

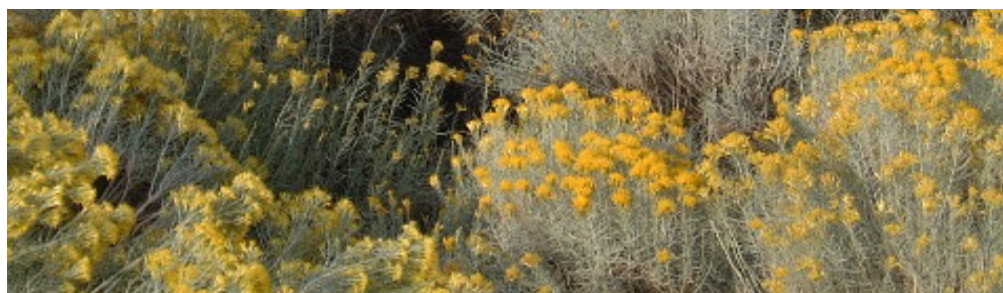


Mitigating the Fragmentation and Development of BC's Grasslands

Problem Analysis and Strategic Plan



Grasslands Conservation Council of
British Columbia, June 30, 2005



Mitigating the Fragmentation and Development of BC's Grasslands

Problem Analysis and **STRATEGIC PLAN**

Prepared for: The Grasslands Conservation Council of British Columbia

Prepared by: G.G Runka Land Sense Ltd.
Stuart Gale and Associates
Joan Sawicki
Ron Erickson
Janet Fontaine

Date: June 14, 2005 and
June 30, 2005

Acknowledgements

The Grasslands Conservation Council of British Columbia would like to acknowledge the time, commitment and effort of the Mitigating Fragmentation and Development of BC's Grasslands Project Advisory Committee. The committee provided invaluable insight and guidance over the duration of this project. Committee members include:

- Graham Strachan, Ministry of Agriculture, Food and Fisheries
- Rick Howie, Aspen Park Consulting
- Jim White, Rangeland Associates
- Guy Patterson and Tom Lancaster, SmartGrowth BC
- Judy Guichon, Gerard Guichon Ranch Ltd.
- Nichola Walkden, The Land Conservancy of British Columbia

As well, the GCC would like to thank all those who attended the stakeholder workshop in Kamloops, BC in May 2004. The workshop proceedings served as the foundation for this problem analysis and strategic plan document.

This project would not have been possible without the generous support of the following conservation funding partners:

- Western Economic Diversification Canada
- Province of British Columbia
- British Columbia Agriculture Council
- Vancouver Foundation
- Beef Cattle Industry Development Fund
- Ministry of Water, Land and Air Protection
- McLean Foundation



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



VANCOUVER
FOUNDATION



The McLean
Foundation

Executive Summary

Grasslands are a small but significant component of BC's natural landscape. Although they represent less than 1% of British Columbia's land base, they provide critical habitat to over 30% of BC's species at risk. In fact, grasslands are considered one of Canada's most endangered ecosystems. They also provide a significant forage base to BC's ranching industry. Ranching in BC has been occurring for generations and has played a major role in shaping the social, economic, and cultural fabric of British Columbia.

Despite the ecological, social and economic importance of grasslands, BC is experiencing unprecedented rates of loss of this special landscape. In response to a strong call for action on this issue, the Grasslands Conservation Council of British Columbia initiated a provincial analysis and, from this analysis, forged a provincial strategy to mitigate future loss of grasslands.

The result of this analysis and strategy-building process is the *Mitigating Fragmentation and Development of BC's Grasslands: Problem Analysis and Strategic Plan* report.

The report is presented in two distinct but integrated sections. Section 1, comprising Chapters 1-4, is the problem (issues) and solutions analysis, while Section 2, comprising Chapter 5, is the Strategic Plan.

Municipal and regional governments are recognized as having a critical role in grassland fragmentation and development; key issues include lack of awareness, understanding or focus upon grassland values, inadequacy of inventory and other technical information and underutilization or ineffective use of existing policy, planning and regulatory tools.

While there are a wide range of provincial and federal regulatory, policy, planning and land/water allocation agencies with jurisdiction and/or influence over grassland fragmentation and development, the key issues fall within several common themes: conflicting mandates and priorities, incompatible policies and regulations, lack of coordination and limited capacity of government agencies to adequately respond to grassland issues. There are specific issues related to the treatment of grasslands within the Agricultural Land Reserve (ALR), the changing regulatory framework and focus of the Agricultural Land Commission (ALC) and the relationship between the ALC and local/regional planning functions.

An overarching issue related to grassland fragmentation and development, however, is economic. Not only are there inadequate economic incentives - whether assessment/taxation or stewardship programs - for ranchers and other landowners to maintain grassland values, but there are inadequate valuation tools that can take into account both the full range of grassland conservation/economic values and the full range of public costs of land use change on grasslands.

Interviews and research yielded a large number and wide range of suggested approaches and solution options to address grassland fragmentation and development issues. A critical success factor analysis produced a list of potential solutions, based on the following themes: awareness and understanding; information, inventory and analysis tools; legislation and regulation; planning and policy tools; economic incentives/disincentives (conservation tools); coordination and cooperation; and public consultation and stakeholder involvement.

Section 2 (Chapter 5) of the report comprises the Strategic Plan. In response to a vision statement, “British Columbia’s grasslands secured against fragmentation and development,” six strategic priorities were identified:

- Enhance inventory and analysis tools to identify and assess and monitor changes to critical grassland areas;
- Support local governments in utilizing and/or developing policy/planning tools and guidelines to mitigate grassland fragmentation and development;
- Integrate grassland fragmentation and development issues into provincial and federal government planning and/or policy;
- Pursue partnerships to increase stewardship and conservation of priority grasslands;
- Promote development and/or utilization of economic and conservation incentives to encourage landowners to avoid fragmentation and development of grasslands; and
- Increase public awareness about grassland fragmentation and development.

The Strategic Plan defines specific objectives and actions as well as an implementation action plan (including measurable outcomes) for each of the strategic priorities. The Plan also provides for implementation and effectiveness monitoring and reporting of progress on Plan implementation.

The Mitigating Fragmentation and Development of BC's Grasslands: Problem Analysis and Strategic Plan report provides clear direction for the Grasslands Conservation Council of British Columbia and its partners over the coming years. In order to achieve this ambitious plan, collaboration with a wide range of interests, a strategic approach, and a commitment to sustainable solutions will be essential. The GCC and its partners look forward to bringing resolution to this long-standing conservation challenge.

Table of Contents

Section 1: Problem Analysis and Priority Solutions

1	Introduction and Background	1
2	Objective, Approach and Methodology	2
3	Issue Analysis Related to the Fragmentation and Development of Grasslands.....	3
3.1	Compilation and Discussion of Issues.....	4
3.1.1	<i>Local and Regional Government Planning, Policy and Regulation</i>	<i>21</i>
3.1.2	<i>Agricultural Land Commission (Agricultural Land Reserve)</i>	<i>23</i>
3.1.3	<i>Land and Water BC (LWBC)</i>	<i>25</i>
3.1.4	<i>Provincial Regulatory, Policy and Planning Ministries.....</i>	<i>27</i>
3.1.5	<i>First Nations</i>	<i>30</i>
3.1.6	<i>Federal Policy and Regulatory Agencies.....</i>	<i>31</i>
3.1.7	<i>Economic Incentives and Disincentives</i>	<i>31</i>
3.2	Strategic Summary of Key Issues	33
4	Potential Solutions Related to Fragmentation and Development of Grasslands.....	37
4.1	Compilation of Solution Options	37
4.2	Consolidation of Potential Solutions.....	49
4.3	Critical Success Factors for Evaluating Potential Solutions	53
4.4	Summary of Priority Solutions	56

Section 2: Strategic Plan

5	Strategic Plan.....	65
5.1	Vision.....	66
5.2	Strategic Priorities	67
5.3	Objectives and Actions.....	67
5.4	Implementation Action Plan.....	78
5.5	Evaluation and Monitoring.....	95
5.5.1	<i>Implementation Monitoring</i>	<i>95</i>
5.5.2	<i>Effectiveness Monitoring</i>	<i>95</i>
5.5.3	<i>Reporting.....</i>	<i>95</i>
6	Selected References, Websites and Additional Sources of Information	97

List of Figures and Tables:

Figure 1	Issue/Solution Flow Chart	53
Figure 2	GCC Vision, Mission Statement, Guiding Principles and Partnership Commitment	65
Table 1	Planning and/or Regulatory Agencies/Processes and Key Issues that Influence Fragmentation and Development of Grasslands	5
Table 2	Summary of Key Issues Related to the Fragmentation and Development of Grasslands	35
Table 3	Common Issue Themes and Suggested Solution Options.....	38
Table 4	Consolidation of Potential Solutions.....	50
Table 5	Critical Success Factors.....	54
Table 6	Priority Solutions	55
Table 7	Implementation Action Plan.....	80

List of Acronyms:

AAP	Agricultural Area Plans
AGM	Annual General Meeting
ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
BCAA	British Columbia Assessment Authority
BCAC	British Columbia Agriculture Council
BMPs	Best Management Practices
CWS	Canadian Wildlife Service
DND	Department of National Defense
EFP	Environmental Farm Plans
EC	Environment Canada
FPPA	Farm Practices Protection Act
GCC	Grasslands Conservation Council of British Columbia
IWMA	Identified Wildlife Management Area
LRMP	Land and Resource Management Plan
LWBC	Land and Water BC
MAFF	Ministry of Agriculture, Food and Fisheries
MEM	Ministry of Energy and Mines
MOF	Ministry of Forests
MOT	Ministry of Transportation
MOU	Memorandum of Understanding
MSRM	Ministry of Sustainable Resource Management
NGO	Non-Government Organization
OCP	Official Community Plan
PAC	Project Advisory Committee
RGS	Regional Growth Strategy
SARA	Species at Risk Act
SRMP	Sustainable Resource Management Plan
WLAP	Ministry of Water, Land and Air Protection

Mitigating the Fragmentation and Development of BC's Grasslands

Problem Analysis and STRATEGIC PLAN

SECTION 1: Problem Analysis & Priority Solutions

Date: June 14, 2005

1 Introduction and Background

Grasslands occupy less than one percent of the provincial land base; approximately 40 percent are privately owned while the remaining 60 percent remain in public hands but often are tenured for a variety of land and water uses.

Many of BC's grasslands comprise critical habitat and are a key component of provincial biodiversity. Over 30 percent of BC's species at risk are associated with grassland ecosystems. In economic terms, these same ecosystems are the foundation of a long-established ranching (forage/livestock) industry in various regions of the province. In addition, there are several other users of BC's grasslands, ranging from recreation and nature tourism to aggregate extraction and transportation corridors.

Grasslands have come under increasing pressure in recent decades. Of key concern is the development and the fragmentation of grasslands and working ranches to meet the demand for rural lifestyle residential properties. However, there are also growing pressures from urban, suburban, recreational, industrial and utility corridor uses.

BC's grasslands make valuable contributions to the provincial economy, to ecological biodiversity and to the economic, social and cultural fabric of many communities and regions of the province. A clear understanding of the complexity of the fragmentation and development pressures on grasslands is necessary and a strategic plan of action is required to address these issues if BC wishes to retain this multi-valued natural resource for the sustainable benefit of present and future generations.

Addressing the problem of fragmentation and development of BC's grasslands is identified as a priority within the stewardship and sustainable ranching program area of the Grasslands Conservation Council of British Columbia (GCC) 2003-2008 Strategic Plan. GCC has taken several steps to bring clarity to the issues and to seek strategic recommendations to mitigate grassland fragmentation and development. In May 2004, GCC convened a stakeholder workshop to provide information, identify issues, encourage discussion of a strategic approach, and explore potential solutions. Arising from the workshop, a *Strategic Planning Tool* document was prepared, which enabled GCC and its Fragmentation and Development of Grasslands Project Advisory Committee (PAC) to identify priority focus areas for problem analysis. This work is summarized in a background paper entitled *Establishing Strategic Directions: Mitigating the Fragmentation and Development of BC's Grasslands*.

2 Objective, Approach and Methodology

The project objective as stated in the GCC background paper is “to bring definition and clarity to the fragmentation and development issue and provide strategic direction and recommendations to government and non-government organizations (NGOs) that will mitigate future loss and fragmentation of BC grasslands”.

The consulting team used previous GCC work as a starting point for the research and interview component of the Strategic Plan. The inventory information contained in *BC Grasslands Mapping Project: A Conservation Risk Assessment (May, 2004)* was reviewed in the context of the study terms of reference. A preliminary list of key issues was prepared.

The expert source interview list was based on the following criteria: grassland interest representation, orientation and experience with focus priority areas, geographical distribution/representation and specialized knowledge.

Personal and telephone interviews were conducted by team members with the objective of amending and supplementing the preliminary list of issues. There was a direct focus on potential solutions to mitigate the fragmentation and development of grasslands. Interviews also provided valuable referral to other references and potential sources of information, including personal contacts, websites and research links, and these were pursued to the extent that time and budget allowed.

Chapter 3 of the report comprises the issue (problem) analysis section. Problem analysis was carried out from the perspective of key government agencies with jurisdiction and/or influence over grassland fragmentation and development. A ‘Summary of Key Issues’ table was prepared and common themes identified.

Chapter 4 of the report comprises the solution analysis section. Suggested approaches and solution options were compiled and grouped in response to the key issues and themes identified in Chapter 3. Criteria were applied to the list of almost 100 solution options to evolve a list of 42 ‘potential solutions’. Critical success factors provided the mechanism to evaluate the potential solutions and to identify the ‘priority solutions’ that form the basis of the strategic priorities to be addressed in the Strategic Plan.

Chapter 5 of the report comprises the Strategic Plan, including vision, strategic priorities, objectives and actions, implementation action plan and evaluation and monitoring framework.

3 Issue Analysis Related to the Fragmentation and Development of Grasslands

Issues related to grassland fragmentation and development are wide-ranging, complex and multi-dimensional. It is a challenging task to organize them in a manner that will facilitate the degree of problem analysis and level of understanding that is needed to inform a strategic planning process.

Many of the issues are government agency-related, including local, regional, provincial and federal. Particularly on the 40 to 60 percent of grasslands that are privately-owned (depending on specific regions of the province), many issues are closely tied to 'economics' – whether the economics of the ranching industry that is dependent upon grasslands for grazing of domestic livestock or the economics of the land development industry to meet the housing and rural residential demands of rapidly growing urban and rural communities. Fundamental to many issues, as well, are the policy decisions that governments make in the perceived broader public interest and the personal choices that people make for themselves within the ever changing land use planning and regulatory framework – where to live, how to use the grasslands they own and to whom and when they choose to sell their grassland properties.

Within this complex maze of influences, GCC and the Mitigating Fragmentation and Development of Grasslands PAC identified six focus areas for priority consideration.

“Policy Issues

1. *Agricultural Land Reserve – explore policies and opportunities where we can preserve agricultural values and achieve grassland conservation; and,*
2. *Taxation – opportunities/obstacles to achieve grassland conservation and preservation of working ranches.*

Land Use Planning Issues

3. *Regional and municipal planning – opportunities for better co-ordination, incorporating grassland values and tools for planners;*
4. *Inter-government collaboration – interaction of planning processes at various levels (Land and Resource Management Plans, Regional Growth Strategies, Official Community Plans);*
5. *Effective evaluation /feedback mechanism for development applications; and,*
6. *Incentives/tools for “green” development.”*

These priority focus areas formed the basis for the development of this Strategic Plan.

3.1 *Compilation and Discussion of Issues*

There are several government entities with jurisdiction and influence over grasslands. This in itself is a major issue in that no one agency or level of government has the mandate to protect grassland values. Where any degree of focus exists, it tends to be on grassland ecosystems rather than on loss of grasslands due to fragmentation and development.

Key agencies, along with a brief summary of their mandates and regulatory/process tools, are summarized in Table 1. Legislation and regulatory tool summaries are not intended to be comprehensive. Priority was given to those agency responsibilities most relevant to the development of a Strategic Plan to mitigate grassland fragmentation and development, recognizing that a more detailed review of specific legislation and policy may be required in response to Strategic Plan priorities and actions. In addition, while efforts were made to obtain current information, it should be recognized that ministries of Government, their legislative/regulatory powers and their internal policies are constantly evolving and, therefore, these aspects of Table 1 are subject to change.

Agencies have been dealt with in the following order: local and regional government; independent provincial resource agencies, namely the Agricultural Land Commission (ALC) and Land and Water BC (LWBC); provincial regulatory, policy and planning ministries; First Nations; and federal policy and regulatory ministries. Provincial and federal ministries and independent agencies that deal with assessment and taxation are discussed as a group in Chapter 3.2 under the heading, Economic Incentives and Disincentives.

Identified issues related to the fragmentation and development of grasslands are also included in Table 1. Issues were compiled from the GCC May 2004 workshop and subsequent strategic planning tool documents. These were supplemented and amended through expert source interviews, research and consulting team personal knowledge. Some judgments were made based on perceived validity, relevance and significance to the project objective. The goal was not to ensure every conceivable issue was documented; rather, to ensure a sufficient compilation of representative issues to enable the development of a Strategic Plan.

June 30, 2005 Addendum Note:

Immediately following the finalization of Section 1 of this report, Government announced a major reorganization of Provincial ministry and agency names, mandates and responsibilities. However, at time of writing, specific information was not available on the details of the changed mandates and ministry/agency interrelationships.

Table 1 Planning and/or Regulatory Agencies/Processes and Key Issues that Influence Fragmentation and Development of Grasslands

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process Tools	Key Identified Agency-related Issues
<p>1. Municipal/ Regional Government <i>(Ministry of Community, Aboriginal and Women's Services¹ MCAWS)</i></p>	<ul style="list-style-type: none"> • Planning, zoning, subdivision and development regulation on privately owned lands. 	<ul style="list-style-type: none"> • Community Charter Act governs municipal-provincial relations and defines broad powers/accountability; • Local Government Act provides for the creation, structure and operation of municipalities, regional districts and improvement districts and defines powers and responsibilities; • Local Services Act authorizes the province to establish areas outside of municipalities and provides land-use regulation and other local government services to the areas; • Local Government Act authorizes Municipal Governments to regulate private land use through OCPs, which may include "policies of the local government relating to preservation, 	<ul style="list-style-type: none"> • Wide range of planning and regulatory tools, including Official Community Plans (OCPs) Regional Growth Strategies (RGSs), rural land use Bylaws, zoning and subdivision Bylaws, site development plans, development cost charges, development referral processes (with provincial and federal agencies), minimum parcel size, agricultural area plans, development standards and environmental protection Bylaws; and, • Wide range of land securement tools, including acceptance of donations of land, land dedication during subdivision development planning, land exchanges, securement of covenants, long term leases, rights-of-way agreements and acquisition of park land. 	<ul style="list-style-type: none"> • Focus of planning is on settlement (accommodating growth) uses, not on protection of natural ecosystems (e.g. OCPs and RGSs don't typically include objectives for natural ecosystems such as grasslands); • Evaluation tools for developments or infrastructure investments are too narrow in scope and biased towards short-term economic parameters; they don't consider the full range of values nor the true costs (environmental, social and economic) of urban sprawl or development of grasslands; • Existing tools (Bylaws, guidelines/policies, development referral processes) are either underutilized or fail to provide consistent incentives/requirements to developers to maintain grassland values and contiguity; • Most municipal planners don't have the training or background to interpret and apply ecosystem-based or biodiversity mapped information; • Local and regional governments don't always use their powers to refuse to forward applications for exclusion/subdivision/non-farm use to the ALC; • Local and regional governments are either submitting applications themselves for exclusion of grasslands from the ALR or are rezoning grasslands outside the ALR for rural residential use; and, • Regional and local plans often do not reflect the direction and intent of provincial strategic land use plans or other resource management processes (e.g. species at risk) that may give priority to grasslands.

¹ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Mitigating the Fragmentation and Development of BC's Grasslands

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process Tools	Key Identified Agency-related Issues
		<p>protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity” and “policies of the local government respecting the maintenance/enhancement of farming on land in a farming area or in an area designated for agricultural use in the community plan”; and,</p> <ul style="list-style-type: none"> • RGSs contain provincial goals such as “protect environmentally sensitive areas, maintain the integrity of a secure and productive resource base, including agricultural and forest land reserves, avoid urban sprawl and ensure that development takes place where adequate facilities exist or can be provided in a timely, economic and efficient manner”. 		

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process Tools	Key Identified Agency-related Issues
<p>2. Agricultural Land Commission (ALC)</p>	<ul style="list-style-type: none"> Subdivision and development (use) control over lands within the Agricultural Land Reserve (ALR). 	<ul style="list-style-type: none"> Agricultural Land Commission Act mandates an independent, government appointed body, "to preserve agricultural land; to encourage farming on agricultural land in collaboration with other communities of interest; to encourage local governments, first nations, the Government and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, Bylaws and policies." 	<ul style="list-style-type: none"> Provincial Agricultural Land Reserve (ALR) zoning; Accepts, processes and makes decisions through regional panels of Commissioners on inclusion, exclusion, subdivision and land use change within the ALR; Establishes policies and procedures through an Executive Committee (Chairs of regional panels), CEO and professional support staff; Integration of provincial agricultural land preservation priority with local government planning functions; and, Approves or rejects Conservation Covenants within the ALR. 	<ul style="list-style-type: none"> Inconsistent treatment of grasslands; some are in the ALR while some critical grasslands are not (Some grasslands that may warrant protection on a biodiversity basis do not qualify for inclusion in the ALR, i.e. grasslands on shallow to bedrock soils); Lack of coordination between ALC/ALR function and municipal/regional government planning functions (OCP direction, minimum parcel size, urban containment, service and infrastructure projects etc.); With its focus on protecting arable lands, the ALR can serve to increase development pressure on adjacent grasslands outside the ALR, particularly in urban edge locations; Difficulty of gaining ALC approval for Conservation Covenants to protect grassland values on lands within the ALR; ALC has no jurisdiction to prevent the fragmentation of contiguous grasslands through the separate sale of existing legal parcels; Constantly changing ALC and conversion from arms-length central Commission with a provincial perspective to regional panel structure has the potential to result in increased fragmentation/development of grasslands and inconsistent approach to inclusion/exclusion applications throughout the various regions of the Province; and, Delegation agreement option to download Commission application decision-making authority to local governments that, historically, have not given high priority to agricultural land (including grassland) preservation (reason the ALR was established in the first place).

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process Tools	Key Identified Agency-related Issues
<p>3. Land and Water BC² (LWBC)</p>	<ul style="list-style-type: none"> • Crown land and water use allocation and tenure; • Site planning approval and monitoring; • Administration of livestock grazing leases; and, • Crown land marketing. 	<ul style="list-style-type: none"> • LWBC “identifies, develops and markets Crown land for a variety of uses, including residential, commercial, industrial, agricultural and recreational uses...in accordance with policies established by MSRM; conditions in the Delegation Agreement; relevant legislation; and, the Province's First Nations Consultation Guidelines”; • Extensive and Intensive Agriculture Program Memoranda of Understanding (MOUs) with MoF and ALC under the Land Act; and, • Under the Land Act, LWBC administers <i>existing</i> Land Act grazing leases. 	<ul style="list-style-type: none"> • Accepts, reviews and makes decisions to issue tenure for use of Crown land and water through Lease, License of Occupation, Use Permit, Water Licenses etc; • Makes decisions to sell Crown land outright; and, • Can attach conditions to tenure or sale of Crown land (including obligation to maintain grassland values) and to the use of water. 	<ul style="list-style-type: none"> • Key mandate and priority is to maximize revenue from Crown land, either through outright sale or approval of enhanced economic activity, which doesn't take into account the potential for cumulative negative impact on wildlife habitat and/or grassland values or upon private ranching operations that rely on Crown range as integral parts of their ranch operations; • Overlapping tenures multiply the diversity and density of uses, and therefore intensify the pressures on grasslands (e.g. backcountry recreation tenures either on grasslands or dependent upon access through grasslands); and tenure holders dependent on range resource have no recourse; and • Allocation and use priority of scarce water resources (e.g. water licenses issued for urban development, rural residential, commercial recreation lodges, industrial and aggregate operations, soil and non-soil-bound agriculture at the expense of water for fisheries and ranching).

² Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
4. Provincial Regulatory, Policy and Planning Ministries				
a. Ministry of Sustainable Resource Management³ (MSRM)	<ul style="list-style-type: none"> Regional and subregional resource planning; Strategic policy direction to Land and Water British Columbia Inc. (LWBC); and, Reporting Minister for the Agricultural Land Commission (ALC) and the BC Assessment Authority (BCAA). 	<ul style="list-style-type: none"> Mandate to promote a vibrant economy through the sustainable development of BC's natural resources while maintaining environmental integrity; and Key legislation includes: Land Act, Water Act and Land Title Act and related legislation such as Agricultural Land Commission Act, Assessment Act, Assessment Authority Act, Environment and Land Use Act, Greenbelt Act and pieces of the Forest and Range Practices Act. 	<ul style="list-style-type: none"> Land and Resource Management Plan (LRMP) and Sustainable Resource Management Plan (SRMP) processes, (including implementation and associated Crown land and water use planning functions) to set goals and strategies for Crown land and resources and to resolve land/resource/water use conflicts; Inventory function (through Land Information Services Division) to provide integrated, science-based land, resource and geographic information for land planning purposes; Acquisition of land (through Crown Land Special Account) for transportation and recreation corridors and for sensitive ecological 	<ul style="list-style-type: none"> Contiguous grassland areas are often subjected to two separate (and uncoordinated) planning processes. LRMPs and SRMPs apply only to Crown lands and OCPs/RGSs apply only to private fee simple lands; Slow pace or lack of implementation of subregional scale management directions for grasslands that have been established through negotiated and approved LRMPs; and, Absence of a consistent, coordinated conservation message to local government related to a unique provincial resource such as grasslands.

³ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Mitigating the Fragmentation and Development of BC's Grasslands

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
			areas; and, <ul style="list-style-type: none"> Collection and dissemination of information (through BC Conservation Data Centre) on plants, animals and plant communities at risk in BC. 	
b. Ministry of Water, Land and Air Protection⁴ (WLAP)	<ul style="list-style-type: none"> Protected area management plans, fish and wildlife habitat protection, and waste management permits. 	<ul style="list-style-type: none"> Environmental protection of water, land and air quality through the Environmental Management Act and several other legislative acts (e.g. Forest and Range Practices Act); Wildlife Act (species management and species at risk); Parks Act; Environmental stewardship, monitoring and enforcement; and, Development of standards and best practices for eco-system, species and habitat conservation. 	<ul style="list-style-type: none"> Environmental management tools, including area-based planning (e.g. species at risk and protected areas) and enforcement, including provision for monetary penalties; Manages Wildlife Habitat Areas (WHAs) designated under Forest and Range Practices Act for selected species and plant communities; Administers Codes of Practice (e.g. Best Management Practices); and, Conservation Covenants (legal agreements). 	<ul style="list-style-type: none"> Lack of ministry budget and staff to carry out needed inventory and research, work with communities on grassland stewardship initiatives or perform adequate enforcement functions; and, Has stewardship responsibility but limited practical tools and ministry ability to exercise stewardship responsibility on the ground (e.g. no decision-making authority on developments that threaten biodiversity).

⁴ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>c. Ministry of Forests⁵ (Range) (MoF)</p>	<ul style="list-style-type: none"> • Range use allocation, tenure and plans; and, • Private land winter forage production commensurability. 	<ul style="list-style-type: none"> • Range Act authorizes the MoF to issue licenses/permits for the use of range resources (grasslands) by the livestock industry through grazing and hay-cutting agreements; and, • Forest and Range Practices Act regulates forest and range practices for planning and management, control of invasive alien plant species and recreation management, as well as providing for wildlife conservation in its biodiversity guidelines. 	<ul style="list-style-type: none"> • Approves: Crown Range Use Plans; Range Stewardship Plans; Identified Wildlife Management Area (IWMA) designations on Crown lands; as well as access permits. 	<ul style="list-style-type: none"> • Under and/or ineffective utilization of IWMA tool to protect Crown grassland values; • No ability to apply IWMA to contiguous critical private grasslands; • Lack of Ministry capacity to assist with new or revised Range Use Plans; and, • Lack of (and serious need for) a long-term coordinated provincial noxious weed control program for Crown and private rangelands.

⁵ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>d. Ministry of Agriculture, Food and Fisheries⁶ (MAFF)</p>	<ul style="list-style-type: none"> • Farm Practices Protection (Right to Farm) legislation, provincial agriculture policy, farm financial programs, environmental farm plans through BC Agriculture Council (BCAC). 	<ul style="list-style-type: none"> • Ministry mandate to administer programs related to the production, marketing, processing, best management practices, and merchandising of agricultural products; • Farm Practices Protection (Right-To-Farm) Act (FPPA) protects farm/ranch operators from nuisance complaints from non-farm neighbours when managing according to normal practices; and, • Responsible for provincial agricultural policy, technical assistance on ALC legislative/regulatory functions and oversight of administration (through BCAC) of federal/provincial farm assistance programs and farm/ ranch environmental plans programs. 	<ul style="list-style-type: none"> • Regional professional land use Agrologist advisors; • Administers delivery of Federal/Provincial Environmental Farm Plans (EFP) program through BCAC; • Review of OCPs and Bylaws to ensure compatibility with provincial FPP Act and support for farm operations; and, • Support to local Agriculture Advisory Committees to provide local governments with advice on land use, planning and regulation, and other issues affecting agriculture. 	<ul style="list-style-type: none"> • Farm Practices Protection (Right to Farm) Act treats all agricultural endeavours equally (which can result in loss of high value grasslands due to conversion to intensive soil-bound (if arable) or non-soil bound agricultural uses); • Water demand for intensive agriculture and non-farm development reduces required supplies to ranchers and indirectly puts pressure on grasslands; and, • Elimination of extension capability that could provide support to government agencies and land owners and users to protect grasslands integral to the ranching industry.

⁶ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>e. Ministry of Energy and Mines⁷ (MEM)</p>	<ul style="list-style-type: none"> • Surface access to subsurface resources; and, • Exploration and development approval for surface and subsurface energy, mineral and aggregate extraction activities. 	<ul style="list-style-type: none"> • Ministry mandate to develop programs and policies to promote, facilitate and manage the exploration and development of oil, gas, coal and coal bed gas reserves and aggregate, industrial and other mineral resources; • Mines Act, Mineral Tenure Act, Petroleum and Natural Gas Act and several other statutes; applicable to all private and Crown lands unless expressly excluded by statute (e.g. within parks and protected areas); and, • Responsible for BC Hydro, Oil and Gas Commission (OGC), BC Utilities Commission, Columbia Basin Trust and Columbia Power Corporation. 	<ul style="list-style-type: none"> • Maintains a registry of mineral claims; issues and administers tenures for oil, gas, coal, coal bed gas and minerals (but not aggregate, which is tenured by LWBC under Land Act); • Regulates worker safety and environmental impacts of energy and mining activity, including sand and gravel pits and quarries; • Regulatory and permitting process includes agency referral for a threshold of surface disturbance; "Notice of Work" permit sets conditions and reclamation requirements; thresholds exist to trigger Environmental Assessment Act and other environmental regulations; and • Oversight functions related to Oil and Gas Commission application review, permitting and regulatory authority related to oil and gas activities and pipelines. 	<ul style="list-style-type: none"> • Primacy of subsurface oil, gas and mineral rights over surface rights, land uses and planning processes that might otherwise be able to take into consideration grassland conservation issues; • Direct loss of grasslands to energy, mineral and aggregate developments and indirect impact on biodiversity and ranching activities from fragmentation due to unrestricted access to areas of surface and subsurface resources through grasslands; • New regulations that allow closer spacing and higher density of oil and gas wells (and potentially coal bed gas wells), which directly impacts fragmentation of grasslands; and, • Lack of designated referral agency to cover the interests of grasslands in 'Notice of Work' permits, conditions and reclamation requirements.

⁷ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>f. Ministry of Transportation⁸ (MoT) and, BC Transportation Financing Authority⁹ (BCTFA)</p>	<ul style="list-style-type: none"> • Subdivision development approval in rural areas and adjacent to controlled access highways; • Transportation route planning, engineering, survey and design; and, • Investments in transportation infrastructure (through BCTFA) financed through borrowing and dedicated taxes. 	<ul style="list-style-type: none"> • Mandate to create an integrated provincial transportation plan and maintain and improve the highway system; • Highways Act deals with the establishment, maintenance, alteration and regulation of public highways under provincial jurisdiction; • In combination with other legislation, Highway (Industrial) Act governs the operation of resource roads and vehicles using those roads; and, • BCTFA mandate of prudent and transparent fiscal management and sustainable transportation financing. 	<ul style="list-style-type: none"> • Regional Transportation Advisory Committees to identify and advise on priority highways improvement projects; • Through delegated authority, MoT Approving Officers accept and approve preliminary subdivision applications; • Approving authority for subdivision of land outside municipal boundaries and regulating subdivision adjacent to Controlled Access Highways within municipalities; • Acquisition of land for provincial highways purposes; and, • Transportation corridor planning. 	<ul style="list-style-type: none"> • Interface of transportation route access, planning and on-going management, including control of noxious weeds, planting of non-native species, as well as livestock and wildlife fencing of rights-of-way through grasslands; • MoT approval of subdivision in rural areas without consideration of grassland values and contiguity issues; and, • Approval process is application driven; not guided by strategic planning direction, inventory or spatial analysis to identify areas (i.e. high value grasslands) where development should be avoided and/or require mitigation.

⁸ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

⁹ Ibid.

Mitigating the Fragmentation and Development of BC's Grasslands

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
g. BC Assessment Authority¹⁰ (BCAA)	<ul style="list-style-type: none"> • Property Assessment for taxation purposes (including residential, farm and range/grassland); and, • Provincial assessment policy. 	<ul style="list-style-type: none"> • Crown Corporation mandate to estimate the fair market value of all private properties in the province to generate income for government taxing authorities; and, • The BC Assessment Act mandates an independent Authority to set policies for lands and land uses for taxation purposes (both fee simple and Crown land, both in and out of the ALR). 	<ul style="list-style-type: none"> • Establishes assessment classification criteria, including farmland productivity and suitability criteria, and makes accommodations for farm properties and lands within the ALR; and, • Administers procedures and processes through which to appeal property assessments. 	<ul style="list-style-type: none"> • Farm tax category does not provide for conservation as an accepted use. Eligibility to qualify for farm tax requires activities and improvements that may contribute to fragmentation of grassland (e.g. fencing). As a result, 'unused' farmland may be assessed as 'residential' (higher tax rate, thereby encouraging further fragmentation and development for alternate uses); • Provincial review of tax rates and categories, including grazing land, could have implications for grassland fragmentation and development; and, • Lack of assessment policy that would discourage urban sprawl and encourage development infilling (which could reduce development pressure on urban-edge grasslands).

¹⁰ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>h. Ministry of Finance¹¹ and Ministry of Provincial Revenue¹² (See also Canada Revenue Agency)</p>	<ul style="list-style-type: none"> Income tax, property transfer tax and policies related to taxation objectives (incentives/disincentives) and structure. 	<ul style="list-style-type: none"> Mandates to establish, implement and review economic, fiscal and taxation policies; and administer and collect taxes under a number of statutes; and, Min. of Provincial Revenue authority to bill and collect taxes on rural properties located outside municipal boundaries based on assessment information provided by BC Assessment Authority; and responsibility to represent BC in its relationship with Canada Revenue Agency with respect to taxation statutes CRA administers on behalf of the Province. 	<ul style="list-style-type: none"> Administers and collects income, resource, property (including Property Transfer Tax), and consumer taxes (including setting tax rates for farm land); Establishes fiscal and taxation policies to achieve government objectives; and, Regulates provisions that effect tax credits or other financial incentive/disincentives. 	<ul style="list-style-type: none"> Lack of tax credits or other financial incentives to conserve grassland ecosystems intact, maintain habitat for species at risk or encourage landowner stewardship of grasslands.

¹¹ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in Table 1.

¹² Ibid.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
5. First Nations				
a. First Nations; and, Department of Indian & Northern Affairs Canada (DIAND)	<ul style="list-style-type: none"> Land use and use change on Indian Reserves; Proposed development referral to address accommodation requirements in traditional use and land claim areas. 	<ul style="list-style-type: none"> Indian Act provides delegated powers from the Federal Government to First Nations and entrenches legal responsibilities for accommodation in areas of First Nations interest; and, Federal legislative framework governing reserve lands includes the Canadian Environmental Assessment Act, Canadian Environmental Protection Act and Species at Risk Act. 	<ul style="list-style-type: none"> Provision for land use plans, zoning and subdivision Bylaws on Indian Reserves; Referral review processes for development proposals on lands of interest to First Nations; and, Treaty negotiation tools and Agreements. 	<ul style="list-style-type: none"> Some of the larger, contiguous, high value grasslands are on Indian Reserves in areas attractive for alternate use development by First Nations committed to providing economic activity (employment) for their members; Limited capacity of First Nations to respond to grassland fragmentation/development issues through referral processes related to Range Use Plans, Crown land tenures, LRMPs or to undertake planning to integrate such plans with First Nation interests in traditional use areas; and, Additional clarification needed regarding Provincial Government's obligations to consult with and accommodate First Nations' interests on Crown lands as an outcome of recent Supreme Court decisions.

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
6. Federal Policy and Regulatory Ministries				
a. Environment Canada (EC) Canadian Wildlife Service (CWS)	<ul style="list-style-type: none"> Species at Risk policy and international/national habitat, research, land and water use change referral. 	<ul style="list-style-type: none"> EC: Preserve/enhance the quality of the natural environment, including water, air and soil quality; conserve Canada's renewable resources and conserve and protect Canada's water resources; and, CWS: administer the Species at Risk Act; Migratory Birds Convention Act; Canadian Environmental Protection Act; Canadian Environmental Assessment Act and Canada Wildlife Act. 	<ul style="list-style-type: none"> Programs for species protection, species/habitats at risk and responsibility for species of national and international significance; Programs and policies related to Wetland Conservation and Habitat Stewardship; Best Practices Guide for Canadian Wildlife at Risk; and, Committee on the Status of Endangered Wildlife in Canada. 	<ul style="list-style-type: none"> Pacific and Yukon Region of the CWS lacks the resources to manage more land and as a result federally-owned grasslands are not being actively considered for conservation purposes

Mitigating the Fragmentation and Development of BC's Grasslands

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
b. Parks Canada	<ul style="list-style-type: none"> Establishment and management of National Parks. 	<ul style="list-style-type: none"> National Parks Act mandates protection and management of nationally significant examples of Canada's natural and cultural heritage and fosters public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations; and, Shared responsibilities under the Species at Risk Act. 	<ul style="list-style-type: none"> Management Plans; use permits and regulations within National Parks, including for the purposes of protection and recovery of species at risk. 	<ul style="list-style-type: none"> No livestock grazing use within National Parks. The proposal for a national park in the South Okanagan.
c. Fisheries and Oceans Canada	<ul style="list-style-type: none"> Fish habitat land and water use change referral; and, Fish habitat protection. 	<ul style="list-style-type: none"> Fisheries Act and regulations mandate responsibility to support Canada's economic, ecological and scientific interests in oceans and inland waters, including responsibility for conservation and use of Canada's fisheries and fish habitat; and, Shared responsibilities under the Species at Risk Act 	<ul style="list-style-type: none"> Provision for monitoring and enforcement of regulations (including through prosecution, financial penalties and mitigative measures requirements) related to watershed and anadromous fish habitat degradation; and, Through the referral process, ability to influence proposed developments to avoid degradation of fish habitat. 	<ul style="list-style-type: none"> No specific issues identified

Agencies	Influence on Frag/Dev of Grasslands	Legislative Mandate	Regulatory/Process tools	Key Identified Agency-related Issues
<p>d. Department of National Defense (DND)</p>	<ul style="list-style-type: none"> • Management of land owned and used for military support purposes; and, • Disposition of lands surplus to Canada's military needs to Canada Lands Company Limited. 	<ul style="list-style-type: none"> • Together with the Canadian Forces and a number of related organizations, all of which are the collective responsibility of the Minister of National Defense, DND provides the core services and capabilities required to defend Canada and Canadian interests. 	<p>Through the Director General Realty Policy and Plans:</p> <ul style="list-style-type: none"> • Planning and forecasting of delivery of all Realty Support to the Canadian Forces (Land, Facilities, Works) within funding limits and the limits of Federal Government policies and laws regarding realty; and, • Tactical level advice and hands-on support in the delivery and management of lands, facilities and works; and in planning the construction of facilities for the smaller custodians of realty within the Department. 	<ul style="list-style-type: none"> • No specific issues identified.
<p>e. Canada Revenue Agency (CRA) (See also Ministry of Finance and Ministry of Provincial Revenue)</p>	<ul style="list-style-type: none"> • Income tax, property tax and policies related to taxation objectives (incentives/disincentives) and structure. 	<ul style="list-style-type: none"> • Income Tax Act mandates Canada Revenue Agency to administer tax laws for Canada and for most provinces and territories, including the various social and economic benefits and incentive programs delivered through the tax system. (Finance Canada oversees the development of tax law) 	<ul style="list-style-type: none"> • Taxation policy, including exemptions, tax credits and other economic incentives/disincentives; • Tax incentives (through Scientific Research and Economic Development Program) to encourage investment in research and development; and, • Tax credit mechanism for donations of ecologically sensitive land (Eco-gifting), easements, covenants and servitudes. 	<ul style="list-style-type: none"> • Intergenerational tax roll-over policies governing farmland (including ranches and grasslands), are a disincentive to grassland conservation; and, • Inadequate tax credits or other financial incentives to conserve grassland ecosystems intact, maintain habitat for species at risk or encourage landowner stewardship of grasslands.

3.1.1 Local and Regional Government Planning, Policy and Regulation

The legislative and policy framework for local governments is provided through the Ministry of Community, Aboriginal and Women's Services¹³. With powers established under the Local Government Act and Community Charter, local and regional governments are seen as the source of many of the issues that have led to increased fragmentation and development of privately-owned grasslands.

The fundamental concern is that the primary focus of local and regional governments is on accommodating growth (or in the best cases, containing growth), not on ecosystem or biodiversity conservation. While this is a valid concern, it must be noted that this is their function and responsibility as established through legislation.

Faced with both growth pressures and the agriculture priority of the ALR, many local and regional governments see grasslands as underutilized marginal farmlands that are logical candidates for the full range of urban uses, including rural residential, ranchettes, industrial, transportation and recreation.

GCC's mapping project, *A Conservation Risk Assessment (2000)*, estimates 20% (or 3000 ha) of native grasslands in the Southern Okanagan Highlands and 55% (or 14000 ha) within Central Okanagan Regional District have already been lost to such uses. Future growth is expected to put even greater pressure on BC's remaining grasslands. Thompson Nicola Regional Growth Strategy (RGS) anticipates a population increase over 1995 of 25% (or 160,000 people) by the year 2015. Thompson Nicola has 39% of the province's remaining grasslands.

In addition to rezoning grasslands outside the ALR for rural residential and other urban/rural uses, there are concerns that local and regional governments are either not exercising their powers to refuse to forward subdivision or exclusion applications to the ALC or are themselves submitting applications for exclusion of grasslands from the ALR for development purposes.

A key issue related to local and regional governments is the apparent lack of awareness and understanding of grasslands – their range of values and the loss of those values that results from fragmentation and development. The linkage between grassland biodiversity conservation and the viability of ranching enterprises that are an integral component of several regional economies is even less well understood; many still consider these two as incompatible.

While GCC's recently completed grassland inventory should greatly assist local and regional governments to better understand grassland values, there is still an

¹³ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and ministry/agency interrelationships to be reflected in Chapters 3.1.1 to 3.1.4 analysis.

urgent need for inventory that identifies, at a local and regional scale, the most critical high value grasslands under the greatest threat of fragmentation and development.

Even with adequate inventory information, however, most municipal and regional planners don't have the training or background to effectively use ecosystem-based information, let alone the time or the directive to incorporate grassland issues into their regular planning and policy development activities.

Not unlike agricultural lands in general, once fragmentation and development of grasslands begins, other changes also happen: increased services and access encourages more development; as working ranches are fragmented or sold, businesses that serve the ranching industry begin to disappear; as the ranching industry becomes less viable, more grasslands are subdivided and developed.

It is felt that there is not enough understanding of the impacts of grassland fragmentation and development on the economic sectors that rely upon them. Available valuation tools are regarded as too narrow in scope and biased towards short-term economic parameters; they don't consider the full range of values nor the true costs (environmental, social and economic) of urban sprawl.

In addition to a wide range of identified issues, local and regional governments have a wide range of planning, regulatory and land securement tools at their disposal. (See Table 1.) Provincial sustainability goals for Regional Growth Strategies (RGSs) that would encompass grassland conservation objectives, for example, are clearly articulated in the Local Government Act, and have been since 1996. Similarly, the Act enables municipal governments to 'protect the natural environment, its ecosystems and biological diversity' through Official Community Plans (OCPs), pass rural land use and subdivision Bylaws to maintain ranching, and prepare Agricultural Area Plans.

With the adoption of the Community Charter Act, local and regional governments gained an even stronger mandate to deal with issues such as grassland conservation if they decide to do so.

The issue, therefore, does not appear to be lack of tools; what appears to be lacking is the ability to apply them to avoid grassland fragmentation and development and the political will to do so. Underutilization, ineffective or inconsistent use of existing tools, including OCPs, RGSs, subdivision and zoning Bylaws, development cost charges, development permit areas and Agricultural Area Plans is seen as a primary target area to mitigate the fragmentation and development of grasslands.

Integration between local planning and provincial planning and regulatory processes is also an issue. (See also Chapter 3.1.2 Agricultural Land Commission.) OCPs and RGSs focus mainly on private lands, while provincial Land and Resource Management Plans (LRMPs) and Sustainable Resource

Management Plans (SRMPs) deal only with Crown lands; further challenges arise when federally-owned lands and First Nations' (Indian Reserves and traditional use areas) are involved. Failure to coordinate objectives across these jurisdictional divides impacts grassland contiguity and intensifies development pressure on grasslands.

3.1.2 Agricultural Land Commission (Agricultural Land Reserve)¹⁴

As an independent Government-appointed body, the Agricultural Land Commission (ALC) has the mandate to preserve agricultural land and encourage agricultural use within the Agricultural Land Reserve (ALR). Issue analysis confirms that, along with municipal/regional government, the ALC is regarded as a key agency with influence upon the fragmentation and development of grasslands.

Approximately 61% of BC's grasslands (private and Crown) are currently within the (ALR). Despite the perception of inconsistent treatment of grasslands, there were specific guidelines applied by the ALC during the establishment of the original ALR boundaries. In general, lands with Class 1-4 capability for agriculture and, in livestock producing/ranching areas of the province, associated Class 5 lands were included within the ALR. In ranching areas, identified Class 6 spring and fall grazing lands (most often grasslands) were also included in the ALR.

Based on legislative mandate and current policy, there is no reason why much of the remaining grasslands could not now be included in the ALR should Agricultural Land Commission panels decide that such lands, whether private or Crown or combinations thereof, have agricultural value and contribute to the well-being of associated agricultural communities. However, it is not the intent of the ALR to conserve grasslands based solely on their biodiversity values. Therefore, some grasslands that might warrant protection on a biodiversity basis may not qualify for inclusion in the ALR using the above criteria, e.g. grasslands on shallow to bedrock soils.

For lands within the ALR, the ALC makes decisions on applications for subdivision and land use change and for exclusion of land from the ALR. Concerns have been raised about the changed regulatory framework and structure within which the ALC now operates. The fact that the regional panel structure has resulted in some regions with significant areas of grasslands not having a member with grassland experience or knowledge is seen to have implications for grasslands inside and potentially outside the ALR. There is the

¹⁴ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and ministry/agency interrelationships to be reflected in Chapters 3.1.1 to 3.1.4 analysis.

concern that this has already led to inconsistent treatment of applications for exclusion, subdivision or land use change of grasslands between regional panels.

Particularly on the urban edge, the ALR focus on high capability arable lands is seen to be increasing development pressure on adjacent grasslands, both inside and outside the ALR. Regardless of high biodiversity and/or livestock grazing values, faced with the choice of excluding either Class 1 arable lands or Class 6 non-arable lands, successive Commissions have been much more likely to allow exclusion of Class 6 lands from the ALR for residential or other uses. Similarly, inclusion of high value grasslands within the ALR may not be regarded as a priority if it is considered to increase the pressure on other urban-edge, higher capability arable lands. (However, this point may be mute in that statistics indicate there have been few private land ALR inclusions of any kind in recent years.)

From a different perspective, however, some consider that, as a 'ring of green' around communities, the ALR has acted as much to protect grasslands as to transfer pressure onto them, particularly in those communities that have committed themselves to urban containment and reduced sprawl.

While the ALC has the option to either allow or refuse applications for subdivision and land use change within the ALR, it has no regulatory powers to prevent the fragmentation of contiguous grasslands should owners decide on separate sale of existing legal parcels. Nor can the ALC prevent – indeed, given its mandate, it would tend to encourage - the conversion of arable grasslands from livestock grazing or forage use to more intensive soil-bound (where climate characteristics allow) or non-soil bound agricultural commodities. (See also Chapter 3.1.4 Ministry of Agriculture Food and Fisheries.)

The ALC is the approving authority for Conservation Covenants on ALR lands. While there is a concern that the ALC is overly protective in this area, application statistics indicate that, of the 22 Conservation Covenant applications formally submitted to the Commission between 1995 and 2004, 20 were eventually approved. This figure may not accurately reflect the reality, however, as it does not take into account Conservation Covenant proposals not pursued because initial reaction from the ALC was negative. Anecdotal information suggests this category is considerably more numerous than the 22 applications formally considered. The ALC Act and its regulations are clear; the intent is to have a provincial zone where food production is paramount. When the non-agricultural intent of a Conservation Covenant conflicts with this mandate or the Farm Practices Protection Act (FPPA) (See Chapter 3.1.4), the Commission panels must refuse the application or require modifications to proposed covenants designed to protect biodiversity or other environmental features. A separate, but related, issue is the lack of monitoring and enforcement of Conservation Covenants once they are established.

Another identified issue related to the fragmentation and development of grasslands is the relationship and perceived lack of coordination between ALC/ALR functions and municipal/regional government planning functions. Under the Agricultural Land Commission Act and its regulations, local and regional governments are obliged to carry out their planning and regulatory functions consistent with ALR zoning. In other words, all OCPs, zoning and subdivision Bylaws and service and infrastructure projects etc. are subject to referral to the ALC panels. Beyond the application process (for exclusion, subdivision or land use change), therefore, there is the opportunity for the ALC to take an advocacy role with municipal/regional government on behalf of agriculture, including ranching. While there have no doubt been times during the ALC's 30+ year history when relationships with particular local governments have been strained, there are also many instances of working cooperatively together, such as regional reviews of ALR boundaries and the 1998 Planning for Agriculture initiative. The ALC has a limited number of regional professional land use planners whose task it is to facilitate the planning and regulatory coordination between local and regional governments and the ALC. In addition, the Ministry of Agriculture Food and Fisheries has regional land use Agrologists and a limited number of land use planners to assist with this often-complex coordination task.

There is concern over the Delegation Agreement option that now exists, which allows the Commission to download application decision-making authority to local governments. While not embraced to any significant degree thus far, this option is nevertheless seen as a threat to ALR grasslands in that it could signal a return of decision-making on subdivision to the whims of local and regional governments – the very reason the provincial ALR was created in the first place.

3.1.3 Land and Water BC (LWBC)¹⁵

As the agency responsible for the development and marketing of provincial Crown land and water resources, LWBC has a key role in the fragmentation and development of provincial grasslands. Established as an independent arm of government, its mandate and priority is to maximize revenue from Crown land, either through outright sale of land or the allocation of land and water resources through the granting of tenure for enhanced economic activity, including residential, commercial, industrial, agricultural and recreational uses.

The key issue is that LWBC carries out its mandate without due regard to the potential for cumulative negative impact upon grassland values or ranching operations that rely on Crown range as integral parts of their ranch operations. While LWBC has the option to attach conditions to the lease or sale of Crown

¹⁵ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and ministry/agency interrelationships to be reflected in Chapters 3.1.1 to 3.1.4 analysis.

land and to the use of water that would impose an obligation to maintain critical grassland values, the concern is that it apparently seldom chooses to do so.

To a significant degree, the source of the problem is inherent in LWBC's institutional structure. With no legislative mandate of its own, LWBC operates through a Delegation Agreement with the Ministry of Sustainable Resource Management (MSRM), which has the statutory responsibility to set LWBC policies based on government objectives. It also enters into protocols and MOUs with other ministries, such as Water, Land and Air Protection (WLAP) and Ministry of Forests (MOF). (See MSRM in Chapter 3.1.4.)

This fragmented mandate is seen as one of the key factors contributing to the lack of provincial priority, coordination and consistency that has resulted in significant loss of Crown grasslands. For example, a review of current service plans reveals that, while LWBC has a mandate and priority to market and/or promote development of Crown lands on the basis of 'highest and best use' to maximize economic return to the Crown, WLAP has statutory responsibility (but no decision-making authority) for biodiversity conservation and stewardship of grassland ecosystems, and MOF has the mandate to allocate rangeland carrying capacity and issue tenure for domestic livestock grazing use. Under the Land Act, however, LWBC administers and MOF (Range) monitors existing grazing leases.

Another LWBC-related issue is the overlapping tenures that multiply the diversity and density of uses (and therefore intensify the pressures) on grasslands. Recreation and surface/subsurface resource extraction tenures, either on grasslands or dependent upon access through grasslands, are of particular concern. However, LWBC has limited technical ability to assess and/or monitor grassland ecosystem carrying capacity or cumulative impact; again, it must rely on other resource ministries for this technical support, ministries who themselves are constrained in their ability to carry out the required inventories and interpretations that would enable informed decision-making. (See Chapter 3.1.4)

As the agency responsible for water allocation, LWBC issues water licenses for both agriculture and non-agricultural purposes. In the drought-prone regions of the province - in which most grasslands are located – water is seen as a key factor in the conversion of grasslands to alternate uses. As water licenses are issued for such uses as urban, rural residential, commercial recreation, and industrial and aggregate operations, there is less water available to ranchers. Within agricultural interests, as well, the availability of water is regarded as a major factor in the conversion of native grasslands from livestock grazing to other soil and non-soil-bound agricultural uses. (See Chapter 3.1.2 ALC and Chapter 3.1.4 Ministry of Agriculture Food and Fisheries)

A final issue related to LWBC is the lack of opportunity for stakeholders and the interested public to have input to applications for alternate use of grasslands prior

to the decision to allocate and/or tenure them to incompatible uses. LWBC is not obliged to hold public hearings on allocation or land use change applications.

3.1.4 Provincial Regulatory, Policy and Planning Ministries¹⁶

Relevant provincial policy and planning ministries are summarized in Table 1. All of these agencies have some jurisdiction or influence over grassland fragmentation and development – some to a substantial degree; others in minor or indirect ways – but no one ministry has a clear mandate to protect grassland values. This fragmentation of mandate is also a key factor in the lack of clarity around the linkages and interrelationships amongst these ministries related to grasslands. (See Chapter 3.1.3 for an example.) The following ministries are considered to have the most direct roles related to the fragmentation and development of grasslands.

Ministry of Sustainable Resource Management (MSRM)

As the provincial ministry responsible for regional and sub-regional resource planning, MSRM-related issues include strategic direction - or lack thereof - for grassland management through the development of LRMPs and SRMPs. Even in those regions of the province where strategic direction for grassland conservation management has been included, there is concern about the slow pace of implementation. Additionally, there has been little follow-up in terms of monitoring whether the management intent (i.e. desired results) for grassland values has been achieved.

Compatibility between provincial planning processes for Crown lands and local and regional planning processes for adjacent private lands is also an issue. (See Chapter 3.1.1.) Theoretically, strategic land use plans are intended to rationalize the many competing use demands on Crown land and bring together provincial and local government perspectives in order to provide consistency on landscapes such as grasslands. In reality, however, it is incredibly difficult to integrate land and water uses across this multi-jurisdictional interface. Further challenges arise when federally-owned lands (or areas of federal jurisdiction) and First Nations' traditional use or Reserve lands are involved.

There is concern at the lack of information on the carrying capacity of Crown grasslands for the wide range of land and water use demands put upon them. There is also limited understanding of those land uses (both nature and extent) that are compatible with grassland conservation and conversely, those that are not. As the ministry with the inventory function to provide integrated, science-

¹⁶ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and ministry/agency interrelationships to be reflected in Chapters 3.1.1 to 3.1.4 analysis.

based land resource and geographic information for planning purposes, MSRM is considered the most logical to address such issues.

Beyond its planning processes, MSRM's coordination role on behalf of Government is critical to mitigating the fragmentation and development of Crown grasslands. Many key provincial pieces of legislation, including the Land Act, Water Act, Environment and Land Use Act and pieces of the Forest and Range Practices Act currently reside within this ministry. In addition, the Minister of Sustainable Resource Management is the reporting minister for the Agricultural Land Commission and the BC Assessment Authority. MSRM also provides policy direction and technical support to LWBC.

Ministry of Water, Land and Air Protection (WLAP)

The relationship between MSRM and WLAP is of particular concern. While WLAP has the environmental stewardship, monitoring and enforcement responsibility on behalf of species at risk, for example, outside of Provincial Parks and Protected Areas it has limited ability to influence (and certainly, no decision-making authority related to) developments that threaten biodiversity of grassland ecosystems. The BC Conservation Data Centre, responsible for the collection and dissemination of information on plants, animals and plant communities at risk in B.C also resides within MSRM.

Ministry of Forests (MOF)

The Range Act authorizes MOF to issue licenses and permits for livestock grazing and to approve Crown Range Use Plans and Range Stewardship Plans. However, this ministry has no jurisdiction over integrated provincial land use planning processes (which resides with MSRM) or the issuance of grazing lease grassland tenures (which resides with LWBC).

Ministry of Agriculture, Food and Fisheries (MAFF)

As the provincial ministry responsible for agricultural policy, MAFF administers the delivery (through BC Agriculture Council (BCAC)) of key federal/provincial farm financial programs and the Environmental Farm Plan program. It is also responsible for the administration of the Farm Practices Protection (Right to Farm) Act, (FPPA), which is considered by some to be a key issue in the fragmentation and development of grasslands.

The intent of the FPPA is to protect farm and ranch operators from nuisance complaints from non-farm neighbours when managing according to normal farm or ranch management practices. However, the concern is that the FPPA (and, therefore, MAFF and the ALC) treats all agricultural endeavors equally, without due regard for the full range of grassland values. This has resulted in the loss of some high value grasslands due to the conversion to more intensive soil-bound (if arable) or non-soil bound agricultural uses. Availability of water, whether through LWBC allocation decisions or through such initiatives as the National Water Supply Expansion Program, is seen as a catalyst for this conversion.

While a valid concern, this issue creates a difficult dilemma within the agricultural community. Not unlike the more traditional competition from non-agricultural uses such as rural residential or industrial, it is grounded in the principle of 'highest and best use'. Within an established provincial priority to protect agricultural land for agricultural purposes and a ministry and an Agricultural Land Commission mandate to promote and encourage expansion of agricultural enterprise, it is difficult to argue that either Crown land decision-makers or private land owners should be dissuaded from seeking higher market returns from conversion to more intensive agricultural uses in the interests of lower economic returns from livestock grazing use of grasslands.

On private grasslands, in particular, there is also the issue of individual choice on the part of the farmer or rancher. Faced with the beef market realities of recent years and the need to find new ways to generate income to stay in business, for many ranchers it may be a choice between converting high capability forage lands to market vegetables or grapes or selling off separate parcels or the whole ranch unit to whomever will buy it. Under the FPPA, local governments are expressly prevented from passing Bylaws that would unduly restrict agricultural activities within the ALR, except as developed cooperatively with the ALC and MAFF and approved by the Minister as part of an Agricultural Area Plan.

An overarching issue related to the fragmentation and development of grasslands is the general lack of understanding of grassland values; their critical importance as grazing land for domestic livestock; and their rapid loss to alternate uses. While MAFF retains support to local Agriculture Advisory Committees and has regional professional land use Agrologist advisors, the elimination of the ministry's extension capability is seen as a key factor in this lack of understanding of grassland issues on the part of local governments, landowners and the general public.

Ministry of Energy and Mines (MEM)

As an advocacy ministry, MEM's mandate is to facilitate and promote exploration and development of provincial oil, gas, coal, mineral and aggregate resources. In addition to issuing and administering tenures for mineral resources, MEM regulates environmental impacts of energy and mining activities and provides oversight to the Oil and Gas Commission, (the Crown Corporation that is the permitting and regulatory authority for oil and gas activities and pipelines). While sand and gravel extraction sites are regulated under the Mines Act, tenures are issued and managed by LWBC.

The key issue related to grassland fragmentation and development is the legislated priority of subsurface rights over surface rights, including an application-driven referral system for surface disturbances that currently lacks a mechanism for flagging grassland issues. In addition to concerns about the direct loss of grasslands to energy, mineral and aggregate developments, there is the issue of fragmentation and impact on ranching activities due to the legal

right of access for energy/mineral exploration and development purposes. There is concern that recent regulatory amendments to allow closer spacing and higher density of oil and gas wells (and potentially coal bed methane wells) will result in even greater fragmentation of grasslands due to these industrial uses.

Ministry of Transportation (MOT)

The primary mandate of MOT is transportation route planning, engineering, survey, and design, including acquisition of land for transportation purposes. (Transportation infrastructure financing is the responsibility of the BC Transportation Financing Authority.) Along controlled access highways throughout the province and in certain rural areas outside municipalities, however, MOT also functions as the approving authority for subdivision and land use change.

A key issue is that MOT approves subdivisions in rural areas without adequate consideration of grassland values. The process is application driven and, therefore, not guided by strategic planning direction, inventory or spatial analysis to identify those areas, such as critical grasslands, where development should be avoided and/or require mitigation.

Similarly, there is the concern that transportation corridor planning and route selection contributes directly to fragmentation of grasslands. Impacts are multiplied after construction by on-going management impacts that include noxious weeds, non-native plant species and livestock and wildlife fencing of rights-of-way through grasslands.

3.1.5 First Nations

Few First Nations'-specific issues emerged through research and interviews. That, in itself, may be an issue that warrants future attention, as First Nations have the potential to significantly influence grassland fragmentation and development. Some of the largest remaining areas of contiguous, high value grasslands are on Indian Reserves. These are also the areas attractive for alternate use development by First Nations committed to expanding economic activity (employment) and providing much needed housing for their members.

Recent Supreme Court decisions oblige the province to consult with and accommodate First Nations' interests with respect to decisions on Crown land including Crown land disposition. In cases where First Nations have asserted aboriginal rights or title and there is potential for a land use decision (e.g. the disposition of lands) to adversely affect (infringe upon) aboriginal rights or title, Government may be required to take steps to accommodate aboriginal rights or title. In some cases, this could lead to restrictions on Government's ability to issue tenures/permits or dispose of land.

Another identified issue is the limited capacity of most First Nations to respond to grassland conservation issues through existing referral processes related to

Range Use Plans, Crown land tenures and SRMPs, or to undertake planning to rationalize such plans with First Nation interests in traditional use areas. There is also the issue of First Nations and local and regional governments working together to manage the impact of development on grassland contiguity across jurisdictional boundaries.

3.1.6 Federal Policy and Regulatory Agencies

While not a significant source of issues resulting in fragmentation and development of grasslands, there are three federal agencies that, due to their relatively strong legislative mandates, are seen as having the potential to help mitigate the fragmentation and development of grasslands.

Under the Federal Species At Risk Act (SARA), **Environment Canada (Canadian Wildlife Service)**, **Parks Canada** (independent agency reporting through Environment Canada) and **Fisheries and Oceans Canada** all share responsibility to protect critical habitat of and provide recovery of plant, animal and plant communities at risk.

As ecosystems containing a high number of nationally endangered species, grasslands are seen as prime candidates for federal action to mitigate their fragmentation and development. However, there is concern at the limited scope of SARA, the reluctance to provide economic incentives to private landowners to steward and conserve grasslands, and the lack of resources (capacity of federal agency presence within BC) to pursue establishment and management of grassland-specific National Wildlife Areas or even to actively manage existing federally-owned grasslands for conservation purposes.

3.1.7 Economic Incentives and Disincentives

Most people own large areas of grassland in order to make a living. Even owners of smaller parcels nonetheless regard their land as having a certain market value. There is perhaps an unreasonable expectation that landowners of grasslands should be required/prepared to safeguard public values (biodiversity, wildlife habitat etc.) at their own expense.

A key issue related to the fragmentation and development of grasslands is the lack of economic incentives to protect grassland values. Indeed, most government policies, regulations and tax systems - and certainly the marketplace - provide disincentives that actually work to facilitate the fragmentation and development of grasslands rather than to encourage voluntary conservation.

Grasslands are attractive real estate for developers engaged in providing opportunities for those seeking rural residential lifestyles. This makes it difficult for ranchers, wishing to sell out or retire, to turn down a development market price for their land. It is also difficult for younger ranchers to compete with

inflated land values that often go far beyond the natural grassland/forage value of the land.

The **BC Assessment Authority (BCAA)** is a Crown corporation with a mandate to estimate the fair market value of private lands in order to generate income for government taxing authorities. BCAA establishes assessment classification criteria, including farmland productivity and suitability criteria, and makes accommodation for farm properties and lands within the ALR.

A key BCAA-related issue is that the farm assessment category does not provide for conservation as an accepted use. Eligibility to qualify for farm assessment requires management activities and improvements (e.g. fencing) that may contribute to grassland fragmentation. Farmland considered 'unused' risks being assessed as 'residential' (i.e. a higher tax rate). While this policy is aimed at 'hobby' or 'recreational' farms and rural ranchettes, it contributes to grassland fragmentation through separation of existing legal parcels or subdivision. With some creativity on the part of the landowner, fragmented parcels dominantly in residential use can achieve farm assessment rate, whereas there are no options for a landowner to choose grassland conservation as a 'use' without assessment penalty.

At the provincial level, there is shared responsibility for taxation matters, including tax credits and other financial incentives/disincentives. The **Ministry of Finance** is responsible for establishing and implementing fiscal and taxation policies to achieve its objectives, while the **Ministry of Provincial Revenue** mandate is to administer and receive income, resource, property (including property transfer) and consumer taxes. In addition, Ministry of Provincial Revenue is the rural property taxation agency for properties outside municipal boundaries and has the responsibility to represent BC in its relationship with Canada Revenue Agency (CRA) with respect to taxation statutes that CRA administers on behalf of the province.

Canada Revenue Agency (CRA) administers federal income and property tax policy, including the various social and economic benefits and incentive programs delivered through the tax system. Intergenerational tax rollover policies governing farmland (including ranches and grasslands) are regarded as a disincentive to grassland conservation. (CRA has the authority to administer non-harmonized taxes in partnerships with provinces at their request.)

Together with the recent reduction of capital gains rate, year 2000 changes to the 'eco-gifting' provision under the federal Income Tax Act have provided some incentives for grassland conservation; however these provisions are regarded as conservation tools of limited applicability.

In general, inadequate tax credits and other financial incentives to conserve intact, grassland ecosystems; maintain habitat for species at risk and encourage

landowner stewardship remains a key issue related to the fragmentation and development of grasslands.

On provincial grasslands, there is also concern that, in the absence of government initiatives, there are no incentives for those holding tenure (whether for livestock grazing purposes or other) to engage in enhanced stewardship above and beyond that required by the lease or license. Nor are there mechanisms for conservation organizations or other NGOs to become directly involved on Crown grasslands where they believe key conservation values are at stake and the Province is not adequately protecting those values. While there are legal provisions for NGOs to purchase Conservation Covenants on private grasslands, the issue on Crown grasslands is complicated and controversial in that it would require attaching a monetary value to grassland conservation on public land as a land use in its own right.

At the local government level, where privately-owned grasslands are dominant, the lack of incentives to maintain grassland values and integrity, especially on the urban development edge, is a significant issue. There are no incentives for landowners not to sell their grasslands to whomever will pay the highest price for them. Similarly, once a developer has purchased a parcel of grassland and submitted a development plan in keeping with local zoning Bylaws, there is no incentive to go beyond basic regulatory requirements or industry-accepted standards to create more environmentally-sensitive 'grassland-friendly' developments.

Finally, there are no obvious incentives for local governments to reconsider their planning policies that are contributing to fragmentation and development of grasslands. Studies that provide provincially-relevant information and analysis on the 'costs' of lost biodiversity and other public values and the 'costs' of urban sprawl are scarce. (Studies in other jurisdictions have calculated that ranch and open land uses generate more in revenues than they require in public service costs, whereas the reverse is true for residential development. Similarly, there are studies that confirm servicing costs increase with the distance that residential uses are located from the urban core).

3.2 Strategic Summary of Key Issues

Most of the grassland fragmentation and development issues listed in Table 1 and discussed in Chapter 3.1 are indicative of broader issue themes. These general issue themes are summarized by agency (or groups of agencies) in Table 2.

Local and regional governments are recognized as having a critical role in the fragmentation and development of grasslands. Many of the identified issues are rooted in the fact that the primary focus of local planning is on accommodating growth and settlement uses rather than on maintaining natural ecosystems such

as grasslands. There is a general lack of awareness of grassland fragmentation and development issues as well as inadequate inventory and other technical information that could assist in building greater understanding of those issues. While it is recognized that local and regional governments have a range of potentially effective tools at their disposal, a key issue is the underutilization or ineffective use of those tools to address the loss of grasslands to fragmentation and development.

Because of its substantial legislative powers (takes precedence over most other provincial legislation) and its direct mandate to protect agricultural land and promote farming (including ranching), the Agricultural Land Commission and the ALR dominate regulatory and policy issues. Notwithstanding the significant loss of critical grasslands in BC, relative to other jurisdictions in North America the existence of the ALR provides some unique support to grassland conservation, particularly those grasslands of importance to the ranching industry for livestock grazing purposes. Given the reliance of the ALR on land capability (range of crops rather than crop suitability), however, there are also concerns about the lack of priority accorded to grassland livestock grazing and biodiversity values relative to 'higher capability' arable lands and cultivated agricultural uses. Other key ALC-related issues include the changing regulatory framework of this arms-length provincial Commission and the relationship between Commission priorities and local/regional land use planning functions.

While the mandates and regulatory functions of other relevant provincial and federal government agencies range widely, the issues themselves reflect consistently common themes: conflicting mandates and priorities, incompatible policies and regulations, lack of coordination and cooperation and lack of capacity of agencies to adequately respond to grassland issues. While not unique to fragmentation and development issues, these characteristics have become accentuated in recent decades as a result of downsizing and cutbacks within most government agencies and the changing culture within governments pertaining to the role of the public service. With the priority focus moving away from traditional tools such as legislation, regulation and interagency referral processes and towards tools that rely on shared responsibility, voluntary guidelines and results-based programs, it is unlikely that government agencies will return to the staff and budget capacity levels associated with the past.

In summary, there are several themes that dominate issues related to grassland fragmentation and development:

- A general lack of understanding and awareness (including by governments, landowners and the general public) of the full range of grassland values and the impact of fragmentation and development on those values;
- Inadequate information upon which to base land and water use decisions related to grasslands, whether inventory of critical grasslands under greatest threat; economic/social/environmental analysis tools to apply to development proposals or assessments of carrying capacity of Crown grasslands;

- Legislation, regulation, policy and planning tools that are inadequate, contradictory or ineffectively utilized to serve the interests of grassland conservation;
- Inadequate economic incentives and conservation tools provided through land assessment and taxation agencies or the marketplace that could encourage local governments, land developers and landowners to recognize grasslands as working landscapes of critical importance to the ranching industry, biodiversity conservation, regional economies and future generations; and
- Lack of effective coordination and underutilized opportunities for partnership approaches that could assist in mitigating the loss of grasslands to fragmentation and development – including amongst decision-making agencies of governments and between governments and NGOs (such as conservation organizations and the ranching industry) as well as other stakeholders and the general public.

Table 2 Summary of Key Issues Related to the Fragmentation and Development of Grasslands

Municipal/ Regional Government Planning, Policy and Regulation	<ul style="list-style-type: none"> • Lack of awareness and understanding of grassland values and impact of development on these values; • Primary focus of planning is on accommodating growth and on settlement uses, rather than on maintaining natural ecosystems; • Adequacy of inventory and other technical information to support local government planning and decision-making related to grasslands (i.e. location of critical grasslands, assessments of full range of grassland values/full range of development costs); and, • Underutilization or ineffective use of existing tools (i.e. OCPs, RGSs, Bylaws, development application policies) that could address the fragmentation and development of grasslands.
Agricultural Land Commission (Agricultural Land Reserve)	<ul style="list-style-type: none"> • Inconsistent treatment of grasslands (ALC focused on protecting arable lands; some grasslands are in the ALR and some are not); • Changing regulatory framework and focus (regional panels; approach to inclusions/exclusions, delegation model); and, • Relationship/coordination between ALC and local/regional planning functions (OCPs, zoning Bylaws, urban containment function).
Provincial and Federal Regulation, Policy, Planning, and Land/Water Allocation	<ul style="list-style-type: none"> • Conflicting mandates and priorities, incompatible policies and regulations (i.e. recreational tenure and water license allocations versus species at risk habitat protection versus livestock grazing tenure); • Lack of coordination and consistency amongst levels of governments and various jurisdictions (local/provincial/federal, First Nations, Crown land versus private land); and, • Capacity of planning/allocation/regulatory agencies to adequately respond to grassland issues (downsizing, cutbacks, limited time for referrals, lack of political will).

**Economic
Incentives/
Disincentives**

- Assessment/taxation policies of BC Assessment Authority and Revenue Canada (i.e. intergenerational transfer disincentives, assessment of 'unused' farmland, lack of conservation tax credits);
- Adequacy of conservation tools and economic incentives for ranchers and other landowners to maintain public values (i.e. conservation of critical habitat, wildlife management, recreational access) and for land developers to use innovation and grassland-friendly subdivision design; and,
- Marketplace does not reflect the true costs of urban and rural small holding development (i.e. loss of habitat values, public costs of servicing rural subdivisions), which constitutes a conservation disincentive to both landowners and developers.

4 Potential Solutions Related to Fragmentation and Development of Grasslands

4.1 *Compilation of Solution Options*

There is not a one-to-one correlation between identified issues related to the fragmentation and development of grasslands and identified solutions to address the issues. Both are multi-dimensional.

The common themes that emerged through the summary of key issues in Chapter 3.2 were used as the basis for organizing the suggested approaches/solution options that are listed in Table 3. To assist in the linkage between issues and solution options, a summary of issues has been restated in Table 3 under the following themes: awareness and understanding; information, inventory and analysis tools; legislation and regulation; planning and policy tools; economic incentives/ disincentives; coordination and cooperation and, public consultation and stakeholder involvement.

Suggested approaches and solution options were gathered from expert source interviews and consultant research to the extent that time and budget allowed. Contributions from the GCC May 2004 workshop and subsequent strategic planning tool documents were also included. Some solution options were reworked to eliminate repetition. Others were combined or pulled apart for placement in different theme categories, recognizing that all of the themes are interrelated and, therefore, placement was somewhat arbitrary. For clarity, solution options were also converted to a consistent structural format. However, within Table 3, no judgments were made as to the desirability or feasibility of the solution options or the adequacy of the response to a key issue or combination of issues.

Table 3 Common Issue Themes and Suggested Solution Options

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> • Most allocation, regulatory and planning agencies (local/regional, provincial and federal) are unaware of grassland values and the significance of grassland ecosystems (i.e. species at risk) and don't know what information is available, where to access it, or how to use it; • General public and owners of ranchettes/hobby farms/rural residential lots on grasslands are unaware of how important grasslands are (e.g. habitat for plants and animals, grazing land for livestock) - or how threatened grasslands are by fragmentation and development; and, • Grasslands don't have the same 'emotional appeal' as higher profile habitats (e.g. 'old growth forests'); in spite of the fact that grasslands provide habitat for numerous species at risk, the rapid disappearance of grasslands is seldom profiled in the media. 	<p>Awareness and Understanding</p>	<ul style="list-style-type: none"> • Ensure all municipal/regional governments, the ALC and all other agencies with interests have access to the GCC Grassland Mapping Project inventory; • Target education on the importance of protecting grassland ecosystems to elected officials, public sector land managers, resource users and professionals involved in land development as well as the general public; • Give highest priority attention to raising awareness of high value, low elevation valley bottom grasslands where development pressures are greatest (i.e. areas easiest and cheapest to develop); • Build awareness of the policy and regulatory tool kit available to municipal/regional governments and development interests under the Local Government Act; • Have GCC Board and staff conduct a workshop with ALC Commissioners and staff, UBCM and others to provide data on the significance of grasslands; • Provide workshops, seminars and extension to the development community on grassland values, sensitive habitats, species at risk and subdivision design approaches that would minimize impacts; • Create a networking publication/website aimed at developers to assist them to protect grasslands; feature NGOs that can help as well as examples of successful developments; • Institute an Extension Program (inter-ministry within the Provincial Government) to provide 'on the ground' expertise, information and tools on the objectives related to mitigation of grasslands fragmentation and development; program would be invaluable to ranchers, First Nations, government staff and the public; • Collect case studies to profile successful models of grassland-friendly subdivision development; • Educate small parcel owners to help reduce the impacts of fragmentation (i.e. by trying to retain continuity of riparian habitats across lot lines); educate weekend recreationists as to the consequences of grassland degradation (i.e. impacts on ranchers' viability and reduced habitat for species at risk); • Provide information on the benefits of grassland biodiversity conservation to 'users' (i.e. ranchers, First Nations, developers, recreating public) in simple language delivered by counterparts; • Raise public awareness of grassland values and loss through the BC Broadcasters public advertising program;

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
	<p>Awareness and Understanding (Continued)</p>	<ul style="list-style-type: none"> • Assist those with an interest in grassland conservation to build the capacity to represent those interests at local Councils (during rezonings etc.) at ALC (hearings, comments on applications) and through local media (letters to the editor etc.); • At local level especially, better to approach grassland fragmentation and development issue from 'environmentally sensitive areas' perspective than from agricultural perspective. Most local governments have an 'Environmentally Sensitive Area' category in their OCPs and, for most people, it's a 'feel good' thing to do; • Collect and publicize success stories – even small, individual ones - in everyone's back yards; • Develop a "report card" tool to raise awareness about the rate of grassland loss/degradation; • Develop a 'user-friendly' definition of grassland (e.g., size, composition, environmental significance, etc.); • Increase awareness through creation of interpretive sites for grassland ecosystems similar to the one near Osoyoos; and, • Incorporate grassland ecosystems as a component of the living landscapes display at the Royal BC Museum; GCC/RBCM could also partner to derive presentation tools that could be used in other venues (e.g. internet, local government presentations, schools etc.).

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> • While the recently completed GCC grassland inventory information will be very useful, there is still an urgent need for inventory/interpretations that identify at a regional scale, the most critical (high value) grasslands under the greatest threat (risk assessment exercise) of fragmentation and development; • Lack of adequate information (in a form usable by local government planning staff) on the full range of grassland values, on the impact of subdivision and development on grasslands and the ranching industry, and on the true costs (environmental, social and economic) of urban sprawl onto grasslands; • Lack of information on land uses (nature and extent) that are compatible with grassland conservation and conversely, those that are not; and • Lack of integrated provincial information on the 'carrying capacity' of Crown grasslands for the wide variety of land and water use demands put upon them. 	<p>Information, Inventory and Analysis Tools</p>	<ul style="list-style-type: none"> • Give high priority to mapping at a usable/appropriate scale, 'critical' 'high value' grasslands under imminent threat of fragmentation and development for use in all planning processes; • Develop a grassland evaluation Best Management Practices (BMP) guide modeled on the Wetland Best Management Practices guide (in preparation) to assist municipal/regional governments and provincial ministries in their decision-making; • Ensure that proper inventory information is available to support a Strategic Plan aimed at mitigating grassland fragmentation and development; actions need to be science-based and provincial in scope - the fragmentation and development of grasslands can't just be addressed on a local basis; • Focus inventory development and analysis on critical grasslands and wildlife corridors; • Develop and use analysis tools to manage for grassland values in strategic land use plans (e.g. inventory, land use objectives, land use zoning); and, • Develop monitoring procedures and measurement tools; select indicators to monitor progress in mitigating grassland development and fragmentation (e.g. hectares of grassland lost, number of hectares with protection/conservation measures in place, etc.).

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> • Conflicting legislative mandates (which translate into incompatible regulations) amongst provincial agencies that deal with some aspect of Crown grasslands (e.g. LWBC priority to maximize revenue from Crown land versus WLAP responsibility for biodiversity conservation and stewardship versus MOF mandate to allocate range resources for domestic livestock grazing use; MEM legislative priority of sub-surface oil, gas and mineral rights over surface land uses and planning processes)¹⁷; • Every agency's mandate for grasslands is too narrow in focus; no one agency has the mandate to manage grassland values and resource use on an integrated basis; and, • Underutilization or ineffective use of both enabling powers under the Local Gov't. Act (related to consideration of grasslands values in OCPs and RGSs) and specific regulatory tools available, such as zoning and subdivision Bylaws and land acquisition. 	<p>Legislation and Regulation</p>	<ul style="list-style-type: none"> • Pursue enactment of a Grasslands Protection Act to, among other things, establish a clear provincial priority to maintain critical grasslands; • Compile a grasslands-smart Bylaw guide (including sample Bylaws) that local Councils could use to protect grasslands, including Bylaws governing the design and character of subdivision development to protect grassland values. Bylaws are an art not a science; • Establish a category of tenure that enables conservation organizations to secure rights to Crown land for conservation/stewardship purposes; i.e. establish stewardship as a legitimate use in Crown tenure/permitting system; • Define objectives under Species at Risk Act and Migratory Bird Act that apply to conservation of critical grasslands; • Define objectives under the Land Act to conserve grassland values; • Carry out a comprehensive analysis of all relevant provincial legislation and regulation from a grasslands perspective as a step towards rationalizing conflicting mandates and clarifying areas of responsibility and cross-ministry coordination of provincial goals related to grasslands; and, • Establish provincial grassland reserves that would conserve biodiversity while limiting incompatible uses.

¹⁷ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in this Table.

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> • Difficulty in achieving a profile for grassland issues within existing local and provincial planning processes (including those internal to ministries related to their specific mandates), all of which have specific purposes and objectives that aren't necessarily compatible with grassland conservation; • While policy tools are among the more flexible and responsive of available tools, they nonetheless can not be effectively utilized (or relied upon) out of context with agency mandates and objectives or, in the case of local government, out of context with OCPs and zoning Bylaws; and, • Government agencies lack the resources (staff time and budget) to add consideration of grassland conservation issues as part of their regular planning and policy development responsibilities. 	<p>Planning and Policy Tools</p>	<ul style="list-style-type: none"> • Promote the development and use of BMP guidelines for management of Crown grasslands and for ranchers and others who are owners of grasslands; ensure BMP are tied back to risk assessment, monitoring and reporting (modeled on BMPs for BC wetlands, currently in preparation); • Make better use of the SRM planning tool to achieve conservation of key grasslands; i.e. identify grassland conservation as an explicit value to be incorporated into strategic land use planning processes where these values exist; • Cluster residential uses on grasslands using density averaging tools; require 'no development' Conservation Covenants on the remainder; • Lobby to have one provincial agency designated as having the mandate and responsibility to protect key provincial grasslands; • Make better, more focused use of Environmental Farm Plans and Range Use Plans as tools; • Ensure that policy statements establishing grasslands as environmentally sensitive areas are included in all RGSs. (OCPs are required to have a regional context statement approved by the Regional Board in areas that already have a RGS so this would ensure that OCPs and all follow up planning and policy that flows from the OCP would have to address grassland conservation); • Pursue establishment and adoption of a provincial grasslands conservation policy as part of the Province's obligation to conserve BC's natural resources; • Utilize development cost charges as a priority policy to mitigate the impacts of development at the local level; • Recognize the range of 'work' that grasslands do by taking a 'working landscape' approach to their protection against incompatible development; apply it equally to private and Crown land (ties in with working forest, working farmland (ALR) working conservation (Parks) and working settlement lands (Urban) concepts); • Pursue an aggressive, properly funded Provincial Noxious Weed Program on Crown and private grasslands; • Include grassland conservation as a component in the current review of farmland classification that is being conducted by MSRM; • Establish a lease system for conservation tenures (i.e. introduce a tenure provision wherein the primary lease holder (lessor) would be permitted to sublease the land for certain agreed upon uses (similar to the approach used by the Federal Government for the Fraser River Port Authority); the lessor would then have obligations to manage the

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
		<p>rights and uses of the sub-lessees; and,</p> <ul style="list-style-type: none"> Establish objectives under the Land Act (and therefore, guidance to LWBC) that would establish critical grasslands as not being open for disposition or development incompatible with grassland values.
<ul style="list-style-type: none"> Built-in disincentives in policies, regulations, 'highest and best use' bias and market circumstances that encourage and facilitate the fragmentation and development of grasslands; e.g. building design standards, insurance/investment industry and 'market demand' heavily favour single family, fee simple and rural residential land use; e.g. economic (beef market) realities push ranchers to find other ways to generate income to stay in business or to leave ranching (i.e. conversion to more intensive agricultural crops, subdivision or sale of separate legal parcels or sale of the ranch unit for alternate development); Absence of, or, inadequate incentives for ranchers or other landowners to maintain grassland values and contiguity, or for developers to go beyond the basic regulatory requirements and industry standards to create more environmentally-sensitive 'grassland-friendly' 	<p>Economic Incentives/ Disincentives (Conservation Tools)</p>	<ul style="list-style-type: none"> Establish a tax rate for rural lands (similar to farm tax) managed for recognized conservation/stewardship purposes (could be tied to a requirement for a registered Conservation Covenant); Move towards full cost accounting of development proposals to include such costs as greenhouse gas/air pollution from long commute (when developments are approved away from urban core), loss of biodiversity/habitat values, reduced availability of water for other economic endeavours etc.; Encourage conservation organizations to increase their securement of critical grasslands that are under threat of fragmentation or development; Investigate use of the option for a municipal tax break of up to 10 years in return for a Conservation Covenant on grasslands; Include conservation values as a criterion for assessing "highest and best use" for Crown land; provide opportunities for individuals and/or organizations to bid on Crown land for conservation/stewardship purposes; enable conservation/stewardship tenure holders to derive revenue (e.g. a lease) from activities compatible with grassland conservation; Negotiate SARA or other stewardship agreements with monetary components on priority Indian Reserves and private grasslands; Ensure that any 'green development' incentive program distinguishes between 'location' and 'site treatment' (i.e. a solar house on high value grassland habitat is not 'green'); Three biggest incentives for developers are time, cost and consistency (certainty); use local government levers (e.g. development cost charges, internal policies) to ensure that those developers who make efforts to protect grassland values consistently go to the front of the line and avoid certain costs; Most people own grassland in order to make a living; if there is a public interest in maintaining ecological values on privately owned grasslands, then provincial/federal taxation agencies need to provide the incentives to do so; Ensure resources and management structures are in place for proper long term management of grasslands prior to securement, (applies equally to Crown designations and to conservation organization acquisitions); it is also critical to monitor to ensure that management commitments are carried out;

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<p>developments;</p> <ul style="list-style-type: none"> • No real market or tax (assessment base) incentive for local governments to reduce sprawl, encourage infill or rethink rural residential/servicing cost ratios; • Lack of enforcement and monitoring of Conservation Covenants; • Inadequate monitoring, enforcement and penalties related to existing legislation, regulation and policies that could help mitigate fragmentation and development of grasslands; • Expectations that landowners of grasslands will safeguard public values (plant and animal habitat, public recreation etc.) at their expense; and, • No mechanism for assigning a value to grassland conservation as an input into benefit/cost analyses to determine 'highest and best' use. 	<p>Economic Incentives/ Disincentives (Conservation Tools) (Continued)</p>	<ul style="list-style-type: none"> • Range use plans are 'entrance level' tools for incentives; beyond a basic expectation of stewardship, there could be incentives for 'value-added' stewardship; • Facilitate consolidation of titles to maintain grassland contiguity; • Perceived market advantage is a great motivator (i.e. consider impacts of forest certification on forest practices); try to establish a similar incentive for beef producers to maintain grasslands; • Promote the use of the much improved post-2000 eco-gifting provisions under the federal Income Tax Act (the definition of 'ecologically sensitive' land is fairly broad and would probably encompass most grasslands); conservation trusts usually hold the covenant against subdivision, development or transfer of parcels independently (contiguity issue); • Lobby for the total elimination of capital gains tax on donations of lands with high grassland values (similar policy to that currently applied to donations of lands for cultural purposes); • Facilitate opportunity for ranch owners of grasslands to engage in nature-based tourism (e.g. fee-based access to private grasslands for hunting, birding, riding, remote cabin location etc., either for individuals or nearby eco-tourism operators); • Increase the use of Crown/private land swaps to protect grasslands with key ecological values (with safeguards to ensure that value of private land is at least equal to the value of the Crown land); • Provide ranchers with the option for longer term tenures (e.g. increase leases from five years to 10 or 20 years) in exchange for enhanced grassland conservation (i.e. more intensive management of Crown rangelands); and, • Establish an oversight body (e.g., NGO) to ensure that conservation rights that have been secured on grasslands are actually maintained through time; be prepared and have the resources set aside to challenge and legally pursue violations.

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> • Difficulty of integrating local/regional planning processes with provincial planning processes, given that OCPs and RGSs focus mainly on private lands while LRMPs and SRMPs focus only on Crown lands; further challenges arise when Federally-owned lands and First Nations' lands (Indian Reserves) are involved; • Virtual breakdown (due to both budget cutbacks/reduced agency capacity and changing policy direction) of traditional referral processes and lack of effective alternate mechanisms to ensure coordinated decision making that meets the requirements of all provincial and federal agencies and stakeholders; and, • Lack of coordination/cooperation related to grasslands is not unique but indicative of the constant challenge related to virtually every issue at every agency/level of government, both individually and collectively. 	<p>Coordination and Cooperation</p>	<ul style="list-style-type: none"> • Establish a multi-agency, multi-level government/non-government grassland securement program similar in concept to the Pacific Estuary Conservation Program; i.e. led by an NGO; priorities set for grassland holdings that are critical and most threatened (e.g. focus on rare plant and wildlife habitat); dollars raised from conservation interests leveraged by additional funding from various levels of government; open competition in the marketplace with public land leveraged through the Crown and land management responsibilities undertaken by NGOs or the Province (e.g. management designation under the Wildlife and Land Acts, such as Wildlife Management Areas or Protected Areas) ; • Build on – and enhance – ALC/local government working relationship, both formally for ALR lands and informally on urban containment policies and issues that affect agricultural land (including grasslands outside the ALR that are tied to working ranches); • Pursue more MOUs and protocols within provincial agencies to increase cooperation and coordination pending longer term changes; two separate (but integrated) streams should receive priority: LWBC/WLAP/MSRM and MAFF/MOF/ALC¹⁸; • On a local/regional basis, facilitate and encourage the establishment of societies modeled after the Delta Farmland and Wildlife Trust (coordination of efforts on behalf of agriculture and environmental interests); • ALC and GCC to work closer together to protect key grasslands from a viable ranch perspective and ALC to try to encourage local governments to do the same; • Build a cooperative model, based on successful initiatives such as Fraser Basin Council, South Okanagan-Similkameen Conservation Program, East Kootenay Conservation Program and Georgia Basin Ecosystem Initiative; • Encourage the establishment of and work cooperatively with First Nations Conservation Coordinators on Reserve lands containing grasslands; • As a potential alternative to the failing referral system, consider the Fraser River Estuary Management Program model of development applications going to one coordinated committee for project review; • Undertake land management contracts with relevant federal agencies to ensure that federally-owned grasslands are secured for conservation and properly managed for their

¹⁸ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in this Table.

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
		<p>biodiversity values (including contiguity with adjacent Crown or privately owned grasslands, where appropriate);</p> <ul style="list-style-type: none"> • Pursue better integration with water/health regulatory agencies/licensing authorities as a way of addressing fragmentation and subdivision of grasslands; • All agencies need to be more willing to 'share' their tools; need different tools for different situations or as fall backs depending on what is 'pragmatic' (e.g. using provincial Fish Protection Act to assist local governments to meet federal requirements related to fish habitat); • Encourage MSRM to play a more effective coordinating role through SRMP processes; • Work on regional MOUs and protocols as appropriate (e.g. Cariboo Benchmark Project whereby MOF agreed to designate certain traditional grassland areas as 'non-timbered' (i.e. no Silviculture to be applied); endorsed by IAMC; • Engage local gov't. to a greater degree in strategic land use planning processes that set direction on future use of Crown land; identify local gov't. issues that need to be addressed in strategic land use planning processes (e.g. urban expansion, recreation use, etc.); • Encourage all grassland interests to develop and support a 'one public voice' for grassland approach; and, • Establish cross-ministry provincial objectives for management of grassland values; integrate management intent and direction in strategic land use plans with local government planning; coordinate land use on Crown land and adjacent settlement lands.

General Issues related to the Theme	Issue Theme	Suggested Approaches/Solution Options
<ul style="list-style-type: none"> Lack of priority (whether due to lack of time, funding or commitment) accorded to ensuring adequate opportunity for public and stakeholder input to decision-making processes that impact grassland fragmentation and development. 	<p>Public Consultation and Stakeholder Involvement</p>	<ul style="list-style-type: none"> Work to build the 'one public voice' for grasslands through education, enhanced public consultation processes, and stakeholder discussions; Support additional funding for public conservation and outreach programs and biodiversity extension programs for stakeholders; Recognize that everyone has a role to play in protecting grassland values; it's not just up to the various levels and agencies of government; Encourage increased consultation by LWBC regarding allocation and disposition of Crown land with grassland values¹⁹; Urge local governments to consult with a local team of grassland conservation experts during reviews of OCPs and other planning/regulatory functions; and Increase engagement of ranchers as one of the major stakeholders in conservation of grasslands (to recognize their interests and encourage them to further stewardship).

¹⁹ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and responsibilities to be reflected in this Table.

4.2 Consolidation of Potential Solutions

As a prerequisite to identifying priority solutions to be addressed in the Strategic Plan, Table 4 represents a consolidation and refinement of the suggested approaches/solution options listed in Table 3 plus the incorporation of additional solutions derived from consulting team personal experience and a cross-check of approaches to mitigating grassland fragmentation and development in other jurisdictions.

Two criteria were applied in the development of Table 4.

- Is the suggested solution a significant enough response to a key issue or group of issues identified in Table 2?
- Does the suggested solution warrant consideration at a Strategic Plan level?

Several of the potential solutions identified are well beyond GCC's ability to implement. Should these emerge as priority solutions in the Strategic Plan, action steps will define GCC's role in moving the initiative(s) forward.

Similarly, Table 4 includes several solutions that may have too many barriers to be feasible. These will be dealt with in Chapter 4.3 (Critical Success Factors to Potential Solutions).

Finally, it is recognized that current or planned GCC activities may already be addressing some of the 'potential solutions'. At this stage of the planning process, the intent was to reduce the range of solution options to a manageable number, ensure there were credible options within each theme category that met the above criteria, and set the foundation for a comprehensive Strategic Plan.

Table 4 Consolidation of Potential Solutions

Theme 1: Awareness and Understanding

1. Ensure that municipal/regional governments, the ALC, First Nations and relevant provincial and federal agencies have access to the GCC Grassland Mapping Project inventory.
2. Build awareness of policy and regulatory tools available under the Local Government Act and Community Charter that could assist in mitigating the fragmentation and development of grasslands.
3. Provide information and workshops to appropriate target groups (e.g. ALC, local government, development community, hobby farm/ranchette property owners and recreation user groups) on grassland values, sensitive habitats, species at risk, and mitigative measures to reduce impact.
4. Develop an inter-ministry Extension Program to provide on-the-ground expertise related to grassland biodiversity and livestock grazing values and fragmentation/development mitigation.
5. Provide information to ranchers on the benefits of grassland conservation/contiguity.
6. Raise public awareness of grassland values and loss through a range of mediums (e.g. BC Broadcasters' public advertising program, Royal BC Museum living landscape display, development community publications/websites, interpretive sites, 'report cards' on grassland loss/degradation).
7. Assist advocates in building capacity to better represent grasslands interests at local government Councils, at the ALC, and through the public media.

Theme 2: Information, Inventory and Analysis Tools

8. Complete mapping and analysis of priority grasslands under imminent threat of fragmentation and development.
9. Develop provincially relevant analysis tools to measure the full range of grassland values and the full costs of urban development and fragmentation of grasslands.
10. Develop indicators and procedures to monitor performance in mitigating grassland development and fragmentation (e.g. hectares of grasslands lost, hectares with conservation measures in place).
11. Conduct a comprehensive analysis of provincial legislation/regulation to facilitate rationalization of conflicting mandates, clarification of provincial goals and areas of responsibility, and improved cross-ministry coordination related to grasslands.

Theme 3: Legislation and Regulation

12. Enact a Grasslands Conservation Act that establishes a clear provincial priority to maintain critical grasslands.
13. Compile a grasslands-smart Bylaw Guide for local governments, including sample Bylaws on subdivision design to protect grassland values.
14. Establish provincial grassland reserves that would limit incompatible uses/development.

Theme 4: Planning and Policy Tools

15. Pursue objectives under federal Species at Risk Act, provincial Biodiversity Strategy (including Recovery Plans) and Migratory Bird Act related to conservation of grasslands.
16. Develop a Grasslands Best Management Practices (BMP) manual to assist municipal/regional governments and provincial agencies as well as ranchers and other owners of grasslands (e.g. modeled on BMPs for BC Wetlands).
17. Establish a category of Crown tenure that recognizes conservation/stewardship as a land use and enables sub-leasing for compatible land use activities.
18. Include policy statements that consider grasslands as potential environmentally sensitive areas in RGSs (and, therefore, in component OCPs).
19. Establish objectives under the Land Act that would enable designation of specific grasslands as not being available for disposition or incompatible development.
20. Designate one provincial agency as having the primary mandate/responsibility and being the designated referral agency related to provincial grasslands.
21. Make better use of local government tools such as development cost charges, development permit areas and Agriculture Area Plans to protect grassland values and mitigate fragmentation and development.
22. Establish a provincial grasslands conservation policy.
23. Identify grassland biodiversity conservation as an explicit value to be incorporated into relevant strategic Crown land use planning processes (SRMPs).

Theme 5: Economic Incentives/Disincentives (Conservation Tools)

24. Provide more conservation incentives to owners of grasslands (e.g. municipal tax break for registered Conservation Covenants; elimination of capital gains tax on lands donated for conservation purposes; lower assessment tax rate for lands managed for biodiversity conservation; credit for 'value-added' stewardship in Environmental Farm Plans).

Theme 5: Economic Incentives/Disincentives (Continued)

25. Facilitate conservation organization securement (e.g. acquisition, Conservation Covenants, land lease, purchase of development rights and stewardship agreements) and perhaps comparable value Crown/private land swaps of critical grasslands that are under imminent threat of fragmentation or development.
26. Champion a certification (branding) program as an incentive for beef producers to maintain grasslands.
27. Establish oversight bodies (e.g. NGOs) and legal mechanisms to monitor Conservation Covenants to ensure restrictions are being upheld.
28. Negotiate SARA or other stewardship agreements with monetary components on Indian Reserve and private grasslands.
29. Apply full cost accounting approaches to developments proposed on grasslands.
30. Facilitate consolidation of titles to maintain grassland contiguity.

Theme 6: Coordination and Cooperation

31. Establish a multi-agency government/non-government grassland acquisition and land management partnership program.
32. Build on the working relationship between the ALC and municipal/regional governments to meet common objectives of ranching viability, grassland conservation, and urban containment.
33. Develop grasslands-specific Memoranda of Understanding (MOUs) and protocols amongst relevant provincial agencies.
34. Address operational problems in coordination among provincial agencies (e.g. institute a coordinated committee referral process for development applications on grasslands; integrate monitoring and enforcement [including penalties] of existing regulations and policies).
35. Support the establishment of First Nations' Conservation Coordinators on Reserve lands containing grasslands.
36. Negotiate land management contracts with relevant federal agencies to ensure federally owned grasslands are secured and properly managed for conservation of biodiversity values.
37. Ensure strategic land use planning processes address local land use requirements and coordinate Crown land management intent and use with adjacent local government planning for settlement and agricultural uses.

Theme 7: Public Consultation and Stakeholder Involvement

38. Facilitate establishment of grasslands-focused local societies built on ranchers and biodiversity interests working together for mutual benefit. (e.g. modeled on Delta Farmland and Wildlife Trust).
39. Build 'one public voice' for grasslands through consultation and stakeholder involvement.
40. Pursue additional funding for stakeholder programs and for public conservation and outreach initiatives.
41. Encourage local governments to consult with local grassland conservation experts during OCP reviews and other planning/regulatory exercises.
42. Increase public and stakeholder consultation prior to allocation or disposition of Crown grasslands.

4.3 Critical Success Factors for Evaluating Potential Solutions

The identification of critical success factors is a key step in the identification of priority solutions. They provide the mechanism to evaluate the potential solutions and to develop the 'priority solutions' that will form the basis of the strategic priorities to be addressed in the Strategic Plan. The process for identifying priority solutions is shown in Figure 1.

Figure 1: Issue/Solution Flow Chart

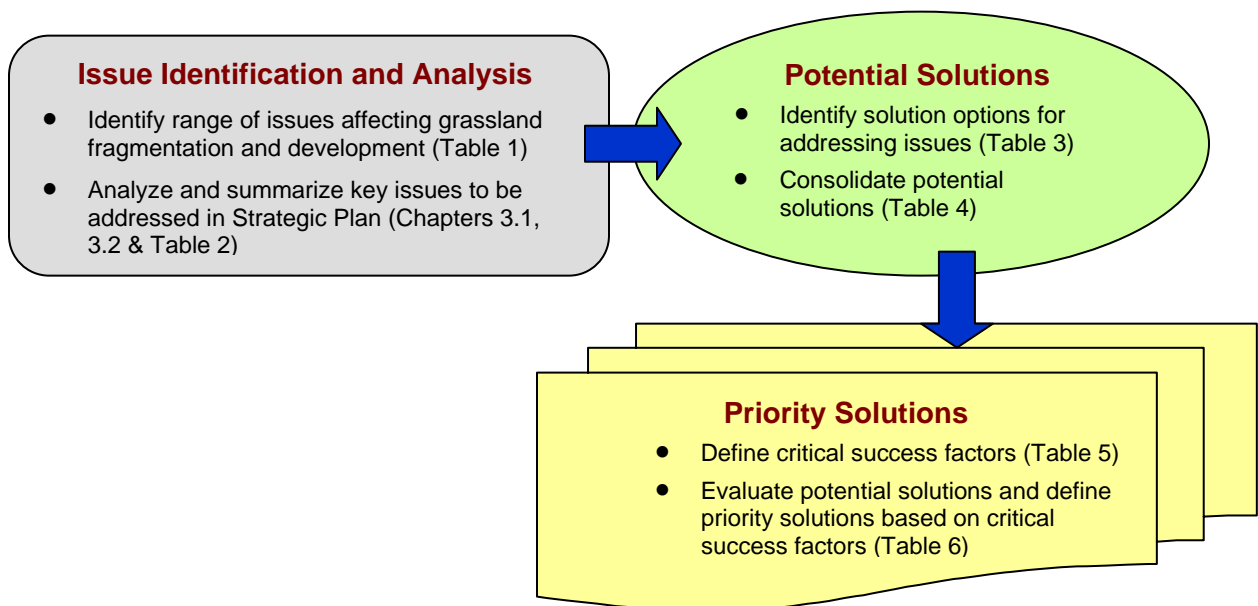


Table 5 identifies the critical success factors and evaluation questions that were used to assess and prioritize potential solutions to mitigate grassland fragmentation and development.

Table 5 Critical Success Factors

Critical Success Factors	Evaluation Questions
Relevance	• How relevant is this solution to the key issues to be addressed?
Impact	• How effective will this solution be in addressing one or more key issues?
Receptivity	• How likely is it that this solution will be accepted and acted upon by decision-makers?
Complexity	• How difficult will this solution be to implement (e.g. does it require legislative change, commitment from multiple agencies and organizations)?
Cost	• How much will this solution cost and how likely is it that funding will be available?
Critical Mass	• To what extent does this solution build a foundation for achieving future results (i.e. first step in a logical sequence of initiatives)?
Partnership Opportunity	• To what extent does this solution provide the opportunity for implementation in conjunction with other initiatives and/or in partnership with other agencies and organizations?

Evaluating potential solutions to identify priority solutions involved the following steps:

1. Evaluating each of the potential solutions against each of the critical success factors in Table 5, using a ranking of 3 (high), 2 (moderate) or 1 (low), for a maximum potential score of 21. (For two of the factors, complexity and cost, this required a reversed ranking to ensure that 3 indicated a solution that was considered relatively simple and inexpensive, while 1 indicated a solution considered complex and expensive.)
2. Establishing a threshold score for priority solutions that ensured all issue themes were addressed in some manner.
3. Reviewing non-priority solutions to determine that key ones had not been overlooked due to unintended implications of the evaluation criteria.

In addition to contributing to the total score achieved, individual critical success factors assisted in distinguishing between solution options that addressed similar issues. Informal checks and balances were also applied to ensure that the

evaluation resulted in the best options to meet the needs of a strategic planning process.

Table 6 lists the priority solutions that emerged from the evaluation exercise. These will be addressed through the strategic priorities in the Strategic Plan, either as strategic priorities themselves or as objectives or actions that support a particular strategic priority. In addition, potential solutions that were not identified as priority solutions may nonetheless emerge as objectives or actions to the extent that they contribute to the achievement of a strategic priority.

Table 6 Priority Solutions

Priority Solutions

Ensure that municipal/regional governments, the ALC, First Nations and relevant provincial and federal agencies have access to the GCC Grassland Mapping Project inventory.

Raise public awareness of grassland values and loss through a range of mediums.

Complete mapping and analysis of priority grasslands under imminent threat of fragmentation and development

Develop provincially relevant analysis tools to measure the full range of grassland values and the full costs of urban development and fragmentation of grasslands.

Develop indicators and procedures to monitor performance in mitigating grassland development and fragmentation.

Compile a grasslands-smart Bylaw guide for local governments, including sample Bylaws on subdivision design to protect grassland values.

Develop a Grasslands BMP manual to assist municipal/regional governments and provincial ministries as well as ranchers and other owners of grasslands.

Include policy statements that consider grasslands as potential environmentally sensitive areas in RGSs (and, therefore, in component OCPs).

Make better use of local government tools such as development cost charges, development permit areas and Agriculture Area Plans to protect grassland values and mitigate fragmentation and development.

Establish a provincial grasslands conservation policy.

Provide more conservation incentives to owners of grasslands.

Facilitate conservation organization securement (e.g. acquisition, Conservation Covenants, land lease, purchase of development rights and stewardship agreements) and perhaps comparable value Crown/private land swaps of critical grasslands that are under threat of fragmentation or development.

Facilitate consolidation of titles to maintain grassland contiguity.

Establish a multi-agency government/non-government grassland acquisition and land

management partnership program.

Build on the working relationship between the ALC and municipal/regional governments to meet common objectives of ranching viability, grassland conservation, and urban containment.

Develop grasslands-specific MOUs and protocols amongst provincial agencies.

Support the establishment of First Nations' Conservation Coordinators on Reserve lands containing grasslands.

Pursue additional funding for stakeholder programs and for public conservation and outreach initiatives.

Increase public and stakeholder consultation prior to allocation or disposition of Crown grasslands.

4.4 Summary of Priority Solutions

The priority solutions in Table 6 will be further addressed in the Chapter 5 Strategic Plan. However, this section is intended to briefly highlight some of the common features – recognizing that most of the potential solutions are multi-dimensional – and place them in the context of the issues identified in Table 1 and summarized in Chapter 3.2.

A number of priority solutions primarily involve building on current initiatives and adapting or making better use of existing planning tools to address grassland fragmentation and development.

In terms of inventory information, there is a priority to ensure that all municipal/regional governments, the ALC, First Nations and relevant provincial and federal agencies have access to – and know how to use - the GCC Grassland Mapping Project inventory. Notwithstanding the fact that strategic decisions will need to be made on its distribution, completing the mapping and analysis of priority grasslands under imminent threat of fragmentation and development is seen as a critical priority. The development of indicators and procedures to monitor the rate of loss – and therefore the effectiveness of initiatives taken - will also be key.

Priority solutions targeted at current initiatives focused on raising awareness and understanding of grassland fragmentation and development issues amongst landowners, (particularly non-ranching community landowners), developers and the general public suggest a variety of mediums (e.g. BC Broadcasters' public advertising program, Royal BC Museum living landscape display, development community publications/websites, interpretive sites and 'report cards' on grassland loss/degradation) as well as the pursuit of additional funding for public conservation initiatives, outreach and stakeholder programs.

The priority solutions aimed at adapting or making better use of existing planning tools are directed mainly at the role of local governments in mitigating the fragmentation and development of grasslands. Given their enabling powers under the Local Government Act and Community Charter, there is the opportunity to pursue inclusion of policy statements related to grasslands within RGSs (and, therefore, in component OCPs), including the option to identify grasslands as environmentally sensitive areas.

Another priority solution to address the needs of municipal and regional governments is a grasslands-smart Bylaw Guide, including sample Bylaws on subdivision site location and design that could contribute to protecting grassland values and contiguity.

Bylaw guides focused on stewardship and 'smart growth' are already available. (See reference list). While they provide useful guidance and sample policy statements and Bylaws on how local governments can address a wide range of land use planning and environmental site planning issues, such as habitat protection, urban containment, tree protection, soil removal and deposit, watercourse and foreshore protection, recreation green space corridors and storm water management, there is limited reference to approaches that could address the fragmentation and development of grasslands.

Local governments also have development cost charge and development permit area policy tools at their disposal that could be adapted to address grassland issues and to provide incentives for developers to go beyond basic regulatory requirements and create more grassland-friendly developments. However, it must be recognized that, by the time grasslands are in the ownership of land developers, many of the options to mitigate their development and fragmentation have already been eliminated.

In response to issues related to the ALR, there is an identified priority to build on the working relationship between the ALC and municipal/regional governments to meet common objectives of ranching viability, grassland conservation, and urban containment.

The Local Government Act makes provision for Agricultural Area Plans (AAPs). Not unlike neighbourhood plans in an urban context, AAPs are sub-area plans designed to address agricultural issues within an OCP. The purpose of an AAP is to express agricultural policy at a level of detail that can effectively deal with issues important to the farming (and ranching) community and that can enhance land and resource use compatibility (including biodiversity). Despite the availability of a comprehensive *Planning for Agriculture* resource manual prepared for local government by the ALC, this planning tool has thus far been underutilized, but could provide a useful mechanism to assist in addressing grassland fragmentation and development.

Adequate planning and policy tools notwithstanding, the reality is that, as elected bodies, it will be very difficult for municipal and regional governments on their own to withstand the intense local development pressures and act in the interests of grassland conservation. In the absence of a defined provincial direction and the resources to implement change at the local level, it is doubtful that municipal and regional governments will be able to accord priority to mitigating the fragmentation and development of grasslands.

The experience in British Columbia of protecting agricultural land resources in general is a good example. Despite widespread opposition at the time, it was the definition of a provincial priority and the strength of a provincial initiative, arms length from the pressures exerted on local elected officials, that motivated and enabled municipal and regional governments to make the transition, both in their attitudes and in their planning documents, towards agricultural land preservation and, by implication, urban containment. Over thirty years later, within British Columbia, both have since become fundamental principles that define those communities most committed to long term sustainability.

There were several potential solutions identified to address the lack of focus and the conflicting mandates related to grasslands at the provincial government level. (See Chapters 3.1.3 and 3.1.4.) While not ranging widely in overall evaluation totals, there were considerable differences in complexity, cost and, most importantly, receptivity (i.e. the likelihood that the solution would be accepted and acted upon by decision makers) amongst the various options. Pragmatic consideration of these success factors is considered critical to the effectiveness of the Strategic Plan.

For example, while it may be desirable to pursue a strong, coordinated piece of legislation coupled with grassland reserves that comprehensively and compatibly accommodate biodiversity and livestock grazing values, there is no indication that Government is receptive to going in that direction; rather, governments have tended to move away from legislation and regulation in recent years and towards more voluntary action and shared responsibility.

Based on the analysis of critical success factors, therefore, the pursuit of grasslands-specific MOUs and protocols emerged as one of the priority opportunities through which to work towards a provincial grasslands conservation policy.

Although sometimes discounted as ineffective and difficult to administer, a number of useful and topical MOUs and protocols have been negotiated amongst government ministries; between independent provincial agencies and, most significantly, with NGOs having specific interests. Examples include:

- Protocol on shared environmental stewardship principles between WLAP and the Wilderness Tourism Association;

- Ministry of Forests MOU agreeing to no silviculture treatment or planting on forest-encroached, traditional Crown grasslands within Cariboo-Chilcotin benchmark areas;
- Protocol between Agricultural Land Commission and Land and Water BC to automatically include within the ALR, Crown agricultural leases established under the Land Act that are subsequently converted to fee simple private lands; and,
- Memorandum of Understanding between MAFF and BC Agricultural Council clarifying technical support to the Environmental Farm Plan program being administered by BCAC.

From the biodiversity conservation perspective, prime ministry candidates for potential MOUs or protocols would include WLAP (stewardship), LWBC (land allocation), and MSRM (planning). From the agriculture/range perspective, there are natural linkages between the ALC (agricultural land preservation), MOF (range management) and MAFF (advocacy)²⁰. Based on precedence and the current emphasis on shared responsibility, either of these potential MOUs and/or protocols could well include NGOs with express interests in grassland conservation.

Also in keeping with the shift towards alternate service delivery, another priority solution that emerged through the evaluation process was the development of a grasslands-specific BMP manual for use by municipal/regional governments and provincial ministries as well as ranchers and other owners of grasslands. While a draft version of *Environmental BMPs for Urban and Rural Land Development in BC* has recently been prepared, the regional sections (which presumably will provide some target management practices related to grasslands) are still in a very preliminary stage.

Useful models for a manual specific to grasslands fragmentation and development issues may be the recently completed *GCC Best Management Practices for Recreational Activities on Grasslands in the Thompson and Okanagan Basins* and the BMP Manual (draft) to reduce land use impacts on wetlands in BC, prepared by the Wetland Stewardship Partnership (WSP) in cooperation with WLAP. (See reference list.) Initiated by NGOs, these projects evolved into broad partnerships of provincial and federal government agencies and other non-government conservation organizations. In addition, The WSP is currently in the process of synthesizing the draft BMP into a proposed wetland policy statement for British Columbia.

²⁰ Ministry/agency names and legislative mandates have substantially changed as of June 16, 2005 and some ministries/agencies have been eliminated entirely. However, at time of writing, sufficient information was not available for the new structures, mandates and ministry/agency interrelationships to be reflected in this report.

Although not emerging as priority solutions, future provincial, federal or First Nations initiatives may nonetheless provide specific opportunities to integrate grassland fragmentation and development mitigation objectives.

In those regions of the province where strategic direction for grassland conservation management has been included within LRMPs, there is the potential to specifically address grassland fragmentation and development in subsequent SRMPs that are undertaken. As 'problem-solving' plans, SRMPs offer the best available mechanism through which to rationalize and coordinate planning and management on Crown lands with local government planning on private lands to maintain grassland contiguity.

Biodiversity conservation of plants, animals and ecosystems at risk falls primarily within the mandate of the Provincial Government, but certain aspects are also within the mandate of the Federal Government. One solution is to pursue grassland conservation objectives under the Species at Risk Act or the Migratory Bird Act, as well as in the provincial Biodiversity Strategy, including mandatory Recovery Plans for listed species.

First Nations' interests in grasslands are associated with their traditional uses of grassland-specific food and medicinal plants. With some of the largest remaining areas of contiguous grasslands on Indian Reserves or within traditional use areas, there is a priority to support First Nations initiatives towards grassland conservation through the establishment of Conservation Coordinators or other mechanisms of their choice. There may also be some opportunity to provide incentives through negotiated stewardship agreements with monetary components under SARA. The successful experience with Habitat Stewardship Program riparian projects in the South Okanagan may provide a model for First Nations partnerships.

Finally there are several priority solutions that might best be described as on the leading edge of creative problem-solving, including those related to economic incentives and disincentives, recognition of the increasing role of conservation organizations, and the pursuit of an overarching, integrative partnership-based grassland acquisition and land management program.

Providing more economic incentives to owners of grasslands is a priority solution; however, beyond the expanded use of currently available options, including municipal tax breaks for registered Conservation Covenant holders in some jurisdictions, the year 2000 changes to the eco-gifting provision under the federal Income Tax Act, and the reduction of capital gains rate for land donated for conservation purposes, the mechanics of providing broad-scale economic incentives acceptable not only to Ministers of Finance but to the taxpaying public are still in the development stages. (See reference list for several recent studies)

While not currently focused in any way on grasslands, the federal/provincial Environmental Farm Plan (EFP) program has some potential for adaptation to address fragmentation and development issues. EFPs focus on identifying environmental risks and impacts and developing action plans to address those impacts. As a farm or ranch-specific tool available to individual agricultural operators, the program is administered by the BCAC on behalf of participating governments. By undertaking a plan, farm or ranch owners can qualify for technical assistance from MAFF regional advisors plus modest funding towards plan implementation. As added incentives, there may be opportunity to pursue lower assessment tax rates for lands managed for biodiversity and tax credits for 'value-added stewardship' being implemented under an Environmental Farm Plan.

There is a growing body of knowledge and experience within British Columbia and Canada related to the use of Conservation Covenants as a mechanism to secure lands for conservation purposes. (See reference list.) Along with outright acquisition, it has become a tool of choice for the several conservation organizations that are now playing an increasingly important role in protecting conservation values on privately owned lands.

Conservation Covenants and Profits a Pendre are voluntary legal agreements that allow landowners to permanently protect specific natural and/or cultural features of their lands while still retaining ownership and use. Often purchased by conservation organizations, these legal agreements are registered against the land title and transfer with the sale of land, binding future owners to the agreement. As potential solutions to the fragmentation and development of grasslands, Conservation Covenants are a useful tool, especially when used in combination with other mechanisms; however there remains a divergence of opinion on the viability of this tool in BC. Adequate monitoring of covenant conditions is a key component to ensure compliance with original objectives.

While purchase of development rights is another tool that is being used in other jurisdictions to secure land with conservation value, it demands a very large funding base. Moreover, it has its most limited appeal in the very locations where development pressures are greatest, along the urban-rural interface. As a tool to mitigate fragmentation and development of grasslands, its potential impact is considered further reduced by the wide gap in value between urban residential, for example, and livestock grazing use of grasslands.

Several of the priority solutions respond to the need for greater cooperation, coordination, stakeholder engagement, public involvement and partnership building. Over the decades, there have been many initiatives by various agencies and combinations of interests at various scales of endeavour aimed at more integrative management of complex land and water use issues through partnership approaches. By their very nature, grasslands require such integrative thinking.

Many partnership initiatives are already underway in the grassland regions of the province, including South Okanagan-Similkameen Conservation Program, the Biodiversity Ranch approach initiated by The Nature Trust of BC and now used by other trust organizations as well, Nature Conservancy of Canada's Thunderhill Ranch acquisition/leaseback, landowner stewardship agreements, and The Land Conservancy product branding program and associated conservation agreements. (These are in addition to broader-scaled government/non-government partnership initiatives, such as the Canadian Intermountain Joint Venture.)

The Biodiversity Ranch model is a partnership-based approach that combines biodiversity conservation and ecosystem restoration with working ranch operations and continued livestock grazing, often on a combination of private fee simple land and provincial and/or federal Crown land leases and/or licenses. While planning and management implementation of biodiversity ranch projects are cumbersome, time consuming and expensive, through a culture of cooperation based on dialogue, negotiation, conflict resolution and consensus building, the model can facilitate the burden of coordination amongst government agencies and with non-government conservation organizations and independent (but interdependent) private ranch owners or operators.

A priority solution that emerged from the evaluation was to encourage such innovative approaches by facilitating greater non-government conservation organization securement (e.g. acquisition, Conservation Covenants, land lease, purchase of development rights and stewardship agreements) and perhaps comparable value Crown/private land swaps of critical grasslands that are under imminent threat of fragmentation or development.

Currently in BC, increased conservation organization involvement is being assisted by a BC Trust for Public Lands program that is focused on supporting science-based approaches to conservation planning, facilitating the acquisition and management of ecologically significant private lands and encouraging donations from the private sector. Conceived as a private/public sector partnership, the BC Trust for Public Lands is an \$8 million, five year agreement predicated on non-government parties matching provincial financial contributions at a rate of 3 to 1, based on mutually agreed upon projects. While a number of projects have already been decided upon, there may still be funding available for an initiative specifically focused on mitigating fragmentation and development of grasslands.

Perhaps the most ambitious of the priority solutions that emerged from the evaluation is the pursuit of an integrated multi-agency government/non-government grassland acquisition and land management program, perhaps modeled on the successful Pacific Estuary Conservation Program. Established in 1987 to secure private and public estuarine land along the BC coast, the 5 originating partners (Habitat Conservation Trust Fund, (then) BC Ministry of Environment Lands and Parks, Wildlife Habitat Canada, Ducks Unlimited and

The Nature Trust of BC) agreed to pool their estuary funds, organizational expertise and staff resources towards integrated land acquisition and management. During its now 19-year history, several other government and non-government organizations, including Environment Canada and Fisheries and Oceans Canada, have since joined the partnership.

While exceedingly complex to initiate and requiring partners with not only strong commitments to grassland conservation but also considerable financial resources, a BC Grassland Securement Program similar in concept to the Pacific Estuary Conservation Program is one option that would provide the opportunity to build on past achievements and experience; introduce a rational process for prioritizing grasslands, negotiating acquisitions, fund raising and leveraging management options on adjacent Crown lands; and above all, enable a management endowment fund to ensure the long term ecological health of grasslands that have been secured.

In summary, there is adequate knowledge and understanding of the issues. In addition, there is no shortage of potential solutions that could contribute to resolving the issues. Nonetheless, effective mitigation of grassland fragmentation and development will be difficult - difficult to develop focus; difficult to build (and keep) consensus; difficult to fund; and difficult to motivate decision makers (including individual land owners) to take the appropriate actions on a consistent, long-term basis. The role of a Strategic Plan is to chart strategic directions, define specific action steps to move initiatives forward and build appropriate monitoring procedures that can measure progress and enable course-correction along the way.

Mitigating the Fragmentation and Development of BC's Grasslands

Problem Analysis and STRATEGIC PLAN

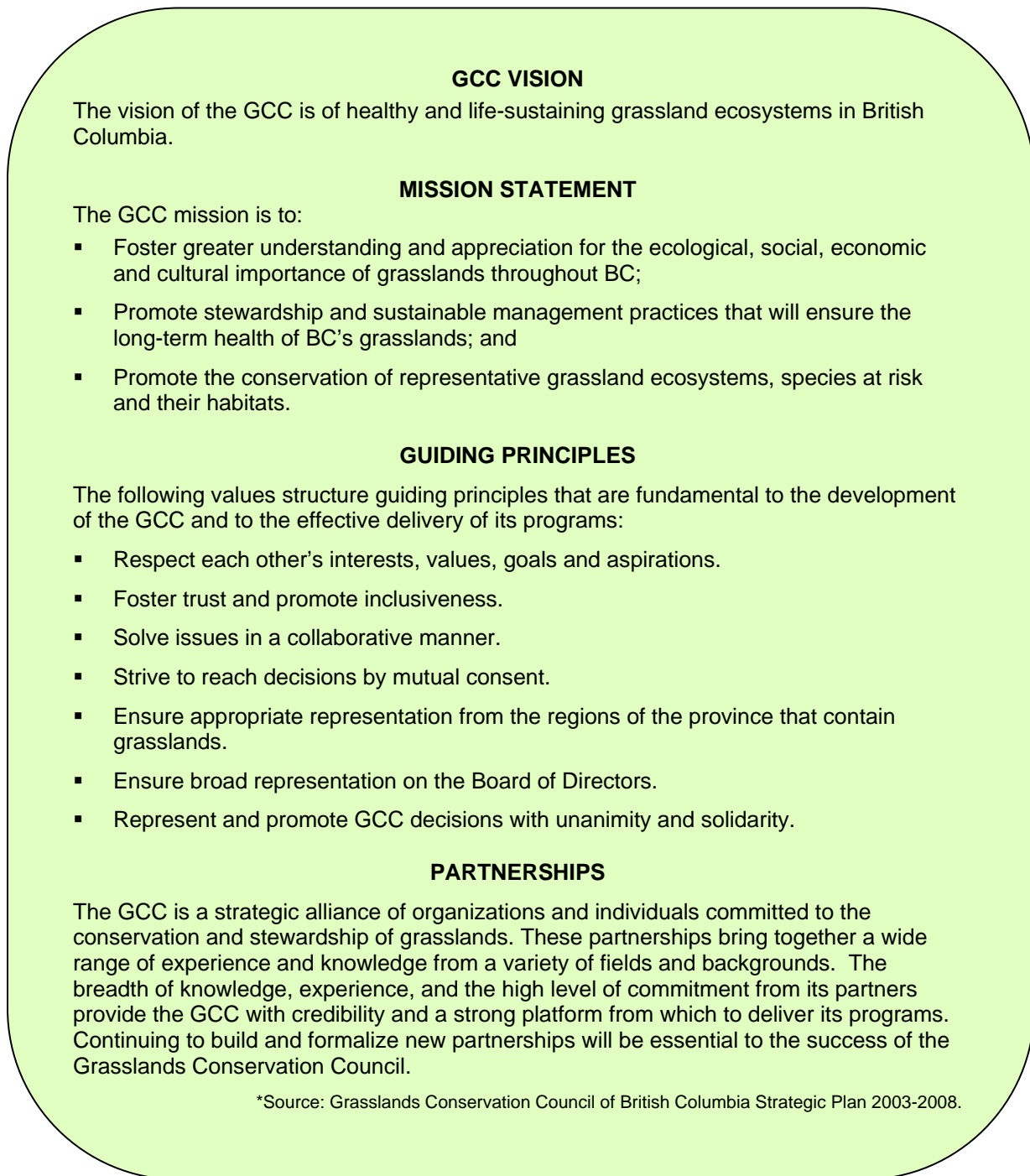
SECTION 2: Strategic Plan

Date: June 30, 2005

5 Strategic Plan

The Strategic Plan for mitigating grassland fragmentation and development is set in the context of the GCC Vision, Mission Statement, Guiding Principles and Partnership commitment as articulated in the 2003-2008 Strategic Plan (see Figure 2).

Figure 2 GCC Vision, Mission Statement, Guiding Principles and Partnership Commitment*



GCC VISION

The vision of the GCC is of healthy and life-sustaining grassland ecosystems in British Columbia.

MISSION STATEMENT

The GCC mission is to:

- Foster greater understanding and appreciation for the ecological, social, economic and cultural importance of grasslands throughout BC;
- Promote stewardship and sustainable management practices that will ensure the long-term health of BC's grasslands; and
- Promote the conservation of representative grassland ecosystems, species at risk and their habitats.

GUIDING PRINCIPLES

The following values structure guiding principles that are fundamental to the development of the GCC and to the effective delivery of its programs:

- Respect each other's interests, values, goals and aspirations.
- Foster trust and promote inclusiveness.
- Solve issues in a collaborative manner.
- Strive to reach decisions by mutual consent.
- Ensure appropriate representation from the regions of the province that contain grasslands.
- Ensure broad representation on the Board of Directors.
- Represent and promote GCC decisions with unanimity and solidarity.

PARTNERSHIPS

The GCC is a strategic alliance of organizations and individuals committed to the conservation and stewardship of grasslands. These partnerships bring together a wide range of experience and knowledge from a variety of fields and backgrounds. The breadth of knowledge, experience, and the high level of commitment from its partners provide the GCC with credibility and a strong platform from which to deliver its programs. Continuing to build and formalize new partnerships will be essential to the success of the Grasslands Conservation Council.

*Source: Grasslands Conservation Council of British Columbia Strategic Plan 2003-2008.

The grasslands fragmentation and development Strategic Plan includes the following components:

- Vision
- Strategic priorities
- Objectives and actions
- Implementation action plan
- Evaluation and monitoring framework

The vision describes the desired future for grasslands to be achieved as an outcome of the Strategic Plan.

Strategic priorities represent the focal themes that need to be addressed in order to achieve the vision. These are derived from the assessment of issues and potential solutions in Chapters 3 and 4.

Objectives and actions are the steps that must be undertaken and results that must be achieved in order to meet the strategic priorities.

Strategic priority objectives and actions have been developed to be consistent with the GCC 2003-2008 Strategic Plan and are based on the assumption that GCC will be responsible for overseeing the implementation of the objectives and actions.

The implementation action plan defines the responsibilities, target completion dates and expected outcomes for each of the actions in the Strategic Plan. The time frame for substantial completion of the actions and achievement of the desired results in the Plan is three years.

At the end of each year, an evaluation should be undertaken to determine whether implementation of the Plan is on track and performance outcomes are being met.

5.1 Vision

The mitigating fragmentation and development vision is as follows:

“British Columbia’s grasslands secured against fragmentation and development.”

5.2 *Strategic Priorities*

The Strategic Plan is built upon the following themes. Recognizing that everyone has a role in mitigating the fragmentation and development of grasslands, the strategic priorities reflect the scope and breadth of both the issues and the solutions. The order in which they are listed is arbitrary and is not intended to imply order of priority.

Strategic Priority 1: Enhance inventory and analysis tools to identify and assess and monitor changes to critical grassland areas.

Strategic Priority 2: Support local governments in utilizing and/or developing policy/planning tools and guidelines to mitigate grassland fragmentation and development.

Strategic Priority 3: Integrate grassland fragmentation and development issues into provincial and federal government planning and/or policy.

Strategic Priority 4: Pursue partnerships to increase stewardship and conservation of priority grasslands.

Strategic Priority 5: Promote development and/or utilization of economic and conservation incentives to encourage landowners to avoid fragmentation and development of grasslands.

Strategic Priority 6: Increase public awareness about grassland fragmentation and development.

Strategic Priority 1: Enhance inventory and analysis tools to identify and assess and monitor changes to critical grassland areas.

5.3 *Objectives and Actions*

Background

A key concern identified during the issue analysis was the lack of adequate information upon which to base land and water use decisions related to grasslands, including inadequate inventory of critical grasslands, lack of analysis tools to assess the impacts of grassland fragmentation and development and lack of monitoring tools and procedures.

While the GCC has recently completed the '*BC Grassland Mapping Project: A Risk Assessment*', there remains an urgent need for inventory that identifies, at a

local and regional scale, priority grasslands (from both biodiversity and socio-economic perspectives) under the greatest threat of fragmentation and development. Distribution of this inventory information, however, will require careful balancing between the needs of decision makers for information and the potential for misuse of the information, which could be detrimental to grassland conservation objectives. Pending the completion of the inventory, interim knowledge will need to be relied upon in order to move forward with many of the actions identified in the Strategic Plan that, ideally, should be based on the science that a priority grasslands inventory would provide.

Valuation tools to more comprehensively assess the social, economic and environmental costs of grassland fragmentation and development are needed for improved land and water use planning and decision-making. Existing valuation tools are regarded as too narrow in scope, biased towards short-term economic parameters and inadequate for identifying the full range of grassland values or the true costs of urban sprawl.

Monitoring is considered key to understanding the cumulative impacts attributable to grassland fragmentation and development but there is need for appropriate indicators and assessment procedures that can be used to track both the rate of loss and the results of mitigative efforts on a periodic and consistent basis.

Objective 1.1 Complete the Priority Grasslands in BC inventory project.

Actions:

- 1.1.1 Finalize criteria to define 'critical grasslands' related to fragmentation and development²¹.
- 1.1.2 Link project to *BC Grasslands Mapping Project: A Conservation Risk Assessment 2004* and assign inventory priority to those areas under imminent threat of fragmentation or development.
- 1.1.3 Produce inventory maps at a scale and in a format that meets the information needs of individual regions and key decision makers.

Objective 1.2: Develop analysis tools to assess the full costs of fragmentation and development of grasslands.

Actions:

- 1.2.1 Establish a technical steering committee to oversee development of valuation tools.

²¹While not mutually exclusive, the term 'critical grasslands' has generally been used to refer to the current state of knowledge, whereas the term 'priority grasslands' is intended to reflect the formal definition and delineation that is expected to result from the completion of the Priority Grasslands in BC inventory project.

- 1.2.2 Assess existing valuation tools (e.g., socioeconomic and environmental assessment, multiple accounts analysis, triple-e bottom line, etc.) and identify tools and/or methods appropriate for grasslands valuation.
- 1.2.3 Select environmental, social and economic indicators for measuring benefits (full range of grassland values) and costs of grassland fragmentation and development.
- 1.2.4 Develop criteria for assessing indicator results (e.g. environmental; risk thresholds, monetary value etc.).
- 1.2.5 Prepare draft methodology for conducting full cost grassland valuations. (See Action 5.4.3)
- 1.2.6 Conduct a peer review and prepare final methodology.

Objective 1.3: Develop procedures and guidelines for monitoring performance in mitigating grassland fragmentation and development.

Actions:

- 1.3.1 Select indicators (e.g. hectares of grasslands lost, hectares with conservation measures in place, etc.) and develop monitoring procedures.
- 1.3.2 Develop reporting mechanisms (e.g. annual “report card”) to communicate performance with respect to mitigating grassland fragmentation and development.
- 1.3.3 Conduct monitoring assessments and distribute results on an annual basis.
- 1.3.4 Support the establishment of oversight bodies to monitor compliance with Conservation Covenants.

Strategic Priority 2: Support local governments in utilizing and/or developing policy/planning tools and guidelines to mitigate grassland fragmentation and development.

Background

Local governments are recognized as having a key role in both increasing and mitigating grassland fragmentation and development. While municipalities and regional districts have a wide range of planning, regulatory and land securement tools at their disposal, a key concern is that their primary focus is on accommodating growth (or in the best cases, containing growth), not on biodiversity conservation or ranching industry viability.

In addition to a general lack of awareness, information and understanding of grassland values and the impact of fragmentation and development, (including

negative impact on local and regional economies), there is concern regarding the underutilization or ineffective use of local government tools to serve grassland conservation objectives.

Objective 2.1: Develop a local government grassland planning guide to assist in mitigating grassland fragmentation and development.

Actions:

- 2.1.1 Prepare a generic context statement (1-2 pages) for the information of local governments that describes the:
 - value of grasslands;
 - risks and public costs associated with fragmentation and development; and,
 - role of local governments in mitigating fragmentation and development.
- 2.1.2 Prepare an 'interpretation and use for local planning purposes' guide to accompany priority grasslands mapping inventory as it becomes available for each region and strategic decisions are made regarding its distribution. (See Action 1.1.3).
- 2.1.3 Draft sample grassland policy statement options for inclusion in RGSs (and therefore, in component OCPs), including options for designating grasslands as environmentally sensitive areas.
- 2.1.4 Compile and maintain a registry of local/regional grassland conservation resource people that municipalities and regional districts can consult during OCP/RGS reviews and other planning/regulatory exercises.
- 2.1.5 With partners, develop sample site development and subdivision Bylaws that could be used by local governments to reduce fragmentation and development impact on grasslands.
- 2.1.6 Form a working group to explore innovative changes to development cost charge schedules and development permit area policies that would provide incentives to developers to minimize negative impact on grasslands. (Pilot innovations with receptive local governments to assess effectiveness in mitigating fragmentation and development.)
- 2.1.7 Utilize the flexibility of the Agriculture Area Plan tool (OCP-equivalent for agriculture) in selected ranching areas containing grasslands (whether inside or outside the ALR) that are currently being overwhelmed by settlement, fragmentation and other development pressures.

Objective 2.2: Increase local government awareness about grassland values and the opportunities to mitigate their fragmentation and development.

Actions:

2.2.1 Offer workshops at UBCM on:

- ecological, socio-economic and cultural role of grasslands;
- sources of information for planning purposes, including where to access and how to use; and,
- range of planning/policy tools available to address grassland fragmentation and development issues.

2.2.2 Distribute and present to Municipal Councils and Regional District Boards components of grassland planning guide as they become available.

2.2.3 Conduct regular surveys to monitor awareness and utilization of grassland planning guide components and solicit suggestions for improvement.

Strategic Priority 3: Integrate grassland fragmentation and development issues into provincial and federal government planning and/or policy.

Background

Within the Provincial Government, there are several ministries and agencies with jurisdiction or influence over the fragmentation and development of Crown grasslands (and in the case of the ALC, private grasslands). This fragmentation of mandate is seen as a key factor in the lack of clarity and coordination around provincial objectives and the incompatibility of provincial policies and regulations related to Crown grasslands.

At the federal level, there are three ministries that share responsibility to protect critical habitat and provide recovery of plant, animal and plant communities at risk, including the significant number of nationally endangered species associated with grassland ecosystems.

With the reduced capacity of provincial and federal regulatory, planning and/or allocation agencies and the priority of both governments to move away from the traditional tools of legislation, regulation and interagency referral processes in favour of tools that rely on shared responsibility, voluntary guidelines and results-based programs, the opportunities to mitigate grassland fragmentation and development are most likely in the areas of MOUs, protocols, BMPs and stewardship agreements.

Objective 3.1: Develop and promote the use of grasslands-specific best management practice components to assist decision-makers, property owners and users in mitigating fragmentation and development.

Actions:

- 3.1.1 Establish a working group comprising representatives from target user groups to provide advice and direction on grassland-specific BMPs related to fragmentation and development.
- 3.1.2 Review all BC land/water-related BMPs recently completed or currently underway to determine opportunity to add, amend, and/or integrate grasslands-specific practices to mitigate fragmentation and development.
- 3.1.3 Prepare BMP summary guidelines (1-2 pages) for specific user groups (e.g. government agencies, First Nations, developers, ranchers, recreationists, etc.).
- 3.1.4 Promote utilization of grasslands-specific BMP components through appropriate media and presentation venues (e.g., press releases and media packages, selected newsletters and trade journals, UBCM, agriculture commodity associations, conservation/ stewardship workshops, non-government organization AGMs).
- 3.1.5 Conduct regular surveys amongst target stakeholder groups to monitor awareness and utilization of grassland BMPs.
- 3.1.6 Revise and update BMP summary guidelines as appropriate.

Objective 3.2: Utilize existing policy/planning tools to address specific provincial government agency issues related to grassland fragmentation and development.

Actions:

- 3.2.1 Prepare a summary backgrounder/policy paper (3-5 pages) on grassland values/principles and issues/solutions as a basis upon which to begin discussions with key provincial agencies/ministries.
- 3.2.2 Pursue MOUs and/or protocol agreements to address grassland fragmentation and development issues from both the biodiversity conservation and the agriculture/range perspective; target appropriate agency/ministry combinations.
- 3.2.3 Negotiate with appropriate ministries to:
 - increase public, stakeholder and GCC consultation prior to allocation or disposition of Crown grasslands;
 - implement grassland management directions where they have been identified in LRMPs and specifically address grassland fragmentation and development in subsequent SRMPs, including the

coordination of Crown land/private land planning processes to maintain grassland contiguity;

- assess feasibility of establishing objectives under the Land Act to avoid disposition/development of priority grasslands; and,
- achieve approval-in-principle to work towards a coordinated provincial grasslands conservation policy.

Objective 3.3: Increase the profile of grassland ecosystems and prepare for opportunities to influence federal/provincial policies/actions focused on Species at Risk.

Actions:

- 3.3.1 Identify priority grasslands under federal jurisdiction and those containing federally-managed species at risk.
- 3.3.2 Enhance representation on behalf of grasslands in all federal/provincial species at risk policy consultations in BC with potential to impact grassland fragmentation/development issues.
- 3.3.3 Prepare a summary document that demonstrates how addressing grassland fragmentation and development issues meets specific Recovery Planning objectives and requirements for species at risk. (See Action 5.2.1.)
- 3.3.4 Pursue inclusion of grassland ecosystems-specific statements within provincial Biodiversity Strategy/federal Species at Risk documents.

Strategic Priority 4: Pursue partnerships to increase stewardship and conservation of priority grasslands.

Background

With increasing pressure on grasslands and the accelerating loss of critical grasslands and grassland values, there is recognition that greater cooperation and coordination of effort amongst the wide range of interests and agencies, both government and non-government, is needed to effectively mitigate grassland fragmentation and development. Over the decades, there have been many initiatives at various scales of endeavour aimed at more integrative management of complex land and water use issues. By their very nature, grasslands require such integrative thinking.

While several partnership initiatives and projects are already underway in the grassland regions of the province, there is need for a more deliberate partnership approach amongst all those with interests in mitigating fragmentation and development of BC's increasingly scarce and valuable grassland resources.

Objective 4.1: Partner with the ALC and local government to build upon their long established legal and administrative relationship with respect to lands within the ALR.

Actions:

- 4.1.1 Develop an information package (3-5 pages) for presentation to the ALC on grassland values/principles and fragmentation and development issues/solutions as the basis upon which to pursue a closer working partnership.
- 4.1.2 Derive ALC/GCC/local government shared objectives to achieve mutual benefits of ranching viability, grassland conservation and urban containment.
- 4.1.3 Pursue MOUs or protocol agreements with ALC and local governments pertaining to consolidation of individual legal parcels within priority grassland areas as a condition of ALC subdivision, non-farm use or ALR exclusion approvals and of local government rezoning and development approvals.
- 4.1.4 Work with the ALC to utilize its mandate and flexibility to mitigate grassland fragmentation and development through its own actions and to advocate with local government and other provincial ministries on behalf of grasslands with livestock grazing values.

Objective 4.2: Work within existing government//First Nations/NGO partnership programs to achieve a more focused partnership approach to the stewardship and conservation of priority BC grasslands.

Actions:

- 4.2.1 Engage current/potential partners, including agencies from all levels of government, First Nations, conservation and other non-government organizations and stakeholder interests, to discuss key grassland fragmentation and development issues and opportunities for more effective cooperative and coordinated action to address the issues.
- 4.2.2 Set principles and objectives for a more integrated partnership approach to mitigating grassland fragmentation and development.
- 4.2.3 Pursue tangible projects that mitigate grassland fragmentation and development through joint venturing (sharing of knowledge, experience, technical and financial resources), utilizing securement tools collectively available, including:
 - stewardship agreements;
 - Conservation Covenants (including compliance monitoring);
 - land lease arrangements;
 - multiple titles consolidation;

- land swaps (Crown/private, grassland/non-grassland);
 - acquisition (with upfront financial resources committed to ongoing land management); and,
 - purchase of development rights (perhaps in exchange for consolidation of separate legal parcels).
- 4.2.4 Support the establishment of First Nations' conservation positions/functions related to grasslands on Reserve lands.
- 4.2.5 Evaluate the adequacy of current partnerships (including capacity) and explore potential alternatives (including, but not limited to, a new partnership organization with its own contract language and financing) to address the stewardship and conservation of BC grasslands.

Strategic Priority 5: Promote development and/or utilization of economic and conservation incentives to encourage landowners to avoid fragmentation and development of grasslands.

Background

A key issue related to the fragmentation and development of BC grasslands is the overall lack of economic incentives for landowners to maintain grassland values and integrity. Indeed, it is felt that most federal, provincial and local government policies, regulations and tax systems – and certainly the marketplace – provide disincentives that actually work to facilitate grassland fragmentation and development rather than encourage voluntary conservation.

Grasslands are attractive real estate. Most people own large areas of grassland in order to make a living. Even owners of smaller grassland parcels nonetheless regard their land as having a certain market value. There is a need to better utilize current and emerging economic incentives, remove current barriers to voluntary conservation and develop innovative, pragmatic and mutually acceptable future economic incentives to mitigate fragmentation and development of grasslands.

Objective 5.1: Evaluate and increase awareness of existing economic incentives/ opportunities to secure BC grasslands against fragmentation and development.

Actions:

- 5.1.1 Pending actions under Objective 5.4, assemble BC expertise to carry out preliminary evaluations of the validity and usability of current conservation options in BC that have monetary value (e.g. ecogifting tax credits, Conservation Covenants, Environmental Farm Plan

funding, stewardship agreements, property assessment appeals, acquisition/leasebacks).

5.1.2 Assemble and distribute a succinct and pragmatic information brochure for grassland owners that briefly describes current incentive options; include listings of agencies and organizations to contact for more information.

5.1.3 Assess the feasibility of funding a resource person liaison that can assist owners of grasslands to access current programs and provisions to meet voluntary grassland conservation objectives.

Objective 5.2: Ensure grasslands qualify for any existing or future federal/provincial incentive/grant programs.

Actions:

5.2.1 As opportunity arises, negotiate monetary components under SARA or other stewardship agreement programs that would apply to Indian Reserve and private grasslands.

5.2.2 Pursue additional funding for public conservation initiatives, outreach and stakeholder programs directly related to grassland fragmentation and development.

Objective 5.3: Pursue specific changes to BC Assessment Authority policy related to grasslands managed for conservation purposes.

Actions:

5.3.1 Prepare a summary background paper (3-5 pages) upon which to begin targeted discussions with BC Assessment Authority on specific economic disincentives to the conservation of grasslands.

5.3.2 Propose a joint (GCC/BCAA) working group of individuals with grasslands (biodiversity and livestock grazing values) and local/provincial government assessment/taxation/policy expertise to formulate practical solutions for grasslands related to farm land classification, assessment penalties and conservation as an accepted land use for assessment/taxation purposes.

Objective 5.4: Target any future studies related to grassland fragmentation and development on economic incentives in the areas of greatest complexity and opportunity.

Actions:

5.4.1 Assess the feasibility and conditions of a Consolidation Assistance Fund (either as a stand alone or as a component of a larger grassland conservation initiative) to offset survey and other costs (perhaps including loss of market value) incurred by landowners who voluntarily consolidate grasslands currently in separate legal parcels.

5.4.2 Engage conservation taxation expertise to:

- review updated BC studies on conservation tools for direct applicability to grassland fragmentation and development issues (see reference list);
- identify specific sections of provincial and federal taxation legislation/policy that negatively impact landowner options for grassland conservation;
- draw the linkages between taxation incentive/disincentives and other policy/planning programs that impact grassland fragmentation and development; and,
- evolve and assess a range of specific options for legislative/policy change (including revenue-neutral tax shifting) and prepare a list of priority incentives to pursue with provincial/federal agencies.

5.4.3 As methodology is completed enabling assessment of the full costs of grassland fragmentation and development (see Action 1.2.5), engage expertise to evolve specific proposals that would reduce public costs through the removal of subsidies (disincentives to grassland conservation) and encourage grassland stewardship (economic incentives to avoid grassland fragmentation and development).

Strategic Priority 6: Increase public awareness about grassland fragmentation and development.

Background

In addition to most planning, regulatory and allocation agencies being unaware of grassland values and the significance of grassland loss through fragmentation and development, owners and users of grasslands and the public in general are equally unaware of how important grasslands are to species at risk, the ranching industry and future generations or how threatened they are by fragmentation and development. Grasslands don't have the same emotional appeal as old growth forests, for example, and therefore grassland conservation issues are seldom profiled in the media.

While there are currently several GCC initiatives aimed at increasing public awareness and education around grassland issues, there is need for strategies specifically related to fragmentation and development and specifically targeted to groups such as hobby farm owners, youth, recreationists and land developers. Through comprehensive and effective education and awareness programs, all citizens can become better informed, prepared and motivated to participate in public debate and consultation processes on behalf of grassland conservation.

Objective 6.1: Develop and implement an education/awareness strategy specifically on grassland fragmentation and development as a component of the Education and Outreach Program in the GCC Strategic Plan 2003-2008.

Actions:

6.1.1 Develop and distribute a series of targeted public information pamphlets (e.g. targeted to youth, recreationists, developers) that describe the:

- range of grassland values and potential threats from fragmentation and development (see also Action 2.1.1);
- location of grassland areas (see also Action 1.1.3);
- tools that are available to assist in mitigating grassland fragmentation and development (see also Actions, 3.1.3 and 4.1.3); and,
- role for citizens (targeted public group) in grassland conservation and stewardship.

6.1.2 Develop a specific fragmentation and development education strategy as part of the broader GCC education and awareness program that utilizes a wide range of venues, including, but not limited to:

- presentations and workshops;
- print media, including publications, trade journals and newsletters;
- television and radio, including BC Broadcasters public advertising program;
- interpretive sites and displays, including Royal BC Museum living landscape display;
- GCC website;
- teaching modules for schools; and,
- awareness raising report cards on grassland loss/degradation (see also Action 1.3.3).

6.1.3 Monitor results and amend education strategy on a regular basis.

5.4 *Implementation Action Plan*

The following implementation action plan (Table 7) provides a framework for moving forward with the implementation of the Strategic Plan. It specifies the lead/coordinating agency, target completion date and expected outcome for each action identified in the Strategic Plan.

While the implementation plan provides specific direction, many of the details related to the actions will require decisions by the GCC as an organization. For

example, GCC will need to determine whether it will implement particular actions on its own or in collaboration with government agencies and/or other NGOs. Similarly, GCC will need to determine funding sources and budgets for each of the action items. Additionally, GCC will need to review the target completion dates to ensure that they are consistent with GCC's priorities and that they are realistic in terms of funding and staff resources.

Table 7 Implementation Action Plan

Strategic Priority 1: Enhance inventory and analysis tools to identify and assess and monitor changes to critical grassland areas

Objective 1.1: Complete the Priority Grasslands in BC inventory project.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
1.1.1 Finalize criteria to define 'critical grasslands' related to fragmentation and development	GCC/project team	\$xxx	Year 1	<ul style="list-style-type: none"> Project definition of critical (priority) grasslands.
1.1.2 Link project to BC Grasslands Mapping Project: A Conservation Risk Assessment 2004 and assign inventory priority to those areas under imminent threat of fragmentation or development	GCC/project team	\$xxx	Year 1	<ul style="list-style-type: none"> Generalized map of grassland areas under imminent threat of fragmentation and development.
1.1.3. Produce inventory maps at a scale and in a format that meets the information needs of individual regions and key decision makers	GCC/project team	\$xxx	Year 2-3	<ul style="list-style-type: none"> Inventory maps identifying 'priority grasslands' in BC.

Objective 1.2: Develop analysis tools to assess the full costs of fragmentation and development of grasslands.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
1.2.1 Establish a technical steering committee to oversee development of valuation tools.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Formation of a technical steering committee.
1.2.2 Assess existing valuation tools (e.g., socioeconomic and environmental assessment, multiple accounts analysis, triple-e bottom line, etc.) and identify tools and/or methods appropriate for grasslands valuation.	Steering committee	\$xxx	Year 1	<ul style="list-style-type: none"> Completed assessment of valuation tools.
1.2.3 Select environmental, social and economic indicators for measuring benefits (full range of		\$xxx	Year 1	<ul style="list-style-type: none"> Selection of valuation indicators.

grassland values) and costs of grassland fragmentation and development.

1.2.4	Develop criteria for assessing indicator results (e.g. environmental; risk thresholds, monetary value, etc.)	Steering committee	\$xxx	Year 2	<ul style="list-style-type: none"> • Assessment criteria.
1.2.5	Prepare draft methodology for conducting full cost grassland valuations. (See Action 5.4.3.)	Steering committee	\$xxx	Year 3	<ul style="list-style-type: none"> • Draft valuation methodology.
1.2.6	Conduct a peer review and prepare final methodology.	Steering committee	\$xxx	Year 3+	<ul style="list-style-type: none"> • Final valuation methodology.

Objective 1.3: Develop procedures/guidelines for monitoring performance in mitigating grassland fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome	
1.3.1	Select indicators (e.g. hectares of grasslands lost, hectares with conservation measures in place, etc.) and develop monitoring procedures	GCC/Priority Grasslands project team	\$xxx	Year 1	<ul style="list-style-type: none"> • Grassland fragmentation & development mitigation performance indicators.
1.3.2	Develop reporting mechanisms (e.g. annual "report card") to communicate performance with respect to mitigating grassland fragmentation and development	GCC	\$xxx	Year 2	<ul style="list-style-type: none"> • Communication tool and procedures for reporting on grassland fragmentation and development.
1.3.3	Conduct monitoring assessments and distribute results on an annual basis	GCC/Priority Grasslands project team?	\$xxx	Dependent on Action 1.1.3	<ul style="list-style-type: none"> • Completion of annual grassland fragmentation/development performance report.
1.3.4	Support the establishment of oversight bodies to monitor compliance with Conservation Covenants	GCC and ?	\$xxx	Year 1	<ul style="list-style-type: none"> • One or more Conservation Covenant oversight bodies established.

Strategic Priority 2: Support local governments in utilizing and/or developing policy/planning tools and guidelines to mitigate grassland fragmentation and development.

Objective 2.1: Develop a local government planning guide to assist in mitigating grassland fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
2.1.1 Prepare a generic context statement (1-2 pages) for the information of local governments that describes <ul style="list-style-type: none"> • the value of grasslands; • the risks and public costs associated with fragmentation and development; and, • the role of local governments in mitigating fragmentation and development. 	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> • Completed BC grassland fragmentation and development context statement for local governments.
2.1.2 Prepare an 'interpretation and use for local planning purposes' guide to accompany priority grasslands mapping inventory as it becomes available for each region and strategic decisions are made regarding its distribution. (See Action 1.1.3).	GCC and Priority Grasslands project team?	\$xxx	Dependent on Action 1.1.3	<ul style="list-style-type: none"> • Completed grassland inventory interpretation and use for planning purposes guide.
2.1.3 Draft sample grassland policy statement options for inclusion in RGSs (and therefore, in component OCPs), including options for designating grasslands as environmentally sensitive areas.	GCC and Smart Growth partners?	\$xxx	Year 1	<ul style="list-style-type: none"> • Completed sample RGS grassland policy statement options.
2.1.4 Compile and maintain a registry of local/regional grassland conservation resource people that municipalities and regional districts can consult during OCP/RGS reviews and other	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> • Initial registry of grassland conservation resource people for local government contact

Mitigating the Fragmentation and Development of BC's Grasslands

planning/regulatory exercises.

2.1.5	With partners, develop sample site development and subdivision Bylaws that could be used by local governments to reduce fragmentation and development impact on critical grasslands.	GCC and partners	\$xxx	Year 1	<ul style="list-style-type: none"> • Sample Bylaws designed to reduce grassland fragmentation and development.
2.1.6	Form a working group to explore innovative changes to development cost charge schedules and development permit area policies that would provide incentives to developers to minimize negative impact on priority grasslands (Pilot innovations with receptive local governments to assess effectiveness in mitigating grassland fragmentation and development).	GCC, Smart Growth and willing local government partners	\$xxx	Year 3	<ul style="list-style-type: none"> • Suggested changes to development cost charge schedules and development permit area policies.
2.1.7	Utilize the flexibility of the Agriculture Area Plan tool (OCP-equivalent for agriculture) in selected ranching areas containing priority grasslands (whether inside or outside the ALR) that are currently being overwhelmed by settlement, fragmentation and other development pressures.	GCC and specific local governments	\$xxx	Year 3 and ongoing	<ul style="list-style-type: none"> • Completed Agriculture Area Plan(s) that incorporate(s) protection of priority grasslands against fragmentation and development.

Objective 2.2: Increase local government awareness about grassland values and the opportunities to mitigate their fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
2.2.1 Offer workshops at UBCM on: <ul style="list-style-type: none"> • ecological, socio-economic and cultural role of grasslands; • sources of information for planning purposes, including where to access and how to use; and, • range of planning/policy tools available to address grassland fragmentation and development 	GCC	\$xxx	Year 1 and ongoing	<ul style="list-style-type: none"> • Delivery of a minimum of 2 grassland fragmentation/development workshops at UBCM.

issues.

2.2.2	Distribute and present to Municipal Councils and Regional District Boards components of the grassland planning guide as they become available.	GCC	\$xxx	Dependent on availability of 2.1 components	<ul style="list-style-type: none"> Distribution and presentation of grassland planning guide components to local governments.
2.2.3	Conduct regular surveys to monitor awareness and utilization of grassland planning guide components and solicit suggestions for improvement.		\$xxx	Year 3 and ongoing	<ul style="list-style-type: none"> Completed survey of awareness and utilization of grassland planning guide.

Strategic Priority 3: Integrate grassland fragmentation and development issues into Provincial and Federal Government planning and/or policy.

Objective 3.1: Develop and promote the use of grasslands-specific best management practice components to assist decision-makers, property owners and users in mitigating fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome	
3.1.1	Establish a working group comprising representatives from target user groups to provide advice and direction on grassland-specific BMPs related to fragmentation and development.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Establishment of a BMP working group.
3.1.2	Review all BC BMPs recently completed or currently underway to determine opportunity to add, amend, and/or integrate grasslands-specific practices to mitigate fragmentation and development.	BMP working group	\$xxx	Year 1	<ul style="list-style-type: none"> Addition, amendment and integration of grasslands-specific practices to BMPs in BC.
3.1.3	Prepare BMP summary guidelines (1-2 pages) for specific user groups (e.g. government agencies, First Nations, developers, ranchers, recreationists, etc.).	BMP working group	\$xxx	Year 2	<ul style="list-style-type: none"> A minimum of 5 BMP summary guidelines for specified user groups.

3.1.4	Promote utilization of grasslands-specific BMP components through appropriate media and presentation venues (e.g., press releases and media packages, selected newsletters and trade journals, UBCM, agriculture commodity associations, conservation/ stewardship workshops, non-government organization AGMs).	GCC	\$xxx	Year 2	<ul style="list-style-type: none"> A minimum of 5 personal presentations to target user groups and a minimum of 10 media/newsletter insertions of BMP summary guidelines.
3.1.5	Conduct regular surveys amongst target stakeholder groups to monitor awareness and utilization of grassland BMPs.	GCC	\$xxx	Year 3 and ongoing	<ul style="list-style-type: none"> Completed survey of awareness and utilization of grassland BMPs among target groups.
3.1.6	Revise and update BMP summary guidelines as appropriate.	GCC and working group?	\$xxx	Year 3+	<ul style="list-style-type: none"> Updated BMP summary guidelines.

Objective 3.2: Utilize existing policy/planning tools to address specific Provincial Government agency issues related to grassland fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome	
3.2.1	Prepare a summary backgrounder/policy paper (3-5 pages) on grassland values/principles and issues/solutions as a basis upon which to begin discussions with key provincial agencies/ministries.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Completed grassland backgrounder/policy paper.
3.2.2	Pursue MOUs and/or protocols to address grassland fragmentation and development issues from both the biodiversity conservation and the agriculture/range perspective; target appropriate agency/ministry combinations.	GCC and participating provincial agencies.	\$xxx	Year 2	<ul style="list-style-type: none"> Adoption of 2 or more MOUs and/or protocol agreements among provincial agencies.

3.2.3	Negotiate with the appropriate ministry to:	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Revised provincial consultation policy involving allocation or disposition of grasslands (based on interim knowledge prior to completion of Action 1.1.3).
				Year 2	<ul style="list-style-type: none"> Assessment of level of implementation of grassland management directions in strategic land use plans.
				Year 2	<ul style="list-style-type: none"> Feasibility assessment of establishing grassland objectives under the <i>Land Act</i>.
				Year 3	<ul style="list-style-type: none"> Approval-in-principle to proceed with development of a provincial grasslands policy.
	<ul style="list-style-type: none"> increase public, stakeholder and GCC consultation prior to allocation or disposition of Crown grasslands; implement grassland management directions where they have been identified in LRMPs and specifically address grassland fragmentation and development in subsequent SRMPs, including the coordination of Crown land/private land planning processes to maintain grassland contiguity; assess feasibility of establishing objectives under the Land Act to avoid disposition/development of priority grasslands; and, achieve approval-in-principle to work towards a coordinated provincial grasslands conservation policy. 				

Objective 3.3: Increase the profile of grassland ecosystems and prepare for opportunities to influence federal/provincial policies/actions focused on Species at Risk.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
3.3.1 Identify priority grasslands under federal jurisdiction and those containing federally-managed species at risk.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Map of priority grasslands under direct federal influence (based on interim knowledge prior to completion of Action 1.1.3).
3.3.2 Enhance representation on behalf of grasslands in all federal/provincial species at risk policy consultations in BC with potential to impact grassland fragmentation and development.	GCC	\$xxx	Year 1 and ongoing	<ul style="list-style-type: none"> Presence of a representative of grassland interests on all relevant BC federal/provincial working committees and/or stakeholder lists related to species at risk.

3.3.3	Prepare a summary document that demonstrates how addressing grassland fragmentation and development issues meets specific Recovery Planning objectives and requirements for species at risk. (See Action 5.2.1)	GCC		Year 1	<ul style="list-style-type: none"> Distribution of summary document to relevant federal/provincial agencies and Recovery Teams.
3.3.4	Pursue inclusion of grassland ecosystems-specific statements within Provincial Biodiversity Strategy/Federal Species at Risk documents.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Confirmation of adequate grassland ecosystems-specific statements within Biodiversity Strategy/Species at Risk documents.

Strategic Priority 4: Pursue partnerships to increase stewardship and conservation of priority grasslands.

Objective 4.1: Partner with the ALC and local government to build upon their long established legal and administrative relationship with respect to lands within the ALR.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome	
4.1.1	Develop an information package (3-5 pages) for presentation to the ALC on grassland values/principles and fragmentation and development issues/solutions as the basis upon which to pursue a closer working partnership.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Grassland information package discussed with the ALC.
4.1.2	Derive ALC/GCC/local government shared objectives to achieve mutual benefits of ranching viability, grassland conservation and urban containment.	GCC/ALC/local government representative	\$xxx	Year 1	<ul style="list-style-type: none"> Statement of objectives that address ranching viability, grassland conservation and urban containment.

4.1.3 Pursue MOUs or protocols with ALC and local governments pertaining to consolidation of individual legal parcels within priority grassland areas as a condition of ALC subdivision, non-farm use or ALR exclusion approvals and of local government rezoning and development approvals.	GCC/ALC/local governments	\$xxx	Year 1 Year 3	<ul style="list-style-type: none"> Adoption of MOU/protocol between ALC and GCC. Adoption of a minimum of 2 MOUs/protocols between ALC, GCC and specific local governments.
4.1.4 Work with the ALC to utilize its mandate and flexibility to mitigate grassland fragmentation and development through its own actions and to advocate with local government and other provincial ministries on behalf of grasslands with livestock grazing values.	GCC/ALC	\$xxx	Year 1 and ongoing	<ul style="list-style-type: none"> Fewer ALC application approvals for subdivision, non-farm use or ALR exclusions involving grasslands. Livestock grazing values of grasslands highlighted in relevant ALC documents directed to local governments and other provincial agencies.

Objective 4.2: Work within existing government/First Nations/NGO partnership programs to achieve a more focused partnership approach to the stewardship and conservation of priority BC grasslands

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
4.2.1 Engage current/potential partners, including agencies from all levels of government, First Nations, conservation and other non-government organizations and stakeholder interests, to discuss key grassland fragmentation and development issues and opportunities for more effective cooperative and coordinated action to address the issues.	GCC and partners	\$xxx	Year 1	<ul style="list-style-type: none"> Multi-stakeholder workshop to evolve agreed upon list of mechanisms and opportunities available within current partnership structures that could be utilized to mitigate grassland fragmentation and development. Partnership decision on initial delivery model (i.e. as part of regular partnership meeting agendas or establishment of an ad-hoc grasslands partnership working group?).

Mitigating the Fragmentation and Development of BC's Grasslands

4.2.2	Set principles and objectives for a more integrated partnership approach to mitigating grassland fragmentation and development.	GCC and partners	\$xxx	Year 2	<ul style="list-style-type: none"> • Statement of agreed upon principles and mutual objectives (based on interim knowledge pending completion of Action 1.1.3).
4.2.3	<p>Pursue tangible projects that mitigate grassland fragmentation and development through joint venturing (sharing of knowledge, experience, technical and financial resources), utilizing securement tools collectively available, including:</p> <ul style="list-style-type: none"> • stewardship agreements; • Conservation Covenants (including compliance monitoring); • land lease arrangements; • multiple titles consolidation • land swaps (Crown/private, grassland/non-grassland); • acquisition (with upfront financial resources committed to ongoing land management); and, • purchase of development rights (perhaps in exchange for consolidation of separate legal parcels). 	GCC and partners	\$xxx	Year 1 and ongoing	<ul style="list-style-type: none"> • Securement, using a combination of tools, of a minimum of 5 projects that specifically identify grassland fragmentation and development mitigation as one of the stated objectives/rationales for the securement project.
4.2.4	Support the establishment of First Nations' conservation positions/ functions related to grasslands on Reserve lands.	GCC	\$xxx	Year 2	<ul style="list-style-type: none"> • Establishment of at least 3 new First Nations' conservation positions/functions.
4.2.5	Evaluate the adequacy of current partnerships (including capacity) and explore potential alternatives (including, but not limited to, a new partnership organization with its own contract language and financing) to address the stewardship and conservation of BC grasslands.	GCC and partners	\$xxx	Year 3+	<ul style="list-style-type: none"> • Completed evaluation of the ability of current and potential new partnership structures to effectively address grassland fragmentation and development.

Strategic Priority 5: Promote development and/or utilization of economic and conservation incentives to encourage landowners to avoid fragmentation and development of grasslands

Objective 5.1: Evaluate and increase awareness of existing economic incentives/ opportunities to secure BC grasslands against fragmentation and development.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
5.1.1 Pending actions under Objective 5.4, assemble BC expertise to carry out preliminary evaluations of the validity and usability of current conservation options in BC that have monetary value (e.g. ecogifting tax credits, Conservation Covenants, Environmental Farm Plan funding, stewardship agreements, property assessment appeals, acquisition/ leasebacks).				<ul style="list-style-type: none"> Preliminary evaluations of current incentive options completed.
5.1.2 Assemble and distribute a succinct and pragmatic information brochure for grassland owners that briefly describes current incentive options; include listings of agencies and organizations to contact for more information.	GCC	\$xxx	Year 1 Year 1	<ul style="list-style-type: none"> Completion of grassland conservation financial incentives brochure. Distribution of brochure to grassland owners.
5.1.3 Assess the feasibility of funding a resource person liaison that can assist owners of grasslands to access current programs and provisions to meet voluntary grassland conservation objectives.	GCC	\$xxx	Year 3	<ul style="list-style-type: none"> Completed feasibility assessment of grassland resource liaison position.

Objective 5.2: Ensure grasslands qualify for any existing or future federal/provincial incentive/grant programs.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
5.2.1 As opportunity arises, negotiate monetary components under SARA or other stewardship agreement programs that would apply to Indian Reserve and private grasslands.	GCC	\$xxx	Year 2	<ul style="list-style-type: none"> A minimum of 1 negotiated financial agreement with a First Nations and a minimum of 1 stewardship program accessible to private land owners to facilitate grassland conservation.
5.2.2 Pursue additional funding for public conservation initiatives, outreach and stakeholder programs directly related to grassland fragmentation and development.	GCC	\$xxx	Year 1 and ongoing	<ul style="list-style-type: none"> Securement of \$500,000 in cash or in-kind funding over 3 years to support mitigation of grassland fragmentation and development.

Objective 5.3: Pursue specific changes to BC Assessment Authority policy related to grasslands managed for conservation purposes.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
5.3.1 Prepare a summary backgrounder paper (3-5 pages) upon which to begin targeted discussions with BC Assessment Authority on specific economic disincentives to the conservation of grasslands.	GCC	\$xxx	Year 1	<ul style="list-style-type: none"> Completed background paper.
5.3.2 Propose a joint (GCC/BCAA) working group of individuals with grasslands (biodiversity and livestock grazing values) and local/provincial government assessment/taxation/policy expertise to formulate practical solutions for grasslands related to farm land classification, assessment penalties and conservation as an accepted land use for assessment/taxation purposes.	GCC	\$xxx	Year 1 Year 2	<ul style="list-style-type: none"> Establishment of GCC/BCAA working group. Recommendations on provincial property assessment policies.

Objective 5.4: Target any future studies related to grassland fragmentation and development on economic incentives in the areas of greatest complexity and opportunity.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
5.4.1 Assess the feasibility and conditions of a Consolidation Assistance Fund (either as a stand alone or as a component of a larger grassland conservation initiative) to offset survey and other costs (perhaps including loss of market value) incurred by landowners who voluntarily consolidate grasslands currently in separate legal parcels.		\$xxx	Year 2-3+	<ul style="list-style-type: none"> Consultant terms of reference set, contract let and study report completed.
5.4.2 Engage conservation taxation expertise to: <ul style="list-style-type: none"> review updated BC studies on conservation tools for direct applicability to grassland fragmentation and development issues (see reference list); identify specific sections of provincial and federal taxation legislation/policy that negatively impact landowner options for grassland conservation; draw the linkages between taxation incentives/disincentives and other policy/planning programs that impact grassland fragmentation and development; and, evolve and assess a range of specific options for legislative/policy change (including revenue-neutral tax shifting) and prepare a list of priority incentives to pursue with provincial/federal agencies. 	GCC	\$xxx	Year 1-3	<ul style="list-style-type: none"> Consultant terms of reference set, contract let, assessment completed and recommendations submitted on proposed changes to taxation policy.

<p>5.4.3 As methodology is completed enabling assessment of the full costs of grassland fragmentation and development (see Action 1.2.6), engage expertise to evolve specific proposals that would reduce public costs through the removal of subsidies (disincentives to grassland conservation) and encourage grassland stewardship (economic incentives to avoid grassland fragmentation and development).</p>	GCC	\$xxx	Dependent on Action 1.2.6	<ul style="list-style-type: none"> • Consultant terms of reference set, contract let, study completed and recommendations submitted.
---	-----	-------	---------------------------	---

Strategic Priority 6: Increase public awareness about grassland fragmentation and development

Objective 6.1: Develop and implement an education/awareness strategy specifically on grassland fragmentation and development as a component of the Education and Outreach Program in the GCC Strategic Plan 2003-2008.

Action	Lead/Coordinating Responsibility	Budget	Completion	Measurable Outcome
<p>6.1.1 Develop and distribute a series of targeted public information pamphlets (e.g. targeted to youth, recreationists, developers) that describe the:</p> <ul style="list-style-type: none"> • range of grassland values and potential threats from fragmentation and development (see also Action 2.1.1); • location of grassland areas (see also Action 1.1.3); • tools that are available to assist in mitigating grassland fragmentation and development (see also Actions, 3.1.3 and 4.1.3); and, • role for citizens (targeted public group) in grassland conservation and stewardship. 	GCC	\$xxx	<p>Year 1</p> <p>Year 1</p>	<ul style="list-style-type: none"> • Completion of targeted grassland information pamphlets. • Distribution of pamphlets to target audiences.

<p>6.1.2 Develop a specific fragmentation and development education strategy as part of the broader GCC education and awareness program utilizing a wide range of venues that include, but are not limited to:</p> <ul style="list-style-type: none"> • presentations and workshops; • print media, including publications, trade journals and newsletters; • television and radio, including BC Broadcasters public advertising program; • interpretive sites and displays, including Royal BC Museum living landscape display; • GCC website; • teaching modules for schools; and, • awareness raising report cards on grassland loss/degradation (see also Action 1.3.3). 	GCC	\$xxx	<p>Year 1</p> <p>Year 2 and ongoing</p>	<ul style="list-style-type: none"> • Education strategy developed. • Implementation of education strategy.
<p>6.1.3 Monitor results and amend education strategy on a regular basis.</p>	GCC	\$xxx	<p>Year 3 and ongoing</p> <p>Year 3+</p>	<ul style="list-style-type: none"> • Effectiveness review of education strategy. • Recommended improvements to education strategy.

5.5 Evaluation and Monitoring

5.5.1 Implementation Monitoring

Implementation monitoring is a periodic assessment to determine the extent to which action items have been carried out in accordance with the direction in the implementation action plan. Implementation monitoring answers the question: “Did we do what the Plan said we should do?”

An evaluation of implementation progress should be completed each year. The process should include an assessment of all actions with a completion or milestone target for that year in order to determine whether or not the measurable outcome for each action was achieved. Where outcomes have not been met, further analysis will be required to provide explanations and recommend remedial measures.

5.5.2 Effectiveness Monitoring

Effectiveness monitoring is a periodic measurement to determine the degree to which desired results in the Strategic Plan have been achieved (i.e. strategic priorities and objectives). Effectiveness monitoring answers the question: “How effective has the Plan been in mitigating grassland fragmentation and development in British Columbia?”

Objective 1.3 provides direction on developing procedures and guidelines for monitoring overall effectiveness of the Strategic Plan through the use of indicators, such as hectares of grassland lost or number of hectares with conservation measures in place.

When developing effectiveness monitoring procedures, it is important to select indicators that are meaningful and relevant and that can be measured in a consistent, timely and efficient manner. It will also be important to establish baseline measures as a basis for assessing performance over time.

5.5.3 Reporting

Reporting procedures need to be developed in order to communicate the results of implementation and effectiveness monitoring assessments. A determination of the target audience and appropriate reporting format for each type of assessment will be required.

In the case of implementation reporting, the audience will likely be GCC (and its partners) who are directly responsible for overseeing and carrying out the implementation action plan. An implementation report should summarize the

results of the assessment and include recommendations for improvement as needed.

In the case of effectiveness reporting, the audience will likely be broader and therefore will require a more informal reporting format, such as an annual 'report card' as described in Action 1.3.2. The purpose of an effectiveness report is both to communicate performance in mitigating grassland fragmentation and development and to inspire public support for bringing about necessary changes for improvement.

A review of monitoring reports by the GCC Board should be undertaken to determine remedial steps that need to be taken to improve progress/results in areas where targets have not been met.

6 Selected References, Websites and Additional Sources of Information

- Adams, Barry and Lorne Fitch.** *Caring for the Green Zone – Riparian Areas and Grazing Management.* Alberta Riparian Habitat Management Project. 1998.
- Agricultural Land Commission.** *Guidelines for Conservation Covenants in the ALR.* December 2003.
- Alberta Environmentally Sustainable Agriculture (AESAs) Program** Homepage. Edmonton, Alberta. <http://www.aesa.ca>.
- Alberta Fish and Game Association.** *Operation Grassland Community Homepage.* Edmonton, Alberta. <http://www.afga.org/Conservation/ogc.htm>
- Alexander, Ben.** *The New Frontiers of Ranching: Business Diversification and Land Stewardship.* Sonoran Institute. Arizona. 2000.
- American Farmland Trust.** *Finding the Balance: Ranching and Rapid Growth in Bandera County.* American Farmland Trust, Texas, USA, 2003. <http://www.farmland.org/texas/BanderaCounty.pdf>
- Attridge, Ian.** *Biodiversity Law and Policy in Canada: Review and Recommendations.* Canadian Institute for Environmental Law and Policy. 1996.
- Banighen, Tyhson.** *On the Ground: A Volunteer Guide to Monitoring Stewardship Agreements.* The Stewardship Series. The Land Trust Alliance of BC. 2001.
- Blaine, T.W. and F. R. Lichtkoppler.** *Willingness to Pay for Green Space Preservation: a Comparison of Soil and Water Conservation District Clientele and the General Public using the Contingent Valuation Method in Soil and Water Conservation.* September/October, 2004. Vol. 59 No. 5. pp 203-208.
- Chutter, Alison.** *BC Grasslands Stewardship Guide – A Guide for Ranchers and Recreation Users.* 1997.
- Cleary, C. Rex and Dennis Phillippi.** *Coordinated Resource Management Guidelines.* Society for Range Management. 1993.
- Cows and Fish, Alberta Riparian Habitat Management Program** Home Page. Lethbridge, Alberta. <http://www.cowsandfish.org/>
- Curran, Deborah.** *A Case for Smart Growth.* West Coast Environmental Law Research Foundation. Vancouver, B.C. December 2003 <http://www.wcel.org/issues/urban/sbg/case.pdf>
- Curran, Deborah.** *Smart Bylaws Summary.* West Coast Environmental Law Research Foundation. Vancouver, B.C. December 2003. <http://www.wcel.org/issues/sbg/summary.pdf>
- Dagget, Dan.** *Beyond the Rangeland Conflict.* Good Stewards Project. Gibbs Smith Publishers, Utah. 1998.
- Denhez, Marc.** *Giving Nature Its Due - Tax Treatment of Environmental Philanthropy: Recent Improvements, Remaining Barriers and Current Opportunities.* Sustaining Wetlands Issue Paper Series No. 2003-1. North American Wetlands

Conservation Council of Canada in partnership with Evergreen Common Grounds and the Nature Conservancy of Canada. Ottawa, Ontario. 2003.

<http://www.terreshumidescanada.org/givingnature.pdf>

Denhez, Marc. *You Can't Give It Away – Tax Aspects of Ecologically Sensitive Lands* for North American Wetlands Conservation Council (Canada). National Round Table on the Environment and the Economy. 1992

Ducks Unlimited Homepage. Stonewall, Manitoba, Canada. www.ducks.ca

Durning, Alan and Yoram Bauman. *Tax Shift, How to Help the Economy, Improve the Environment and Get the Tax Man off Our Backs.* Northwest Environment Watch. Seattle, WA. 1998.

East Kootenay Conservation Program. *Conserving Working Landscapes. A Framework for Conservation on Private Land.* The Rockies Network. Undated.

Evans, Gary R. and R. Dennis Child. *Productive Capacity Criteria and Indicators for Rangeland Ecosystems.* Presentation of 1st Approximation Report – Sustainable Rangelands Round Table Report. 2003.

Fernandez-Gimenez, Sonyal Le Febre, Alex Conley and Amy Tendick. *Collaborative Stewardship of Arizona's Rangelands* in Rangelands. Society for Range Management, Vol. 26 No. 6. December 2004. pp. 24-30

Findlay, Barbara and Ann Hillyer. *Here Today, Here Tomorrow. Legal Tools for the Voluntary Protection of Private Land in BC.* West Coast Environmental Law Research Foundation. 1994.

Gillis, Charlie. *The War between Town and Country* in MacLean's. November 29, 2004 pp51-59.

Government of Alberta. Agriculture, Food and Rural Development. *A Guide for Creating Effective Land and Water Stewardship: Building Community Partnerships.* Edmonton, Alberta. Revised December 2004.
[http://agapps16.agric.gov.ab.ca/\\$Department/deptdocs.nsf/All/aesa3354#top](http://agapps16.agric.gov.ab.ca/$Department/deptdocs.nsf/All/aesa3354#top)

Government of British Columbia. *Annual Service Plan Reports 2003/2004.* Victoria, B.C. <http://www.bcbudget.gov.bc.ca/annualreports/default.htm>

- Environmental Assessment Office
- Ministry of Agriculture, Food and Fisheries
- Ministry of Attorney General
- Ministry of Community, Aboriginal and Women's Services
- Ministry of Energy and Mines
- Ministry of Finance
- Ministry of Forests
- Ministry of Land and Water BC
- Ministry of Provincial Revenue
- Ministry of Transportation
- Ministry of Water, Land and Air Protection
- Provincial Agricultural Land Commission

- Government of British Columbia.** Cariboo Mid Coast Interagency Management Committee. Cariboo-Chilcotin Grasslands Strategy Working Group. *Cariboo-Chilcotin Grasslands Strategy: Forest Encroachment onto Grasslands and Establishment of a Grassland Benchmark Area*. January 2001.
- Government of British Columbia.** BC Assessment Authority Homepage. <http://bcassessment.bc.ca>
- Government of British Columbia.** Ministry of Agriculture and Food. *Guide for Bylaw Development in Farming Areas* (Working Copy). Victoria, B.C. 1998.
- Government of British Columbia.** Ministry of Environment Lands and Parks. *Stewardship Options for Private Landowners in British Columbia*. The Stewardship Series. 1996.
- Government of British Columbia.** Ministry of Sustainable Resource Management. *Conservation Investments and Incentives Initiatives: Conservation Tenure Model* (Discussion Draft). 2004.
- Government of British Columbia.** Ministry of Water, Land and Air Protection. *Best Management Practices for Recreational Activities on Grasslands in the Thompson and Okanagan Basins*. Victoria, B.C. January 2004. http://wlapwww.gov.bc.ca/wld/documents/bmp/grasslands_th_ok_bmp.pdf
- Government of British Columbia.** Ministry of Water, Land and Air Protection. *Recovery Planning in BC Homepage*. Victoria, B.C. <http://wlapwww.gov.bc.ca/wld/recoveryplans/rcvry1.htm>
- Government of British Columbia.** Ministry of Water, Land and Air Protection and The Wilderness Tourism Association. *Protocol for Shared Environmental Stewardship Principles between the Ministry of Water, Land and Air Protection Environmental Stewardship Division and The Wilderness Tourism Association (WTA)*. 2005.
- Government of British Columbia.** Ministry of Water, Land and Air Protection. *Environmental Best Management Practices for urban and Rural Land Development in British Columbia*. DRAFT June 2004.
- Government of British Columbia.** Ministry of Sustainable Resource Management. *Resource Analysis Guidelines for Sustainable Resource Management Planning*. Victoria, B.C. December 2004. <http://srmwww.gov.bc.ca/rmd/srmp/background/rag.htm>
- Government of British Columbia.** Ministry of Water, Land and Air Protection. *Guidelines and Best Management Practices Home Page*. Victoria, B.C. December 2004. <http://wlapwww.gov.bc.ca/wld/BMP/bmpintro.html>
- Government of Canada,** Department of Fisheries and Oceans and Province of British Columbia. *Stream Stewardship: A Guide for Planners and Developers*. The Stewardship Series. 1994.
- Government of Canada,** Department of Fisheries and Oceans and Province of British Columbia. *Community Greenways: Linking Communities to Country and People to Nature*. The Stewardship Series, 1996.
- Government of Canada.** Canadian Wildlife Service. *Donation and Income Tax Scenarios Homepage*. Ottawa, Ontario. www.cws-scf.ec.gc.ca/ecogifts/tax_e.cfm.

- Government of Canada.** Canadian Wildlife Service. *Ecological Gifts Program Homepage*. Ottawa, Ontario. www.cws-scf.ec.gc.ca/ecogifts/intro_e.cfm
- Government of Saskatchewan.** Grazing and Pasture Technology Program. *Ranching for Conservation and Profit: Producer Experiences*. Regina, Saskatchewan, Canada. 1999.
- Grasslands Conservation Council of British Columbia** Home Page. Kamloops, B.C. <http://www.bcgrasslands.org/>
- Grasslands Conservation Council of British Columbia.** *Grasslands Conservation Council of British Columbia Strategic Plan 2003-2008: A Five Year Vision for BC's Grasslands*. Grasslands Conservation Council of British Columbia. Kamloops, BC. March 31, 2003
- Grasslands Conservation Council of British Columbia.** *Meeting Summary for "Shaping the Future: Mitigating the Fragmentation and Development of BC's Grasslands"*. May 18 and 19, 2004 Kamloops, B.C.
- Grasslands Conservation Council of British Columbia.** *Strategic Planning Tool Document from "Shaping the Future: Mitigating the Fragmentation and Development of BC's Grasslands"*. Conference May 18 and 19, 2004 Kamloops, B.C. July, 2004.
- Grasslands Conservation Council of British Columbia.** *The Grasslands of British Columbia*. Grasslands Conservation Council of British Columbia. Kamloops, B.C. April 2004.
- Grasslands Conservation Council of British Columbia.** *BC Grasslands Mapping Project: A Conservation Risk Assessment Final Report (disc)*. Kamloops, B.C. May 2004
- Grasslands Conservation Council of British Columbia.** *Changes in the Grasslands-Forest Interface: A BC Grasslands Conservation Risk Assessment Communication Tool*. 2003.
- Grasslands Conservation Council of British Columbia.** *Developing a Grasslands Assessment Manual for BC: A Tool for BC Ranchers*. 2005.
- Grasslands Conservation Council of British Columbia.** *Establishing Strategic Directions: Mitigating the Fragmentation and Development of BC's Grasslands - Backgrounder*. Kamloops, B.C. 2003. <http://www.bcgrasslands.org/about/strategic.htm>.
- Grasslands Conservation Council of British Columbia.** *Developing a Qualitative Approach for Assessing Grassland Ecological Condition: A Tool for BC Ranchers*. Annual Report Hamilton Commonage Grassland Monitoring Project. Kamloops, B.C. March 2004.
- Greenaway, Guy.** Ed. *Preserving Working Ranches in the Canadian West*. Southern Alberta Land Trust Society and The Land Conservancy of British Columbia, Sonoran Institute. Graphcom Printers Ltd. 2000.
- Gripne, Stephanie Lynn.** *Grassbanks: Bartering For Conservation in Rangelands*, Society for Range Management. Vol 27 No. 1 February, 2005. pp. 24-27.

- Hammond, Jeff, Gary Wolff, Clifford Cobb and Mark Frame.** *Greening the Golden State: A Tax Reform Proposal for California's Future.* Redefining Progress. San Francisco, California. 1999.
- Hillyer, Ann and Judy Atkins.** *Greening Your Title: A Guide to Best Practices for Conservation Covenants.* Second edition, Vancouver, B.C. West Coast Environmental Law Research Foundation. March 2005.
<http://www.wcel.org/wcelpub/2000/13247.pdf>
- Hillyer, Ann and Judy Atkins.** *Giving It Away: Tax Implications of Gifts to Protect Private Land.* Vancouver, B.C. West Coast Environmental Law Research Foundation, March 2004. www.wcel.org/wcelpub/2000/13020.pdf
- Horsfall, Linda and Sheila Harrington et al.** *Safeguarding Canada's Wealth: Bringing Stewardship and Conservation into Ecological Economic Valuation.* British Columbia. Land Trust Alliance of British Columbia. Ganges, BC. Undated (circa 2004). [http://landtrustalliance.bc.ca/public/Economic ecological values.pdf](http://landtrustalliance.bc.ca/public/Economic%20ecological%20values.pdf)
- Lanarc Consultants Ltd . et al.** *Stewardship Bylaws – A Guide for Local Government.* The Stewardship Series. Province of British Columbia and Government of Canada. 1997.
- Lanarc Consultants Ltd. et al.** *Watershed Stewardship: A Guide for Agriculture.* The Stewardship Series. Province of British Columbia and Government of Canada. 1997.
- Land Trust Alliance of BC.** *Safeguarding Canada's Wealth: Bringing Stewardship and Conservation into Ecological, Economic Valuation.* 2004
- Land Trust Alliance of British Columbia.** *On the Ground: A Volunteers' Guide to Monitoring Stewardship Agreements.* *The Stewardship Series.* British Columbia. 2001. http://www.stewardshipcentre.bc.ca/sc_bc/ita/covenant.pdf
- Macon, Dan.** *Grazing for Change. Range and Watershed Management Success Stories in California.* California Cattlemen's Association. 2000.
- Marin Agricultural Land Trust** (1980) Homepage. California, USA.
<http://www.malt.org/>
- National Association of Local Government Environmental Professionals and SmartGrowth Leadership Institute.** *Smart Growth is Smart Business: Boosting the Bottom Line and Community Prosperity.* Washington, DC, USA, 2004. <http://www.sqli.org/SGisSBfinal.pdf>
- Natural Resources Conservation Service.** *Grassland Reserve Program Farm Security and Rural Investment Act.* 2002.
- Nature Conservancy of Canada.** *Conservation Covenants: Working with Landowners Who Love the Land.* The Ark, Spring, 2005.
- North American Wetlands Conservation Council of Canada** (2003). *Publications Homepage.* Ottawa, Ontario. www.terreshumidescanada.org/pubs.html
- Nowlan, Linda, Chris Rolfe and Kathy Grant.** *The Smart Growth Guide to Local Government Law and Advocacy.* West Coast Environmental Law Research Foundation. 2001.

- Provincial Agricultural Land Commission and BC Ministry of Municipal Affairs.** *A Guide to the Relationship between Agricultural Land Reserves and Local Government Plans and Bylaws.* Victoria, B.C. 1982.
- Rocky Mountain Institute** (1882). *Building Community Prosperity through Natural Capitalism.* Economic Renewal Series ER01-23. Colorado, USA, 2001, updated 2005. http://www.rmi.org/images/other/EconRenew/ER01-23_BldCommProsp.pdf
- Rocky Mountain Institute** (1982) Homepage. Colorado, USA. <http://rmi.org>.
- Rosan, Liz.** Ed. *Preserving Working Ranches in the West.* Sonoran Institute. Arizona. 1997.
- Runka, Gary and Joan Sawicki.** *The Biodiversity Ranch Conservation Model: An Assessment Prepared for The Nature Trust of BC and Conservation Partners.* 2004.
- Runka, Gary and Nancy Mahoney.** *Evaluation of South Okanagan Riparian Restoration Project 2000-2004.* Canadian Wildlife Service. 2004.
- SmartGrowth BC** (1999). *State of the ALR Report.* Vancouver, B.C. 2004. http://www.greenbelt.bc.ca/getpdf.php?org=oState_of_the_ALR_Report_final.pdf
- Smith, Barry E.** *Planning for Agriculture (Resource Materials).* Agricultural Land Commission. British Columbia. 1998.
- Smith, Barry E.** *Planning for Agriculture.* Agricultural Land Commission. British Columbia. 1998.
- Sonora Institute Homepage.** Tucson, Arizona, USA. www.sonoran.org
- South Okanagan-Similkameen Conservation Program.** *A Prospectus: Conserving Canada's Desert Country.* 2000.
- Sprawl Watch Homepage.** Washington DC, USA. www.sprawlwatch.org
- The Land Conservancy Homepage.** Victoria, BC, Canada. www.conservancy.bc.ca
- The Land Trust Alliance of British Columbia.** *An Introduction to Conservation Covenants: A Guide for Developers and Planning Departments.* The Stewardship Series. British Columbia. June 2004. http://landtrustalliance.bc.ca/public/Developer_info_kit.pdf
- The Nature Conservancy.** *Developing a Conceptual Scientific Framework for Conservation in the Arid West* in Aridlands Grazing Network, Workshop 1, Colorado, April 11-13, 2001.
- The Nature Trust of British Columbia.** *Vaseux Lake-Okanagan Falls Biodiversity Ranch Management Plan.* July, 2000.
- The Nature Trust of British Columbia.** *White Lake Basin Biodiversity Ranch Management Plan.* July 2000.
- Toombs, Ted.** *Safe Harbor: Helping Landowners Help Endangered Species* in Rangelands, Society for Range Management. Vol 27 No. 1. February, 2005. pp. 35-36.

United States Department of Agriculture. Natural Resources Conservation Service. *2002 Farm Bill Conservation Provisions Homepage.* Farm Security and Rural Investment Act (Farm Bill 2002).
<http://www.nrcs.usda.gov/programs/farbill/2002/>

United States Department of Agriculture. Natural Resources Conservation Service. *Grassland Reserve Program Home Page.*
<http://www.nrcs.usda.gov/programs/GRP/>

West Coast Environmental Law Research Foundation (1974) Home Page.
Vancouver, B.C. www.wcel.org

Wetland Stewardship Partnership and Government of British Columbia, Ministry of Water, Land and Air Protection. *Best Management Practices for Reducing Urban and Agricultural Impacts on Wetlands in BC.* 2004.

Wikeem, Brian and Sandra for Grassland Conservation Council of British Columbia. *Ecological Status Assessment for British Columbia Grassland: A Field Workbook for Ranchers* (DRAFT). Grassland Conservation Council of British Columbia. Kamloops, B.C. July 2004.

Wikeem, Brian and Sandra. *Grassland Assessment Manual for BC: A Prototype for the Fescue Grasslands of the Nicola Valley* for Grasslands Conservation Council of British Columbia. July 2004

Wilderness Tourism Association. *Strategic Plan.* 2004.