ALBERTA GOVERNMENT SERVICES
LAND TITLES OFFICE

IMAGE OF DOCUMENT REGISTERED AS:

991025530

ORDER NUMBER: 27658134

DEED OF CONSERVATION EASEMENT

THIS DEED OF CONSERVATION EASEMENT ("Easement" or "Conservation Easement"), made as of this 15 day of [illegible], 1998, by the Town of Canmore whose address is 600 9th Street, Canmore, Alberta T1W 2T2 ("Grantor") and Rocky Mountain Elk Foundation Canada, a Canadian non-profit corporation, whose address is P.O. Box 940, Rocky Mountain House, Alberta, T0M 1T0 ("Grantee").

WITNESSETH:

WHEREAS, the Town of Canmore is the owner of all the real property in the Town of Canmore (the "Property"), described in Exhibit A and shown in Exhibit B; and

WHEREAS, the Town of Canmore intends to convey this Easement under the Alberta Environmental Protection and Enhancement Act ("EPEA") and other provisions of Alberta statutory and common law; and

WHEREAS, the Property has significant relatively natural habitat for native wildlife and ecological, scenic, aesthetic, open space, and biological diversity values as recognized in the EPEA; and

WHEREAS, the Property is considered a necessary and integral component of the critical wildlife corridors defined and protected by the Town of Canmore, and

WHEREAS, the Property constitutes a valuable element of the natural habitat of the Canmore area and its ecological, scenic, aesthetic and open space values, including flora, fauna, and soils. The Property provides significant migratory habitat for elk, and also provides habitat and migration corridors for other large mammals, small mammals, many species of birds, and other wildlife. The maintenance of such natural habitat helps support wildlife populations and biological diversity in the Canmore area. All of these natural, ecological, scenic, habitat, wildlife, aesthetic, and open space values (the "Conservation Values") are of great importance to the RMEF and to the people of the Province of Alberta, and are worthy of preservation for the purposes of protecting, conserving and enhancing the environment, and the natural scenic and aesthetic values of the Property and the Canmore area; and

WHEREAS, the Town of Canmore desires and intends that the Conservation Values of the Property be preserved and maintained to protect and conserve the environment and the natural scenic and aesthetic values, by the continuation, initiation, or introduction of patterns of land use on the Property that will not interfere with or substantially disrupt the ecosystem, and are consistent with preserving and maintaining the Conservation Values (the "Primary Uses"), and

WHEREAS, the Town of Canmore, as the owner in fee of the Property, owns the rights necessary to identify, to preserve and protect in perpetuity, and to enhance by restoration the natural ecosystems, the natural elements and processes, and the great scenic and aesthetic values of the Property; and

WHEREAS, the Town of Canmore desires and intends to transfer certain of such rights to the Grantee, provided that the Town of Canmore's right to use the Property for the Primary Uses is also protected and preserved in the manner more particularly set forth in this Easement; and

WHEREAS, the Grantee is a qualified organization under Section 22.1(1)(e)(iv) of the EPEA, and has the capability to preserve and conserve natural areas and significant land for ecological, scenic, aesthetic, scientific, charitable, and educational purposes; and

WHEREAS, the donation of this Easement is an ecological gift to the Grantee, which is a certified qualified organization for the purposes of Section 118.1 of the Canadian Income Tax Act; and

WHEREAS, the Province of Alberta has recognized the importance of private efforts toward the preservation of natural systems in the province by the enactment of the EPEA; and

WHEREAS, the parties wish that any interpretation of this Easement shall be construed so as to further the preservation, protection, and enhancement of wild and free ranging elk, and the other natural, ecological, scenic, aesthetic and open space values of the Property; and

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and pursuant to the EPEA, and other provisions of Alberta statutory and common law, the Town of Canmore hereby grants, conveys, and warrants to the Grantee this perpetual Conservation Easement over the Property to the Grantee for the purposes of preserving and maintaining the Conservation Values. The scope of this Conservation Easement is set forth in this agreement. This conveyance is a donation from the Town of Canmore to the Grantee.

SECTION I - RIGHTS OF GRANTEE

The rights conferred by the Town of Canmore to the Grantee to perpetually maintain the Conservation Values of the Property in this Easement include the following:

A Identification and Protection. The Grantee has the right to identify, to preserve and protect in perpetuity, and to enhance by mutual agreement, the Conservation Values, including the natural and open space, the ecological, scenic and aesthetic features, the water resources, and the natural flora and fauna on the Property, in the manner set forth in this Easement, subject, however, to the Town of Canmore's reserved rights in this Easement.

B Access. The Grantee has the right to enter the Property to inspect, monitor, and enforce compliance with this Easement at reasonable times. The Grantee also has the right to undertake observations or ecological studies of natural resources protected by this Easement in a manner that will not unreasonably interfere with the use of the Property by the Town of Canmore.

The general public is granted access to the Property under this Easement, only on designated and maintained trails. The Grantee shall have the right of immediate entry upon the Property if, in the Grantee's sole judgement, such entry is necessary to prevent immediate damage to or the immediate destruction of the conservation purposes of this Easement.

C Preservation, Injunction, and Restoration. The Grantee has the right to prevent any activity on, or use of, the Property which is inconsistent with this Easement. The Grantee is entitled to take any legal action to prevent such activity, including but not limited to, obtaining an injunction in a court of competent jurisdiction. The Grantee also has the right to enforce the reasonable restoration of such areas or features of the Property as may be damaged or impaired by any activities or failure to take action which are inconsistent with this Easement. The Grantee shall be entitled to recover its reasonable legal fees in enforcing its rights under this Easement.

D Signs. The Grantee has the right to place signs on the Property which identify the land as being protected by this Conservation Easement. The number and location of the signs are subject to the Town of Canmore's approval.

E Grantee as Occupant. The Grantor is the owner and the Grantee is an occupant for the purposes of the Alberta Surface Rights Act and successor legislation.

F Grantee Potentially Affected. The parties recognize that both Town of Canmore and the Grantee would be directly and adversely affected by any activity which could be authorized by statute or other act which has the potential of disturbing the Conservation Values, including, without limiting the foregoing, use of the Property by elk and other wildlife and the Property's biological diversity.

SECTION II- GENERAL EFFECT OF EASEMENT

A Perpetual Restrictions. This Easement shall run with and burden the title to the Property in perpetuity, and shall bind the Town of Canmore and all future owners of the Property.

B Permitted Uses in General. This Easement shall confine the use of the Property to activities such as the Primary Uses, consistent with the terms of this Easement. Any activity on or use of the Property inconsistent with the purposes or terms of this Easement, or detrimental to the Conservation Values or to the protection, conservation or enhancement of the environment, or natural scenic or aesthetic values as expressed in this Easement, is expressly prohibited.

C Dedication of Property. Pursuant to the terms of the EPEA and the Property preserved by this Easement is declared to be open space and natural land, ecologically significant, and may not be converted or directed to any uses other than those provided in this Easement.

SECTION III - PERMITTED USES AND PRACTICES

The attached Management Plan (Exhibit C), while not an exhaustive recital of permitted uses and practices, is consistent with this Easement. The permitted uses preserved below may not be precluded or prevented by this Easement except when this Easement requires prior approval of an activity by the Grantee as provided in Section IV of this Easement or when such uses or practices are conducted or allowed to take place in a manner which violates the terms of this Easement, poses a serious threat to the Conservation Values protected by this Easement, or constitutes an inconsistent use or uses as set forth in section V of this Easement.

Permitted uses shall include the following:

A Limited Human Use. General public use of the easement will be restricted to trail use as set forth in the attached management plan (Exhibit C) (hereinafter referred to as "the plan"). Trail use shall be limited to non-motorized traffic. Grantor may use the Property for conservation of habitat and wildlife. Such trail uses include but are not limited to, education and traditional or generally accepted recreational activities allowed by law and that are not inconsistent with the intent of this Conservation Easement.

B Fencing. Fencing is allowed along the trails. The height, location and construction of fences shall be governed by the plan.

C Vegetation Management. Fire, livestock grazing, and holistic vegetation management may be utilized as vegetation management tools only as prescribed in the plan. Vegetation management activities will be generally restricted to the time period between July 1st and October 31st to decrease disturbance to wildlife and birds.

D Public Education. Public education signage will be provided pursuant to the plan. Limited use of the easement by school children for educational purposes will be allowed.

E Habitat Manipulation. For the enhancement of wildlife habitat and to reduce the chances of fire, disease and parasites, the habitat may be manipulated by tree removal and vegetation management, as specified in §III, ¶C, above. Habitat manipulation shall be coordinated with the vegetation management, and shall be subject to §V, ¶O. The Property will be managed to promote migration of large mammals.

F Research. Non-intrusive research to study corridor functions may occur on the easement.

G Monitoring. The effectiveness of the corridor easement may be monitored according to a comprehensive monitoring plan, which shall be established by the parties as soon as practicable.

H Hunting Hunting is allowed on the Property but only with the written pre-authorization of the Grantor, and then only when necessary to disperse wildlife when over-utilization occurs. Any authorized hunting must be within municipal, federal and provincial regulation.

SECTION IV - PRIOR APPROVAL OF ACTIONS BY THE GRANTEE

If any provision of this Easement requires the Town of Canmore to obtain the prior approval of the Grantee before performing any act or undertaking any enterprise, then the Town of Canmore shall not perform that act or undertake that enterprise until it has satisfied the notice and approval provisions of this section. Nothing in this Section shall prohibit or limit in any manner the ability of the Grantee to obtain orders, injunctive relief or other relief relating to any violation of this Easement.

A Town of Canmore's Written Notice Prior to the commencement of any activity, use, or enterprise which requires the Grantee's approval, the Town of Canmore will notify the Grantee in writing of the activity, use or enterprise which the Town of Canmore intends to undertake. This notice must inform the Grantee of all aspects of such proposed activity. The Town of Canmore will send such notices to the Grantee by registered or certified mail, return receipt requested, addressed to the Grantee at P.O. Box 940, Rocky Mountain House, Alberta, T0M 1T0, or to such other address as the Grantee may designate in writing.

B The Grantee's Response The Grantee shall have forty five (45) days from the date that it receives such notice, as indicated by the registered or certified return receipt, to review the proposed activity, use, or enterprise, and to notify the Town of Canmore of any objections that it may have to the activity, use, or enterprise. The objections, if any, shall be based upon the Grantee's opinion that the proposed activity is inconsistent with the purpose and/or provisions of this Easement. If, in the Grantee's judgment, the proposal set forth by the Town of Canmore can be modified to conform with the purposes and provisions of this Easement, then the response shall inform the Town of Canmore of the manner in which the proposed activity can be modified to be consistent with this Easement. Except as provided in Paragraph C of this Section, the Town of Canmore can commence or conduct the proposed activity, use, or enterprise only if it receives the Grantee's express written approval, and only in the manner explicitly proposed by the Town of Canmore and approved by the Grantee. The Grantee will send such response to the Town of Canmore by registered or certified mail, return receipt requested, addressed to the Town of Canmore, 600 9th Street, Canmore, Alberta, T1W 2T2, or to such other address as the Town of Canmore may designate in writing.

In the event it is the Grantee's opinion that the proposed activity is objectionable, based on the foregoing criteria, then, the Grantee shall make a good faith effort to advise the Town of Canmore how its proposal can be modified to conform with the purposes of the provisions of this Easement.

C The Grantee's Failure to Respond If the Grantee fails to post its response to a proposal sent to it by the Town of Canmore within forty five (45) days after it receives the proposal, then the proposed activity shall automatically be deemed consistent with the terms of this Easement, and the Grantee will have no further right to object to the activity described in the proposal.

D Force Majeure The Town of Canmore will not be obligated to send any notice to the Grantee, and the Grantee will not be entitled to bring any action against the Town of Canmore, with respect to any prudent activity undertaken by the Town of Canmore in a good faith effort to prevent, abate, or mitigate injury to the Property from fire, flood, storm, earth movement, vandalism, acts of war, and similar causes beyond the control of the Town of Canmore. The Town of Canmore will promptly inform the Grantee of injury to the Property caused by such causes.

SECTION V - INCONSISTENT USES

Any activity on or use of the Property inconsistent with the purposes of this Conservation Easement or detrimental to the Conservation Values is expressly prohibited. The Town of Canmore states and agrees that the

following uses and practices, though not an exhaustive recital of inconsistent uses and practices, are deemed to be inconsistent with the purposes of this Easement, and shall be prohibited:

A Commercial Facilities and Activities. The Town of Canmore may not establish or conduct any commercial or industrial facilities or activities (other than those necessary in the operation or uses of the Property expressly permitted by this Easement) including, but not limited to, any restaurant, night club, campground, trailer park, motel, hotel, commercial swimming pool, snowmobiling, gas station, retail outlet or facility for the manufacture or distribution of any product.

B Game Farming or Game Farm Animals. The Town of Canmore will not construct, conduct, or operate a game farm, or raise or hold game farm animals on the Property, which include any game farm animals regulated, or prohibited, by the *Alberta Livestock Diversification Act*, or other federal or provincial law and include privately owned caribou, black bear, grizzly bear, mountain lion, white-tailed deer, mule deer, black-tailed deer, coues deer, elk, moose, antelope, mountain sheep, mountain goat, red deer, or any other cloven-hoofed ungulate indigenous to Alberta, or which could inter-breed with, or spread disease to, any cloven-hoofed ungulate indigenous to Alberta.

C Aircraft Facilities. The Town of Canmore will not construct or erect any aircraft facilities or aircraft landing facilities on the Property.

D Wildlife Disturbance or Harassment. Harassment of elk or other wildlife by people or domestic animals is also prohibited. The Town of Canmore will not conduct or pursue any activity, including but not limited to, snowmobile or all terrain vehicle use, which may be reasonably anticipated to disturb or harass elk or other wildlife.

E Alteration of Watercourses and Topography. The Town of Canmore will not change, disturb, alter, excavate, or impair any watercourse or wetland or the topography of the surface of the ground on the Property, except as expressly permitted by this Easement, or without the prior approval of the Grantee pursuant to Section IV of this Agreement.

F Non-native Species. The Town of Canmore will not knowingly introduce any non-native plant or animal species (except as otherwise expressly allowed by this Easement).

G Construction. The Town of Canmore does not have the right to construct any structures or facilities.

H Roads. The Town of Canmore does not have the right to construct any roads but may use or construct trails in connection with timber management for wildlife habitat protection and enhancement.

I Off-Road Vehicles. Neither the Town of Canmore nor the Grantee has the right to use vehicles off of existing roads in a manner which may result in significant erosion or compaction of the soil, impact on the natural appearance of the land, interference with vegetation, or interference with the natural habitats of those animal species occurring on the Property. The parties recognize, however, that the use of off-road vehicles may be necessary in forest and range management for protection and enhancement of elk and wildlife habitat, and such limited use is therefore expressly allowed solely to the Town of Canmore and the Grantee, in accordance with any relevant terms of the Management Plan, provided that all reasonable efforts are made to minimize any adverse impact of the use, consistent with the terms and intent of this Easement.

J Dumping. Trash, debris, and other non-compostable refuse may not be dumped or otherwise disposed of on the Property, except that generated by timber and range management operations, allowed by III, ¶ C & E of this Agreement, on the Property associated with protection and enhancement of elk and wildlife habitat.

K Utilities. Any utility structures and systems must be buried, unless prior approval is obtained from the Grantee.

L Subdivision The Town of Canmore may not subdivide the Property.

M Mineral Activities. The Town of Canmore shall not permit any access to the Property other than public recreational access through existing trails, unless required to by law, under the *Forests Act, Mines and Minerals Act, Public Highways Development Act, Public Lands Act, Exploration Regulation* (Alta. Reg. 32/90) or other legislation relevant to access by a party other than the Town of Canmore, without first obtaining the prior approval of the Grantee pursuant to Section IV of this Agreement. Each party agrees to give the other written notice should it become aware of any such activity or proposed activity.

N Timber Harvesting. The Town of Canmore does not have the right to harvest timber on the Property, except in accordance with §III of this Agreement, the attached Management Plan (Exhibit C) and §V, ¶ O, below.

O Raptor Nests. The Town of Canmore will not cut or disturb any trees or other vegetation within 300 feet of any active raptor nest during the nesting season, nor will it remove any crown trees or overstory vegetation within 300 feet of any active raptor nest at any time. However, diseased trees may be cut down and removed during the non-nesting season to abate infestations if required by law.

P Billboards. The Town of Canmore will not construct, maintain, or erect any commercial signs or billboards on the Property. Small signage may, however, be displayed to state the name of the owner and Property, that the area is protected by this Conservation Easement, the prohibition of any unauthorized entry or use, or the advertisement for the sale of the Property.

SECTION VI - BREACH, RESTORATION, AND REMEDIES

A Enforcer. This Easement may be enforced by the Grantee, or by such other person appointed in accordance with section 22.1 of the Environmental Protection and Enhancement Act (the Grantee or appointed person herein jointly referred to as the "Enforcer").

B Breach and Restoration. If a violation of any restriction on use contained in Section V of this Easement, or if damage to any of the Conservation Values associated with the Property, whether caused by the Town of Canmore or by a third party, comes to the attention of the Enforcer, the Enforcer may notify the Town of Canmore in writing of such violation. Upon receipt of such notice by the Enforcer, the Town of Canmore agrees to immediately cease and desist from any actions which may in any manner, potentially or possibly, violate the terms or intent of this Easement and or the restrictions contained in Section V or which may damage the Conservation Values.

The Town of Canmore shall have thirty (30) days after receipt of such notice to undertake actions, including initiation of restoration of the Property, that are reasonably calculated to swiftly correct the conditions caused by such violation. If the Town of Canmore fails to take such corrective action, the Enforcer at its discretion may undertake such actions, including appropriate legal proceedings, as are reasonably necessary to effect such corrections. The cost of such corrections, including the Enforcer's expenses, court costs, and legal fees, shall be paid by the Town of Canmore, provided that the Town of Canmore, through either action or inaction, is determined to be responsible for the violation. In the event the Town of Canmore is determined to not be in violation of this Easement, either through action or inaction, then the Town of Canmore's legal fees shall be paid by the Enforcer. Provided, however, and notwithstanding any provision of this Easement to the contrary, the Town of Canmore expressly agrees that if any activities are taking place on the Property which may potentially or possibly violate the terms or intent of this Easement and/or the restrictions contained in Section V, that Enforcer is entitled, at any time, to seek and obtain any orders, injunctive relief, or any other relief from a court of competent jurisdiction so as to preserve and protect the Property until there is final resolution of any dispute.

C Nuisance. Without derogating from any other rights of the Enforcer, in addition to whatever other remedy at law or equity, any violation of this Easement in whole or in part, is hereby declared a nuisance and every

remedy allowed by law or equity against a person causing or permitting a nuisance, whether public or private, may be exercised by the Enforcer

D Injunctive and Other Relief The Town of Canmore and the Grantee further intend that should the Town of Canmore undertake or cause to be undertaken any activity which requires the approval of the Grantee without obtaining the prior consent of the Grantee in the manner required by Section IV of this Easement, or should the Town of Canmore undertake or cause to be undertaken any activity in violation of the terms of this Easement, then the Grantee, at the Grantee's sole election, shall have the right to obtain injunctive relief or writs from courts of competent jurisdiction to stop any unauthorized activities and shall have the right to force the reasonable restoration of that portion of the Property affected by such activity to a condition similar or equivalent to the condition that existed prior to the undertaking of such unauthorized activity Such restoration may include restoring soils, replanting suitable domestic vegetation, or taking such other reasonable action as the Grantee deems necessary to achieve restoration In such case, the costs of such restoration and the Grantee's costs of suit, including legal , shall be borne by the Town of Canmore or those of its successors or assigns against whom a judgment is entered, or in the event that the Grantee secures redress without a completed judicial proceeding, by the Town of Canmore or those of its successors or assigns who are otherwise determined to be responsible for the unauthorized activity. In the event a judgment is entered against the Grantee or Enforcer in an effort to seek injunctive relief or restoration and the Town of Canmore is held not to be in violation of this Easement, then the Grantee or the Enforcer shall pay the Town of Canmore's costs of suit, including legal fees Nothing contained in this Easement shall be construed to preclude the Grantee from exhausting its legal remedies in determining whether the proposed activity to which the Grantee has objected is inconsistent with this Easement

E Actual or Threatened Non-Compliance The Town of Canmore acknowledges that actual or threatened events of non-compliance under the Conservation Easement constitutes immediate and irreparable harm. The Grantee is entitled to invoke the equitable jurisdiction of any court to enforce this Conservation Easement

F Cumulative Remedies The remedies of the Enforcer set forth in this Easement are cumulative Any, or all, of the remedies may be invoked by the Enforcer if there is an actual or threatened violation of this Conservation Easement

G Delay in Enforcement A delay in enforcement shall not be construed as a waiver of the Enforcer's right to eventually enforce the terms of this Conservation Easement.

H Notwithstanding any other provision of this Agreement, the parties here to covenant and agree that the obligation to restore the Property to its prior condition, or to pay any costs, as provided in this Section VI, may be enforced only against that party or parties who shall have caused such damage through action or inaction, including, but not limited to the Town of Canmore and the successors or assigns of the Town of Canmore. For better certainty no Party is responsible under this Agreement for damages or loss caused by natural forces or disaster, or through the unauthorized act of a third party

SECTION VII - MANAGEMENT PLAN

The Town of Canmore and the Grantee shall prepare a management plan (or modification of a prior management plan) for the Property within one year of the execution of this Agreement. This plan shall be a guideline, consistent with the terms of this Easement It will propose ways to manage the land to conserve and protect, and if necessary, restore and enhance the terrestrial and wetlands for wildlife use and production. The parties intend that the management plan, and future modifications, will be a mutual and cooperative planning effort. The plan will assist by mutual consent of the parties in implementing the goals and provisions of this Easement. The management plan shall clarify and facilitate the management strategy in context with the spirit and intent of this easement and shall not contravene Section V of this easement. The Town of Canmore will attempt to meet periodically with the regional Alberta Fish & Wildlife biologist to review big game animal use and management opportunities on the Property

SECTION VIII - COSTS AND TAXES

The Town of Canmore retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep and maintenance of the Property, including responsibility for the control of noxious weeds in accordance with Alberta law. The Town of Canmore shall pay any and all lawful taxes, assessments, fees, and charges levied by competent authority on the Property.

SECTION IX - INDEMNITY

The Town of Canmore agrees to bear all costs of operation, upkeep and maintenance of the Property except with respect to the Grantee's operations on the Property to maintain and enhance the Property for its Conservation Values in accordance with this Agreement including any Management Plan. Subject to the noted exception, the Town of Canmore agrees to indemnify the Grantee against all claims and obligations arising from such operation, upkeep, and maintenance activities.

Unless the Town of Canmore has been negligent or willful, this indemnification does not apply in instances where representatives or agents of the Grantee and/or the Enforcer or their activities on the property result in physical or personal damage or liability exposures. In such cases, the Grantee and/or the Enforcer will bear full responsibility.

SECTION X - ASSIGNMENT OF EASEMENT

The Grantee may not transfer or assign its interest in the Property created by this Easement except to a "qualified organization" (within the meaning of Section 22) which is organized or operated primarily or substantially for one or more of the conservation purposes specified in Section 22 1(1)(e) of the EPEA. Any such "qualified organization" shall agree to enforce the provisions of this Easement. The Grantee shall consult the Town of Canmore before making any assignment of this Easement.

SECTION XI - BASELINE DATA

The parties acknowledge that an inventory of baseline data relating to the Property has been completed by competent professionals familiar with the Property, and is attached as Exhibit D. Copies of this inventory of baseline data are on file in the RMEF's offices in Rocky Mountain House, Alberta and in the Grantor's offices at 600 9th Street, Canmore, Alberta T1W 2T2. The parties acknowledge that this collection of baseline data contains an accurate representation of the condition of the Property subject to this Easement and natural resources associated with the Property as of the date of the execution of the Easement.

Notwithstanding the foregoing, in the event of a controversy arising with respect to the nature of the biological and/or physical condition of the Property, the parties shall not be foreclosed from using any and all other relevant or material documents, surveys, reports and other information to assist in the resolution of that controversy.

SECTION XII - EXTINGUISHMENT OF DEVELOPMENT RIGHTS

The Town of Canmore hereby acknowledges the extinguishment of all development rights except as specifically reserved herein that are now, or hereafter may be, allocated, implied, reserved or inherent to the Property, and the Town of Canmore agrees that all of the Town of Canmore's rights or interest in such development rights are terminated and extinguished and may not be used on or transferred to any portion of the Property as it now or hereafter may be bounded or described or to any other property adjacent or otherwise. Such extinguished development rights shall not be used for the purpose of calculating permissible lot yield or density of the Property or any other property with regard to any land use or zoning which affects, or may affect, the Property.

SECTION XIII
SUBSEQUENT SALE, EXCHANGE, OR INVOLUNTARY CONVERSION

The Town of Canmore and the Grantee agree that the donation of this Easement gives rise to a property right, immediately vested in the Grantee. The Grantee's property right in this Easement shall be based on the condition and improvements on the Property at the time that the Easement is established, and this condition shall be documented as referred to in Section XI above. For purposes of this Section, the property right shall be deemed to have a fair market value at least equal to the proportionate value that this Easement bears to the entire value of the Property as a whole at the time of its creation. That proportionate value of the Grantee's property rights shall remain constant.

Whenever all or part of the Property is taken in exercise of expropriation or similar authority, or under claim of rights of expropriation or similar authority, by public, corporate, or other authority so as to abrogate the restrictions imposed by this Easement, the Town of Canmore and the Grantee shall join in appropriate actions to recover the full value of the Property taken and all incidental or direct damages resulting from such taking. All expenses incurred by the Town of Canmore or the Grantee in any such action shall first be reimbursed out of the recovered proceeds, the remainder of such proceeds shall be divided between the Town of Canmore and the Grantee in proportion to their interest in the Property, as provided in the first paragraph of this Section.

The Town of Canmore agrees that reference to this Easement will be made in any subsequent deed, or other legal instrument, by means of which it conveys any interest in the Property (including any leasehold interest), and that a copy of this Deed of Conservation Easement will be attached thereto. The Town of Canmore will notify the Grantee in writing of any conveyance of interest by sending written notice to the Grantee as provided in paragraph A of Section IV. The Town of Canmore agrees to provide notice of this Easement to any potential purchasers or subsequent owners. In the event the Town of Canmore elects to sell some or all of the Property, the Town of Canmore agrees to provide notice of this Easement in any sale or solicitation materials or information.

SECTION XIV - MISCELLANEOUS PROVISIONS

A Partial Invalidity. If any provision of this Easement, the application of this Easement, or the application of this Easement to any person or circumstance is found to be invalid, the remainder of the provisions of this Easement and the application of such provisions to persons or circumstances, other than those to which it is found to be invalid, shall not be affected thereby.

B Enforcement. The Town of Canmore intends that enforcement of the terms and provisions of this Easement shall be at the discretion of the Grantee and that the Grantee's failure to exercise its rights under this Easement in the event of any breach of this Easement by the Town of Canmore shall not be deemed or construed to be a waiver of the Grantee's rights under this Easement in the event of any subsequent breach. The parties agree that, as provided in Section 22.1 (3) (b) of the EPEA, the Grantee may designate another qualified organization to enforce this Easement.

C "Grantee" and "Town of Canmore". The terms "Grantee" and "RMEF", as used in this Easement, and any pronouns used in place thereof, shall mean and include the Rocky Mountain Elk Foundation Canada and its successors and assigns. The terms "Grantor" and "Town of Canmore", as used in this Easement, and any pronouns used in place thereof, shall mean and include the Town of Canmore and its successors and assigns.

D Titles. Section and paragraph titles and subtitles are for convenience only and shall not be deemed to have legal effect.

E Amendment. Nothing in this Easement shall be construed to preclude the Grantor and the Grantee amending this Agreement to further protect its conservation values; however, any such amendment shall not impair any conservation purpose sought to be advanced by this Easement shall be registered as required by EPEA.

F. Liberal Construction. This Conservation Easement shall be liberally construed in favor of maintaining the Conservation Values of the Property, and in accordance with the EPEA.

G. Successors. This Conservation Easement is binding upon and inures to the benefit of the Town of Canmore's and the Grantee's successors in interest. All subsequent owners of the Property are bound to all provisions of this Conservation Easement to the same extent as the current Property owner.

H. Provincial Law. This Conservation Easement will be construed in accordance with the laws of Alberta

I. Mediation. In the event of disagreement between the parties, the parties may mutually agree that an arbitration team, comprised of 3 representatives for each party, will determine the outcome. However, nothing in this paragraph shall limit the Grantee's ability to seek and obtain injunctive or other relief.

J. Entire Agreement. This Conservation Easement sets forth the entire agreement of the parties and is intended to supersede all prior discussions, understandings, or agreements relating to the property.

IN WITNESS WHEREOF, the Town of Canmore and the Grantee have executed this Easement.

ROCKY MOUNTAIN ELK FOUNDATION CANADA

By _____

Lyle R. Dorey
Vice President of Canadian Operations

TOWN OF CANMORE

By _____

APPROVED AS TO CONTENT

PROVINCE OF ALBERTA)
ss
County of _____)

On this ___ day of _____ 1998, before me, _____, a Notary Public for the Province of _____, personally appeared _____, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that [he/she/they] executed the same.

IN WITNESS WHEREOF, I hereunto set my hand and affix my notarial seal on the date above written.

(SEAL)

Notary Public for the Province of _____
Residing at _____
My commission expires _____

PROVINCE OF ALBERTA)

County of _____)

On this 15 day of December, 1998, before me, Lyle R. Dorey, who is known to me to be the Vice President of Canadian Operations for the Rocky Mountain Elk Foundation Canada, and the person whose name is subscribed to the instrument set forth above, personally appeared before me, Katherine Strangness, a ~~Notary~~ Commissioner for Oaths ~~Public~~ for the Province of Alberta, and acknowledged that he executed the same on behalf of Rocky Mountain Elk Foundation Canada.

IN WITNESS WHEREOF, I hereunto set my hand ~~and affixed my notarial seal~~ on the date above written.

(SEAL) Commissioner for Oaths ~~Notary Public~~ for the Province of Alberta
Residing at Canmore, Alberta
My commission expires November 11, 2000

KATHERINE ANN STRANGNESS
A Commissioner for Oaths
in and for the Province of Alberta
My Commission Expires Nov 11/2000

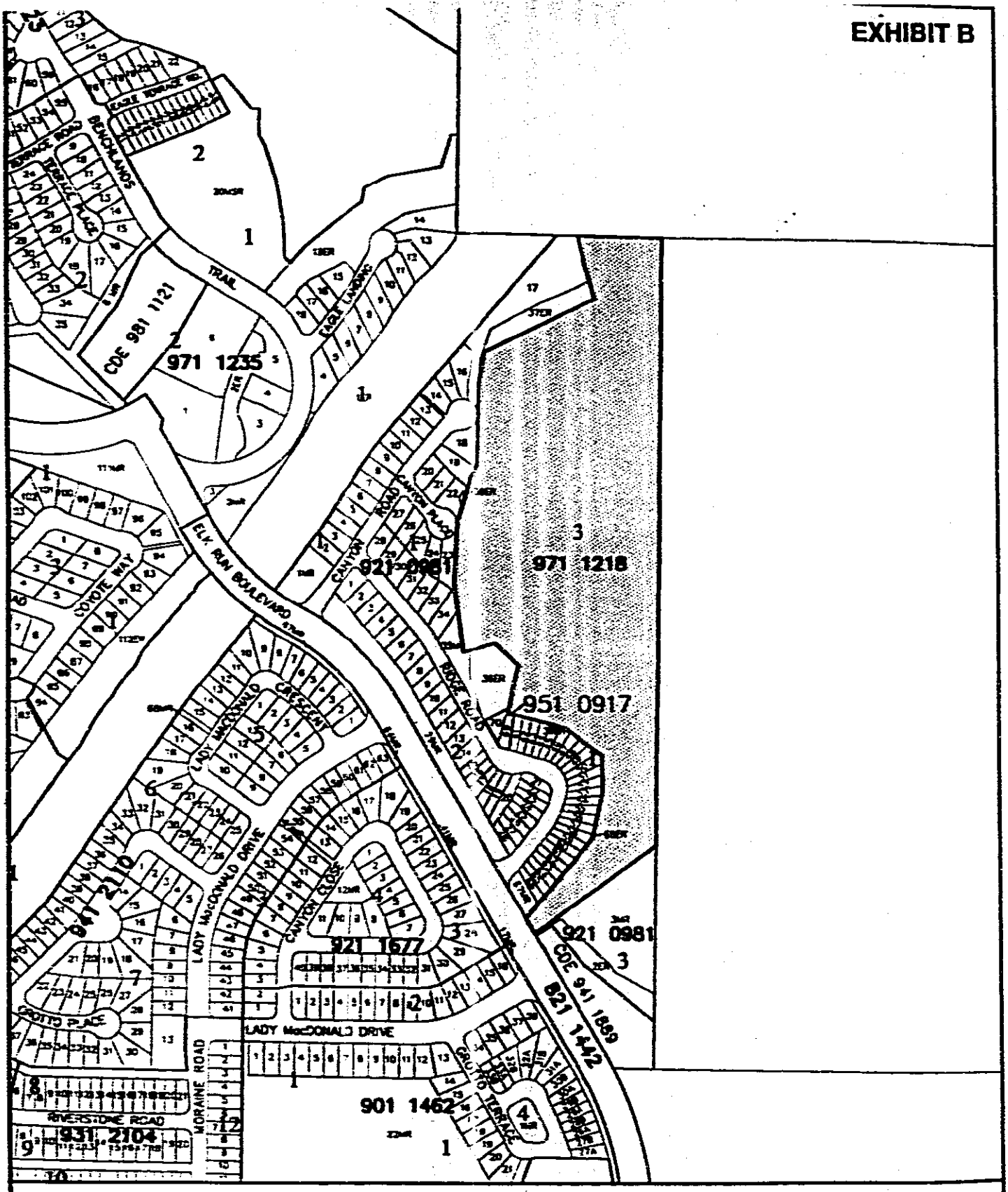
J:\WORDPROC\LEGAL BEAL\CANADA\Can.dres.doc

EXHIBIT A

The following lands are described as the lands directly affected under the terms of the easement:

SW ¼ 34-24-10 -W 5th
Plan 971 1218, Block 3

EXHIBIT B



Subject Property

Block 3, Plan 971 1218

RMEF-G

Golder Associates Ltd.

10th Floor, 940 6th Avenue S.W.
Calgary, Alberta, Canada T2P 3T1
Telephone (403) 299-5600
Fax (403) 299-5606

EXHIBIT C

Golder Associates

CANYON RIDGE CONSERVATION EASEMENT - MANAGEMENT PLAN

Prepared for:
The Town of Canmore
600 - 9th Street
Canmore, Alberta
T1W 2T2

Portions abridged from:
Eagle Terrace Conservation Easement,
Management Plan
Golder Associates Ltd.
Calgary, Alberta

By:
Golder Associates Ltd.
10th Floor, 940 - 6th Ave. S.W.
Calgary, Alberta
T2P 3T1

DISTRIBUTION:

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2 Copies	**The Town of Canmore** **Canmore, Alberta**
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December 1998

982-2204-5130

TABLE OF CONTENTS

1. INTRODUCTION

The land upon which the Canyon Ridge conservation easement (the easement) lies will be owned and managed by the Town of Canmore. The easement, which limits certain uses, is held by the Rocky Mountain Elk Foundation (RMEF). This Management Plan outlines the background, objectives and implementation strategy for the easement.

2. BACKGROUND

The continued expansion of the Town of Canmore (the Town) north of the Trans Canada Highway has resulted in the constriction of wildlife movement corridors around the town. A primary corridor that crosses Cougar Creek has been defined by McCallum and Paquet (1992), the Wildlife Corridor Task Force (Paquet et al. 1994) and the Bow Corridor Ecosystem Advisory Group (BCEAG 1997). The primary corridor is considered to be a multispecies corridor (i.e., all species, including large carnivores). The intent is to allow for passage of animals around the Town, but not to provide feeding or resting habitat within the corridor. The rationale for this is to reduce the opportunities for wildlife - human interactions such as occurs with habituated elk in the Town of Banff.

The existing Canyon Ridge subdivision borders the primary corridor, and the easement will provide a buffer zone between the residential area and this corridor.

The Town agreed that a conservation easement should be established on the lands bordering the primary corridor to the east of the Canyon Ridge subdivision. The RMEF have agreed to a Deed of Conservation Easement. The Deed of the Conservation Easement is conveyed under the Alberta Environmental Protection and Enhancement Act (EPEA) and other provisions of Alberta statutory and common law.

An important assumption made during the design of the easement was that animal movements to the east and west will not be further compromised by additional developments.

Baseline conditions on the conservation easement are described in Golder (1998). That report was based on the Golder (1998) baseline report for the Eagle Terrace conservation easement.

This Management Plan forms an attachment to the Deed of Conservation Easement. As such, any changes to the plan must be agreed upon by the RMEF, acting in consultation with the Town and Alberta Environmental Protection (AEP).

The Management Plan was written by Golder Associates Ltd. Unpublished material written by Jeff Green of Axys Environmental Consulting Ltd. and Paul Paquet of McCallum Paquet Associates was used as an aid in the preparation of portions of the document.

3. OBJECTIVES

The lands of the Conservation Easement are recognized to have significant relatively natural habitat for native species and ecological, aesthetic, open space and biological diversity. The overall objectives of the Management Plan are to protect and conserve these values.

More specific objectives are to:

- maintain the land as an extension of the multispecies regional corridor;
- facilitate movement of these animals through the corridor;
- maintain the land as habitat for the other native species of the area;
- promote scenic, aesthetic and open space values;
- maintain the land with the spirit and intent of the goals of wildland protection;
- promote public education relative to wildlife corridors; and,
- monitor the efficacy of the easement as a wildlife corridor.

In keeping with the above objectives, the emphasis in this Management Plan is on the conservation and preservation of the natural ecosystem as opposed to enhancement.

4. IMPLEMENTATION STRATEGY

4.1 Human Use

Human use of the easement will be restricted to two of the existing trails. The first trail runs north-south along the top of the escarpment on the west side of the property. The second trail is

located just north of the homes along Ridge Road and runs east-west. These trails should be directed such that they do not enter the primary corridor. Signs will be placed and maintained at the entrance points to the easement along both trails instructing that dogs be leashed and that no off-trail use is permitted. Elk and other wildlife are most active at dawn and dusk. Therefore, the signs will recommend that trail use be discouraged within one hour of sunrise and one hour of sunset. Rationale for these restrictions will be included on the signs, highlighting that the purpose of the easement is to facilitate wildlife movement. All other pre-existing trails will be decommissioned. Signs and downed logs will be placed along both trails at intersections with these pre-existing trails to discourage their use. Additional signs will be placed every 100 m along the trails reminding users to avoid off-trail use and the rationale for this ban.

4.2 Fencing

To minimize human use within the easement and to clearly define the boundaries of the corridor, the north and south-east boundaries of the easement should be fenced using wooden fencing approximately 1 m in height. The north boundary should follow the boundaries for the corridor within Block 5 and could potentially connect with a trail that would run south-west along the subdivision and parallel to Cougar Creek. The south and east boundaries should follow the boundaries for the corridor within the easement for Blocks 4 and 5.

The fence should be constructed and maintained by the RMEF such that it can be easily negotiated by ungulates and carnivores. A suggested structure is single rails or poles placed on posts. No gates or gaps should be permitted in the fence except for its entrance points; these entrances should be designed to deter animals from inadvertently entering the housing developments (e.g., drift fencing). Local topography and a transition zone could be used to advantage to complement the fence. The fences should parallel the north and east sides of the aforementioned trails. Wrought iron and barbed wire fencing which can present hazards to wildlife should not be used. Appropriate signage should be placed at intervals along the fence. Fence construction and maintenance should only occur between 1 July and 31 October. The fence should be built by 31 October, 1999.

4.3 Vegetation Management

Vegetation communities in the Benchlands Area are adapted to frequent, low-intensity fires. Research in Banff National Park suggests that montane communities were historically subjected to fire once every 20-30 years. Vegetation thinning may be required within the easement as part of the Town's Fire Management Plan. Such management activities will be restricted to the period between 1 July to 31 October to avoid excessive disturbances of wildlife in winter through to early spring, and to prevent disturbance to breeding birds.

4.4 Public Education

Public education will be a key element of the Management Plan. The following groups will be the focus of education programs

- general public;
- adjacent landowners;
- adjacent developers;
- hotel guests;
- users of the Silver Tip golf courses; and,
- school children.

Education for these groups will include information on why the easement was created, its objectives and the rationale for the restrictions in human use. Education will be provided by means of:

- a centrally located sign in Canmore;
- appropriate signage at trail entry points along the trails and along the perimeter fence;
- appropriate signage at the easement's north, south and particularly west ends (e.g., at existing human or game trails, where people are most likely to enter the easement);
- a pamphlet that will be given to all adjacent homeowners, prospective home or lot buyers, hotel guests and golf course users;
- meetings with adjacent land developers;
- media promotion; and,
- encourage the regulated use of the easement by school children to learn about the easement and its objectives.

Public education will be critical to the success of the easement and will primarily be undertaken by the Town in cooperation with the RMEF.

4.5 Habitat Manipulation

Habitat manipulation for the enhancement of wildlife habitat will be limited to tree removal to encourage passage of animals (e.g., elk). If such action is taken, it will be planned in close association with vegetation management to reduce the risk of fire (Section 4.3). Tree removal or trimming may also be considered for trees affected by disease or parasites. Control of noxious weeds may be undertaken by limited, site-specific application of herbicides or by controlled grazing. Manipulation will not be undertaken to promote feeding habitat, as the corridor is not meant to act as a habitat patch. All manipulation activities will occur between 1 July and 31 October.

4.6 Human-Wildlife Conflicts

As the Town expands into the urban fringe, there is increasing potential for human-wildlife conflicts, including aggressive elk attacks on humans and bear-human encounters. Education of residents and visitors is likely the most effective technique in reducing the potential for dangerous encounters.

However, a wildlife response plan that includes notification of AEP should be developed that describes the types of responses to human-wildlife conflicts and the criteria for selecting a specific response. In particular, elimination or translocation of "problem" animals should be a last resort.

4.7 Research

Research activities will be permitted if the objectives of the research study are to investigate wildlife corridor functions and if non-intrusive techniques (e.g., snow tracking) are used.

Other types of research are better suited to non-corridor areas as levels of human disturbance within corridors must be kept to a minimum.

A research program should be encouraged to determine the effectiveness of corridors of varying design on wildlife in the Bow Corridor (see recommendations in Paquet et al. 1994 regarding the requirements for better mapping, monitoring of existing corridors, quantification of impacts of human disturbances, investigations into effective corridor design and the need for predictive landscape models).

4.8 Monitoring

Monitoring of the easement should occur at two levels: basic and comprehensive. At the basic level, an annual walk through of the easement should be undertaken by the RMEF or their designate to ensure that fencing and signage is in good repair, and to assess the level of human intrusion into the easement.

A comprehensive monitoring plan should be encouraged to determine the effectiveness of the easement as a corridor. This information will prove useful in future decisions regarding wildlife corridors in the Canmore area. A uniform monitoring protocol for this and other monitoring programs is to be encouraged.

Monitoring of the effectiveness of closure enforcement and education programs should also be encouraged. Setting aside the conservation easement is a invaluable first step to mitigating human-related impacts on wildlife in the Bow Valley, however without an effective monitoring plan, the success of management plans cannot be determined.

5. ADAPTIVE MANAGEMENT

Monitoring is only useful if the lessons learned are used to adjust or refine the mitigative measures that are in place. Adaptive management is the process whereby changes to the way we do things come about from what we learn during monitoring. Unfortunately, the consequences of many resource management decisions are often ignored. An adaptive management approach, whereby a feedback mechanism is clearly specified, is critical to determine whether the management tactics have been successful and where adjustments can be made. Therefore, an annual monitoring report will be written by the RMEF or their designate that will summarize the results of the year's monitoring, and provide a clear link back to the mitigation in place for the

protection of the easement as a wildlife corridor. While some mitigative measures are readily modified (e.g., trail signage), it is recognized that others (e.g., size and shape of the easement) are not possible to change. In these cases, lessons learned should be applied to the design and protection of corridors elsewhere in the valley.

6. REFERENCES

BCEAG. 1997. Proposal to establish and implement protection for wildlife movement in the Bow Valley. Bow Corridor Ecosystem Advisory Group.

Golder. 1998. Baseline conditions for the Canyon Ridge conservation easement. Unpubl. report for the Town of Canmore. Abridged from: Golder. (1998). Baseline Conditions for the Eagle Terrace Conservation Easement. Unpubl. report by Golder Associates Ltd for the Town of Canmore.

McCallum, M.J. and P.C. Paquet. 1992. Preliminary wildlife study and analysis of ungulate travel corridors on CADCO Property, Canmore, Alberta. Unpubl. report for Canmore Alpine Development Company Ltd.

Paquet, P.C., M.L. Gibeau, S. Herrero, J. Jorgenson and J. Green. 1994. Wildlife corridors in the Bow River Valley, Alberta: a strategy for maintaining well-distributed, viable populations of wildlife. Unpubl. report to the Bow River Wildlife Task Force, Canmore.

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Golder Associates

REPORT ON

BASELINE CONDITIONS FOR THE CANYON RIDGE CONSERVATION EASEMENT

Prepared for:
The Town of Canmore
Canmore, Alberta

Portions abridged from:
Baseline Conditions for the
Eagle Terrace Conservation Easement
Golder Associates Ltd.
Calgary, Alberta

By:
Golder Associates Ltd.
Calgary, Alberta

DISTRIBUTION:

1 Copy	**The Rocky Mountain Elk Foundation**
1 Copy	**The Town of Canmore** **Canmore, Alberta**
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September 1998 **982-2204-5130**

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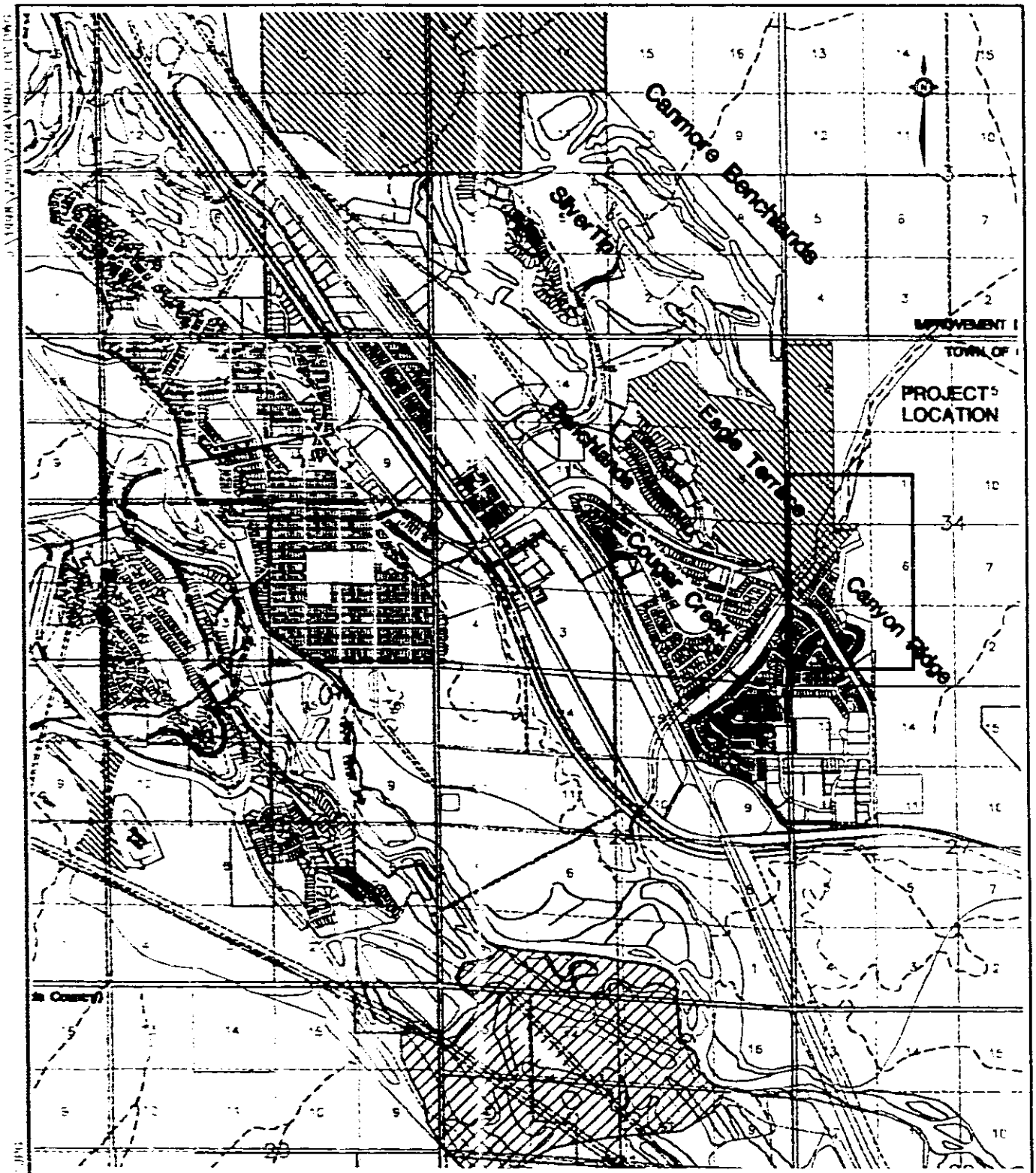
1. INTRODUCTION

The land upon which the Canyon Ridge conservation easement (the easement) (Figure 1) lies will be owned and managed by the Rocky Mountain Elk Foundation (RMEF). The Town of Canmore will transfer ownership of Canyon Ridge property to the Rocky Mountain Elk Foundation by the end of 1998. The easement is bounded by the Canyon Ridge residential subdivision to the southwest and southeast (Figure 2). This baseline document outlines current (1998) environmental conditions on the easement. It provides a description of the property in terms of its biophysical characteristics (soil, terrain and vegetation), wildlife suitability, and recreational, cultural and heritage resource values.

Portions of this baseline document are abridged from the Eagle Terrace Environmental Impact Assessment (EIA) by Axys Environmental Consulting Ltd. (Axys 1996) and Baseline Conditions for the Eagle Terrace Conservation Easement (Golder 1998). Apart from a 2 hour reconnaissance trip, no field studies were conducted at this specific site. However, the baseline information obtained for the nearby Eagle Terrace property and easement (Axys 1996) provides reasonable baseline conditions for the Canyon Ridge easement. This document focuses on information specific to the easement. Descriptions of the general geologic, archaeologic, and palaeontologic history, climatic conditions, and technical information and data from previous field studies conducted on the nearby Eagle Terrace property and easement can be found in the above documents.



REFERENCE

BASE MAP PROVIDED BY EAGLE TERRACE
LOCATION MAP (FIGURE 2.1.1)

Golder Associates	TOWN OF CANMORE
PROJECT LOCATION	
DRAWN BM APPROVED AK	DATE 17 SEPT.98
PROJECT 982-2204	FIGURE 1

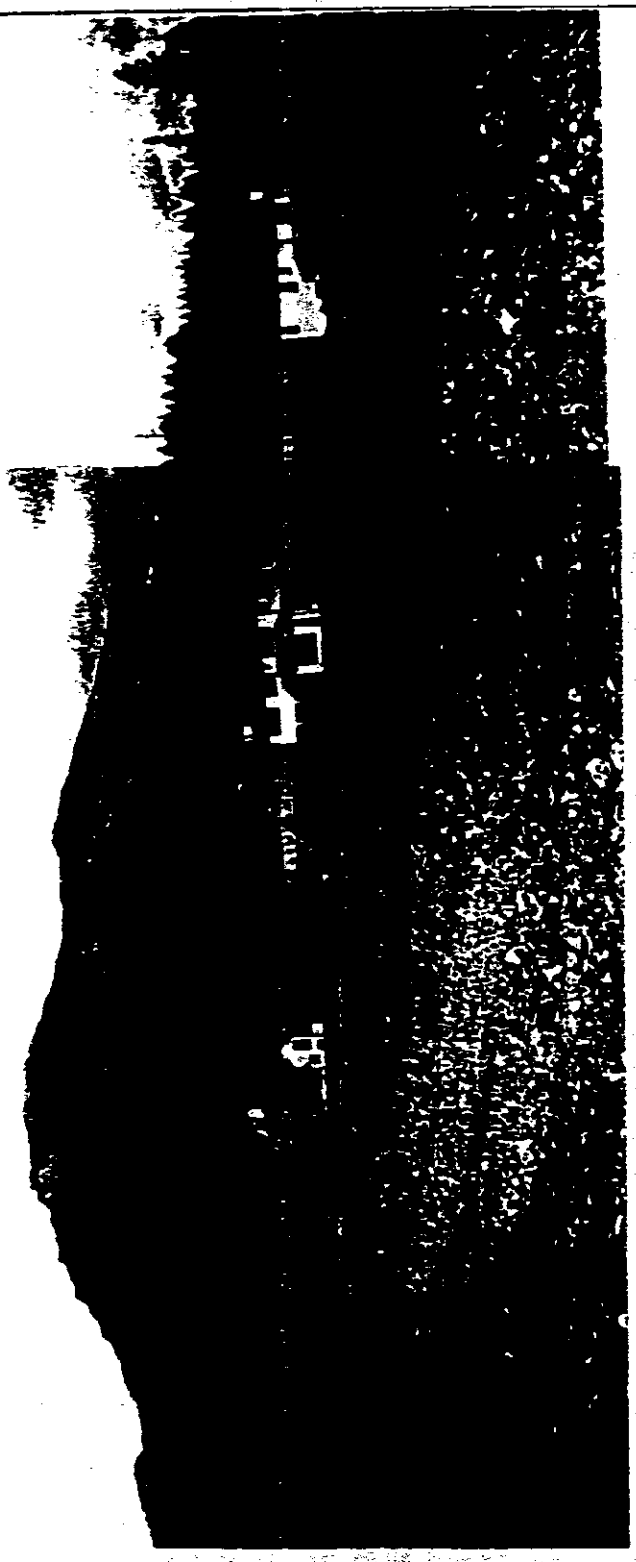


Figure 2 View of Easement from the Southwest. Photographs Taken from the West Bank of Cougar Creek.

2. BASELINE RESOURCE DESCRIPTION

2.1 Background Studies

Baseline information on Canyon Ridge and the surrounding region was assembled from a variety of sources including environmental reports and planning documents completed for the Bow Corridor, wildlife investigations on the adjacent SilverTip property, and from site-specific investigations designed and conducted for the Eagle Terrace EIA (Axys 1996). Results of the field investigations on Eagle Terrace are summarized in the EIA, while technical details (e.g., methodology and assumptions) can be found separately in the Technical Appendices (Report) to the EIA (Axys 1996). A reconnaissance level site visit was made on September 8, 1998 to verify vegetation communities within the easement.

2.2 Environmental Setting

The environmental setting for the project area has been described in a number of documents, including the Bow Corridor Local Integrated Resource Plan (Alberta Forestry, Lands and Wildlife 1992a), Cottonwood (1990 and 1994) and Strong and Leggat (1992).

2.2.1 Physiography and Ecoregion

The Town occurs in the Bow River Valley, within the Front Ranges of the Rocky Mountains. The elevation of the outer Town boundary varies with the topography of the valley, generally from about 1829 m above-sea-level (asl) on the south side of the Bow Corridor to about 1524 m asl on the north side of the valley. The elevation of the Bow Corridor varies only slightly from west to east, lying at about 1341 m asl.

The easement occurs on the north side of the Bow Corridor generally on gentle, south-facing topography (Figure 1). The elevation of the Canyon Ridge property varies from about 1350 m asl at its lowest elevation to about 1450 m at the northern extreme (a difference in elevation of some 100 m). There are steep escarpments along the boundary of the easement and the Canyon Ridge residential area at the northern end of Canyon Road and eastern end of Canyon Place. Cougar Creek lies along the northwest boundary and likely carved the steep escarpment that runs through the northwest corner of the easement in a northeast direction.

The easement occurs within the Montane ecoregion of Alberta, within the 5RM Ecodistrict. A detailed description this ecodistrict can be found in Strong and Leggat (1992). This ecoregion is characterized by mild winters created by numerous Chinook events giving the Montane the warmest winter temperatures of any forested ecoregion in Alberta. Douglas fir and white spruce (with some hybridization with Englemann spruce) are climax succession species, and both lodgepole pine and trembling aspen are seral species.

The Montane provides high quality wildlife habitat and supports the greatest variety of plants and wildlife in the Rocky Mountains (Cottonwood 1994). The Montane ecoregion in Alberta, and particularly within the Bow Corridor, has been heavily impacted by human developments and is likely to continue to receive development pressure.

2.3 Geology And Hydrology

The easement is located in the Front (Continental) Ranges district of the Rocky Mountains physiographic region of Alberta (Bostock 1970; Pettapiece 1986). Within the easement, slopes are present which are rounded and stable. To the west, along the border of Cougar Creek, and to the south, the ground surface slope is noticeably steeper. Landforms in this area are unstable, and are prone to further and on-going erosion.

There are no permanent watercourses or ponds within the easement. Cougar Creek, on the northwestern boundary of the property, has been recently channeled and armoured with coarse rip-rap to guard against occasional flash flood events that have in the past destroyed property and built structures. Cougar Creek does not contain a continuous flow of water, but turbulent flow occurs with spring run-off and summer rains.

2.3.1 Soil Types and Description

A soil survey was not conducted, however, it is reasonable to assume that the soil types on the Canyon Ridge easement are similar to those of the nearby Eagle Terrace easement. Descriptions of soil types were prepared as support material for determining the ecological land classification of the site. Details of these soil types can be found in the description of the Ecological Land Classification in the Technical Appendix to the EIA (Axys 1996).

2.4 Present Land Use

The easement lies on the urban fringe of Canmore, an area that has recently experienced rapid residential and recreational growth (e.g., the Canyon Ridge, Cougar Creek, Eagle Terrace and Benchlands Terrace subdivisions). The easement is bounded to the southwest and southeast by the existing Canyon Ridge residential area development (see Figure 1).

2.4.1 Recreation and Trail Use

Extensive recreational use occurs on the easement, as evidenced by the well developed trails that run along the top of the escarpments that border the easement to the south and west (Figure 3). This is typical of the benchlands area that has an extensive existing trail system (Cottonwood 1994).

Figure 3 **Well Developed Trail Above the Southern Escarpment of the Easement**

2.4.2 Sport Hunting

Because the property is within the Town of Canmore limits, no recreational hunting is allowed on the property. However, the easement is traversed by hunters gaining access to public lands for bow hunting only offered in Wildlife Management Unit 410 (i.e., lands north of the Bow River that are outside of the Town of Canmore boundaries). Fall bow hunting seasons (September - November) are open on adjacent public land for white-tailed deer, mule deer, elk, moose, bighorn sheep, black bear and cougar (Alberta Environmental Protection 1994). Game bird seasons for Ruffed and Spruce Grouse, Blue Grouse and Ptarmigan (September - November) also exist on adjacent public land.

2.5 Adjacent Land Use

The Town of Canmore is located within the Bow Corridor Planning District which extends westward from the Kananaskis River to the east gate of Banff National Park (Alberta Forestry Lands and Wildlife 1992a). The Canmore Corridor is the sub-section of the Bow Corridor adjacent to and surrounding the Town. Canmore is geographically located between Banff National Park and Kananaskis Country (Cottonwood 1990). The Canmore and Bow Corridor is experiencing urban expansion from a number of resort and recreational developments (Banff National Park Proposal to Neighbouring Municipalities 1992). Within the broader Bow Corridor watershed a number of other developments are occurring or are proposed.

The easement is bordered to the north by a primary wildlife movement corridor (BCEAG 1997), making the property valuable as a buffer between the residential development of Canyon Creek and the corridor.

2.5.1 Existing Developments

The only existing development adjacent to the easement is the Canyon Ridge subdivision along the southwest and southeast boundaries (see Figure 1).

2.6 Biophysical Characteristics

2.6.1 Ecological Land Classification

An ecosystem classification approach was utilized for the purposes of describing vegetation and wildlife habitat suitability. Ecosystem classification organizes similar ecosystem units into functional expressions of biophysical conditions of slope, aspect, soil moisture and nutrient regime, and vegetation characteristics. These similar units respond to disturbance in a predictable and similar manner (Alberta Environmental Protection 1994). This system is hierarchical in nature and consists of three levels within any natural subregion: ecosite, ecosite phase, and community type (Alberta Environmental Protection 1994)

Site Assessment and Classification

Although a detailed on-site survey was not conducted on the easement, representative polygons were derived from interpretations of a 1:3,000 scale orthophoto mosaic (Alberta Vegetation Inventory Map Twp 24, Rge 10, W5) and a comparison to the nearby Eagle Terrace property and easement.

2.6.2 Ecosite Phases and Vegetation Communities

Two ecosite phases were recognized within the easement (Figure 4). One of the ecosite phases (i.e., C1) was subdivided into two communities (C1.2 and C1.3). Descriptions of each ecosite phase are subdivided into vertical strata. Definitions of the vertical vegetation strata used for the assessment are discussed in the following paragraphs; note that overlap occurs between each stratum due to separate analysis (e.g., 75% tree cover *and* 85% low shrub cover, *beneath the trees*). Table 1 illustrates the ecosite phases and communities within Canyon Ridge. Each ecosite phase and/or community is described below.

LEGEND

A 1	ROUGH FESCUE
C 1.2	LODGEPOLE PINE/BEARBERRY HAIRY WILD RYE
C 1.3	LODGEPOLE PINE/BUFFALOBERRY

REFERENCE

PHOTO FROM PHOTO ENLARGEMENT, APPROXIMATE SCALE 1:3000, ROLL GRS98044 #107, DATE OF PHOTO JULY 14, 1998

0 25 50 75 100 125 metres

SCALE 1:3000

Golder Associates	TOWN OF CANMORE
ECOLOGICAL LAND CLASSIFICATION OF THE CANYON RIDGE CONSERVATION EASEMENT SHOWING DISTRIBUTION OF INDIVIDUAL ECOSITE PHASES	
DRAWN: PBR / APPROVED: [illegible]	DATE: 17 SEPT. 98
PROJECT: 982-2204	FIGURE: 4

Table 1 Ecosite phases and vegetation communities within the Canyon Ridge Conservation Easement

Ecosite Phase or Community	Area of Biophysical Description
A1	Rough fescue
C1.2	Lodgepole Pine/Bearberry/Hairy Wild Rye
C1.3	Lodgepole/Buffaloberry

Rough Fescue (A1)

This dwarf shrub and herb dominated ecosite phase is most common on southerly aspects over orthic regosol soil. It is found on the south and southeast margins of the easement (Figure 1). As described in Axys (1996), the tree canopy is absent or present only in scattered clumps or individuals, the latter especially in areas which will eventually succeed to a forested community in the absence of fire. Seedling aspen and white spruce are present in a number of areas and exposed soil and rock are common. The low shrub layer is dominated by bearberry in almost all areas with cover ranging from 40 - 80% where present (Figure 5). Other shrubs include patches of common juniper, prickly rose, shrubby cinquefoil, and isolated patches of wolf willow, all of which account for 10 - 20% cover. The herbaceous layer is diverse but sparse and is often dominated by grasses with a cover of 5 - 30%. Herbaceous species include wild strawberry, yellow hedysarum, locoweed, common yarrow, prairie crocus, anemone, plains wormwood, toadflax, hairy wild rye, fleabane, northern bedstraw, wild blue flax, prairie groundsel, blue-eyed grass, goldenrod, wild vetch, white camas, nodding onion, pasture sage and bog orchids.

Dry Pine Shrub (C1)

This ecosite phase comprises a large majority of the easement. It is subdivided into two communities: C1.2 is commonly the more open forest, primarily over orthic regosol soil, while C1.3 is usually dense and most often over eutric brunisols. The two are usually distinguished by the occurrence of common bearberry in the former, and by the prominence of feathermosses in the latter.

Lodgepole Pine Bearberry/Hairy Wild Rye (C1.2)

This moderately open forest community is dominated by lodgepole pine with white spruce co-dominating where the forest is open (Figure 6). Fire scarred trunks and burned timber show evidence of past fire history, and regenerating spruce, and aspen or balsam poplar are occasional in the understory. The main canopy of the tree stratum ranges between 20-50% in this community, and is commonly in the lower end of this range. Lodgepole pine generally comprises the main canopy, with white spruce usually accounting for 5%. Diameter-at-breast-height (DBH) ranges from 24 to 45 cm and heights are typically 20 to 22 m. Regenerating spruce, and aspen or balsam poplar are common in the understory but rarely comprise more than 10% cover. Cover within the low shrub stratum ranges from 5-40% and is dominated by buffaloberry and prickly rose which are scattered throughout the community. Also occurring are bearberry,

common juniper, white meadowsweet, saskatoon, and high-bush cranberry. The herbaceous stratum supports numerous species but is dominated by hairy wild rye which may make up to 65% of the ground cover. Total ground coverage may range up to 80% with showy aster, and twinflower common constituents. Additional species in the herbaceous stratum include wild strawberry, heart-leaved arnica, peavine, greenish-flowered wintergreen, milkvetch, cut-leaved anemone, bog orchid, sedge, white camas, northern bedstraw, felwort, common pink wintergreen, and balsam groundsel.

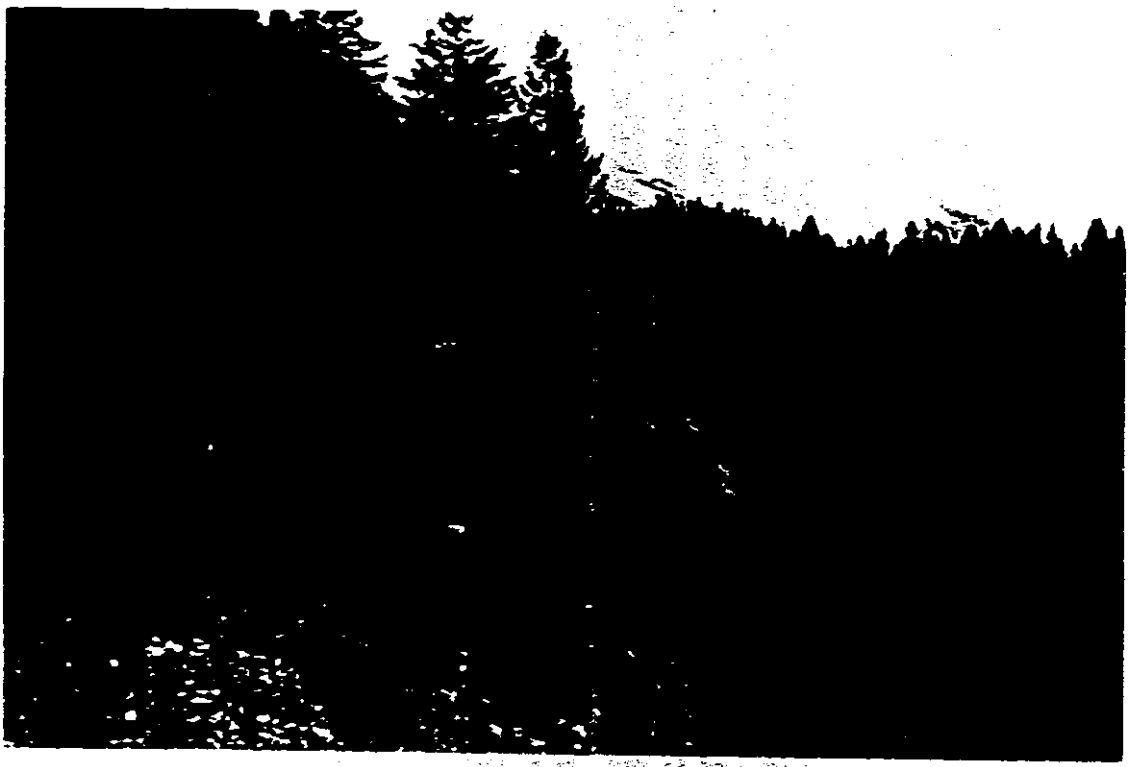


Figure 5 Photograph of Rough Fescue (A1) Ecosite Phase

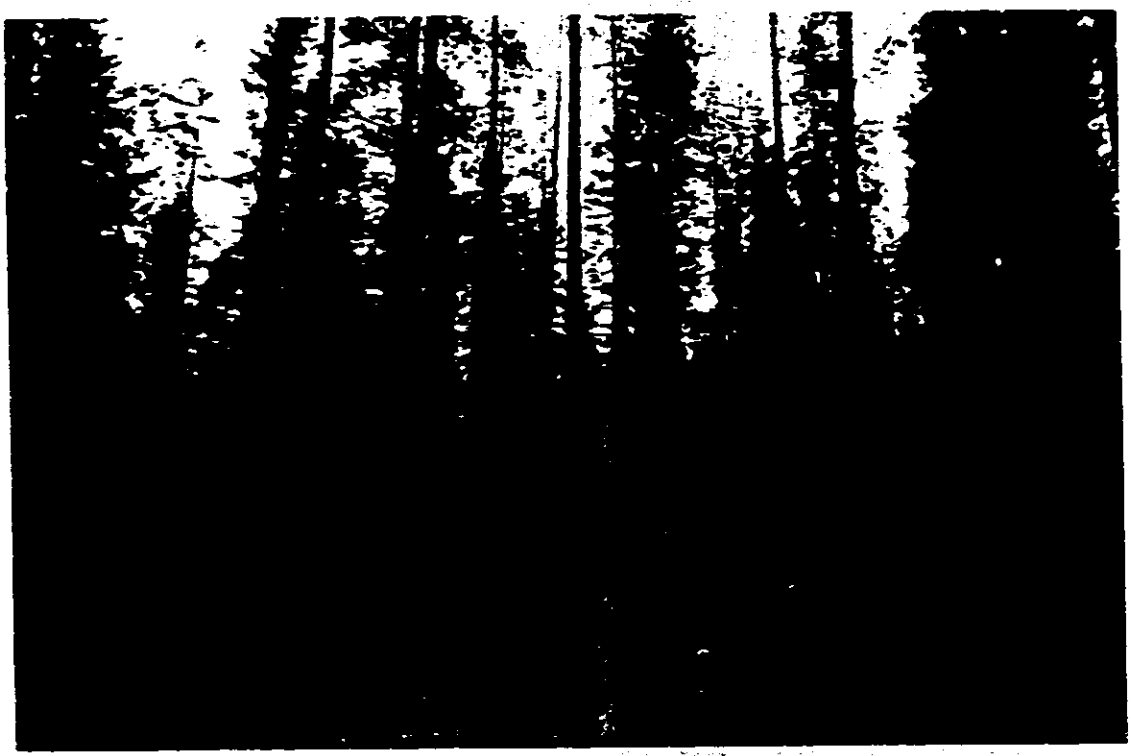


Figure 6 Photograph of Lodgepole Pine/Bearberry/Hairy Wild Rye (C1.2) Community

Lodgepole Pine/Buffaloberry (C1.3)

This moderately dense forest community is dominated by lodgepole pine; a minor component of Douglas fir occurs infrequently. As described in Axys (1996), the main canopy tree stratum coverage ranges between 30-55% in this community. Lodgepole pine comprises the main canopy, with Douglas fir usually accounting for less than 5% where it occurs. Diameter-at-breast-height (DBH) ranges from 15 to 30 cm and heights are typically 20 - 22 m. Where the canopy is infrequently more open, regenerating pine, spruce, and aspen occur but rarely comprise more than 10% cover. Cover within the low shrub stratum ranges from 5-20% but is usually sparse as the dense forest canopy precludes shrub development. Buffaloberry is the dominant shrub and prickly rose, white meadowsweet and common juniper contribute to the sparse shrub layer. The herbaceous stratum supports numerous species but is dominated by feathermosses which may comprise 80% of the ground cover. In more open areas, hairy wild rye is prominent and, although commonly accounting for approximately 60% of the ground cover, may make up to 60% in pockets of open canopy. Additional species in the herbaceous stratum include showy aster, wild strawberry, one-sided wintergreen, anemone, Kentucky bluegrass, common dandelion, felwort, white camas, peavine, common yarrow, yellow false dandelion, timber milkvetch, pale coralroot orchid, twinflower, clover, wildvetch, small-flowered rocket, northern bedstraw, and red paintbrush. Venus'-slipper and blunt-leaved orchids may be found scattered above the feathermoss in some areas.

2.7 Rare And Endangered Plants

Existing literature on known and potential rare plants occurring within the general study region include Wallis *et al.* (1987), Fairbarns *et al.* (1987), and Argus and Pryer (1990). Additional information on vegetation inventories and management studies in the Bow Corridor are provided in Cottonwood Consultants Ltd. (1990); Sweetgrass Consultants Ltd. (1991); McCallum and Paquet (1993). Potentially rare plant species that may be present in the area are summarized in the Technical Appendices to the Eagle Terrace EIA (Axys 1996).

Although no rare plant search was performed on the site, a field survey on the nearby Eagle Terrace property and easement was conducted for rare and endangered plants during early summer (15-16 June 1995) and again during late summer (6 August 1995) (Williams 1995a *in* Technical Appendix to the EIA, Axys 1996). Surveys for rare plants consisted of detailed systematic observations at selected intervals within the study area, emphasizing habitats having a

greater potential for the occurrence of rare plant species. A rare plant is a species that is known from five or fewer localities in the Province. Of the approximately 130 vascular plant species that were identified on the Eagle Terrace study area, none were rare or endangered.

2.8 Wildlife Resources

Sources of information describing wildlife in the region, included a variety of studies from the Canmore Corridor, as well as from wildlife studies conducted by Axys Environmental Consulting Ltd. for the Eagle Terrace EIA. Although no wildlife field studies were conducted on the easement, the Eagle Terrace reports (Axys 1996, Golder 1998) provide information on which species are likely to occur on the Canyon Ridge easement. However, as there are fewer ecosite phases on the Canyon Ridge easement (2 compared to 5 on Eagle Ridge), habitat suitability ratings of the individual ecophases were further used to predict which species may be expected to occur. For discussion purposes, wildlife resources are described within several functional groups such as ungulates, carnivores, small mammals, birds and herptiles (reptiles and amphibians), except for individual species that are better known.

2.8.1 Ungulates

Ungulate populations in the Canmore Corridor include both white-tailed deer (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus*), bighorn sheep (*Ovis canadensis*), elk (*Cervus elaphus*) and moose (*Alces alces*). None of these wildlife have provincial status as endangered or vulnerable species. Moose occur in the Bow Corridor in very low numbers; the population estimate for moose in the Bow Corridor is five (5) (CRELIG 1995). Low numbers of moose in the Corridor are related to high mortality from train and highway collisions, and the presence of the giant liver fluke (Alberta Forestry Lands and Wildlife 1992a). Available information suggests that the Bow Corridor currently supports about 200 mule deer, 200 white-tailed deer and 222 bighorn sheep (CRELIG 1995). The alpine, and to some extent the subalpine ecoregions above the Canyon Ridge property, are occupied by bighorn sheep on Mt. Lady MacDonald and Grotto Mountain. Three main bighorn sheep winter ranges occur north of the Bow River.

The easement occupies a portion of the important winter range for elk within the Montane ecoregion in the vicinity of Canmore (Cottonwood 1992; McCallum and Paquet 1992; CRELIG

1995). Three subpopulations of elk have been identified in the Bow Corridor: the Pigeon Mountain-Wind Ridge herd on the south side of the Canmore Corridor (approximately 200 animals); the Banff National Park herd west of Canmore (approximately 900 animals); and the Bow Corridor Provincial Park herd at the east end of the corridor (approximately 80 animals). These subpopulations are considered to be herds of animals within one continuous range. Movement between these elk herds (subpopulations) are not well understood, although field studies have shown movements by elk along the north side of the Bow River Valley from the east gate of Banff National Park through Harvie Heights, along Canmore's urban fringe, and across Cougar Creek (Paquet *et al.* 1994). The Alberta Fish and Wildlife Division estimates that 30 to 50 elk winter between the east gate of the Park and Grotto Mountain (McCallum and Paquet 1993). Current habitat suitability for elk in this area has been described as supporting 1 to 4 elk per km^2 (CRELIG 1995).

As there are no major barriers to ungulate movement on or around the easement, the ungulate distribution patterns obtained for the nearby Eagle Terrace easement are likely representative of patterns on the Canyon Ridge easement.

Deer winter tracks

Deer tracks on the Eagle Terrace easement included both white-tailed and mule deer, although mule deer are presumably in the majority (Axys 1996). During winter 1994-95, deer tracks were recorded intercepting practically all sample transects during all three systematic surveys (i.e., November and December 1994 and February 1995). The density of deer tracks varied among survey periods; the highest average density of deer tracks among transects (64 tracks/km/day) was observed during late November 1994. Track densities during December 1994 and February 1995 tended to be about one-third of the November 1994 estimate (24 tracks/km/day during both December and February). The relatively high track density during late November 1994 may have been the result of larger numbers of deer, or greater movement activity during the rutting season. The direction of travel of deer intercepting the transects suggests that deer were largely travelling the contours of the property, and were largely resident; similar numbers of deer were traveling east as west during all three periods of winter study.

Intercepts of winter deer tracks along sample transects on the Eagle Terrace were also summarized by elevation. Elevational plots were drawn for each survey period to investigate if there were particular contours on the property where deer movements were most likely to occur.

Based on these results, deer were traveling along the entire range of elevations on the property during each survey period, from the lowest areas near the urban fringe to higher locations on the mountain slope. The weighted mean elevation of deer tracks shifted slightly between survey periods; deer tracks tended to be lowest on the property during December, and highest on the property during February.

Elk Winter Tracks

Observations of elk and elk tracks on and near the Eagle Terrace easement and property were not been frequent enough to identify definitive movement patterns and associated topographic features/locations that could be defined with confidence as a corridor. It is clear, however, that urbanization and resort developments are encroaching on Montane habitats of the Benchlands, an area considered by other researchers to be important regionally as a wildlife movement corridor (Paquet *et al.* 1994). While habitats and movement corridors are being modified by urban development (e.g., intersection of the Benchlands by SilverTip Drive, residential construction in the Canyon Ridge, Benchlands Terrace and SilverTip subdivisions), some elk are adjusting to these changes and exploiting the available resources (e.g., early green forage on landscaping). Based on data for winter 1994-95 and early winter 1995-96, it appears that local movements of elk are distributed through a network of trails, and that movements within the local area are indeterminate and opportunistic. It also appears likely that some individual elk are becoming habituated to the urban setting on the Benchlands.

Daily and seasonal movements of elk in the Canmore Corridor are not well understood because the required studies have not been conducted (Nette and Jorgenson 1989). It is generally agreed that elk ecology is better known than other wildlife in the valley and that traditional migratory movements have been curtailed by expanding development (White *et al.* 1992). However, there are differences of opinion regarding the current number of elk in the valley and the amount of interchange among the various subpopulations (Hornbeck *et al.* 1991a; Irwin *et al.* 1992; Alberta Environmental Protection 1993; Paquet *et al.* 1994).

2.8.2 Carnivores

The most abundant carnivores on nearby Eagle Terrace were coyotes (*Canis latrans*) and martens (*Martes americana*), and possibly black bears (*Ursus americanus*) and it is expected that this trend is the same for the easement. These wildlife inhabit most forested regions in the area

(Alberta Forestry, Lands and Wildlife 1992a). Both martens and coyotes were observed on Eagle Terrace during the winter field studies by Axys, however no site-specific information was obtained for black bears beyond the identification of black bear claw marks on an aspen tree. Black bears and their sign have been observed on nearby SilverTip property (McCallum and Paquet 1995), and on the Three Sisters property on the south side of the Bow River (Three Sister Resorts 1991). A study of the black bear in the Montane ecoregion of Banff National Park suggested densities of 1 bear per 50 to 60 km^2 Kansas *et al.* 1989). This density estimate indicates that the easement, by virtue of its relatively small size, could at best represent a fraction of any one black bear's home range.

Other carnivores which may be transient on the Canyon Ridge property include fishers (*Martes pennanti*), lynx (*Lynx canadensis*), possibly bobcats (*Lynx rufus*), cougars (*Felis concolor*), grizzly bears (*Ursus arctos*) and wolverines (*Gulo gulo*). Of these wildlife, only lynx tracks were noted on the Eagle Terrace site during the winter field surveys by Axys during 1994-95 and 1995-96. Fishers are uncommon in southern Alberta, but have been recorded in the Bow Corridor on the south side of the Bow River on the Three Sister's property (Hornbeck *et al.* 1991b). Grizzly bears and wolverines occur regionally in the Bow Corridor, but evidence of their occurrence on the Canmore Benchlands has not been recorded recently. Their presence in the region has been documented in the Spray River - Wind Valley area (Strom *et al.* 1991). Additional information on the grizzly bear, wolverine, lynx and cougar in the Bow Corridor is provided in the section on rare and endangered wildlife.

Wolves have recently returned to Banff National Park and Kananaskis Country following an historical period of eradication that last occurred about 40 years ago (White *et al.* 1992). Although field studies on the Eagle Terrace easement and property did not reveal evidence of wolf, in 1992 three wolf scats were observed on SilverTip (McCallum and Paquet 1993). As part of a four-year study of wolf recolonization, two radio collared wolves have been observed on or adjacent to SilverTip property on 13 occasions (pers. comm., P. Paquet, cited in McCallum and Paquet 1993). Wolves did not return to SilverTip during 1994, and are not expected to do so on a regular basis (McCallum and Paquet 1995). As noted for cougars, wolves can be expected to be distributed with concentrations of their major ungulate prey, elk and deer. The recolonization of wolves into the Bow Corridor is being closely studied and important findings to date follow.

Wolf Populations and Movements in Bow Corridor

Wolf are considered a key species in the wildlife ecology of the Bow Corridor because they represent the top carnivore in this ecological system. Wolves are wide ranging, and are particularly sensitive to human developments (Paquet 1993). During winter, wolf movements are generally restricted to elevations below 1850 m (P. Paquet, pers. comm.) thereby increasing their potential to interact with human facilities and activities.

Since the mid to late 1970's, wolves have recolonized the Bow Corridor, including Banff National Park, and Kananaskis Country. Presently, two wolf packs use the Bow Corridor of Banff National Park (Paquet 1993, CRELIG 1995). In particular, the Cascade Pack has been observed outside the east gate of the National Park in Harvey Heights and along the Bow River (Paquet 1993). Wolf movements and home range are influenced by a large number of factors such as physiography of available habitat, distribution and abundance of prey species, and human activity and developments. Physiography of the landscape has a dominant effect on the availability of habitat. For example, it was been estimated that within the Rocky Mountains, only 22% of the planar landscape is usable habitat because much of the habitat is ice, rock, steep slopes and seasonally restrictive snow depths (Paquet 1993). Furthermore, relocations of radio-collared wolves (> 95%) in the Bow Corridor have been obtained below 1,850 m, which illustrates that Montane habitats of mountain valleys are particularly important for wolf home range movements and survival. In the Bow Corridor, wolves prey principally on elk, but they also kill mule deer, white-tailed deer, snowshoe hares (*Lepus americanus*), small rodents and beavers (*Castor canadensis*) (Paquet 1993).

Recent research in the Bow Corridor suggests that human factors are the dominant influence on the distribution of wolves, and it has been generally concluded that some areas of the Rocky Mountains (e.g., the Bow Corridor) are too fragmented to permanently sustain populations of large carnivores (i.e., wolves, grizzly bear). At the present time, wolves are considered a "transient species" on the Canmore Benchlands (McCallum and Paquet 1992). A concerted effort is needed for protection and restoration of habitat to ensure long-term survival of wolves in the Bow Corridor. Recognizing the present extent of habitat loss and fragmentation, it has been suggested that the main objective should now be directed toward the protection of corridors to link 'subpopulations' of wolves from different areas of high quality habitat (i.e., Banff National Park and Kananaskis Country) (Paquet 1993).

2.8.3 Avifauna

A breeding bird census of nearby Eagle Terrace was conducted in June 1995 (Collister 1995 in Technical Appendix to Axys 1996). The objective was to characterize the breeding bird assemblage, to identify significant avian habitats, and to identify the occurrence of any rare or endangered bird species. A total of 32 species of breeding birds were detected during point-count surveys (Latin names are provided in Technical Appendices in Axys 1996).

The avifaunal assemblage on nearby Eagle Terrace was typical of the pine-dominated landscape in the Montane ecoregion, and therefore should be representative of the bird community expected to occur on Canyon Ridge. The collective bird community, listed in decreasing order of occurrence at point counts, consisted primarily of Pine Siskin (10 PCs), Yellow-rumped Warbler (9 PCs), Chipping Sparrow (9 PCs), American Robin (7 PCs), Warbling Vireo (6 PCs), Ruby-crowned Kinglet (6 PCs), Brown-headed Cowbird (5 PCs) and Swainson's Thrush (4 PCs). Based on co-related vegetation types in the Banff/Jasper Biophysical study with the ecological land classification of Canyon Ridge (C3, C6 and C19 in Banff/Jasper co-related to C1.2 and C1.3 on Canyon Ridge), the bird community on Canyon Ridge can be described as Bird Community 5 (Holroyd and Van Tighem 1983).

Breeding bird densities within the two ecosites on the Eagle Terrace property (C1.2 and C1.3) averaged 234 and 268 breeding birds/40 ha, respectively (Axys 1996). Variability in bird densities were influenced by the level of disturbance within each site, with the more disturbed areas (e.g. gravel pit) showing a lower density of birds. Similarly, on the Canyon Ridge easement, it is expected that the density of breeding birds may be influenced by the proximity to the Canyon Ridge residential area on the southwest boundary of the property.

Results from a 1993 survey on the nearby SilverTip property suggested that bird density varied directly with habitat patch size; larger patches contained higher densities of breeding birds. The 1994 results suggested a general decline in the breeding density of woodland species, particularly those associated with aspen and lodgepole pine habitats. No conclusions were presented regarding the relative importance of factors that might explain this general decline. Future surveys planned for SilverTip will determine the strength of this conclusion.

Two species classified as Vulnerable by COSEWIC (Committee on the Status of Endangered Wildlife in Canada, Species at Risk, May 1995); the Great Gray Owl (*Strix nebulosa*), and the Cooper's Hawk (*Accipiter cooperi*), have potential to occur on or near the easement. These species have formerly been observed in the Bow Corridor (Three Sisters Golf Resorts 1991). During the breeding bird surveys on Eagle Terrace, no threatened or endangered species, as designated by either COSEWIC or Alberta Environmental Protection (Alberta Forestry, Lands and Wildlife 1991), were observed.

In recent years, a raptor migration corridor primarily for Golden Eagles (*Aquila chrysaetos*) has been identified along the Fisher Range in Kananaskis Country which is continuous with the Fairholm Range in the Canmore Corridor (Sherrington 1992; Sherrington and Allen 1993; Sherrington 1994). The raptor migration occurs over Grotto Mountain and Mt. Lady Mcdonald, which are mountain peaks above the proposed Eagle Terrace development. Migratory movements occur in spring (late March) and fall (late September and through October) with peak numbers moving with optimal weather conditions. A significant percentages of eagles can move through in the span of a few days (Sherrington 1992). The prime reason that this corridor hadn't been identified earlier is that the migration corridor is narrow and bird flight takes place at high altitudes.

This raptor migration corridor follows a particular NW - SE oriented mountain chain within the Rocky Mountain Front Ranges. This particular range of which Grotto Mountain and Lady McDonald are a part, is relatively continuous and uniform in elevation, and intersects river valleys which are relatively narrow and can normally be crossed with a single glide (Sherington and Allen 1993).

2.8.4 Small Mammals

The term small mammals describes a wide variety of mammals, mostly rodents, but also including shrews and small carnivores such as most of the mustelids (weasel Family). No systematic field surveys for small mammals were conducted on the easement.

Based on information from the nearby Silver Tip property, twenty-two species (22) of small mammals have been identified or are expected to occur on that site (McCallum and Paquet

1993). Small mammals are important ecosystem components because they provide the prey base for higher trophic levels occupied by raptors and carnivores.

Based on incidental observations during the field studies on the Eagle Terrace property and easement, and the distribution of habitat types within the property, the most common small mammals on the easement would likely be: the red squirrel (*Tamiasciurus hudsonicus*), marten, snowshoe hare, least chipmunk (*Eutamias minimus*), short-tailed weasel (*Mustela erminea*), deer mouse (*Peromyscus maniculatus*), and meadow vole (*Microtus pennsylvanicus*). There are no rare or endangered species of small mammals that might occur on the easement.

2.8.5 Amphibians and Reptiles

Several amphibians (frogs, toads and salamanders) and reptiles (snakes) occur in the Bow Corridor. Those that are known to occur in the Montane zone of southwestern Alberta, and could potentially occur in the easement include:

1. Western Toad (*Bufo borealis*);
2. Wood Frog (*Rana sylvatica*);
3. Long-toed Salamander (*Ambystoma macrodactylum*);
4. Wandering Garter Snake (*Thamnophis elegans vagrans*).

A participant (M. Nicks) at a Round Table meeting for Eagle Terrace on 9 January 1996 reported seeing a Western Plain Garter Snake (*Thamnophis radix*) on the trail above Cougar Creek in the Grotto Benchlands area.

This species list is based on *a priori* knowledge of reptiles and amphibians in the region (Strom *et al.* 1991; Williams 1994; R. Lauzon, Axys Environmental Consulting Ltd., pers. comm.), plus a literature review of wildlife studies from adjacent properties in the Canmore area (e.g., McCallum and Paquet 1993), and the Bow Corridor corridor/Rocky Mountain region (e.g., Taylor 1978; Roberts 1982; Holroyd and Van Tighem 1983; Powell 1993).

Amphibians

Because of their need during the spring breeding season for wetland habitat, and the limited quantity of standing water on Canyon Ridge, all three amphibians are expected to be uncommon

on the property. Only the long-toed salamander has been listed in Alberta as a species that warrants special status. In Alberta, the long-toed salamander have been placed on the Red List - species considered to be Endangered because populations are non-viable or at immediate risk of declining to nonviable levels (Alberta Forestry, Lands and Wildlife 1991). The western toad and wood frog are both on Alberta's Green List - species that are not considered to be at risk. Neither of the amphibians are listed by COSEWIC

Reptiles

As indicated, one species of snake may occur on or in the vicinity of Canyon Ridge. Wandering garter snakes have been observed in the Bow Corridor on the Stone Creek Properties, and a few other sites (McCallum and Paquet 1993, Lauzon, pers. comm.). Wandering garter snakes prefer grass openings in secondary growth forest, on sunny exposed south-facing slopes, or on rocky outcrops, and most importantly they are usually found near water. Therefore, few areas on Canyon Ridge would provide suitable habitat for wandering garter snake.

2.8.6 Wildife Habitat Suitability for Elk, Wolf and Swainson's Thrush

Biophysical land classification of the project area has been used as a method of facilitating wildlife habitat assessment. Key species used for the assessment include the elk, wolf and Swainson's Thrush. Elk are used to assess use by ungulates (e.g., mule deer), and is used as an ecological indicator of early seral habitats in the Bow Corridor. Wolves are used to assess use by large carnivores (including, e.g., black bear), and are used as an indicator of regional movements. Swainson's Thrush are used to assess use by songbirds, and are used as an ecological indicator of localized fragmentation of forest habitat. Information for ungulates and carnivores is provided for both summer and winter habitat requirements, while assessment of the Swainson's Thrush is provided for spring-summer only.

Habitat suitability for the elk, wolf and Swainson Thrush's on Canyon Ridge was assessed on a semi-quantitative basis by assigning habitat suitability ratings (Low, Moderate and High) to individual ecophases derived from ecological land classification (Table 2). In general, the assessment of habitat suitability considered the biophysical attributes of the property and the general life requirements for the elk, wolf and Swainson's Thrush. Both winter and summer habitat suitability ratings were developed where appropriate. Wildlife habitat suitability ratings were summarized from Holroyd and Van Tighem (1983) and grouped into a three-tier rating of

high, moderate and low. Details of habitat suitability assessment procedures are provided by Van Egmond (1995) *in* the Technical Appendix.

Table 2 Wildlife Habitat Suitability By Season For The Canyon Ridge Conservation Easement

Ecosite Phase/ Community	Elk		Wolf		S. Thrush
	Winter	Summer	Winter	Summer	Summer
A1	M	M	H	H	L
C1.2	H	L	H	M	M
C1.3	H	H	H	H	M

The assessment of wildlife habitat suitability excluded the existing influence of human developments and activity (i.e., pristine conditions). The majority of the easement is comprised of High suitability habitat for elk (during both winter and summer). The remainder of the easement provides Moderate to High suitability habitat during winter and Low to Moderate suitability habitat for elk during summer. The majority of the easement is comprised of High suitability habitat for the wolf (during both winter and summer). The remainder of the easement provides Moderate to High suitability habitat during winter and Low to Moderate suitability habitat for wolf during summer. The majority of the easement is comprised of Moderate suitability habitat for the Swainson's Thrush with the remainder providing Low suitability habitat.

2.8.7 Rare and Endangered Wildlife

Several mammals that have been identified as potentially occurring on the easement are on the Province of Alberta's Blue List of vulnerable species: the grizzly bear, wolverine, cougar, lynx and bobcat. Species on the Blue List are considered to be species at risk, but threats are less immediate than for Red Listed species (Alberta Forestry, Lands and Wildlife 1996). Several species that are generally suspected of being vulnerable, but where specific information is lacking, have also been placed on the Blue List (e.g., the wolverine, lynx and bobcat). Because these large carnivores are likely or known to exist in the Canmore Corridor, they have been listed as occurring on the easement, even though their status with regard to Canyon Ridge is not known (Table 3). As previously suggested, the grizzly bear and wolverine are considered to be transient on the easement.

Table 3 List Of Rare And Endangered Wildlife Potentially Occurring On The Canyon Ridge Conservation Easement

Common Name	Latin Name	COSEWIC	Alberta[2]	Status on Eagle Terrace
Mammals				
Grizzly Bear	*Ursus Arctos*	Vulnerable	Blue List	Transient/Not Present
Wolverine	*Gulo gulo*	Vulnerable	Blue List	Transient/Not Present
Cougar	*Felis concolor*	NIAC	Blue List	Observed on SilverTip[3]
Lynx	*Lynx canadensis*	NAR	Blue List	Observed on SilverTip[3]
Bobcat	*Lynx rufus*	NIAC	Blue List	Transient/Not Present
Avifauna				
No rare or endangered species of birds are likely to occur on the easement				
Reptiles and Amphibians				
No rare or endangered species of reptiles or amphibians are likely to occur on the easement				

[1] *Committee on the Status of Endangered Species in Canada (1995):*
Vulnerable - a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
NAR - a species that has been evaluated and found to be not at risk.
NIAC - not evaluated and not in any category.

[2] *Alberta Forestry, Lands and Wildlife (1996):*
Blue List - Species at risk, but threats are less immediate

[3] *McCallum and Paquet (1993).*

Grizzly Bear

Banff National Park and Kananaskis Country are integral parts of the current range of grizzly bears in southern Alberta (McCrory and Herrero 1982). A study of grizzly bears in Kananaskis Country (1980 to 1984) discovered that high mortality of adult male, combined with a relatively low reproductive rate, was contributing to decline of populations (Wielgus 1993). Most recently, a regional study has been initiated on the grizzly bear in the Continental Ranges of the Central Canadian Rocky Mountains (Gibeau and Herrero 1995). The Central Rocky Mountains study is focussed on the Bow River watershed, and was initiated in response to a growing recognition that grizzly bears in the Bow River Valley are being heavily impacted by human development. The grizzly bear research is being conducted by an interagency, multi-stakeholder group formed in 1994. The overall goal is to control the cumulative effects of human actions on the grizzly bear population. Specific objectives include the analysis of grizzly bear demography, and identification of spatial and temporal activity patterns in relation to human developments to

better understand influences on habitat effectiveness, and determine the effects on grizzly bears of major transportation corridors such as the Trans-Canada Highway (Gibeau and Herrero 1995).

Preliminary results of the Central Rocky Mountains grizzly bear research effort are just becoming available at this time. For example, the grizzly population has recently been estimated to be relatively small; a total of seven female grizzlies with cubs were identified in the Bow Corridor study area in 1994 (Gibeau and Herrero 1995). Point relocations from the radio-collared bears show that most grizzlies reside in the National Park west of the Town of Banff, or in Kananaskis Country south of the Banff-Canmore corridor. The distribution of these bear's 1994 annual home ranges suggests that individuals are avoiding the highly developed portions of the Bow Corridor occupied by the Towns of Banff and Canmore. In particular, one of the radio-collared grizzly bears (bear #23) resides largely along the Bow River valley, downstream and east of the Town of Canmore. Typical of most grizzly bears, bear #23 has demonstrated wide-ranging excursions along the foothills, both to the north and to the south of the Bow Corridor. Grizzly bear #26 ranges south of the Bow Corridor but has been observed to use habitat in Skogan Pass area near Wind Valley. To date, the preliminary information from this research suggests that grizzly bears are transient in the Canmore area. It would appear critical though to maintain habitat to allow grizzly bears to cross the Bow Corridor to allow for movements across and along the Bow River Valley.

Wolverine

No specific information regarding the wolverine in the Canmore Corridor is available, although their status has been previously stated as "reasonably secure" in Kananaskis Country (Mill and Andersen 1980). Overall, wolverines have been described as one of North America's least known large carnivores (Banci 1994). Wolverine sign has been recorded recently on the south side of the Bow River on the Three Sisters property (Hornbeck *et al.* 1991). Wolverines typically have large home ranges, ranges which reflect the abundance or scarcity of food resources (Hatler 1989). As for grizzly bears, wolverines are likely to only be transient on the Canyon Ridge property.

Cougar

Cougars are considered to be relatively common in the Canmore Corridor as they are distributed throughout the foothills of the Rocky Mountains, and are dependent on populations of their primary prey, elk and deer (Alberta Forestry, Lands and Wildlife 1992b). Density estimates for

cougars for Wildlife Management Unit 410 (the Bow Corridor watershed east of Banff National Park to the confluence of Kananaskis River) indicate that there is about one cougar per 29 km^2 (Alberta Forestry, Lands and Wildlife 1992b). The winter population estimate for the cougar in WMU 410 has been recently estimated at 13 adults (CRELIG 1995).

Lynx

The lynx is the only species of provincial management concern that have been noted on Eagle Terrace during Axys' winter field studies. Lynx are generally associated with mature forest habitat in the foothills and mountains, although they are less common in the cordilleran than in the boreal regions of the province (Holroyd and Van Tighem 1983). Despite their occurrence on the Blue List of vulnerable species, lynx are considered to be common in Alberta (Smith 1993). The species is managed under a province-wide system of Registered Fur Management zones. It has been noted that lynx are relatively scarce in Banff National Park, but are relatively common in Kananaskis Country (Mill and Andersen 1980). No quantitative population estimates are available for lynx in the Bow Corridor or specifically for Canyon Ridge.

Bobcat

The presence of bobcats in the Bow Corridor is considered rare. The only observation of bobcats in the Bow Corridor has been reported on the south side of the river in Wind Valley as a personal communication by a local outdoorsman (Strom *et al.* 1991). The species has been reported as rare in Kananaskis Country (Mill and Andersen 1980), but has not been identified in the cordilleran by the Banff-Jasper Biophysical study (Holroyd and Van Tighem 1983). Smith (1993) indicates that the range of the bobcat may extend from southern Alberta along the foothills as far north as Rocky Mountain House. In any case, bobcats are not known to share the same landscape with lynx, and are known to prefer areas without deep winter snow cover (Forsyth 1985). All evidence suggests that bobcats can be assumed to be rare on Eagle Terrace.

2.8.8 Existing Wildlife Movement Corridors

According to recent research, the Canmore Benchlands function as a regional wildlife movement corridor considered important for migratory elk and deer, and also for carnivores that utilize these animals as prey (McCallum and Paquet 1992; Paquet *et al.* 1994, BCEAG 1997). Concern for functional wildlife movement corridors is receiving increasing amounts of attention in terms of planning for development while maintaining wildlife population viability (Strom *et al.* 1991;

Canadian Parks Service 1992; Cottonwood 1990,1994; McCallum and Paquet 1992, 1993; Paquet *et al.* 1994; CRELIG 1995). It is generally accepted by principles of conservation biology that subpopulations of wildlife are not viable in the long-term if isolated into small population centers confined to small reserves (Shaffer 1990).

The need to identify and protect wildlife movement corridors in the Canmore Corridor has been discussed at considerable length in a number of reports. The key issue is that long-term definitive studies in support of wildlife corridor placement and design have not been conducted. Monitoring is needed to determine wildlife movements within the easement.

A regional perspective of wildlife movements in the Canmore Corridor was first introduced during the Natural Resources Conservation Board (NRCB) hearings for the Three Sister's Golf Resorts proposal (Strom *et al.* 1991; UMA 1991; Canada Parks Service 1992). The studies described how some wildlife populations in the Canmore Corridor were continuous with those in Banff National Park (BNP), and flagged the need to protect the integrity of regional movements. A generalized concept of wildlife movement corridors in the Bow River Valley was also presented (Irwin *et al.* 1992). The basis for the regional wildlife corridor map was the existing matrix of physical topography, land use and available habitat. With regard to Canyon Ridge, the travel corridor and habitat analysis conducted by the Canadian Parks Service (1992) revealed that the Benchlands between Harvie Heights and Cougar Creek was an important multi-species migration corridor out of BNP, eventually linking the Park to Wind Valley. The map, developed as part of this analysis, identified only an upper movement corridor (similar to what is referred to in this EIA as the upper regional wildlife movement corridor). This work was subsequently incorporated into the Town of Canmore's General Municipal Plan.

Based on these concepts, recent data from a variety of wildlife studies, and expert opinion, Paquet *et al.* (1994) further refined the location and distribution of wildlife corridors in the Bow River Valley. The report and maps describing these corridors eventually was incorporated into the Growth Management Strategy for the Town of Canmore.

The concept of regional wildlife corridors in the Bow River Valley has recently been refined by the Wildlife Corridor Technical Committee under the direction of the Bow River Valley Wildlife Task Force. A 1:20,000 scale map showing the boundaries of wildlife movement corridors within the Canmore Corridors was prepared (BCEAG 1997). The map reflects current

infrastructure developments (e.g., the new Benchlands Interchange), and the effects of these developments on wildlife corridors (e.g., the corridor from South Canmore across Highway 1A to the base of SilverTip is now considered to be dysfunctional). A regional wildlife corridor is considered to run in a west - east direction on top of the benchlands.

Ownership of the Canyon Ridge property is to be transferred to the RMEF as this property was considered to be suitable for preservation as part of the regional corridor described above.

2.9 Historical And Cultural Resources

The historical significance of Canyon Ridge was not specifically assessed, however, a complete Historical Resources Impact Assessment (HRIA) was performed as part of the Eagle Terrace EIA (in Technical Appendix of Axys 1996). The general area archaeological and palaeontological history and cultural resources are described in detail in the above document.

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