains. Most of the Wilderness Area sits within the Front Ranges, except for Cirrus Mountain and the other peaks along the Banff Park boundary south of Cataract Creek.

Bivouac.com (<http://bivouac.com>) lists 23 mountains within White Goat Wilderness Area (See Table 23.1).

Table 23.1 Mountains in White Goat Wilderness Area

Stewart	3,312 m
Cirrus	3,270 m
Willis	3,220 m
Cornice	3,188 m
Tuft	3,155 m
Afternoon	3,148 m
Lonely	3,140 m

Stewart NW2	3,101 m
Jain	3,100 m
Colonnade	3,100 m
Metawampe	3,100 m
Slump	3,091 m
Bertram	3,063 m
Strong Winds	3,060 m
Padula	3,060 m
Seven Seas	3,050 m

Tuft NW2	3,033 m
Seven Seas S3	3,018 m
Garth	2,980 m
Michaelis	2,972 m
Oval	2,900 m
Stewart NW4	2,820 m
Monastic	2,620 m



Figure 23.3
Landforms within the White Goat Wilderness Area

Bedrock

As of the time of the release of the area's biophysical inventory (1989), the bedrock geology of the White Goat Wilderness Area has not been mapped. However, Beak Consultants (1989) concluded that the Area's bedrock must be similar to that of the Siffleur Wilderness Area where some geological research has taken place (see the following section on Siffleur Wilderness for more detail).

Landforms

The topography and landforms of the White Goat Wilderness Area are typical of the Rocky Mountain Front Ranges (see Figure 23.3). However, the extensive gently-sloping upland areas and rounded summits found in the northwestern parts of the White Goat have no counterparts in the Siffleur Wilderness Area. The lowest elevation in the area, 1410 m, occurs in the east.

Bedrock and broken rock deposits are by far the most extensive surface. The White Goat Wilderness Area is characterized by extensive talus aprons, which are formed below long cliffs—the coalescing of individual talus cones. The longest of these extends 16 km down the south side of Cataract Creek, around a mountain ridge and up the north side of Huntington Creek.

Two types of glacial till occur: ground moraine from the last glaciation, and more recent cirque tills, which are associated with existing glaciers. Ground moraine occurs continuously along the Cline River and nearly so along the valley of Cataract Creek.

Rock slide deposits are scattered throughout the area. They are neither as abundant or as large as those in the Siffleur Wilderness Area. One rock glacier has been identified, on Mount Stewart.

Ice glaciers are found at many high elevation locations in the western half of the Wilderness Area (see Figure 23.2).

Habitats

Beak Consultants (1989) identified 12 habitats. They are described below in order of abundance.

Rock (49 %)

This is the largest habitat type by area consisting of almost half of the surface area. Vegetation will include numerous species of lichen and some mosses.

Alpine Tundra (13.6 %)

39 alpine tundra polygons were mapped. Common vegetation types included:

- heather-everlasting
- mountain avens-snow willow-moss campion

Closed Pine Forest (10.8 %)

Closed pine forest was found to be relatively extensive in the Wilderness Area. 141 sites were identified. The majority were located on slopes between 140 to 240 degrees. Common vegetation types included:

- lodgepole pine/juniper/bearberry
- lodgepole pine/buffaloberry/showy aster
- lodgepole pine/buffaloberry/twinflower

Closed-South-Facing Spruce Forest (6.1 %)

56 sites were found on slopes ranging from 180 to 270 degrees. Common vegetation types included:

- Engelmann spruce-subalpine fir/grouseberry:
- Engelmann spruce-subalpine fir/hairy wild rye-heart-leaf arnica
- Engelmann spruce/hairy wild rye

Open- South-Facing Spruce Forest (6.1 %)

These spruce forests faced northwest to northeast. Common vegetation types included:

- Engelmann spruce-subalpine fir/heather
- subalpine fir/willow
- heather-everlasting

Avalanche (3.7 %)

16 avalanche areas were mapped. Common vegetation types included:

- subalpine fir/willow
- juniper/willow
- Engelmann spruce-subalpine fir/heather
- willow-dwarf birch/fleabane: 9.5 %)

Closed-North-Facing Spruce Forest (3.7 %)

48 sites were found on slopes ranging from 0 to 120 degrees. Common vegetation types included:

- Engelmann spruce-subalpine fir/rock willow/white mountain heather
- Engelmann spruce-subalpine fir/heather/feathermoss
- Engelmann spruce-subalpine fir/grouseberry

Open Pine Forest (3.7 %)

12 sites were identified. Common vegetation types included:

- Engelmann spruce-subalpine fir-whitebark pine-lodgepole

Open- North-Facing Spruce Forest (2.4 %)

51 sites were found on slopes between 30 to 70 degrees. Common vegetation types included:

- Engelmann spruce-subalpine fir/heather
- Engelmann spruce-subalpine fir/willow/ribbed bog moss
- Engelmann spruce-subalpine fir/rock willow/bracted lousewort

Shrub- Sedge Meadow (1.7 %)

37 were found. Common vegetation types included:

- willow/timber oatgrass
- dwarf birch-shrubby cinquefoil/bearberry
- heather-everlasting

River Flats (0.2 %)

No sites were sampled.

Plant Species

There are two distinct vegetation zones. Above the tree line (roughly 2,100 metres) are grasses, sedges and wildflowers. Below that are spruce, fir, and lodgepole pine.

No detailed plant survey of the Wilderness Areas has yet been conducted. Beak Consultants includes a short list of 81 significant plant species.

Wildlife Species

During their field work on plant communities Beak Consultants (1989) kept logs of wildlife sightings. They included a list of wildlife species that included:

- 194 bird species (36 observed, 158 predicted)
- 51 mammal species (22 observed, 29 predicted)
- 4 amphibian species (1 observed, 3 predicted)

No detailed studies of fish and invertebrates have been conducted.

According to the management plan, the Wilderness Area has rugged mountains, glacier-carved valleys, mountain lakes, waterfalls, and alpine meadows. Animals in the lower regions (below tree line) include woodland caribou, moose, elk, white-tailed deer, mule deer, grizzly bear, black bear, mountain lion, coyote, gray wolf, and wolverine. Animals in the upper regions include golden-mantled ground squirrels, Bighorn Sheep, mountain goat, hoary marmot, pika, White-tailed Ptarmigan, Gray-crowned Rosy Finch, Water Pipit and horned lark. Eagles are common in both regions.

Historical and Culture Features

Pictographs

The Alberta Archeological Survey has identified a single prehistoric pictograph site of indeterminate age and cultural affiliation along the Cline River. The 2004, site inventory data sheet describes the pictograph site as a good example of a Columbia Plateau Tradition site, with extensive group of parallel “tally” marks, a human figure, possible zoomorphs (drawings of animals), simulated handprints, and abstract designs.

Further descriptions characterize the drawings and site as a series of red pictographs on the south-facing side of large limestone boulder Includes:

- hand prints
- stick human figures
- V-shaped figures
- a long row of parallel tally marks
- several uncertain drawings which may by animals

Visitor Services staff interested in interpreting this site should contact the Archeological Survey of Alberta for permission and to learn more about the location and the importance of this site.

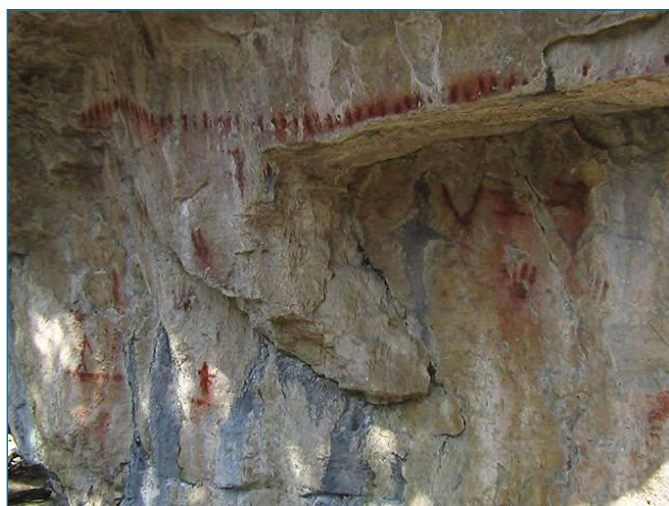


Figure 23.4
Petroglyph in the White Goat Wilderness Area

Plant Species

No detailed plant survey of the Wilderness Areas has yet been conducted. Beak Consultants includes a short list of 81 significant plant species.

Wildlife Species

During their field work on plant communities Beak Consultants kept logs of wildlife sightings. They included a list of wildlife species that included:

- 167 bird species (31 observed, 137 predicted)
- 50 mammal species (17 observed, 33 predicted)
- 5 amphibian species (2 observed, 3 predicted)

The majority of the wildlife list is speculative and over 20 years old.

No comprehensive studies of fish and invertebrates have been conducted.

According to the management plan, this Wilderness Area has woodland caribou, moose, elk, white-tailed deer, mule deer, grizzly bear, black bear, mountain lion, coyote, gray wolf, and wolverine living below tree line. Animals in the upper regions include golden-mantled ground squirrels, Bighorn Sheep, mountain goat, hoary marmot, pika, White-tailed Ptarmigan, Gray-crowned Rosy Finch, Water Pipit and horned lark. Eagles are common above and below tree line.

Historical and Culture Features

The Wilderness Area's management plan makes no reference to cultural features in the Siffleur Wilderness Area.

Infrastructure

Access

Siffleur Wilderness Area is located to the east of highway 11. It is accessed from the west at Siffleur Falls Staging Area and from within Banff National Park along Highway 93. The Siffleur Falls Staging Area lies within the Kootenay Plains Ecological Reserve. The trailhead consists of a parking lot, pit toilet, information kiosk and information sign. These are described in detail in the ecological reserve's Features Analysis. In brief, the current kiosk and information sign contain limited information/orientation information about Siffleur Wilderness Area and no detailed interpretation.

Three of the ecological reserves trails join with trail right-of ways in the Siffleur Wilderness Area.

Recreation Facilities

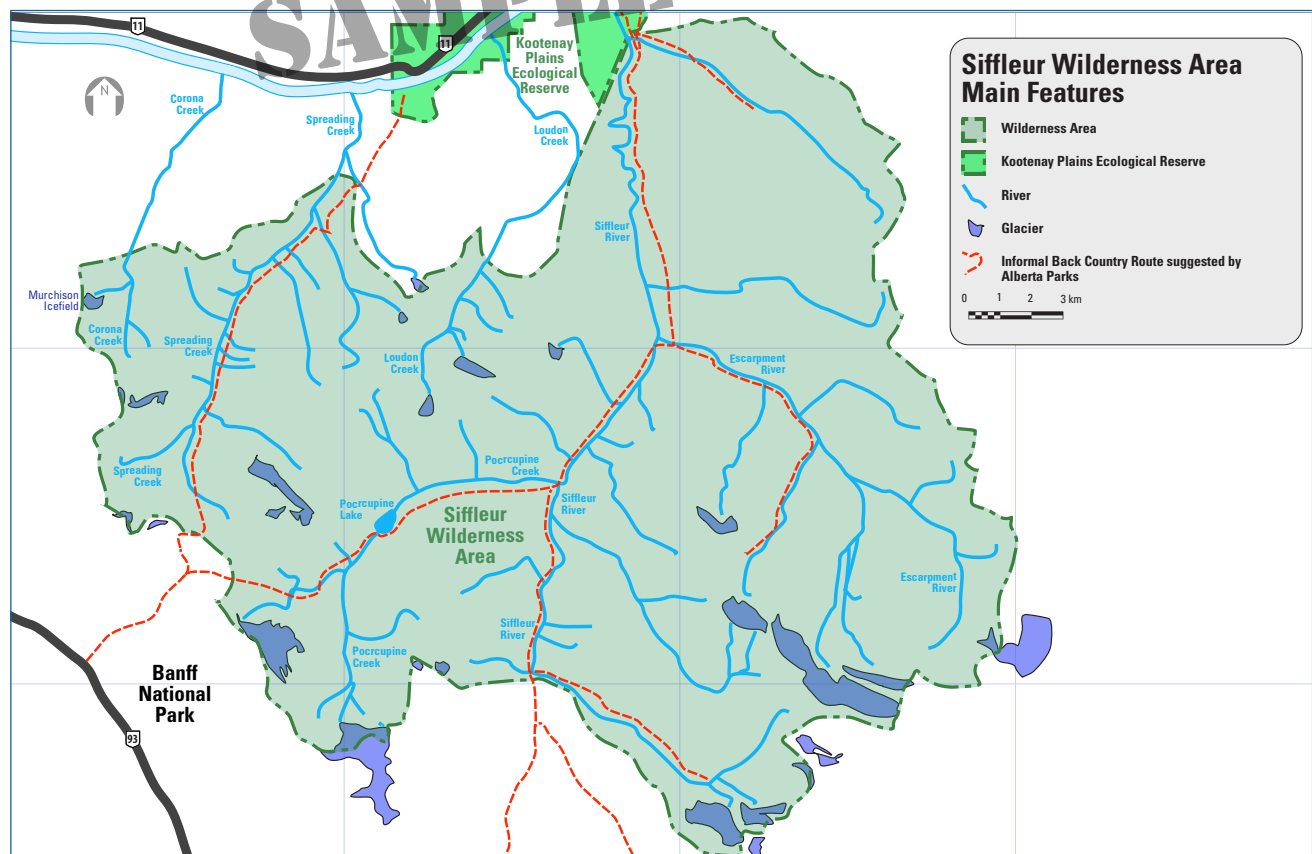
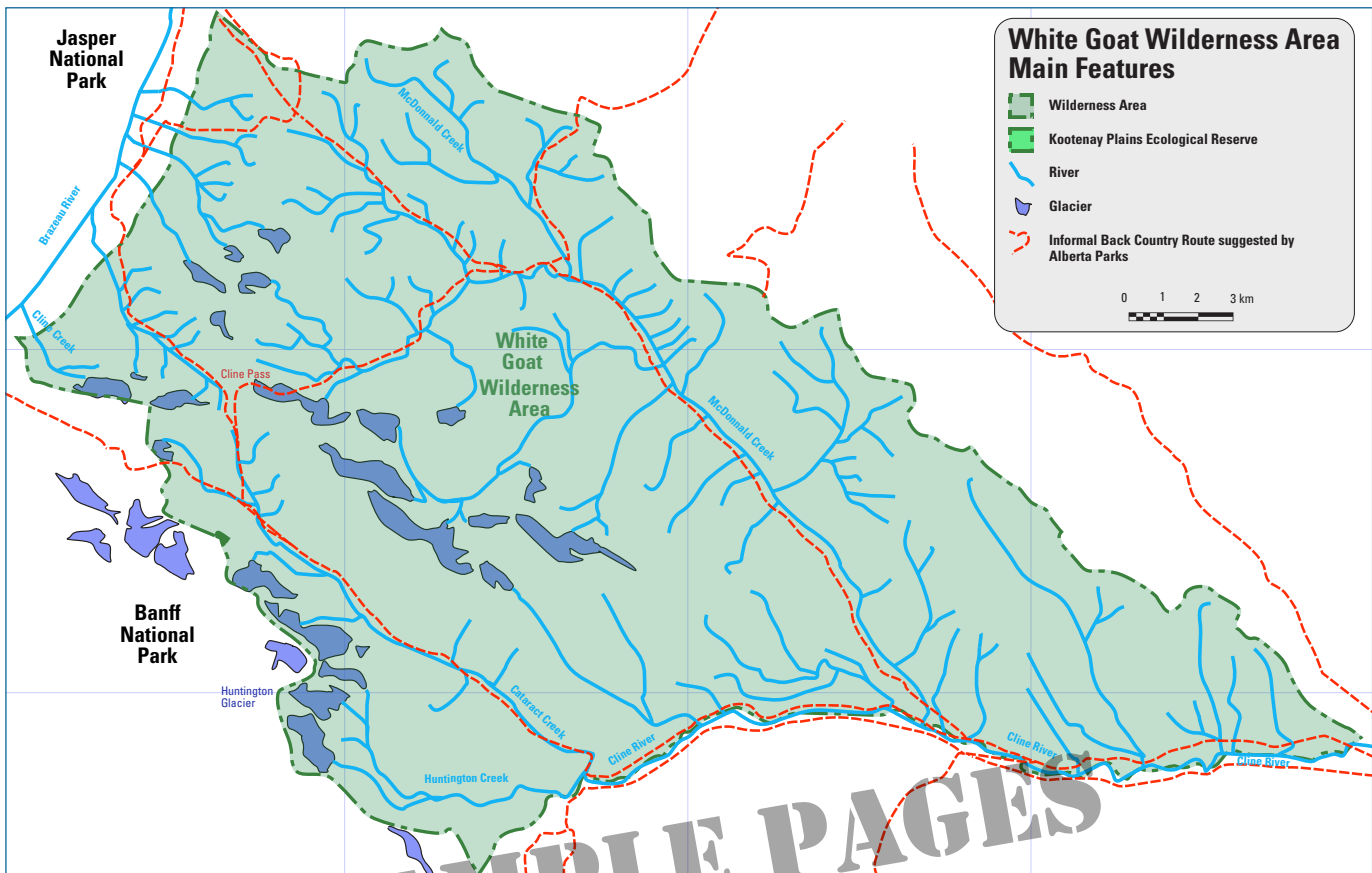
No Built Recreation facilities exist. According to its management plan, the Siffleur Wilderness Area is managed for people seeking the challenge of self propelled wilderness adventure activities where they are left totally on their own initiative. There are no maintained trails or campsites. Visitors choose their own routes and destinations. No-trace, random camping is permitted throughout. Visitors are totally dependent on their own resources and what they can carry—only foot access is permitted.

Section 2

Program Statements and Implementation



White Goat Wilderness Area and Siffleur Wilderness Area



Introduction

Because they are similar and because Visitor Services staffing levels are low in the district, this section combines the program statements for these two Wilderness Areas. When appropriate, differences between them are highlighted and discussed.

As with other program statements in this plan, program statements are based on the ANZECC Best Practice Model in Park Interpretation and Education (www.environment.gov.au/parks/publications/best-practice/pubs/interp-and-edu.pdf).

As well, these program statements are guided by the direction of the *White Goat and Siffleur Wilderness Areas Management Plan* (1992).

Visitor Services staff involved in developing information/orientation and interpretive programs for the two Wilderness Areas should be familiar with the management plan and any updates and revisions that may result from the development of the regional Land-use Framework for the North Saskatchewan Region.

As with other sections of this plan, the program statements outline the ten areas of core competency for Visitor Services staff:

- Research
- Information Orientation
- Assisting Park Management
- Interpretation
- Education
- Stewardship Involvement
- Recreation Programming
- Collaboration and Partnership
- Tourism
- Marketing

Constraints on Visitor Services

The major constraint on developing, delivering and evaluating Visitor Services programming at this site include:

- lack of Alberta Parks staff
 - lack of staff in the district restrict the possibilities for developing and implementing both Alberta Parks programming and with working with volunteers and partners
- low visitation
 - Alberta Parks does not directly collect statistics on users of the Wilderness Area. However, the relative isolation and ruggedness of area suggests that a very limited number of people use these Wilderness Areas

Visitor Analysis

No surveys of Wilderness Area users has been conducted. However Alberta Parks staff have provided anecdotal information that suggests most visitors are seasoned backcountry hikers and climbers. Most are Albertans but some are from the US and Europe. A significant number of non-Canadian visitors are reported to be surprised by the ruggedness of the trails and landscape—their understanding of the term Wilderness Area often includes groomed trails and maintained backcountry campsites.

Engagement Opportunities

This author's experience with backcountry outdoor enthusiasts is that there is a broad spectrum of interest, and engagement with natural history within this group. Some are highly interested and knowledgeable about plants animals and geology while others are more focused on physical and emotional challenge of extending themselves in wild outdoor settings. The former group may be willing to engage in sharing observations of wildlife, changes in glaciers and blossoming times etc. as part of citizen science programs. Many of the latter group may be more interested in recording the exact location of mountain peaks and other geographic features using their GPS equipment.

Market Analysis

The market analysis chapter of this plan includes a summary of Hard Outdoor Adventure Enthusiasts (http://en-corporate.canada.travel/sites/default/files/pdf/Research/Product-knowledge/TAMS/Canadian%20Travellers%20Outdoor%20Activity/tams_report_Canadian_hard_adventure.pdf). Visitor Services staff should use this summary when developing approaches to programming at these sites. As well, Visitor Services staff should work with the district management team to determine the level of visitation that is desirable in these lightly patrolled Wilderness Areas.

1. Research

Introduction

The Value of Research

Interpretation of a site's natural and cultural history must be based on up-to-date information about habitats, wildlife, ecological and environmental trends (e.g., the effects of climate change on alpine environments). Current information is especially important to knowledgeable, multiple repeat visitors that probably make up a significant proportion of the visitors to the two Wilderness Areas.

Current Conditions

Biophysical Research

Up-to-date biophysical information is currently lacking. There appears to have been no new Alberta Parks-sponsored research following the work of Beak and Associates in 1989. Beak's information is incomplete and becoming dated. For example, a large burn area in Siffleur Wilderness was in early stages of post-fire succession in 1989. It is not known how far along the succession process has advanced to.

As well, the biophysical report indicates that up to 1989, no bed rock geology mapping of the White Goat Wilderness Area has taken place.

Archeological/Anthropological Research

As stated earlier, Alberta Park staff have provided site inventory data from the Archeological Survey of Alberta that identify and locate a significant pictograph site in White Goat Wilderness Area. However, it is not clear that a thorough survey of the two Wilderness Areas has been conducted.

Visitor Research

Apart from voluntary registration at Nordegg Ranger Station (closed in 2011), information about visitors is not gathered. It is not clear what proportion of visitors register their trips.

Recreation Research

The management plan (1989) recommends research related to the social carrying capacity of backcountry trails be conducted. This research would look at the number of contacts with other visitors that is acceptable to wilderness users before they perceive that their backcountry experience is degraded. To date, this research has not been conducted.

2. Information/ Orientation

Introduction

Accurate, up-to-date information/orientation is especially important for travelers in these Wilderness Areas because of their remoteness and ruggedness—accurate detailed information increases visitor safety.

Current Conditions

Currently Alberta Parks provides information/orientation using the following media:

- a map/brochure for each Wilderness Area
- panels at access points along Highway 11
 - Siffleur Falls Staging Area (Siffleur Wilderness Area)
 - Coral Creek White Goat Staging Area (White Goat Wilderness Area)
- websites
 - there is a basic website for each Wilderness Area

The above are described in more detail earlier in this chapter.

Define

Outputs

The primary output will be Information/Orientation materials that assist visitors to:

- navigate safely
- realize that:
 - the site is true wilderness, remote, with no groomed trails and no official campsites
 - they are in the White Goat or Siffleur Wilderness Area
 - the property is part of the Alberta Parks system
- be aware of:
 - the rules and regulations within a Wilderness Area
 - current safety issues
 - the boundaries and extent of the Wilderness Area
 - recreation, learning and stewardship opportunities
 - the purpose and goals of Alberta Parks



Figure 23.14 Major (★) and minor (★) access points to White Goat Wilderness Area.

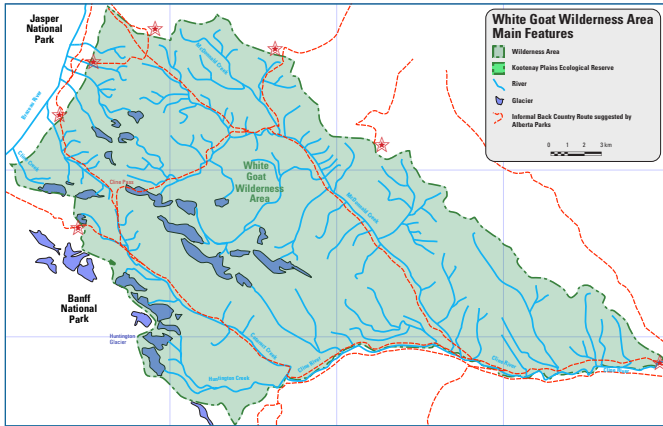
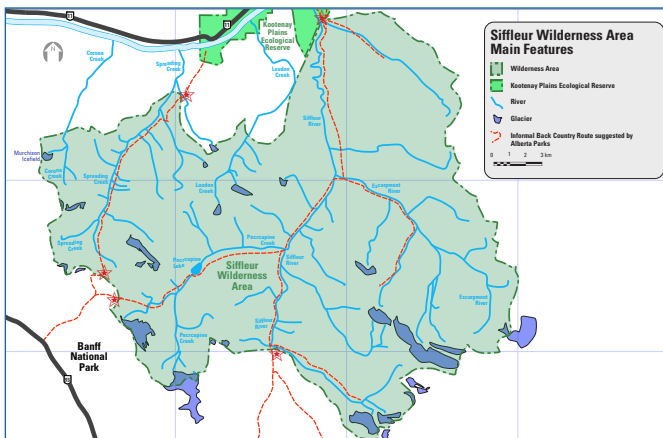


Figure 23.15
Major (★) and minor (★)
access points to
Siffleur Wilderness Area.



ALBERTA PARKS

Entering White Goat Wilderness Area

You are entering backcountry wilderness. Trails and campsites are not maintained—expect rough conditions. Mountain weather can change in an instant—carry extra food and fuel in case you are delayed.

Please respect the following rules that are enforced to protect you, the wildlife, and the environment for your enjoyment and the enjoyment of others.

White Goat Wilderness Area, xxxx Rocky Mountain House
403-xxx-xxxx, Emergency : Call 911

Alberta



No impact
camping



Hiking



Rock and ice
climbing



Snowshoeing



Backcountry
skiing



Pack out all
garbage



No motorized
vehicles



No horses



No open fires

Figure 23.16

A mock-up showing what a Wilderness Area boundary sign located a minor trail access points could look like.

Implementation Recommendations

Address Missing Critical Success Factors

1. Replace/upgrade all information/orientation materials at Siffleur Falls and Coral Creek/White Goat Staging Areas over the next five years (as dictated by available operations budget): Use the review and planning process outlined in the Alberta Parks Sign Program manual.

White Goat Wilderness Area

- White Goat Coral Creek Staging Area
 - main entry point (see Figure 23.14)
 - major information kiosk identifying:
 - name of Wilderness Area and identify Alberta Parks as management agency
 - major regulations
 - outline of no-trace camping
 - distances, un- maintained trail conditions, safety issues
 - regulations re-wildlife harassment

Other Trail Access Points

- at minor trail entry points (see Figure 23.14)
- use site-specific boundary sign design from Alberta Parks Sign Program (see example Figure 23.16 on facing page)

Siffleur Wilderness Area

- Siffleur Falls Staging Area
 - main entry point (see Figure 23.15)
 - major information kiosk identifying trailhead as the main access point to Siffleur Wilderness Area and
 - name of Wilderness Area and management agency
 - major regulations
 - distances, un- maintained trail conditions, safety issues
 - regulations re-wildlife harassment

Other Trail Access Points

- at minor trail entry points (see Figure 23.15)
- use site-specific boundary sign design from Alberta Parks Sign Program (see example Figure 23.16 on facing page)
- include an outline of no-trace camping

2. When funding becomes available, update current map/brochures to current Alberta Parks print media standards.

New Offerings

At present, staffing levels prevent the development of new information/orientation programs. However, when staff and funding becomes available, Visitor Services staff should investigate the feasibility and cost-effectiveness of developing information/orientation/navigation applications for smartphones and tablet computers.

3. Assisting Wilderness Area Management

Introduction

A role of Visitor Services is to assist the district management team through supporting the Three-E management model which has three parts:

- Education
- Engineering
- Enforcement

In most cases, Visitor Services staff will be involved with the education component of this model.

Define

The management plan stresses a focus on communicating backcountry no-impact ethics and behaviour. Visitor Services staff can assist the White Goat and Siffleur Wilderness Areas' management team to inform backcountry visitors about current best practice and encourage them to use these techniques.

Outputs

Visitor Services staff will provide the education component of the Three-E (engineering, Education and Enforcement) visitor management model. Key areas of focus will be:

- backcountry ethics and appropriate behaviour
- rules and regulations
- backcountry safety

Critical Success Factors

This will include:

Critical Success Factor	Status (2011)
• internal communication	✓
• Visitor Services staff with communications skills	✓
• connections with conventional media	✓
• connections with the backcountry adventure community	X

Performance Indicators

The following will indicate success of management support initiatives:

- over 90% of visitors recognize the site as part of the Alberta Parks system
 - are aware of and understand rules and regulations
 - show a high degree of compliance with these rules
 - can safely find their way in the Wilderness Area
- over 90% of visitors understand and exhibit best practice in backcountry travel
- backcountry visitors regularly communicate conditions and issues to a central Alberta Parks David Thompson Corridor District source (website/Facebook/Twitter site) which forwards appropriate information to the district

Deliver

Key Media

Visitor Services staff will continue to use conventional media for communication of management issues and initiatives. These include:

- public service announcement to local radio, television and news outlets
- trailhead kiosks at main staging areas along Highway 11
 - Siffleur Falls Staging Area (Siffleur Wilderness Area)
 - White Goat/Coral Creek Staging Area (White Goat Wilderness Area)
- map/brochures distributed at Alberta Parks sites in the David Thompson Corridor and further afield in major population centres (e.g., Edmonton and Calgary)

As well, if audience numbers are sufficient and projects prove cost effective, Visitor Services staff may decide to develop:

- on-line blogs and discussion groups
 - where backcountry enthusiasts who have traveled in the Wilderness Areas can share their experiences and support others wishing to visit for the first time
- smartphone applications that make use of GPS and built-in cameras to:
 - assist visitors in identifying mountain peaks and other features
 - log and share wildlife sightings, scenic vistas, blooming alpine and valley bottom flowers, etc.

Evaluate

Evaluation of this service should be done annually by a team of management, enforcement and Visitor Services staff using the key performance indicators on the proceeding page.

Support

All Visitor Services initiatives in Wilderness Areas are dependant on Alberta Parks staff being available. And if available they must have the capacity and experience in communication and working with experienced backcountry adventure enthusiasts.



Implementation Recommendations

Address Missing Critical Success Factor

Contacting and Developing Relationships with Outdoor Organizations

1. Visitor Services Staff should develop a list of Alberta Outdoor Adventure Groups that have members active in the White Goat and Siffleur Wilderness Areas and
 - contact them and assess their compatibility with Alberta Parks
 - work with these groups to facilitate the sharing of information about their experiences in the Wilderness Areas
 - with their permission, include the group's contact information on the Alberta Parks website and social media sites
2. Each following year Visitor Services Staff should review contact list and
 - add new local and provincial outdoor adventure enthusiast groups and contact them and consider adding their contact information on the Wilderness Areas' websites
 - deleting contact information of defunct or incompatible groups

Deliver Information About Backcountry Ethics and Behaviour

Visitor Services staff should work closely groups and agencies such as Leave No Trace Canada to develop communications about backcountry ethics and behaviour (See Sidebar Leave No Trace on facing page).

Using this information, Visitor Services staff should work with the district management team to identify media and methods that can best communicate with Wilderness Area visitors and find budget for development and deployment.

Sharing Information About Backcountry Conditions

Other Visitor Services activities can include developing ways of gathering information from Wilderness Area users about problem wildlife, dangerous trail conditions (e.g., avalanche danger and high water streams and rivers that prevent travel in certain areas) and developing communication systems to inform the management team and warn other travelers of these dangers and advise them of necessary precautions they should take.

4. Interpretation

Introduction

The combination of low staff levels, small, dispersed visitor population who are intent on their own timetables (e.g., reach specific destinations and complete their hike within the time they have budgeted) and remoteness of location make it likely that interpretation on these Wilderness Areas will be limited mostly to non-personal media. However, interpretation to off-site and remote target audiences may include both non-personal and personal media and methods. Discussion of this core competency is divided into four segments:

- Non-Personal Services
- Personal Services
- Community Outreach

Objectives

The key objectives for interpretation in White Goat and Siffleur Wilderness Areas include the following:

1. To inform visitors of:

- the features in the Wilderness Area that they are visiting
- best practices in no trace camping and wilderness safety
- the Wilderness Area's role as a key player in the protection and stewardship of wild mountain wilderness and the maintenance of ecological goods and services of importance to the province such as the supply of abundant clean water

2. To inspire visitors to:

- observe and share observations and experiences with park staff, other visitors and others who may not be able to visit these sites
- care about these places of protected landscape
- learn more about the geology, plants, animals, habitats, natural processes and history of the Wilderness Areas
- engage with and care and learn about the natural and cultural heritage of Wilderness Areas and engage in their stewardship.

3. To involve visitors in:

- in engaging in no-trace camping practices
- taking part in citizen science projects aimed at monitoring plants, wildlife, habitats and impact of visitors and/or climate change
- stewardship projects led by Alberta Parks and its partners

Also, Section 1: Research, of this chapter recommends studies of visitors be conducted to build a more accurate visitor profile. This will assist Visitor Services staff to select appropriate media and efficiently design, deliver evaluate and market interpretive programs.

Remote Visitors

Remote visitors are defined as people who are interested in these particular Wilderness Areas or mountain habitat, scenery and wildlife in general. Most are not likely to visit the site directly because of distance, costs, physical disability or lack of backcountry skills.

As with current visitors, the numbers and characteristics of potential remote visitors are unknown. There have been no studies that try to identify who is interested in these Wilderness Areas. Section 1: Research recommends that studies be conducted. A clear understanding of the size, current knowledge, areas of interest and skills and ability

On-site Interpretation Opportunities

Target Participants

There are no detailed current data on the numbers and characteristics of visitors to White Goat and Siffleur Wilderness Areas. They most likely fit the descriptions of hard outdoor adventure enthusiasts summarized in Chapter 9 Market

Analysis. Key characteristics of this group include:

- more men than women (63% men/33% women)
- mostly young
 - nearly 60% are aged 18–34
 - 30% between 35–44
- 69 percent live in adult-only households
- have high incomes
- have high levels of formal education

Other important characteristics include:

- tech savvy and like equipment and gadgets
- will be at advanced intermediate and advanced backcountry skill levels
- knowledge and interest in natural history
 - many have deep interest the habitats, plants and wildlife that they encounter
 - others have limited interest and knowledge, they come to the backcountry for the physical and mental challenge

Assessment

Hard outdoor adventure enthusiasts are likely to be interested in combined information/orientation/interpretation applications for hand-held computer devices (e.g., smartphones and tablet commuters) especially those that incorporate GPS sensors and digital maps.

Possible Interpretive Applications

Alberta Parks could develop applications focusing on features found in the Wilderness Areas that:

- assist users to identify wildlife, plants and habitats (e.g., *iBird* and *Leafsnap*)
 - some apps compare photos taken by participant with an onboard photo database (e.g., *Leafsnap*)
 - some apps include behaviours and plant-wildlife interactions to watch for
- identify geological features and processes that they may encounter
 - some existing apps include mountain-finder tools whereby visitors take photos with their smart phone and the software identifies the mountain by name
- record photos and text entries of discoveries and map their locations (e.g., *iNaturalist*)
 - for use as a record of their trip, some apps enable sharing trip information over the internet

Possible Citizen Science Projects

In Canada, arctic and alpine habitats are showing the largest and most rapid changes resulting from climate change. In the Rocky Mountains glaciers are melting and high altitude habitats are shifting upslope as warm seasons come sooner in the year, average temperatures rise and lowland native species move into lower elevations.

Backcountry travelers can contribute to the science of recording the effects of climate change and prepare for adaptive management by recording retreat of glaciers and the changes in plant blooming times.

Alberta Parks could work with existing Citizen Science programs such as PlantWatch and IceWatch by partnering with Nature Canada or work with researchers such as Dr. David W Schindler, Biological Sciences University of Alberta (email: d.schindler@ualberta.ca) to develop a photo-record of the retreat of glaciers in these Wilderness Areas similar to that being conducted by the Extreme Ice Survey (www.extremeicesurvey.org/)

with technology such as smart phones and computers will assist Visitor Services staff in assessing the feasibility and approaches to engaging this target group.

Deliver

The Visitor Services staff available will concentrate mostly on non-personal delivery. As with other properties in the David Thompson Corridor, development and delivery will be severely limited by staff availability.

Programming for Current Visitors

Programming for current visitors is and will likely remain non-personal only (see introduction to this section for reasons). This may include traditional media such as kiosks at trailheads and map/brochures or new technology such as smartphone and tablet computer applications.

Programming for Remote Visitors

Programming for remote visitors can be both personal (e.g., PowerPoint presentations at libraries in major towns and cities in central Alberta) or non-personal media such traditional books, and posters, or newer technology available on Alberta Parks websites and Facebook sites (e.g., ebooks, streaming video clips and longer documentaries)

Evaluate

Evaluation of this service should be done annually by a team of management, enforcement and Visitor Services staff using the key performance indicators on 23.47.

Support

All Visitor Services initiatives in Wilderness Areas are dependant on Alberta Parks staff being available. Support for Visitor Services staff should focus on training to increase capacity for working with experienced backcountry adventure enthusiasts and making live outreach presentations to urban audiences who have interests in mountain nature.

Implementation Recommendations

Address Missing Critical Success Factor

Research

1. Encourage and enable research on natural history and cultural history of White Goat and Siffleur Wilderness Areas (see Research section of this chapter pp 23.27–23.29).
2. Encourage and enable research on visitors and remote program audiences with partners such as Travel Alberta and/or through contracts with social science research experts (see sidebar on this page). Focus on:
 - Wilderness Area Visitors
 - current numbers
 - potential visitation and visitor carrying capacity (maximum number of visitors that can be accommodated without degrading habitat, impacting wildlife populations or the visitors' backcountry wilderness experience)
 - Remote Audiences
 - potential size (number of Albertans, Canadians and international) wishing to engage in learning about Alberta's mountain wilderness
 - audience prior knowledge, interests and access and abilities with new technology

Process

1. Use a program planning form for all new interpretive programs.
2. Develop an effective evaluation system for each area of interpretation (non-personal, personal, outreach to remote audiences).
 - use the personal program evaluation tool provided in this plan as a start

Staffing

1. When budget allows, hire a full-time Visitor Services staff to manage programs for the western half of the David Thompson Corridor (concentrating on Kootenay Plains Ecological Reserve, White Goat Wilderness Area and Siffleur Wilderness Area).

Interpreting nature and history in wilderness conditions to hard outdoor adventure enthusiasts is significantly different than delivering programs to families in a regular campground. The person hired for this position should have strong backcountry experience.

Staff Professional Development

Developing interpretation programs for the two main audience groups is likely to require knowledge and skills in the fast-changing fields of hand-held devices (smartphone and tablet computer applications) and web-based technology (social media, websites, streaming video, blogs, etc.). If these types of media are to be developed by staff or contracted out, Visitor Services staff will need training in current best practice.

1. Visitor Services staff should have regular training in current techniques for developing and deploying new technology interpretation and/or management of complex projects such as the development of smartphone applications.

On-site Interpretation Opportunities

Personal Interpretation

Current staffing and low visitor numbers and the remoteness of the Wilderness Areas precludes on-site personal interpretation in the foreseeable future.

Non-Personal Interpretation

1. As soon as possible, upgrade all trailhead kiosks at main entry points for White Goat and Siffleur Wilderness areas to current Alberta Parks Sign Program standards.
 - Focus on:
 - examples of wildlife and plants likely to be encountered at different times of year
 - encouraging visitors to post photos and observations on Alberta Parks websites and Facebook pages
2. When staffing and budget permit, look into the market size and feasibility of developing
 - one or more smartphone/tablet computer interpretation application
 - one or more citizen science project(see sidebar: On-site Interpretation Opportunities on facing page)

Off-site Interpretation

Personal Interpretation

1. Within the next five years, develop and deliver a PowerPoint presentation featuring the nature and landscape of White Goat and Siffleur Wilderness Areas in at least five outreach programs in population centres in central Alberta
 - this may include results of citizen science projects identified in the sidebar: On-site Interpretation Opportunities on page 23.40)