



BC Grasslands Mapping Project

Proposal & Work Plan 2002-2004

1. Project Background

Grasslands are unique, vital and life-sustaining ecosystems that provide shelter, food and protection to a wide variety of plants, animals and insects. More than 30% of British Columbia's threatened or endangered species depend on grasslands for their survival. British Columbia's grasslands represent less than 1 percent of the provincial land base and are one of Canada's most endangered ecosystems. In fact, 'ancient' grasslands represent a much more endangered space in BC and across Canada than do 'ancient,' or old growth, forests!

British Columbia does not currently have adequate information and a clear provincial picture on the abundance, distribution and status of its grasslands. The BC Grasslands Mapping Project is compiling existing information (inventories) from around the province to build a grasslands Geographic Information System (GIS) and associated maps for the whole province. This project fills a critical need and will provide solid baseline information on a provincial scale that agencies and range management interests can have confidence in.

The lack of baseline information that would assist the resource and range management community in achieving sustainable and economically viable land management practices puts into question the long-term sustainability of BC's grasslands. With ever increasing pressures on a relatively small land base, managers, decision makers and industry need to be able to strategically and effectively address key issues and threats to grasslands, such as forest encroachment, the invasion of weeds, subdivision of agricultural and grazing lands, inappropriate grazing practices, abusive recreation, and urban expansion.

An inventory of BC's grasslands is long overdue. The BC Grasslands Mapping Project is an important step in compiling existing information to create a provincial database and will provide access to information that is currently not available. This process is fundamental to ensuring the conservation and sustainable management of BC's grasslands.

2. Project Goals

The goal of the BC Grasslands Mapping Project is to provide information and a clear provincial picture on the abundance, distribution and status of British Columbia's grasslands. To achieve this end, the immediate goal is to compile existing inventories & information from around the province to build a grasslands Geographic Information System (GIS) and the associated maps for the province of British Columbia. The following key questions are being addressed:

- How many hectares of native grasslands remain in British Columbia?
- What is the land status and range tenure (under grazing lease, grazing licenses and permits) of BC's grasslands? (privately owned, on crown and federal lands, on Indian reserve, within municipal boundaries, etc)
- How many hectares of grasslands have been lost to cultivation, urbanization, forest encroachment and in-growth?

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- What types of grasslands occur in BC and where do they occur?
 - What are the current and potential threats to grasslands?
 - Which species at risk are associated with grasslands and where are they located?
 - What are the priority areas for conservation, restoration and stewardship?

3. Project Objectives

The objectives of the BC Grasslands Mapping Project are to:

1. Map remaining grasslands, namely the East Kootenay Trench, Southeastern Skeena, and South Vancouver Island/Gulf Islands at a scale of 1:20 000 (this will complete the grassland base map for BC).
2. Map overlapping land status and range tenure information, including: private land, provincial crown land, federal lands, Indian reserves, grazing leases, grazing licenses and permits, parks and protected areas, agricultural land reserve, regional districts and municipal boundaries.
3. Map the historical distribution of grasslands for all regions.
4. Describe and characterize the different grassland types found in each region of the province.
5. Compile existing classification information from each region and develop recommendations for a provincial grasslands classification system.
6. Incorporate available data and map species at risk locations, known occurrences of grasslands considered sensitive or at risk, noxious weed infestations and key recreational areas (i.e. ATV areas).
7. Identify and prioritize specific grassland ecosystems which are most threatened by urbanization, cultivation, noxious weeds, inappropriate grazing management practices, abusive recreation and subdivision of agricultural land (current and potential threats).
8. Develop recommendations for action on priority grassland areas (conservation and stewardship).
9. Complete long-term maintenance strategy for the grassland database. The strategy will include: maintenance requirements, responsibilities for maintenance, ownership and long-term funding requirements.
10. Produce a comprehensive extension plan for the BC Grasslands Mapping Project.

4. Proposal for Year Three (April 01 2002 – March 31, 2003): Tasks & Activities

1. Complete base grassland ecosystems layer for regions remaining, namely the East Kootenay Trench, Southeastern Skeena, and South Vancouver Island/Gulf Islands at a scale of 1:20 000 (this will complete the grassland base map for BC).
2. Complete compilation and overlay of range tenure and land status data on base grassland coverages.
3. Complete phase one of the historical grasslands mapping. Phase one will focus on native grasslands that have been converted to intensive agricultural land uses and urban development primarily in the Ponderosa Pine and Bunchgrass Zone valley bottoms.
4. Continue to compile ecological and biophysical information from key range agrologists, ecologists and range managers to assist in characterizing grasslands by region. Produce a comprehensive report on the characterization of BC's grasslands by region.
5. Initiate and facilitate process to develop a briefing document that outlines justification and need for a provincial classification of BC's grasslands.
6. Initiate discussion on the condition and seral stage distribution of BC's grasslands. Facilitate development of a strategy and plan to complete assessment of grassland condition and seral stage distribution.
7. Compile all available spatial data on noxious weed infestations from regions and districts.

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8. Work with the Ministry of Sustainable Resource Management; Ministry of Water, Land, and Air Protection; and the Conservation Data Centre (CDC) to list all red and blue listed species that occur in specific grassland types. Overlay CDC species occurrences with mapped grassland areas. This process will allow the GCC and other organizations to begin making some assessment as to priority areas for stewardship and conservation initiatives around the province.
 9. Establish process for mapping and analyzing grassland habitats considered sensitive or at risk. This process will identify current and potential threats to grasslands (type & level of threat).
 10. Develop the BC Grasslands Website (www.bcgrasslands.org) with appropriate GIS information - (Phase One): distribution and abundance of grasslands, types of grasslands and where they are found, grassland parks and protected areas, land status and tenure information.
 11. Work with Technical Review Committee and the Ministry of Sustainable Resource Management (MSRM) in establishing a maintenance strategy for the grasslands GIS. Establish ownership and location of provincial database and map server.
 12. Develop a communication and extension plan for the information produced through the BC Grasslands Mapping Project.
 13. Communicate and extend results of mapping to partners and other government and non-government organizations through reports, news articles and the *BC Grasslands* Newsletter and website.
 14. Provide draft map products and statistics for review by the Technical Review Committee and Regional Committees.
 15. Perform analysis and provide draft statistics on:
 - Total hectares of grasslands in BC:
 - By forest region and forest district,
 - By Ecosection & Biogeoclimatic zone,
 - By broad grassland type, namely open grassland, open dry forest adjacent to open grassland, open dry forest in NDT4, open burned forest stand in Ponderosa Pine or Bunchgrass Biogeoclimatic Zones (see the *Year End Statistical Report March 2002* for additional information on these categories).
 - Land status and range tenure of BC's grasslands,
 - Historical extent of BC's grasslands (phase one only),
 - Grasslands affected by cultivation and urbanization,
 - Species at risk (fauna and flora) locations.
 16. Produce Year Three Annual Report for the *BC Grasslands Mapping Project*.
 17. Communicate and extend results to partners and other government and non-government organizations, through annual report, but also through a series of grassland articles and other media.

5. Year Three Deliverables

1. Draft statistics:
 - Total hectares of grasslands for the province (final statistics):
 - By forest region and forest district,
 - By Ecosection & Biogeoclimatic Zone,
 - By broad grassland type.
 - Land status & tenure
 - Historical distribution (phase one only)
 - Species at risk locations
2. Report on the characterization of BC's grasslands by region.
3. Briefing document - justification and need for provincial classification of grasslands

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4. Maps for regions complete: distribution and abundance; types of grasslands and where they occur; land status and tenure; historical extent of grasslands (phase one); grasslands affected by cultivation and urbanization; species at risk locations.
 5. BC Grasslands website: distribution and abundance of grasslands, types of grasslands and where they are found, grassland parks and protected areas, historical distribution land status and tenure.
 6. Press releases and articles for newspapers, magazines, and other media.

6. Proposal for Year Four (April 1, 2003 – March 31, 2004): Tasks and Activities

1. Complete phase two of historical mapping. This phase will focus on forest encroachment and in-growth.
2. Complete the overlay of species at risk locations.
3. Complete the overlay of noxious weed infestations.
4. Complete mapping and analysis of BC's grassland habitats considered sensitive or at risk. Identify current and potential threats to grasslands (type & level of threat).
5. Finalize strategy and plan to assess grassland condition and determine seral stage distribution for BC's grasslands by region.
6. Perform final analysis to determine: total hectares of grasslands; historical distribution; land status and tenure (including: private land, provincial crown land, federal lands, Indian reserve, grazing leases, grazing licenses and permits, parks and protected areas, Agricultural Land Reserve, regional districts, municipalities); current and potential threats to grasslands (level of threat, type of threat); grasslands lost to cultivation, urbanization, forest encroachment and in-growth and weed infestation; grasslands considered sensitive or at risk; species at risk locations.
7. Complete the BC Grasslands website with all appropriate GIS information: distribution and abundance of grasslands; characterization of BC's grasslands (spatially represented where available); grassland parks and protected areas; historical distribution of BC's grasslands; grasslands lost to cultivation, urbanization, forest encroachment, in-growth and weeds; grassland habitats considered sensitive or at risk; locations of species at risk (this information will be linked to the *Understanding Grasslands* section of the GCC website which describes the habitat requirements for each species); current and potential threats to grasslands (type & level of threat); land status and tenure information.
8. Finalize ownership and location of provincial database and map server. Establish all necessary links with GCC and provincial websites.
9. Develop BC Grasslands Mapping Project final report and list of recommendations for action on priority grasslands for conservation and stewardship.

7. Year Four Deliverables

1. *BC Grasslands Mapping Project* final report.
2. BC Grasslands final statistics report.
3. Access to provincial grassland database. This database will be accessible through the BC Grasslands website and provincial ministry websites. These sites will allow access to colored maps of BC's grasslands with key information overlays through a map server.
4. Strategy and plan to assess grassland condition and determine seral stage distribution for BC's grasslands by region.
5. Website (www.bcgrasslands.org) with all GIS layers and information available in map, statistical and report form.

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6. Press releases and articles for newspapers, magazines, organization newsletters, and TV: including CBC, BCTV, *The Vancouver Sun*, *Beef in BC*, *Country Life in BC*, *The Naturalist*, and other NGO newsletters

8. Project Budget - Not included

9. Strategic Significance of the BC Grasslands Mapping Project

This project will provide an effective tool and the most comprehensive source of quantitative data and spatial information available in BC. This information will improve all aspects of land use management, planning and decision-making, as well as providing key information to the Real Estate industry.

✓ Natural Resource Management

The BC Grasslands Mapping Project addresses *Natural Resource Management* needs in BC by:

- Producing and making available critical information about the abundance, distribution and status of grasslands around the province to the agricultural industry;
- Increasing awareness and understanding about grasslands and related land use/management issues among industry, government and non-government organizations;
- Providing a useful tool for government, non-government organizations (such as the BC Cattlemen's Association) and industry to achieve effective and sustainable management of grasslands and to ensure the conservation of BC's range resources;
- Improving ability to define, target and effectively address priority grassland issues;
- Increasing ability to identify priority areas for conservation, stewardship, research, communication and extension;
- Forging new partnerships and developing new opportunities for stewardship, education and applied research;
- Enabling the GCC to work co-operatively and in partnership with the Society for Range Management, the BC Cattlemen's Association and ranchers to address concerns over wildlife habitat and the long-term sustainability of BC's grasslands.

✓ Land Use Planning and Decision Making

The BC Grasslands Mapping Project addresses *Land use Planning and Decision-Making* by:

- Allowing for more informed planning and decision-making, as well as more informed policy and management initiatives.
- Providing baseline information to assist planning and policy initiatives, and decision-making processes:
 - Land status (ownership and range tenure) of BC's grasslands.
 - Spatial distribution of grasslands; types of grassland and where they occur.
 - Spatial distribution of grasslands that are privately owned, on Indian reserve or within First Nations traditional territories, in Agricultural Land Reserve (ALR) and within regional districts and municipal boundaries (size, shape, connectivity of parcel; and density of settlement). The spatial distribution of grasslands will determine how their landscape context affects conservation and planning initiatives.
 - Spatial distribution of rare and unique grasslands.
 - Species at risk locations and their habitats, wetlands, aspen copses, riparian areas, cottonwood stands and noxious weed infestations.
 - Historical extent of grasslands and how much has been lost to cultivation, urbanization, forest encroachment and in-growth, and weed infestation.

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- Current and potential threats to grasslands and identification of priority areas for conservation, restoration and stewardship.
 - Contributing to meeting the goals and objectives of LRMP processes and other land use planning initiatives.
- ✓ **Communication & Partnerships**
- The BC Grasslands Mapping Project will improve communication, access and exchange of grassland related information between industry, government organizations (federal, provincial, municipal & regional districts), environmental organizations, First Nations, academic institutions and other groups.
 - The Project will assist in establishing new partnerships and developing opportunities for discussion on important grassland management, conservation and stewardship issues. Only through partnerships will we effectively achieve sustainability and the conservation of grasslands.
- ✓ **Environmental Sustainability**
- The *BC Grasslands Mapping Project* is an essential step in obtaining a provincial picture and accurately determining the status of British Columbia's grasslands. A lack of baseline information to assist industry, municipal governments and resource managers to work with conservation interests on achieving sustainable and economically viable land management practices puts into question the long-term sustainability of BC's grasslands. With increasing pressures on a relatively small land base, managers, planners, decision-makers and industry need to be able to strategically and effectively address key issues and threats to grasslands, such as forest encroachment the invasion of weeds, subdivision of agricultural lands, urban encroachment, and other land use and development issues. The inventory of BC's grasslands is long overdue and is key to the complex process of ensuring sustainability over the long term.

10. Project Beneficiaries

The BC Grasslands Mapping Project will benefit the province of British Columbia by providing the most comprehensive source of grassland information in the province, as well as a strategic planning tool for local, provincial and federal governments, First Nations, non-government organizations, and academic institutions. The beneficiaries include:

- Provincial government: Ministry of Sustainable Resource Management; Ministry of Water, Land and Air Protection; Ministry of Forests; Ministry of Agriculture, Food and Fisheries; Land Reserve Commission
- First Nations: Native bands and tribal councils, Aboriginal Mapping Network, Shuswap Nation Natural Resources Board
- Regional and municipal governments: organizations such as the Union of BC Municipalities
- Non-government organizations: BC Cattlemen's Association, Canadian Nature Federation, Canadian Parks & Wilderness Society, Ducks Unlimited Canada, Federation of BC Naturalists, Livestock Associations, Society for Range Management, Forest Extension & Research Partnership, The Land Conservancy of BC, The Nature Trust of BC, Nature Conservancy of Canada
- Industry: Beef Cattle Industry Development Council, Agriculture, Real Estate
- Federal Government: Environment Canada, Agriculture Canada, Aboriginal Affairs, Intermountain Joint Venture (an International Cooperative Venture)
- Universities and colleges: The University College of the Cariboo, the University of British Columbia, the University of Northern British Columbia

11. Evaluation Plan

The success of the BC Grasslands Mapping Project will be evaluated against the completion of the specific deliverables identified above, as well as continuing the longer-term process of providing grassland information and facilitating its incorporation into resource management, planning and decision-making processes around the province.

12. Dissemination Plan

All information and products will be accessible and available through the BC Grasslands website, the GCC office and the Ministry of Sustainable Resource Management. The GCC will extend the information to the following organizations: Ministry of Forests – Range, BC Cattlemen’s Association, Wildlife Federation, Canadian Parks & Wilderness Society, BC Parks, The Land Conservancy of BC, Ducks Unlimited Canada, Federation of BC Naturalists, Nature Conservancy of Canada, The Real Estate Foundation, The Nature Trust of BC, Environment Canada, South Okanagan-Similkameen Conservation Program, Union of BC Municipalities, various Municipalities (Vernon, Princeton, and others).

Information-sharing agreements have been developed with organizations that would like to use information produced by this project (prior to the information being formally released). The need and demand for this information is becoming very apparent! Agreements currently in place include: Lower Similkameen Indian Band, Vernon Naturalists and Allan Brooks Centre. Pending and future agreements may include Nature Conservancy of Canada, Columbia Basin Fish and Wildlife Compensation Program (Biodiversity Atlas for the Columbia Basin), Ducks Unlimited Canada (Intermountain Joint Venture) and Environment Canada. A comprehensive extension plan is currently being developed and will be available by April 2002.

13. Maintenance

This project involves building an extensive grasslands database that will require continued work and maintenance. Maintenance is an important issue that has been addressed by the project team and its partners. As the database is built within the Ministry of Sustainable Resource Management, this agency has agreed to be the custodian of the database for the term of the project (3 years). A long-term strategy for maintenance and updating of the database will be developed with MSRM and other partners to ensure that the product is kept up to date and that it remains a viable tool for government, the GCC and other partners. By March 31, 2003 an ownership and maintenance strategy will be complete, including a description of maintenance requirements, responsibilities for maintenance and long-term funding requirements.