APR 23 1997

Wind Valley Natural Area

Management Plan

February 1997

Kananaskis
Country

Alberta
ENVIRONMENTAL PROTECTION
Natural Resources Division

Digitized by the Internet Archive
in 2016

https://archive.org/details/windvalleynatura00albe_0

APPROVAL STATEMENT

This plan is consistent with the provisions and intent of the Wilderness Area, Historical Reserves and Natural Areas Act and with provincial policies, priorities and objectives.

G. Nadeau
Assistant Deputy Minister
Natural Resources Service
Alberta Environmental Protection

Date

WIND VALLEY NATURAL AREA

Cliff Henderson
Assistant Deputy Minister
Land and Forest Service
Alberta Environmental Protection

January 15/1997

MANAGEMENT PLAN

Natural Resources Service

February 1997

WIND VALLEY NATURAL AREA

MANAGEMENT PLAN

Pub. No.: 1/647

ISBN: 0-7732-5117-0

Copies of this report available from:

Alberta Environmental Protection

Natural Resources Service

Suite 201, 800 Railway Avenue

Canmore, AB T1W 1P1

APPROVAL STATEMENT

This plan is consistent with the provisions and intent of the Wilderness Areas, Ecological Reserves and Natural Areas Act and with provincial policies, priorities and direction.

J.R. Nichols
Assistant Deputy Minister
Natural Resources Service
Alberta Environmental Protection

Date

Cliff Henderson
Assistant Deputy Minister
Land and Forest Service
Alberta Environmental Protection

Date

APPROVALS BY ENVIRONMENTAL RESOURCES COMMITTEE
SOUTHERN EAST SLOPES REGION

Jay Litke, Chairman, Corporate Management Services

date: Nov 7, 1996

Pat Guidera, Land and Forest Services

date: Nov. 7, 1996

Dave Nielsen, Natural Resources Service - Parks

date: 7 Nov 96

Frank Cardinal, Natural Resources Service - Fish and Wildlife

date: 7 Nov 1996

Peter Watson, Environmental Regulatory Service

date: Nov. 7, 1996

Morris Seiferling, Public Lands Division

date: Nov 18, 96

Rick Siddle, Economic Development and Tourism

date: Nov 20/96

Jerry MacPherson, Energy

date: Nov. 25/96

Doug Clark Natural Resources Service

date: Nov. 18, 1996

TABLE OF CONTENTS

1. INTRODUCTION	2
1.1 What Are Natural Areas?	2
1.2 What Is This Management Plan All About?	3
1.3 Plan Limitations	3
1.4 What Process Was Used To Develop This Plan?	4
1.5 Intent For The Wind Valley Natural Area	4
2. OVERVIEW	5
2.1 Location	5
2.2 Biophysical Resources	5
2.3 Land Use	8
2.4 Administrative History	9
2.5 Natural Area Values and Rationale	9
3. MANAGEMENT ISSUES AND STRATEGIES	10
3.1 Conservation	10
3.1.1 The "Nature Takes its Course" Approach	10
3.1.2 Fire	11
3.1.3 Habitat Management	11
3.1.4 Species Management	12
3.1.5 Weeds/Insects and Diseases	12
3.1.6 Reclamation	13
3.2 Education and Research	13
3.2.1 Education/Interpretation	13
3.2.2 Research	13
3.3 Recreation	14
3.3.1 Trails	14
3.3.2 Camping/Picnicking	15
3.3.3 Equestrian/Mountain Bike Use	15
3.3.4 Hunting	15
3.3.5 Motorized Vehicle Use	17
3.3.6 Mushroom/Berry Picking	17
3.3.7 Removal of Flora, Fauna, Fossils and Artifacts	17
3.4 Resource Extraction	17
3.4.1 Grazing/Timber Removal	17
3.4.2 Trapping	18
3.5 Other Issues	18
3.5.1 Access and Roads	18
3.5.2 Linear Developments	18
3.5.3 Helicopter Activity	18
3.5.4 Commercial Recreation	19
3.5.5 Private Land	19
3.5.6 Freehold and Crown Mineral Rights	19

3.5.8 Approval of Activities not Discussed in this Plan	20
4. PROGRAM SUPPORT	20
4.1 Physical Structures	20
4.1.1 Signage	20
4.1.2 Facilities	20
4.2 Regulations and Enforcement	21
4.3 Site Monitoring	21
4.5 Communications	21
5. ADMINISTRATION	22
5.1 Boundary Changes	22
5.2 Role of Volunteer Stewards	22
5.4 Role of MD of Bighorn, The Town of Canmore and Kananaskis Improvement District	23
5.6 Process for Plan Amendments	23
Appendix A	
Wind Valley Natural Area In the Context of Alberta's Province Wide System of Recreation and Protected Areas	24
Appendix B	
Wilderness Areas, Ecological Reserves and Natural Areas Act	30
Appendix C	
List of Species	42

1. INTRODUCTION

Wind Valley Natural Area comprises 7890 hectares of protected crown land adjacent to the Bow Valley, east of the Town of Canmore. It is located entirely within the Rocky Mountain Natural Region and contains alpine, subalpine and montane zones. The terrain is rugged and spectacular and adjacent to the Trans Canada Highway.

The natural area is managed by staff of the Department of Environmental Protection, Southern East Slopes Region with assistance from other government agencies and volunteers.

1.1 What Are Natural Areas?

Natural Areas are one of seven categories in the spectrum of recreation and protected areas designated under the Provincial Parks Act and the Wilderness Areas, Ecological Reserves and Natural Areas Act. This spectrum includes Ecological Reserves, Wilderness Areas, Wildland Parks, Provincial Parks, Natural Areas, Recreation Areas and Wayside and Access Sites. These different designations provide for varying levels of protection of the natural landscape and afford a variety of recreational opportunities. Collectively these categories achieve the four broad, system wide objectives: preservation, heritage appreciation, outdoor recreation and tourism that define the mandate of Natural Resources Service with regard to the recreation and protected areas system.

Appendix A provides a context for Wind Valley Natural Area with regard to Alberta's province wide system of recreation and protected areas.

Natural Areas are public lands, set aside under the Wilderness Areas, Ecological Reserves and Natural Areas Act to:

- (a) protect sensitive or scenic public land from disturbance, and
- (b) ensure the availability of public land in a natural state for use by the public for recreation, education or any other purpose.

Natural areas are defined as "areas selected as representative, special or sensitive natural landscapes and features of the province which are set aside to protect their natural values and provide opportunities for nature appreciation, education and low intensity recreation."

Site management typically involves a strategy of first providing information and education to users to ensure site protection. Enforcement of existing provincial legislation (eg. Forest Act, Litter Act etc.) by staff of Environmental Protection does occur. The enabling legislation for Natural Areas is the Wilderness Areas, Ecological Reserves and Natural Areas Act (Appendix B). Where justified, enforceable regulations under this Act may be passed by Order-in-Council to restrict specific activities in a given Natural Area. Such regulations would have the same

status as, for example, existing provisions of the Act which restrict activities within Ecological Reserves.

1.2 What Is This Management Plan All About?

There are several reasons why this plan was prepared by staff of Environmental Protection in consultation with various stakeholder groups and the general public. First, the potential of increasing use is high and might result in significant negative pressure on the resources of the Natural Area in the form of environmental impacts and in reduced or perhaps conflicting opportunities for users. Land managers and citizens have become increasingly concerned about these impacts and changes in Natural Area conditions and experiences and while Natural Area legislation provides general protection status it does not address site specific needs. Consequently, a site specific management plan is required.

This plan is directed at managing use of the Natural Area. Adherence to this plan should reduce or prevent unacceptable environmental impacts, maintain or enhance educational, research and recreational opportunities as well as the natural qualities found within the area. This plan also establishes a process for managing the Natural Area cooperatively between government and volunteer stewards.

1.3 Plan Limitations

This plan applies only to provincial crown land within the boundaries of the Wind Valley Natural Area.

This management plan is limited by the completeness and quality of the existing information that is available for the site. A preliminary bibliography of existing references for the Wind Valley area has been prepared and will be updated as research is completed. This additional information will have to be considered in future plan amendments.

The general philosophy of Natural Area management is one of education where possible rather than regulation. However, activities such as tree cutting, littering and soil extraction are prohibited or controlled by legislation that is applicable to public land in general. Hunting, fishing and trapping are activities which are permitted to occur in Natural Areas, subject to existing legislation and regulations (eg. licenses, season dates, bag limits). Upon approval of this plan, several of the management guidelines are proposed to be enforceable by Order-in-Council under the Wilderness Areas Ecological Reserves and Natural Areas Act (WAERNA). These include restrictions on vehicle use, commercial use, removal of natural objects etc.

It is further noted that, as part of the Special Places initiative, the provincial government may, in future, revise existing legislation governing recreation and protected areas. At that time, this management plan would need to be reviewed and updated in line with the new legislation.

1.4 What Process Was Used To Develop This Plan?

This plan was prepared by staff of Environmental Protection, Southern East Slopes Region. Key stakeholders and the general public provided comments on the Terms of Reference, and identified topics and opinions to be considered in the plan. Comments by stakeholders and the public have contributed to the preparation of this plan. The schedule for the plan process was as follows:

- August '95 - Wind Valley Natural Area designated by the Minister
- September '95 - Direction to prepare Management Plan by June of 1996.
Establishment of Southern East Slopes Environmental Resource Committee (ERC) as approving authority for management plan.
- December '95 - ERC approval of Terms of Reference (TOR)
- January '96 - Contract to prepare Bibliography
- March 7 '96 - Public Open House to receive comment on TOR
- March/May 1996 - draft plan preparation
- June 6, 1996 - ERC approval of draft plan
- June/Aug 30 - review and comment by stakeholders and public of draft plan
- Oct. 1996 - final draft approved by ERC and endorsement by the Assistant Deputy Minister, Natural Resources Service

1.5 Intent For The Wind Valley Natural Area

The management intent is:

"to ensure the maintenance of ecological integrity and biodiversity particularly for wildlife populations."

The management objectives are:

1. Conserve the existing biodiversity of wildlife, with particular emphasis on carnivores and ungulates.
2. Ensure the continued utilization of existing critical seasonal habitats including movement corridors within Wind Valley and connecting corridors to adjacent lands.
3. Maintain the integrity of unique vegetation, landscapes and features of Wind Valley.

The above objectives can be met while allowing a range of activities (especially research and recreation) to occur. Appropriate guidelines for these activities are provided in Chapter 3 of this plan.

2. OVERVIEW

2.1 Location

The Wind Valley Natural Area is a 7,890 hectare parcel of land located approximately 70 km west of Calgary and 10 km southeast from the centre of the Town of Canmore (see map). It is located entirely within the Rocky Mountain Natural Region and includes alpine, subalpine and montane landscapes.

Experts agree that the combination of vegetation, terrain, hydrology and climate has produced a very diverse and highly productive ecosystem which is still relatively intact. The entire area is of major importance to wildlife on a year-round basis. Bighorn sheep, elk, mule deer, white-tailed deer and moose frequent the area. The southerly-facing, grassy slopes in Wind Valley are critical winter range for bighorn sheep because Chinook winds keep them snow free in winter. Wind Ridge is one of the finest winter ranges for bighorn sheep in the Canadian Rockies. The abundant and diverse ungulate populations in the area help to support a number of large carnivores, some rare in Alberta. In addition to grizzly and black bears, there are wolverine, wolf and cougar. The Wind Valley area also functions as an important corridor for movement of wildlife, particularly the larger ungulates and carnivores from adjoining Bow, Kananaskis and Spray Valleys.

Most of the boundary uses a height-of-land except for a portion near Skogan Pass in the south. However, that portion of the northern boundary east of Deadmans Flats uses a land use Zone boundary (elevation 1370 meters). That portion near Alpine Resort Haven lease and Three Sisters Resorts private property uses legal lines.

2.2 Biophysical Resources

2.2.1 Landforms/Hydrology

Wind Valley Natural Area consists mainly of steep mountain slopes and high cliffs. Some more gentle valley bottom areas exist in the drainage of West Wind Creek. Elevation ranges from 1370 meters in the valley bottom to 3095 meters at the summit of Wind Mountain. High cliffs and bedrock outcrops are defining characteristics at higher elevations but are generally covered by colluvial or morainal materials on slopes or valley bottoms. An analysis of geomorphology, soils and vegetation in the Wind Valley was done in 1984 as part of the biophysical analysis of Kananaskis Country as a whole.

There are seven named creek drainages within the Natural Area. All are generally small, turbulent mountain streams with steep gradients. The creeks are: Stewart, Marsh, Cairnes, West Wind, Wind, Pigeon and MacGillivray. The last three flow year round while others flow seasonally or are partially ephemeral at normal flows. There is one small shallow alpine pond below the east face of Mt. Loughheed. Other drainage features of significance ecologically are a

series of seeps and springs located the base of the north facing slopes of West Wind Valley and along the upper portion of West Wind Creek. These have given rise to several fen environments important as feeding areas for ungulates and bears. A series of small cold sulphur springs are located along the base of the north slopes of Pigeon Mountain near the Trans Canada Highway. These springs and the surrounding vegetation were the key features recognized in the Pigeon Mountain Candidate Natural Area.

2.2.2 Soils

Limited soils information is available from a 1982 biophysical inventory. Generally, soils are thin to non-existent through most of the high elevation areas however have developed into a variety of regosols, brunisols and luvisols on different slopes, aspects and drainage situations at lower elevations.

2.2.3 Vegetation

The main vegetation communities include a wide variety of forest types, grasslands, wetlands and shrublands. Pockets of Douglas fir, a rare forest community in Alberta, are found in the Wind Valley Natural Area. Along creeks and in depressional areas, wetlands, bogs, fens and shrub meadows are common. Of particular importance is the major fen in West Wind Valley, the largest fen in this part of the Province. It is critical spring and summer range for both grizzly and black bear because of the abundance of horsetails, a staple of bear diets at this time of year. Elk also depend on the fen as a source of food.

2.2.4. Wildlife

Wind Valley is known as an important wintering area for large ungulates such as elk and bighorn sheep. This stems from its extensive open south and west facing slopes along Wind Ridge and Pigeon Mountain that are exposed to the frequent chinook winds of winter. As a result, these slopes are free of snow most of the winter. This characteristic, combined with abundant grasses provides relatively easy foraging opportunities during a critical time of the year. The valley currently sees approximately 150-200 bighorn sheep and 150 elk as well as smaller populations of mule deer and white-tailed deer in the winter. Moose appear to be uncommon and this is likely because of limited suitable habitat. In summer, most of the nursery sheep herd leaves Wind Ridge and migrates onto higher alpine ridges near the summit of Mt Allan and Mt Lougheed. Several lambing areas and important summer ranges have been identified that require protection from human activities. The Mount Allan Centennial Trail which passes through part of the natural area has been closed during the lambing season for many years. Rams are known to migrate from Wind Ridge to spend the summer as far south as Peter Lougheed Provincial Park. These migration patterns are similar from year to year. Less is known about elk movement patterns but it is believed that most leave Wind Valley to summer in other areas such as the Bow River Valley, the Kananaskis Valley, and the Spray Valley. Some calving likely occurs in Wind Valley.

With the abundance of prey species, Wind Valley is also an important area for carnivores such as grizzly bear, black bear, cougar, wolf and other smaller carnivores (wolverine, lynx, fox, coyote). The high alpine and subalpine areas provide excellent spring and summer vegetation for foraging bears. Several furbearer species are also present (marten, mink, red squirrel).

Wind Valley plays a significant role in maintaining the ecosystem integrity of several wildlife species on a larger regional scale due to its location as a hub for wildlife movements that link smaller metapopulations. The valley provides a key link between populations in the Kananaskis, Spray, and Bow River valleys. These wildlife corridors allow for the exchange of genetic material between populations that would soon lose genetic diversity if isolated. These important corridors include Skogan Pass which links the Kananaskis Valley to Wind Valley, and Pigeon Creek which links Wind Valley to the Bow River valley through Deadmans Flats. The Bow River valley in turn links Wind Valley with Banff National Park. As well, wildlife movement occurs between West Wind Valley and the Spray Valley. For species with larger home ranges such as wolves and grizzly bears, these corridors allow for a greater exploitation of the available land base and thus increase the number of individuals the land can support.

2.3 Land Use

The Wind Valley area is currently zoned “Critical Wildlife” (Zone 2) under the Kananaskis Country Integrated Resource Plan (IRP) in recognition of its high wildlife values. Under the Bow Corridor Integrated Resource Plan, northerly portions of the Wind Valley are zoned “Prime Protection” (Zone 1) as well as “Critical Wildlife.” Zone 1 lands under the Bow Corridor IRP include Wind Ridge and Pigeon Mountain.

The main use of Wind Valley Natural Area is hiking on the designated trails (Skogan Pass and Mount Allan Centennial) and several undesignated trails or routes. Strips of land containing the Skogan Pass and Mt. Allan trails were designated as Provincial Recreation Areas in 1981 under the Provincial Parks Act. As such they have had the same protection as provincial parks since then and this status will not change now that they are surrounded by Natural Area. Skogan Pass Trail was designated in 1992 as part of the National Trail. Use levels on the various trails are estimated by local rangers to be from ten to thirty people per summer weekend day. Occasional motorized use does reportedly occur but is restricted by gates and signs at main access points , as well as by legislation on the two designated trails and within Kananaskis Country. Vehicle use is a concern to be addressed in this plan. Equestrian and mountain bike use is estimated to be light. The use of helicopters for sightseeing or hiking access to high elevation areas has been a concern due to the impact on wildlife and conflict with other users of the area. Helicopter use in this and surrounding areas appears to be growing and needs to be addressed.

Hunting (elk, bighorn sheep and deer) has traditionally occurred in Wind Valley on a limited entry (permit) basis by both archers and rifle hunters. Trapping has also been a traditional activity in Wind Valley.

Winter use of the area appears to be very light with occasional ski touring or snow shoeing being the main form of activity.

The natural area is all provincial crown land although it does surround a parcel of private land as an island near the northern boundary. Alberta Environmental Protection has the main management responsibilities. There are several existing dispositions for a major powerline over Skogan Pass, four small communication facilities and two small access/exit roadways. Municipal authority for development control, emergency services etc. is presently shared between the Town of Canmore, Kananaskis Improvement District and the MD of Bighorn.

2.4 Administrative History

- pre 1930 - lower portions of Pigeon, Wind and West Wind Valleys become part of Canmore Mines property. Other parts are part of Rocky Mountains (Banff) Park
- 1930 - Park portions are transferred from the dominion to provincial government.
- 1954 - Skogan Pass powerline installed by Calgary Power Ltd. (now Trans Alta Utilities)
- 1958 - Pigeon Mountain Ski Hill lease issued.
- 1967 - Mt Allan Centennial Trail completed by Rocky Mountain Ramblers of Calgary
- 1992 - Natural Resources Conservation Board decision to not permit resort/residential development in the lower portion of Wind/Pigeon Valleys.
- 1993 - Land Exchange Agreement between Three Sisters Resorts Inc. and the provincial government
- 1995 - Minister of Environmental Protection announces the creation of Wind Valley Natural Area as one of 29 new areas during the launch of the Special Places initiative.

2.5 Natural Area Values and Rationale

Wind Valley Natural Area was designated by Order-In-Council in August 1995. It was one of 29 new Natural Areas announced by the Honourable Ty Lund, Minister of Environmental Protection, to launch Special Places. Special Places is a provincial government initiative to establish a network of natural landscapes, representing the diversity of Alberta's six natural regions, by the end of 1998. Wind Valley and surrounding area includes ecological and scenic resources of provincial significance and is located just south of the Trans-Canada Highway and Bow Valley where human activities are increasing. Its outstanding natural values and vulnerability to human impacts were recognized by the Natural Resources Conservation Board (NRCB) and the provincial government in 1992, when a major development proposed for the north end of the Valley was turned down. The provincial government subsequently acquired

virtually all lands in Wind Valley and designated it as Natural Area to provide the required protection while permitting certain traditional uses to continue. The Wilderness Areas Ecological Reserves and Natural Areas Act (WAERNA) provides for a high level of enforceable protection where justified while maintaining a more flexible management approach on other aspects.

The natural values that led to the creation of this Natural Area, are described in the Natural Resources Conservation Board (NRCB) Decision Report on the application by Three Sisters Resorts Inc. in November 1992.

"Wind Valley is an exceptionally fertile and diverse area and is rich in species of animals and plants. It is of particular importance for large carnivorous species such as grizzly bear, wolverine and black bear and also includes critical habitat for bighorn sheep and elk. The Wind Valley is an important route for movement of all these species between Banff, the Bow Valley and the north, and Kananaskis Country and the south".

In addition, it has very high scenic values. It is remarkable that the area has remained in a relatively undisturbed state and has retained its natural values given its proximity to the Trans Canada Highway and the Town of Canmore. Given these factors, Wind Valley makes an excellent Conservation Natural Area. It also offers excellent recreation, education and research opportunities with restrictions designed to adequately protect the area's natural values. The main intent of this Natural Area is one of conservation and the direction for all management strategies discussed in this plan are formulated on that basis.

3. MANAGEMENT ISSUES AND STRATEGIES

The following guidelines will provide management direction for a variety of uses, issues and activities that are, or could become, problems or conflicts. Allowing for the continued existence of the natural features and ecological processes is the underlying premise on which each management strategy has been developed. As part of this ecosystem management approach, responsible government agencies will establish and maintain an effective, positive working relationship with all surrounding landholders and stakeholders. The three municipal jurisdictions involved in these joint efforts include the Town of Canmore, Municipal District of Bighorn and Kananaskis Improvement District. Additional research which will assist the management of this natural area will be encouraged and research results will be used when appropriate to improve management of this Natural Area.

3.1 Conservation

3.1.1 The "Nature Takes its Course" Approach

The natural features and processes give the Wind Valley Natural Area its value, therefore they

will be protected and human interference will be kept to the minimum.

Some exceptions to this "nature takes its course" policy may be necessary to ensure that the effects of natural processes on human activities will be moderated. These would include: wildfires, weed and pest control, vegetation and wildlife management, trail access development or reclamation. These are addressed in more detail in later sections.

3.1.2 Fire

Wildfire has always played an important role in the natural succession and renewal of forest/plant communities by allowing the development of new, healthy forest growth. Allowing wildfire to run its course can cause major destruction and can endanger human life, animal life and property. Thus the present policy in Alberta is to suppress all wildfire in the initial or early stages. To counterbalance this, prescribed fire can be used as a management tool to achieve objectives such as habitat improvement. The use of prescribed burns can be controlled and limited to a specified area. The parameters of the prescribed burn can also be adjusted to best meet the objectives of the burn. For example: if the objective is forest canopy removal then the prescription - fire weather indices and the fire behaviour indices, are set to produce a crown fire. The same can be said for removal of ground vegetation where the burning prescription parameters are set to produce a surface fire.

In order to carry out a prescribed burn, a burn plan must be drawn up and approved. The plan must state the objectives of the burn, area to be burned, desired results to be achieved, natural controls in the area, manmade controls to be constructed, values at risk, resources required to safely implement the burn, burning parameters, ie desired fire weather and fire behaviour indices and finally assess the results achieved. Care must be taken at the higher elevations as soil layers are very thin and a hot fire could remove all the nutrients and "sterilize" the soil. This could cause erosion problems and hamper the revegetation/regrowth process. The burn plan is approved and signed by the Director of Forest Protection and personnel must adhere strictly to the burn prescription.

Research on fire history in the area will be encouraged. This knowledge could then be used to mimic nature and aide managers in deciding what areas should be burnt keeping in mind that the final decision to burn an area is dictated by the ability to control the fire and confine it to a specified area.

Section 4.4 contains information on the administration and coordination of fire suppression in the area.

3.1.3 Habitat Management

Habitat protection is a key element in the conservation of wildlife within Wind Valley. This involves the protection of key seasonal ranges such as wintering ranges and lambing areas from

direct habitat destruction and from indirect habitat alienation brought about by increased human use of the area. Activities that could potentially impact the utilization of critical areas within the valley will not be permitted. Recreational opportunities will be limited and designed so as to have minimal impacts on wildlife.

Some habitat enhancement has already occurred in Wind Valley and adjacent to Stewart Creek. This involved the clearing of tree cover (predominantly deciduous) to open up areas of the valley floor to promote the growth of grass and forbs for use as winter range by ungulates. Additional opportunities exist and will be identified by Fish and Wildlife for future development to maintain available habitat and to increase habitat diversity in the valley.

Habitat manipulation will only be considered if it has no significant impacts on threatened, rare or endangered species, fragile or limited natural communities or features, or the natural beauty of the site. The determination of impact significance will be on a case by case basis and will most often be based on the subjective assessment of Environmental Protection staff in conjunction with other professionals. Further inventory and assessment of vegetation and other features in the Wind Valley Natural Area is required to identify which require particular protection.

Protection of wildlife movement corridors within the natural area and linkages to critical areas outside of the Natural Area will be an ongoing effort addressed through the normal consultative/referral process with those jurisdictions responsible for the management of those lands. Of particular importance at present is the corridor linking Wind Valley to the Bow River valley. This corridor will require better delineation and protection through a consultative process with the private land holders involved.

3.1.4 Species Management

In exceptional circumstances, valuable features of the Natural Area or of the adjacent land as well as public safety may be threatened by the activities of some species of wildlife. Such occurrences may occasionally warrant the implementation of mitigative measures to control individual animals of specific species or populations. As in section 3.1.3, the significance of the threat will be determined by the Department of Environmental Protection and if mitigative measures are required they will be directed by departmental staff consistent with Natural Resources Service Policies for the recreation and protected areas program. Black and grizzly bear conflicts will be dealt with according to the Bear Conflict Prevention Plan (May 1995). This plan's primary objective is to define appropriate courses of action to minimize the probability of bear/human encounters while protecting and maintaining natural populations of black and grizzly bears in Kananaskis Country.

3.1.5 Weeds/Insects and Diseases

Should weeds, insects or disease seriously threaten the vegetation of the natural area or if the natural area is acting as a reservoir for pests that are significantly affecting adjacent lands or are a

threat to public health and safety, control measures will be taken. The control of weed species will be done by land managers under the authority of the Weed Control Act. In the case of insects and diseases, selective mechanical or biological methods of control are the preferred option rather than chemical. Any chemical control will be carried out consistent with Natural Resources Service Policy regarding Use of Pesticides.

3.1.6 Reclamation

Disturbed areas are restricted to various existing old roads or trails. A field assessment will be undertaken by departmental staff to map the location and condition of all the old roads and trails.

All old roads and trails will be closed to unauthorized vehicle use and allowed to revert back to their natural condition. Some of these which provide ready recreational access to sensitive areas may be reclaimed so as to reduce impacts.

The existing trails and the more heavily used random campsite areas will be monitored periodically for an assessment of environmental damage such as erosion, rutting, compaction and vegetative cover. If damage is occurring the areas would be closed to overnight camping and reclaimed if necessary. When reclaiming areas, natural materials and native species will be used.

3.2 Education and Research

3.2.1 Education/Interpretation

Educational or interpretive use of the Natural Area will not be actively encouraged. All users should carry out their activities so as to minimize their impacts. While basic trailhead sign information will be provided, and a brochure about the Natural Area may be prepared under the direction of departmental staff, no other interpretive signs or facilities will be developed at this time. To do so may promote heavier use than is desirable. Use will be monitored by the volunteer stewards and departmental staff. Research to assist in determining what reasonable use limits are will be encouraged. It is recognized that measures to limit the impacts of increased numbers of users include the provision of good information/educational materials to visitors. This will be considered at the appropriate time.

3.2.2 Research

Research proposals will be considered on a case by case basis provided such activities have no significant negative impacts on the area, the wildlife, or other users. Priorities for research will be given to projects that provide information to better manage the area, the wildlife, and habitat components contained therein. Long term research will be of particular value. Immediate areas of need include projects designed to identify wildlife corridors, role of historical wildfire in maintaining habitat diversity, establishing human use limits, and the identification of

sensitive/critical seasonal use areas for different wildlife species. Monitoring programs designed to monitor human use levels and impacts upon the site will be encouraged and used to better manage the area with implications for other areas within Kananaskis Country. Approval for research activities must be obtained in writing from Environmental Protection and a copy of all research results must be provided to the Department. Natural Resources Service Policy regarding Management of Research and Collection Activities will be followed.

New knowledge resulting from research will be used where it has been shown to be of benefit to the management of the Natural Area.

3.3 Recreation

Many forms of non-motorized, nature oriented recreation such as hiking, birdwatching and photography may occur. However, even these can have significant negative impacts on an area if large numbers of people are involved or if they occur at sensitive times of the year. Since the Natural Area has sensitive wildlife species and is partially within the very active Bow Corridor and the growing Town of Canmore, limitations are necessary to protect wildlife and other features and to ensure that the quality of the recreational experience remains high. These are detailed below.

The restrictions on recreation in Wind Valley Natural Area will include an Order-in-Council prohibiting or limiting certain activities. As well, promotion of the Natural Area will be limited with a minimum of necessary information and facilities being provided. A priority will be placed on determining overall recreation use limitations based on the concept of "Limits of Acceptable Change". Both environmental and user factors will be considered.

3.3.1 Trails

Trails will be kept to a minimum. Generally, they should be planned so that only part of the Natural Area will be affected and to ensure that no significant impacts on important features or on rare, endangered or threatened species, fragile or limited natural communities occur. Trail design should be adequate to provide for permitted uses and to prevent erosion and trampling of vegetation.

Presently, there is an undeveloped but usable trailhead parking area adjacent to Alpine Resort Haven (see Map 2). This serves the Skogan Pass and Mount Allan Centennial trails as well as access to other undesignated old roads and trails within the Natural Area. One of the most used of these undesignated roads leads into West Wind Valley and connects to other trails leading up to Wind Ridge. This provides outstanding views of much of the area as well as opportunities to view wildlife. In winter, this is one of the most important winter ranges in the Rockies for sheep and elk and there is a strong concern to limit disturbance at this time of year. In spring, lambing and elk calving occur here. In view of this, the existing undesignated trail into West Wind Valley will be closed to all public use during the critical winter and spring period (December 1st

to June 15th). This trail will not be designated (mapped, signed and maintained) in order to reduce visitor numbers at other times of the year. The winter/spring closure will cover the sensitive parts of West Wind Valley and have a boundary that is readily visible and/or posted with signs (see Map 2). It will be implemented by an Order-in-Council under the WAERNA Act. Monitoring by staff and volunteers will be carried out to determine the effectiveness of these measures. Other sensitive areas that will be watched closely include the alpine areas on Pigeon Mountain in winter and the alpine basins along the western boundary of the Natural Area in spring and summer. As well, the use of Skogan Pass by grizzly bears especially will be closely monitored. The existing annual spring closure (April 1st to June 15th) of the Mount Allan Centennial Trail will continue to protect Bighorn Sheep during lambing season.

The proposed route for the Trans Canada Trail may pass through or along the northern edge of the Natural Area. This is acceptable since it has been demonstrated that this is the only suitable route in the vicinity and, as proposed, will have minimal impact.

3.3.2 Camping/Picnicking

Some random camping reportedly occurs although less than in the past and primarily in the West Wind Valley. In order to limit impacts within Wind Valley Natural Area, no developed camping or picnic facilities will be provided. No-trace/minimum impact practises will be encouraged on trailhead signs. Impacts and conflicts due to camping and fires will be monitored by staff and volunteer stewards and, if they become a problem, restrictions will be considered.

3.3.3 Equestrian/Mountain Bike Use

Equestrian and Mountain Bike use of the Natural Area is reportedly light with some summer and fall day riding. These day uses will be permitted to continue and impacts will be monitored.

3.3.4 Hunting

Hunting is recognized as a legitimate and compatible recreational activity and will be permitted in the Natural Area consistent with Natural Resources Service regulations. Hunting also provides a mechanism to regulate population levels, and reduce habituation of animals to humans. The Natural Area contains portions that are restricted to either bowhunting only or a rifle/bow option.

Most hunting (excluding trophy sheep, spring black bear, and bird game) will be regulated by a limited permit or quota system based on estimated population sizes, hunter success rates, and desirable harvest rates (which can be adjusted according to desirable population objectives for each species as determined by Natural Resources staff). Formal inventories will be conducted at periodic intervals to monitor population levels in species such as elk and bighorn sheep and hunter harvests for most species. It should be noted that at present, hunting is presently prohibited by bylaw within the Town of Canmore portion of the Natural Area.

MAP 2
WIND VALLEY NATURAL AREA
IN
PARTS TWP.23 & 24, RGS.9 & 10, W.5M.
Canmore Area
ALBERTA
June 1996

LEGEND
— NATURAL AREA BOUNDARY
— PAVED ROAD
— IMPROVED GRAVEL
— TOWN OF CANMORE
— PATENTED LAND (WYOCON)
— FREEHOLD MINERAL RIGHTS
— CUTLINE - INFORMAL TRAIL
— PIPELINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Natural Resource Service
Recreation and Protected Areas

3.3.5 Motorized Vehicle Use

Unauthorized motorized vehicle (including Off Road Vehicle) use will not be allowed in the Natural Area because of the associated impacts and conflicts with permitted non motorized recreation activities. Motorized vehicle use is currently prohibited by regulation within the Kananaskis Country portion of the Natural Area. It is proposed that the boundary of the Kananaskis Country Forest Land Use Zone be amended to exclude all of the Natural Area. An Order-in-Council under WAERNA will be put in place to enforce the no vehicles provision throughout the Natural Area. The existing gates will be left in place and adequate signage installed by the Department. An assessment will be done during the summer of 1996 to determine the need for additional signs or measures to physically restrict vehicle use. Reclamation of portions of existing trails will be considered as one option. Monitoring of the success of these measures will be done by volunteer stewards and departmental staff.

Motorized vehicle use will only be allowed in emergency situations such as fire or when human life or safety is threatened. Vehicle use for research purposes will be discouraged and only allowed when shown to be necessary. These measures have proven to be effective in Kananaskis Country.

3.3.6 Mushroom/Berry Picking

Berry and mushroom picking are not expected to create significant impacts and will continue to be permitted uses in the Natural Area. Monitoring will indicate if additional restrictions are required in the future.

3.3.7 Removal of Flora, Fauna, Fossils and Artifacts

Removal of these features will not be permitted except as described in 3.3.6 above, for authorized research purposes, or hunting or trapping. A regulation prohibiting such removals will be established by Order-in-Council under WAERNA.

3.4 Resource Extraction

3.4.1 Grazing/Timber Removal

Domestic livestock grazing is not a permitted use in the natural area. Equestrian users will be informed by word of mouth and trailhead signage of the requirement to pack in their own horse feed. If monitoring shows unacceptable impacts, then further restrictions will be considered.

Timber cutting will not be permitted in this area except on a very limited basis as follows. If there is an infestation of insects and/or diseases which threatens adjacent natural resources or other important features, low impact selective logging may occur as a control measure. The only

other reasons for such removal would be for an approved fire hazard reduction or habitat management program. If such activities occur, only the affected trees will be removed to control the spread of infestation or conform to the approved plan. The method of removal would likely be by helicopter so as to minimize impacts on the Natural Area and consider aesthetics.

3.4.2 Trapping

The one current Registered Fur Management Area (RFMA) that includes most of the Natural Area will remain in effect. Any reassignment of this RFMA would consider an amendment to exclude the Wind Valley Natural Area.

3.5 Other Issues

3.5.1 Access and Roads

There are no public roads within the Natural Area. Three Sisters Resorts has an Agreement for Easement for an emergency fire road exit for a future residential development near Pigeon Creek (see Map 2). As well, they hold a Licence of Occupation for an access road to their water intake on Stewart Creek (see also Map 2). Old roads and trails within the Natural Area will be reclaimed either naturally or actively as determined by a staff assessment.. The existing public road to Alpine Resort Haven and the existing undeveloped trailhead parking area for the Skogan Pass and Mt. Allen Centennial Trail will serve as the main access and trailhead for the Natural Area (see Map 2). Additional trailhead signage providing Natural Area information will be installed and maintained by departmental staff. No directional signage to the trailhead is proposed at this time.

3.5.2 Linear Developments

With the exception of the existing electrical power transmission line, no further linear development such as roads, pipeline or other power transmission lines will be permitted. Some upgrades of the existing powerline may be permitted. As well, limited mechanical brush removal for vegetation control on the powerline right-of-way will be permitted to maintain safe operation of the line. However the upgrades and brush removal projects must be the minimum necessary and be approved in writing by Environmental Protection. The existing Skogan Pass and Mt. Allan Centennial Trails will be maintained as non-motorized recreation trails.

3.5.3 Helicopter Activity

Helicopter landings for sightseeing or other recreation purposes within the Natural Area, will require a permit issued by Environmental Protection staff under authority of an Order-in-Council to be passed under WAERNA. Examples of permit conditions are indicated in 3.5.4 above. Overflights will be discouraged from specific locations, times and low elevation flights by

negotiating with helicopter operators. These negotiations will occur on an ongoing basis between staff of Environmental Protection and the operators and will consider the Natural Area in a larger regional context. Monitoring of overflights and landings will be done by departmental staff and volunteer stewards.

3.5.4 Commercial Recreation

Any commercial recreation activities proposed within the Natural Area, will require a permit issued by Environmental Protection staff under the authority of an Order-in-Council to be passed under WAERNA. This will ensure that impacts and conflicts are minimized. Generally, these activities would have to be nature-based, not require motorized access, and involve small groups on a day-use only basis. No commercial recreation facilities will be permitted to be developed. Examples of permit conditions include locations and timing of use, seasons, group size and total numbers of commercial and non-commercial visitors.

3.5.5 Private Land

There is a private inholding of undeveloped land near Stewart Creek surrounded by the Natural Area (see map 2). Presently, it has no road access. This parcel is not included in the Natural Area and its development potential is unknown. Development control for this parcel is under the Town of Canmore's jurisdiction.

3.5.6 Freehold and Crown Mineral Rights

Freehold mineral rights exist within the northerly portion of the Wind Valley Natural Area. (see Map 2). While the province will explore ways of resolving the potential conflict, currently the owners of these rights can apply to the provincial government and the Alberta Energy and Utilities Board (AEUB) for permission to explore or develop. Such an application would trigger existing review processes that would determine whether development was in the public interest. An application for surface access would be reviewed by the provincial government in light of land use policies and guidelines which would include the fact that this was now a Natural Area with a high degree of protection. There are no existing Crown mineral agreements within the Natural Area. The only new crown mineral agreements that could have been issued in the Natural Area prior to this Management Plan would have been for petroleum and natural gas in the small Zone 2 portion of the Bow Corridor planning area (see Map 2). However, as a result of this management planning process within Wind Valley Natural Area, there will be no issuance of new crown rights and the Bow Corridor IRP will be amended to reflect this.

3.5.7 Boundary Amendments

The Pigeon Mountain Candidate Natural Area was identified in the 1960s along the base of the north slopes of Pigeon Mountain. The main features identified were cold sulphur springs and associated vegetation and included Douglas Fir forest. Because of the partial overlap of this

candidate area with Wind Valley Natural Area (see Map 2), it is proposed to amalgamate the overlap portion and leave the north portion as Pigeon Mountain Candidate Natural Area. Further boundary amendments in this vicinity and near Fall Creek will be investigated.

3.5.8 Approval of Activities not Discussed in this Plan

Specific activities may be identified which are not discussed in this plan. For these activities to be approved, they must:

- a) be compatible with the objectives for the Natural Area;
- b) not damage rare, endangered or threatened species or their habitats;
- c) not damage significant or special features of the Natural Area or impair its aesthetic values;
- d) be approved by the Southern East Slopes Environmental Resource Committee (ERC) in conjunction with the Kananaskis Country Interdepartmental Committee (KCIC).

4. PROGRAM SUPPORT

4.1 Physical Structures

For the present, no facilities for education or interpretation will be developed in the Natural Area. If facilities or educational/interpretive materials are approved in the future, they will be restricted to designated trails, small scale viewing blinds or areas and possibly some onsite signage. Such facilities will normally be funded from outside government. The role of government would include planning and design and limited maintenance in addition to the monitoring, enforcement and administrative functions.

4.1.1 Signage

No directional signs indicating the name of the site will be placed along the Trans Canada Highway. "Natural Area" boundary signs will be supplied by Parks Management and placed where needed on the perimeter. The provision, installation and maintenance of approved trailhead and on-trail signs will be done jointly by Parks Management and volunteer stewards. Prior to installation, approval must be received in writing from Parks Management located in Canmore.

4.1.2 Facilities

The existing temporary trailhead near Alpine Resort Haven will have a standard Kananaskis

Country trailhead kiosk installed. This will contain a map, basic trailhead and natural area information as well as several specific messages designed to lessen the impacts of recreation use and ensure longterm protection. Trailhead use levels will be monitored on a regular basis and, as demand warrants, changes may be considered.

The two existing designated trails and other random use trails within the natural area will be monitored by volunteer stewards and departmental staff for their condition and adequacy in limiting impacts especially on area wildlife.

4.2 Regulations and Enforcement

Enforcement of existing regulations will be provided by government agencies under their existing mandates. Signs will be erected and maintained at the trailhead to inform users of existing rules and regulations. The establishment of a new regulation under the Natural Areas legislation which prohibits vehicle use throughout the Natural Area, prohibits all use of the Wind Ridge area in winter, limits removal of natural objects from the Natural Area and restricts commercial recreation activities including helicopter landing is required. Parks Management will ensure that this is implemented as soon as possible following the approval of this plan.

4.3 Site Monitoring

Regular on-site monitoring will be the joint responsibility of volunteer stewards and staff of Parks Management, Fish and Wildlife and Land and Forest Service staff. Parks Management in Canmore will coordinate the volunteer stewards. The intent of monitoring will be to determine whether or not natural values are being maintained and whether appropriate use is occurring. It would be desirable to have volunteer stewards establish and maintain a visitor registry at the trailhead. The results of monitoring will be reported to Parks Management and, wherever appropriate, used in the management of the Natural Area.

4.4 Wildfire

Alberta Land and Forest Service is responsible for the prevention, detection and suppression of all wildland fires in the Forest Protection Area. The majority of the Wind Valley Natural Area is within the protection area. The remainder of the area is under the jurisdiction of the Town of Canmore or The MD of Bighorn. The Land and Forest Service has cooperative agreements with the Canmore Fire Department as well as with other local fire departments within the Municipal District of Bighorn (M.D. #8) and Improvement District #5 to action fires outside the protection area.

4.5 Communications

Parks Management will supply signs for the Wind Valley Natural Area. No other printed brochures or maps are planned at this time.

5. ADMINISTRATION

Administration and management of the Wind Valley Natural Area will be the joint responsibility of provincial government agencies and volunteers as identified throughout the plan.

5.1 Boundary Changes

The existing "Green Area" boundary that separates Kananaskis Country from the Bow Corridor should be moved northwards to include all of the Natural Area (see Map 2). This recognizes the undeveloped crown land nature of the area and will consolidate the land management responsibilities within Environmental Protection.

The Kananaskis Country Forest Land Use Zone boundary should be amended to exclude all of the natural area. In its place, an Order-in-Council under the *Wilderness Areas, Ecological Reserves and Natural Areas Act* will prohibit vehicle use and otherwise limit recreation use to provide adequate protection to the natural area.

5.2 Role of Volunteer Stewards

Individuals or groups of local people are invited to come forward and assume the responsibilities of volunteer stewards. The goal of this program is the protection of the natural features and promotion of nature-oriented activities.

In all respects, the stewards responsibilities will conform to the standards set out by the Natural Areas Volunteer Steward Program. The volunteer stewards are to assist Parks Management and other departmental staff in monitoring and reporting on the conditions of the Natural Area and, if mutually agreed-to, conducting inventory or research activities. They will also provide input to the ongoing management process. They will have no enforcement role, and in witnessing a questionable act, they will only, OBSERVE, RECORD, AND REPORT.

At a minimum, their tasks will include:

- visiting the Natural Area twice per year
- observing and reporting to local contacts in Parks Management any destruction or alteration of the site through inappropriate activities
- locating and maintaining signs along the Natural Area boundary and designated trails
- completing and submitting an annual Natural Area inspection form to their local contact.

Additional projects could be considered, depending on the interest, time and experience of the

volunteer stewards. Project ideas should be submitted to the Land Management Coordinator, Parks Management in Canmore for review and approval.

5.4 Role of MD of Bighorn, The Town of Canmore and Kananaskis Improvement District

These jurisdictions presently share municipal jurisdiction within the Wind Valley Natural Area (see map 1). The established practice of all three jurisdictions is to coordinate emergency services as well as to refer any planning or development matters to those neighboring jurisdictions who stand to be affected. This will continue. In addition, a Terms of Reference for the Bow Corridor Ecosystem Advisory Working Group has been developed. It is expected that this group will have representation from all the jurisdictions in the Bow Valley and will coordinate research and make recommendations on a range of environmental topics to its members. For example, the topic of forest fire response strategies and wildlife corridors are being discussed. It is anticipated that improved coordination of land use and municipal planning will result from this working group.

5.5 Roles of Environmental Protection

The co-ordination of plan implementation and day-to-day management of the site is the responsibility of Environmental Protection staff. Roles include administration, planning, information/education and enforcement. They will provide technical advice and support to and work closely with, the volunteer stewards in managing and maintaining this site. Overall management authority for this natural area will be provided by the Environmental Resource Committee of the Southern East Slopes Region and the Kananaskis Country Interdepartmental Committee (KCIC).

5.6 Process for Plan Amendments

The management plan is based on existing knowledge of the site and, consequently will need to be updated from time to time. Such updates will incorporate the results of monitoring research and evaluation and normally include public consultation.

As new issues arise, they will be dealt with to follow, as closely as possible, the intent for the site. Should changes to the management plan be required, they will be noted on the covering sheet and the involved agencies/groups will be informed and consulted. The Environmental Resource Committee (ERC) will be involved in all plan amendments.

Major review of the Management Plan will be considered at five year intervals and include public consultation. In exceptional cases, a review may be requested and initiated when a new and substantial issue/concern arises or as new information becomes available.

Appendix A

Wind Valley Natural Area In The Context of Alberta's Province Wide System Of Recreation And Protected Areas

Provincial Objectives

Natural Resources Service, Alberta Environmental Protection has adopted four broad program objectives which guide the selection, designation and management of Alberta's province wide network of recreation and protected areas. These four objectives: preservation, heritage appreciation, outdoor recreation, and tourism/economic development have been adopted as the goals of the Alberta Government's Special Places 2000 Policy.

The province wide objectives for the recreation and protected areas network or system are:

Preservation - to preserve and protect in perpetuity a system of representative, special and outstanding natural landscapes and features as well as landscape-related prehistoric, historic and cultural resources in Alberta.

Heritage Appreciation - to provide opportunities to explore, understand and appreciate the natural, historical and cultural heritage of Alberta, and to enhance public awareness of our natural environment, and our relationship to and dependence on it.

Outdoor Recreation - to provide a variety of intensive and dispersed outdoor recreation opportunities and related facilities and services.

Tourism\Economic Development - to encourage residents and visitors to discover and enjoy the natural, historical and cultural resources of the province through a variety of recreation opportunities, facilities and accommodation services.

To achieve these objectives or goals in a systematic fashion a number of tools have been adopted. these include the Natural Regions Framework and the Classification Framework.

Natural Regions Framework

The land classification framework "Natural Regions and Subregions of Alberta" provides the scientific basis to evaluate environmental diversity to achieve the preservation objective. This landscape based hierarchy systematically describes the environmental diversity of Alberta in terms of geological features and landforms, terrestrial and aquatic ecosystems, plant and animal species, populations and habitats and the environments and processes that sustain them. The classification framework is set up in such a way that larger, more general landscapes are divided into smaller units on the basis of specific natural characteristics. At the broadest level the

province is divided into six Natural Regions: Grasslands, Parkland, Boreal Forest, Canadian Shield, Foothills and Rocky Mountains. These six Natural Regions are divided into 20 Subregions which in turn are divided into three levels of Natural History Themes. Level 1 themes are readily identified landforms such as wetlands, bedrock and valley/ridges. Level 2 themes are more specific breakdowns of Level themes. They include distinctive vegetation communities and highly visible geological features such as spruce/fir forests and glacial moraines. Level 3 themes are finer breakdowns of level 2 themes and include rare plants and specific geologic features such as waterfalls. The details of this framework are provided in "*Natural Regions, Subregions, and Natural History Themes of Alberta: A Classification for Protected Areas Management, 1994 (Report #2)*).

Wind Valley Natural Area is located in the Rocky Mountain Natural Region and includes components of all three Subregions: Alpine, Subalpine and Montane. Approximately 80% of the Natural Area is Subalpine, 15% Alpine and 5% Montane.

Of the 14 Level 1 Natural History Themes identified for the three Subregions of the Rocky Mountain Natural Region, 8 occur in Wind Valley Natural Area. A summary of the Level 1 and 2 themes found in Wind Valley Natural Area is provided in the following table.

Natural History Themes In Wind Valley Natural Area

Alpine Subregion

Level 1 Themes

Valley/Ridge/Floor/Stream
(applies to stream-influenced valley bottoms including the stream channel and related riparian woodlands and shrubbery)

Valley/Ridge/Ridge/Valley Wall

Level 2 Themes

Colluvial
Fluvial
Snow Communities-deep
Snow Communities-moderate
Stream

Bedrock-calcareous
Colluvial
Snow Communities-deep
Snow Communities-moderate
Snow Communities-shallow

Subalpine Subregion

Valley/Ridge/Floor/Stream

Fluvial
Forest-deciduous

	Forest-lodgepole pine Forest-spruce Shrubbery
Valley/Ridge:Valley Wall	Bedrock-calcareous Colluvial Forest-deciduous Forest-old-growth Forest-spruce-fir Front Ranges Graminoid Shrubbery Snow Avalanche Slope Subalpine-lower Subalpine-upper Timberline/Krummholz
Wetland:Mineral	Shrubbery
Montane Subregion	
Valley/Ridge:Floor/Stream	Forest-aspen Forest-lodgepole pine Forest-spruce Grassland River Shrubbery Spring Outwash-fluvial Outwash-glacial
Valley/Ridge:Valley Wall	Colluvial Forest-Douglas fir Forest-aspen Forest-lodgepole pine Forest-spruce Grassland Shrubbery
Wetland:Mineral	Marsh Shrubbery

Legislative Framework/Classification

Natural Resources Service is responsible for the administration and management of recreation and protected areas designated under the Provincial Parks Act and the Wilderness Areas, Ecological Reserves and Natural Areas Act. Under these two pieces of legislation, seven distinct categories or classes of recreation and protected areas are established: Ecological Reserves, Wilderness Areas, Wildland Parks, Provincial Parks, Natural Areas, Recreation Areas and Wayside and access Sites. Each site established under the legislation is designated in one of the seven categories on the basis of environmental significance and sensitivity, potential visitor opportunities and priorities for management of the site. Each of these categories contributes in varying degrees to the four broad program objectives: **Preservation, Heritage Appreciation, Outdoor Recreation and Tourism/Economic Development**. The following graphic visually depicts the emphasis of the four objectives across the spectrum of recreation and protected areas established under the above two acts.

EMPHASIS OF THE FOUR OBJECTIVES ACROSS THE SPECTRUM OF RECREATION AND PROTECTED AREAS

The classification system is intended to:

- express the primary purpose and the role of individual areas in achieving the four program objectives--Preservation, Heritage Appreciation, Outdoor Recreation and Tourism/Economic Development.

- assist visitors in selecting appropriate areas to satisfy their outdoor recreation and heritage appreciation needs; and
- assist Natural Resources Service in establishing clear and consistent development, management, and operational policies, standards and guidelines.

Purpose and objectives have been adopted for each of the classes. Following are the purpose and objectives for Natural Areas. These statements provide a context for the Management Plan for Wind Valley Natural Areas.

Natural Areas

LEGISLATION Wilderness Areas, Ecological Reserves and Natural Areas Act.

The Act provides the authority to designate any area of public land as a Natural Area, in order to:

- and
- (a) protect sensitive or scenic public land from disturbance,
 - (b) ensure the availability of public land in a natural state for use by the public for recreation, education or any other purpose.

PURPOSE Areas selected as representative, special or sensitive natural landscapes and features of the province which are set aside to protect their natural values and provide opportunities for nature appreciation, education and low intensity recreation.

OBJECTIVES

Protection Protects provincially, regionally and locally significant representative, special, sensitive or scenic natural landscapes and associated flora and fauna.

Heritage Appreciation

Provides opportunities for unstructured exploration, enjoyment, understanding and appreciation of Alberta's natural heritage. Educational and interpretive programs may be provided.

Outdoor Recreation Provides a land base for low intensity, day use, nature oriented outdoor recreation. Facilities are kept to a minimum and may include staging areas with parking, privies, garbage receptacles trails and interpretive structure

Tourism

Provides a land base for a variety of eco-tourism activities throughout the province.

Appendix B

PROVINCE OF ALBERTA

WILDERNESS AREAS, ECOLOGICAL RESERVES AND NATURAL AREAS ACT

**Revised Statutes of Alberta 1980, Chapter W-8
with amendments in force as of June 5, 1987
not including unproclaimed amendments**

Consolidated June 7, 1989

OFFICE CONSOLIDATION

Published by the Queen's Printer
for Alberta

Distributed by:

Publication Services
11510 Kingsway Avenue
Edmonton. T5G 2Y5
427-4952
Fax 451-4109

and

Publication Services
Main Floor, McDougall Centre
455 - 6th Street S.W.
Calgary. T2P 4E8
297-6251

\$3.00

NOTE

All persons making use of this consolidation are reminded that it has no legislative sanction, that the amendments have been embodied for convenience of reference only, and that the original Acts should be consulted for all purposes of interpreting and applying the law.

UNPROCLAIMED AMENDMENTS

This consolidation incorporates only those amendments in force on the date shown on the cover. It does not include the following amendments not proclaimed in force on that date:

RSA 1980 c12 (Supp.) s1(25), which amends the Schedule.

REGULATIONS

The following is a list of the regulations made under the *Wilderness Areas, Ecological Reserves and Natural Areas Act* that are filed as Alberta Regulations under the *Regulations Act* as of the consolidation date shown on the cover:

Wilderness Areas, Ecological Reserves and Natural Areas Act

	Alta. Reg.	Amendments
Ecological Reserves		
Athabasca Dunes	313/88	
Crow Lake	275/87	
Goose Mountain	314/88	
Hand Hills	14/88	
Kennedy Coulee	435/87	
Kootenay Plains	277/87	
Marshybank	278/87	
Silver Valley	279/87	
Upper Bob Creek	48/89	
Wainwright Dunes	15/88	
Whitemud Falls	315/88	
Natural Areas		
Kootenay Plains	265/78	
Natural Areas Designation	47/85	41/87, 121/87, 125/87, 247/87, 344/87, 368/87, 369/87, 373/87, 456/87, 481/87

WILDERNESS AREAS, ECOLOGICAL RESERVES AND NATURAL AREAS ACT

CHAPTER W-8

Table of Contents

Definitions	1
Advisory Committee	2
Wilderness areas	3
Ecological reserves	3.1
Hearings	4
Programs	5
Termination of leases, permits etc.	6
Prohibition	7
Prohibited activities	8
Exceptions	9
Offences	10
Travel restrictions	11
Controlled buffer zones	12
Natural areas	12.1
Penalties	13
Regulations	14

Schedule

Preamble

WHEREAS the continuing expansion of industrial development and settlement in Alberta will leave progressively fewer areas in their natural state; and

WHEREAS it is in the public interest that certain areas of Alberta be protected and managed for the purposes of preserving their natural beauty and safeguarding them from impairment and industrial development; and

WHEREAS to carry out these purposes for the benefit and enjoyment of present and future generations it is desirable to establish certain kinds of areas and reserves and to provide varying degrees of protection to those areas and reserves;

1981 c76 s3

THEREFORE HER MAJESTY, by and with the advice and consent of the Legislative Assembly of Alberta, enacts as follows:

Definitions

1 In this Act,

(a) "Advisory Committee" means the Advisory Committee on Wilderness Areas and Ecological Reserves;

(b) "controlled buffer zone" means an area of land designated as a controlled buffer zone by the regulations;

(b.1) "ecological reserve" means land designated as an ecological reserve under section 3.1;

- (c) "government agency" means
- (i) a corporation that is an agent of the Crown in right of Alberta, or
 - (ii) a corporation, commission, board or other body empowered to exercise quasi-judicial or governmental functions and whose members are appointed by an Act of the Legislature, the Lieutenant Governor in Council, or a Minister of the Crown, or any combination thereof;
- (d) "Minister" means
- (i) in the case of a wilderness area or ecological reserve, the Minister of Recreation and Parks, and
 - (ii) in the case of a natural area, the Minister of Forestry, Lands and Wildlife;
- (d.1) "natural area" means land designated as a natural area under section 12.1;
- (e) "public land" means land of the Crown in right of Alberta;
- (f) "wilderness area" means an area of land specified in the Schedule as a wilderness area.

RSA 1980 cW-8 s1;1981 c76 s4;1986 cD-20.5 s17

Advisory
Committee

- 2(1) The Lieutenant Governor in Council shall establish a committee called the "Advisory Committee on Wilderness Areas and Ecological Reserves" consisting of 12 members and shall designate one of the members as chairman.
- (2) The Lieutenant Governor in Council may prescribe the term of office of any member of the Committee and the term of office of the chairman.
- (3) The Minister shall designate a member of the Advisory Committee as the secretary to the Committee.
- (4) The Advisory Committee shall consist of
- (a) 2 employees of the Department of Recreation and Parks,
 - (b) 1 employee of the Department of Energy,
 - (b.1) 2 employees of the Department of Forestry, Lands and Wildlife,
 - (c) 1 employee of the Department of Culture and Multiculturalism, and
 - (d) 6 persons who are not employed by the Government or a government agency.
- (5) The Lieutenant Governor in Council may authorize, fix and provide for the payment of remuneration and expenses to any of the members of the Advisory Committee who are not employees of the Government or of a government agency.
- (6) The Advisory Committee shall meet at the call of the chairman, or at the direction of the Minister.

(7) The Advisory Committee shall receive and consider requests from the public regarding wilderness areas and ecological reserves and may make recommendations to the Minister regarding

- (a) the establishment of new wilderness areas or ecological reserves;
- (b) the addition of land to wilderness areas or ecological reserves;
- (c) the withdrawal of land from wilderness areas or ecological reserves;
- (d) the making of regulations for the administration, management, operation and utilization of wilderness areas, ecological reserves and controlled buffer zones.

(8) The Minister shall refer any recommendations made by the Advisory Committee under subsection (7) to the Executive Council for its consideration.

(9) A copy of any recommendation made by the Advisory Committee under subsection (7) shall be laid before the Legislative Assembly by the Minister if it is in session and if not, within 15 days after the commencement of the next ensuing session.

RSA 1980 cW-8 s2; 1981 c76 s5; 1986 cD-18.1 s14;
1986 cD-20.5 s16; 1987 c20 s9

Wilderness areas **3** The areas of land described in the Schedule to this Act are established as wilderness areas.

RSA 1980 cW-8 s3

Ecological reserves **3.1(1)** The Lieutenant Governor in Council, in order to preserve public lands for ecological purposes, may by regulation designate as an ecological reserve any area of public land that, in his opinion,

- (a) is suitable for scientific research associated with the studies of natural ecosystems,
- (b) is a representative example of a natural ecosystem in Alberta,
- (c) serves as an example of an ecosystem that has been modified by man and that offers an opportunity to study the recovery of the ecosystem from that modification,
- (d) contains rare or endangered native plants or animals that should be preserved, or
- (e) contains unique or rare examples of natural biological or physical features.

(2) No ecological reserve shall be established or disestablished, and the area constituting an ecological reserve shall not be altered, unless public notice of the proposed establishment, disestablishment or alteration is given.

(3) A public notice under subsection (2) shall

- (a) state whether the proposed action under this section involves the establishment, disestablishment or alteration of an ecological reserve,
- (b) state the effective date of the proposed action.

Chap. W-8 WILDERNESS AREAS, ECOLOGICAL RSA 1980
RESERVES AND NATURAL AREAS

- (c) give the legal description of the public land affected by the proposed action,
- (d) if a public hearing is to be held under section 4, give the date of the public hearing,
- (e) give the name and address of the person to whom representations may be made, and
- (f) be published at least 60 days prior to the effective date of the proposed action in
 - (i) The Alberta Gazette,
 - (ii) at least one issue of a daily newspaper in Calgary, Edmonton, Lethbridge and Red Deer, and
 - (iii) at least one issue of a daily or other periodical newspaper, if any, that has a regular circulation in the immediate vicinity of the public land affected by the proposed action.

1981 c76 s6

Hearings

4(1) The Environment Council of Alberta, when requested by the Lieutenant Governor in Council, shall hold public hearings for the purpose of receiving and hearing submissions and representations respecting any proposal made by the Executive Council for the establishment of a new wilderness area or ecological reserve or the addition of any land to, or the withdrawal of any land from, an existing wilderness area or ecological reserve.

(2) The Minister may authorize the holding of public hearings for the purpose of receiving and hearing submissions and representations respecting

- (a) any recommendations made by the Advisory Committee under section 2(7), or
- (b) any other matter pertaining to the administration and management of wilderness areas or ecological reserves.

1981 c76 ss7,16

Programs

5 The Minister may carry out or cause to be carried out measures or programs in a wilderness area or ecological reserve, or approve the carrying out by other persons of measures or programs in a wilderness area or ecological reserve.

- (a) for the management and preservation of the animal and plant life and the environment of the wilderness area or ecological reserve,
- (b) for environmental research that does not involve any physical disturbance of the wilderness area or ecological reserve,
- (b.1) for the furtherance of public education and interpretation, and
- (c) generally, for the preservation and protection of the wilderness area or ecological reserve.

RSA 1980 cW-8 s5; 1981 c76 ss8,16

Termination of
leases, permits
etc.

6(1) Subject to subsections (2) and (3), if at the time any public land is established as part of a wilderness area or ecological reserve or is added to a wilderness area or ecological reserve a person other than the Crown holds, in respect of that land, an interest under or pursuant to

RSA 1980 WILDERNESS AREAS, ECOLOGICAL Chap. W-8
RESERVES AND NATURAL AREAS

- (a) a disposition granted under the *Public Lands Act* and the regulations under that Act,
- (b) a lease, permit, easement or other disposition under the *Special Areas Act* and the regulations under that Act,
- (c) a timber disposition as defined in the *Forests Act*,
- (d) a surface disposition granted under any other Act or regulation, or
- (e) a disposition as defined in the *Mines and Minerals Act*.

the Minister of the Crown who is charged with the administration of the relevant Act referred to in clauses (a) to (e) shall ensure as far as practicable that the interest is withdrawn, cancelled or otherwise terminated as soon as possible.

(2) Subsection (1) does not apply so as to require the Minister of Energy to withdraw, cancel or otherwise terminate an interest under a petroleum or natural gas disposition in an ecological reserve.

(3) The Minister of Recreation and Parks may, when an ecological reserve is established or added to, permit interests under

- (a) dispositions granted under the *Public Lands Act* or the *Special Areas Act* and the regulations under those Acts in connection with a petroleum or natural gas disposition made under the *Mines and Minerals Act*,
- (b) other dispositions granted under the *Public Lands Act* and the regulations under that Act,
- (c) leases, permits, easements and other dispositions under the *Special Areas Act* and the regulations under that Act,
- (d) timber licences and timber permits under the *Forests Act*, and
- (e) permits to graze livestock granted under the *Forest Reserves Act* and the regulations under that Act

that exist on or relate to the ecological reserve or the land added to the ecological reserve at the time the ecological reserve is established or added to, as the case may be, to continue until their expiry and to be renewed, but no interest referred to in clauses (a) to (e) may be continued or renewed unless the Minister of Recreation and Parks consents in writing to the continuation or renewal.

1981 c76 s9; 1986 cD-18.1 s14

Prohibition

7(1) Subject to section 6, the Crown

- (a) shall not, on land that has been established as a wilderness area, dispose or permit the disposition on its behalf of any of the interests referred to in section 6(1), and
- (b) shall not, on land that has been established as an ecological reserve, dispose or permit the disposition on its behalf of any of the interests referred to in section 6(1)(a) to (d).

(2) No Minister of the Crown or government agency, or other person authorized by an Act to do so, shall grant any permission, whether termed as approval, consent, permit, licence, certificate, order or otherwise, which would in the absence of this subsection empower the person to whom it is granted to expropriate or acquire any estate or interest in land in a wilderness area or ecological reserve.

Chap. W-8 WILDERNESS AREAS, ECOLOGICAL RESERVES AND NATURAL AREAS RSA 1980

(3) No Minister of the Crown, government agency or other person on behalf of the Crown shall

(a) construct, maintain, repair or operate any public work, road, railway, aircraft landing strip, helicopter base, structure or installation in a wilderness area or ecological reserve, or

(b) expend or authorize expenditure of any money for any of those purposes.

RSA 1980 cW-8 s7:1981 c76 ss10,16

Prohibited
activities

8(1) No person shall

(a) travel in a wilderness area except on foot,

(b) hunt or trap animals in a wilderness area or ecological reserve,

(c) fish in a wilderness area or ecological reserve,

(d) land an aircraft in a wilderness area or ecological reserve,

(e) deposit any litter, garbage or refuse in a wilderness area or ecological reserve except in places provided and designated for that purpose,

(f) unless authorized by the Minister, collect, destroy or remove any plant life or animal life (or bird eggs) or excavate or remove fossils or other objects of geological, ethnological, historical or scientific interest in a wilderness area or ecological reserve,

(g) take into or use in a wilderness area a horse or pack animal or any motorized vehicle,

(h) introduce into, deposit in or add to a wilderness area or ecological reserve a material or substance that is or may be harmful to plant or animal life in the wilderness area or ecological reserve,

(i) operate a motorized vehicle or motor boat in an ecological reserve except on routes or in areas designated for that purpose under the regulations,

(j) light or maintain an open fire in an ecological reserve, or

(k) without the consent of the Minister

(i) construct, reconstruct or add to an improvement on, or

(ii) do any act that will alter or disturb the surface of

land within a wilderness area or ecological reserve.

(2) A person who contravenes subsection (1) is guilty of an offence.

RSA 1980 cW-8 s8:1981 c76 ss11,16

Exceptions

9 Sections 7(3) and 8 do not apply to any of the following actions by the Minister or by persons authorized by the Minister:

(a) the carrying out of measures or programs referred to in section 5;

(b) the use of any equipment or means of transportation for the purpose of, or the doing of any act in connection with,

(i) the prevention or extinguishing of forest fires.

RSA 1980 WILDERNESS AREAS, ECOLOGICAL Chap. W-8
RESERVES AND NATURAL AREAS

- (ii) the prevention of damage to natural resources or property.
or
- (iii) emergencies involving the health or safety of persons.

RSA 1980 cW-8 s9

Offences

10(1) A person who destroys or damages or pollutes any land, water, plant life or animal life in a wilderness area or ecological reserve is guilty of an offence.

(2) Subsection (1) does not apply to a person who destroys or damages plant life or animal life in a wilderness area or ecological reserve in the course of removing it under the authority of the Minister given under section 8(1)(f) or while carrying out an activity consented to by the Minister under section 8(1)(k).

RSA 1980 cW-8 s10; 1981 c76 ss12,16

Travel
restrictions

11(1) The Minister may by order prohibit or restrict travel in a wilderness area or ecological reserve during any period either absolutely or except under the authority of a permit issued by or on behalf of the Minister.

(2) A person who contravenes an order of the Minister under subsection (1) is guilty of an offence.

RSA 1980 cW-8 s11; 1981 c76 s16

Controlled buffer
zones

12(1) The Lieutenant Governor in Council may, by regulation, designate any area of public land adjoining a wilderness area or ecological reserve as a controlled buffer zone.

(2) On an area of land being designated as a controlled buffer zone

(a) the Surface Rights Board established under the *Surface Rights Act* shall not make any order under that Act granting right of entry, use or taking of the surface of any land in a controlled buffer zone for the purpose of strip mining or quarrying,

(b) the Minister of Forestry, Lands and Wildlife shall not issue or renew a lease under the *Public Lands Act* which would permit the use of the surface of any land in a controlled buffer zone for the purpose of strip mining or quarrying, and

(c) no person shall cause, allow or undertake any strip mining or quarrying in the controlled buffer zone.

(3) On an area of land being designated as a controlled buffer zone

(a) no licence, interim licence or permit shall be issued under the *Water Resources Act* for any diversion, undertaking or works, and

(b) no person shall cause or allow or undertake any diversion, undertaking or works in the controlled buffer zone.

(4) In this section "licence", "diversion", "undertaking" and "works" have the same meanings that they have in the *Water Resources Act*.

(5) A person who contravenes subsection (2)(c) or (3)(b) is guilty of an offence.

RSA 1980 cW-8 s12; 1981 c76 ss13,16; 1986 cD-20.5 s17

Chap. W-8 WILDERNESS AREAS, ECOLOGICAL RESERVES AND NATURAL AREAS RSA 1980

Natural areas

12.1(1) The Lieutenant Governor in Council may, in order to

- (a) protect sensitive or scenic public land from disturbance, and
- (b) ensure the availability of public land in a natural state for use by the public for recreation, education or any other purpose.

by regulation designate any area of public land as a natural area.

(2) Land that has been designated as a natural area under the *Public Lands Act*, the *Provincial Parks Act* or a predecessor of either of those Acts is deemed to have been designated under this Act, and the designation is continued under this Act.

(3) No disposition as defined in the *Public Lands Act* or timber disposition as defined in the *Forests Act* shall be made by or on behalf of the Crown in relation to land in a natural area without the consent of the Minister.

1981 c76 s14

Penalties

13 A person who is guilty of an offence under this Act or the regulations is liable

- (a) for the first offence, to a fine of not less than \$50 and not more than \$1000 and in default of payment to imprisonment for a term of not more than 60 days,
- (b) for a 2nd offence, to a fine of not less than \$100 and not more than \$5000 and in default of payment to imprisonment for a term of not more than 120 days, and
- (c) for a 3rd or subsequent offence
 - (i) in the case of a natural person, to imprisonment for a term of not less than one month and not more than 6 months, or
 - (ii) in the case of a corporation, to a fine of not less than \$10 000 and not more than \$50 000.

RSA 1980 cW-8 s13

Regulations

14(1) The Lieutenant Governor in Council may make regulations respecting the administration, management, operation and utilization of wilderness areas, ecological reserves, natural areas and controlled buffer zones.

(2) A regulation under subsection (1) may, without restricting the generality of subsection (1), transfer to any Minister of the Crown powers and duties under this Act in relation to all or any part of a wilderness area, ecological reserve, natural area or controlled buffer zone.

1981 c76 s15

SCHEDULE

WILDERNESS AREAS GHOST RIVER WILDERNESS AREA

All those parcels or tracts of land, situated, lying, and being in the Province of Alberta, Canada, and being composed of:

All those portions of what would be if surveyed under the system of surveys under the *Surveys Act*, townships twenty-seven (27) and twenty-eight (28), ranges ten (10) and eleven (11), west of the fifth (5) meridian, which are shown outlined in red on a plan of Ghost River Wilderness area of record in the Department of Recreation and Parks at Edmonton as Number 1431 Temporary.

The land herein described containing fifty-nine and fourteen hundredths (59.14) square miles, more or less.

SIFFLEUR WILDERNESS AREAS

All those parcels or tracts of land, situated, lying, and being in unsurveyed territory in the Province of Alberta, Canada, and being composed of:

All those portions of unsurveyed townships thirty-three (33) to thirty-five (35) inclusive, range sixteen (16), townships thirty-two (32) to thirty-five (35) inclusive, range seventeen (17) and townships thirty-three (33) and thirty-four (34), ranges eighteen (18) and nineteen (19), all west of the fifth (5) meridian, as shown outlined in red upon a map or plan of the said portions of record in the Department of Recreation and Parks at Edmonton as No. 1370 Temporary. The land herein described containing one hundred and fifty-nine and thirteen hundredths (159.13) square miles, more or less.

WHITE GOAT WILDERNESS AREA

All that parcel or tract of land, situated, lying, and being in the Province of Alberta, Canada, and being more particularly described as follows:

Commencing at a point on the east boundary of Banff National Park, distant three hundred (300) yards northwesterly measured along the said boundary from its intersection with the Norman Creek-Pinto Lake Trail in unsurveyed township thirty-six (36), range twenty-one (21), west of the fifth (5) meridian; thence in a northeasterly direction parallel to the said trail to a point on the left bank of the Cline River, which point is approximately four hundred (400) yards downstream from where the said trail first crosses the Cline River; thence downstream following the sinuosities of the said bank to a point on the said bank opposite the mouth of a small unnamed creek; which point is approximately one (1) mile upstream from the confluence of the said Cline River with Coral Creek in unsurveyed township thirty-seven (37), range eighteen (18), west

of the fifth (5) meridian; thence northwesterly following the height of land forming the west boundary of the watershed of Coral Creek and continuing along the height of land forming the easterly and northerly boundary of the watershed of McDonald Creek to Mount McDonald in unsurveyed township thirty-nine (39), range twenty-one (21), west of the fifth (5) meridian; thence southerly approximately one (1) mile to an unnamed peak; thence westerly down the slope of this latter peak to the source of the easterly fork of an unnamed creek; thence westerly and northerly following the unnamed creek to its intersection with the east boundary of Jasper National Park in unsurveyed township thirty-nine (39), range twenty-one (21), west of the fifth (5) meridian; thence southerly, southwesterly and southeasterly following the east boundary of Jasper and Banff National Parks to the point of commencement.

The land herein described containing one hundred and seventy-one and sixty-five hundredths (171.65) square miles, more or less.

RSA 1980 cW-8 Schedule

Appendix C

List of Species

BIRDS SEEN IN THE WIND VALLEY (Berger, R.P., et.al., 1991):

American robin		pine grosbeak	
barn swallow		pine siskin	
bald eagle	(uncommon)	purple finch	
black-capped chickadee		red-breasted nuthatch	
blue grouse		red-tailed hawk	
blue jay		ruby-crowned kinglet	
boreal chickadee		ruffed grouse	
bufflehead duck		rusty blackbird	
cedar waxwing		savannah sparrow	
chipping sparrow		solitary vireo	(uncommon)
Clark's nutcracker		spruce grouse	
common loon		Steller's jay	(uncommon)
common raven		Swainson's thrush	
Cooper's hawk	(endangered)	Tennessee warbler	
dark-eyed junco		Townsend's warbler	
eastern phoebe	(rare)	unknown flycatcher	
golden-crowned kinglet		unknown warbler	
golden eagle	(uncommon)	varied thrush	
goldeneye duck		veery	(uncommon)
goshawk		Vesper sparrow	
grasshopper sparrow		warbling vireo	
gray catbird		western wood pewee	
gray jay		white-breasted nuthatch	
hairy woodpecker	(uncommon)	white-crowned sparrow	
least flycatcher		white-tailed ptarmigan	
mallard duck		white-winged crossbill	
northern flicker		Wilson's warbler	
northern three-toed woodpecker		yellow warbler	
	(uncommon /rare)	yellow-rumped warbler	
osprey	(uncommon)		
pileated woodpecker	(rare/uncom)		

BIRDS SUSPECTED TO BE IN THE AREA:

alder flycatcher		Lazuli bunting	
American kestrel		Lincoln's sparrow	
barred owl	(rare)	MacGillivray's warbler	
black-backed woodpecker	(very rare)	merlin	(rare)
black-billed magpie		mountain bluebird	
Bohemian waxwing		mountain chickadee	
boreal owl	(uncommon)	northern goshawk	(rare)
brown creeper	(rare)	northern harrier	(rare)
Cassin's finch		northern hawk owl	(very rare)
cliff swallow		northern pygmy owl	(rare)
common flicker		northern saw-whet owl	
common nighthawk	(uncommon)	olive-sided flycatcher	
common redpoll		orange-crowned warbler	
common yellowthroat		ovenbird	
downy woodpecker	(rare)	red crossbill	
dusky flycatcher		red-eyed vireo	
eastern kingbird		sharp-shinned hawk	(rare)
evening grosbeak		short-eared owl	(very rare)
fox sparrow		snow bunting	
great gray owl	(endangered)	song sparrow	(uncommon)
great horned owl	(uncommon)	tree swallow	
hermit thrush		willow flycatcher	
hoary redpoll		winter wren	(uncommon)
house sparrow		yellow-bellied sapsucker	(uncommon)
house wren			
killdeer			

AMPHIBIANS AND REPTILES OBSERVED IN THE WIND VALLEY AREA (Axys, 1995):

wandering garter snake
western toad
wood frog
spotted frog - in adjacent areas (rare)
chorus frog - in adjacent areas (rare)
long-toed salamander - in adjacent areas (**endangered**)

FISH IN THE WIND VALLEY AREA: (UMA Environmental - Final Report 1991)

No fish species were found in the Wind Valley Natural Area creeks. At the mouth of Pigeon Creek where it joins the Bow River (outside of the Natural Area), Brown Trout and Brook Trout have been noted to spawn.

Species found in the Bow River are:
Mountain Whitefish
Brown Trout
Eastern Brook Trout
Rainbow Trout
Bull Trout (**endangered**)

LARGE MAMMALS: (Van Egmond - Final Report - 1991)

bighorn sheep		lynx	
black bear		marten	
bobcat		moose	
cougar		mule deer	
coyote		white-tail deer	
elk		wolf	
grizzly bear	(endangered)	wolverine	(endangered)

SMALL MAMMALS: (Van Egmond - Final Report - 1991)

American porcupine	red-backed voles
American red squirrel	snowshoe hare
beaver	Richardson's ground squirrel
Columbian ground squirrel	Richardson's water vole
deer mouse	striped skunk
dusky shrew	thirteen-lined ground squirrel
Gapper's red-backed vole	varying hare
golden-mantled ground squirrel	western jumping mouse
heather vole	woodrat
least chipmunk	yellow pine chipmunk
least weasel	* little brown bat
long-tailed vole	*big brown bat
long-tailed weasel	*silver-haired bat
masked shrew	*hoary bat
meadow vole	
mink	
muskrat	
northern bog lemming	
northern flying squirrel	
northern pocket gopher	
pika	

* - known to exist in B.V.

PLANTS KNOWN IN THE WIND VALLEY AREA:

TREES AND SHRUBS:

(Axys, 1995)

aspen	lodgepole pine
balsam poplar	low-bush cranberry
blueberry willow	prickly rose
bog birch	prince's pine
bracted honeysuckle	red-osier dogwood
Canada buffaloberry	saskatoon
Douglas fir	short-fruited willow
dwarf birch	shrubby cinquefoil
green alder	snowberry
ground juniper	subalpine fir
grouseberry	twining honeysuckle
Labrador tea	water birch
	white meadowsweet
	white spruce
	wild gooseberry
	wild red raspberry
	willow spp.
	wolf willow
	[limber pine]

HERBS AND FORBS:

(Axy's, 1995)

alpine bluegrass
alpine fleabane
alpine milk vetch
American milk vetch
arrow-leaved coltsfoot
ashpodel
aster
bastard toadflax
beaked sedge
bistort
bitter fleabane
black-tipped groundsel
blue grass
blue-eyed grass
bluebunch wheat grass
blunt-leaved orchid
bog cranberry
bog orchid
bracted orchid
bronze-bells
bunchberry
chickweed
cinquefoil
common bearberry
common butterwort
common fireweed
common pink wintergreen
coral-root orchid (Striped)
cow parsnip
cut-leaved anemone
dwarf bramble
dwarf horsetail
Drummond's rock cress
early blue violet
elephant's head
fairybells
feldwort
fescue grass
field horsetail
field pussytoes

fleabane
finged gentian
grass-of-parnassus
green-keeled cotton grass
greenish-flowered wintergreen
golden Alexanders
goldenrod
groundsel
hairy wild rye
heart-leaved arnica
hedysarum
Kentucky bluegrass
lady's slipper orchid
late yellow loco-weed
leafy aster
Lindley's aster
meadowrue
milk vetch
mitrewort / bishop's cap
mountain hairgrass
mountain timothy
northern anemone
northern bedstraw
northern goldenrod
northern green orchid
northern sweet vetch
northern wheat grass
one-flowered wintergreen
one-sided wintergreen
pale coral-root
palmate-leaved coltsfoot
pea vine
pearly everlasting
Philadelphia fleabane
prairie cinquefoil
prairie groundsel
purple clematis
pussytoes
rattlesnake plantain
red fescue grass

red paint brush
rock cress
round-leaved rein orchid
running raspberry
rush
senecio
sheathed sedge
shooting star
showy aster
showy everlasting
silverweed
single-spike sedge
smooth aster
sparrow's egg lady's slipper orchid
spiked goldenrod
sticky asphodel
sweet cicely
sweet-scented bedstraw
tuffed hair grass

twinflower
variegated horsetail
Venus lady's-slipper orchid
western wood lily
wheat grass
white camas
white hawkweed
white pussy-toes
wild columbine
wild sarsaparilla
wild strawberry
wild nodding onion
wire rush
woodland horsetail
yarrow
yellow mountain avens
yellow hedysarum

NON-VASCULAR PLANTS IN THE AREA:

(Axys, 1995)

Christmas tree moss
cladonia lichens
cladonia scales lichen
common coral lichen
common witch's hair
dog lichen
green starburst lichen
hoary rosette lichen
knight's plume
leatherleaf lichens
pixie cup lichen
ragbag lichen
red-stemmed feather moss

step moss
stiff-leaved polytrichum
toad pelt lichen
velcro lichen
waxpaper lichen

bracket fungi
earthstar fungi
puffballs (fungi)

stonewort

RARE PLANTS THOUGHT TO BE IN THE WIND VALLEY AREA :

(Dhol, S. 1995)

Alaskan rein orchid
mountain lady's slipper (Cypripedium montanum)
moss gentian
northwestern twayblade

one-flowered cancerroot (ghost pipe)