

Alberta Conservation Association
Grant Eligible Conservation Fund
2007 – 2008



Annual Report of Activities
&
Synopsis of Funding Recipient Projects

For the Period of
April 1, 2007 to March 31, 2008

Amy MacKinven
August 2008



ACA's Mission

ACA conserves, protects and enhances fish, wildlife and habitat for all Albertans to enjoy, value and use.

ACA's Vision

An Alberta with an abundance and diversity of fish, wildlife and their habitats, where future generations continue to use, enjoy and value our rich outdoor heritage.

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**VISIT OUR WEBSITE AT
<http://www.ab-conservation.com>**

Front Cover Photo:

*Photo: taken with remote camera by Miistakis Institute
From the project 'Recreation and wildlife in the Rockies of Southwestern Alberta: Human Use and its effect on wildlife, fisheries and regional connectivity' (Miistakis Institute 030-00-90-108)*



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Executive Summary

The **Grant Eligible Conservation Fund** (GECF) formally began in 2002, making this the 6th funding cycle in this new streamlined format. The aim of the fund is to aid the Alberta Conservation Association (ACA) in the delivery of its mission and Strategic Business Plan. Grants made to partners are intended to enhance and supplement ACA activities. Over \$6.2 million dollars have been provided to 343 conservation projects implemented by the conservation community, which has leveraged an estimated \$40 million in conservation work across Alberta. The aim of this document is to provide an overview of activities and results of projects financially supported through the GECF in 2007/2008 and relate them to the ACA Strategic Business Plan.

KEY PROGRAM HIGHLIGHTS for the GECF 2007/2008:

- 102 funding requests were received requesting a total dollar value of ~\$2.1 million.
- A total of **\$868,155.00** was granted to **60** projects.
- **53** projects were completed, **7** projects were given extensions.
- Project budgets ranged from \$500.00 to \$50,869.00.

1. Introduction:

The **Alberta Conservation Association (ACA)** believes it is our responsibility to join and support the collective effort to conserve, protect and enhance Alberta's natural biological resources. One of the ways in which ACA does this is to make grants to our partners. Grants made to partners are intended to enhance and supplement ACA activities. Environmental conservation grants have been awarded by ACA since 1997. ACA is proud to have completed its 10th year of Conservation Funding. In 2002 the Grant Eligible Conservation Fund (GECF) formally began in this format. For 2007/2008 up to **\$1.2 million dollars** were available for project funding via the GECF.

This document provides an overview of GECF activities for the funding cycle 2007/2008 and an overview of accepted projects carried out between April 1, 2007 and March 31, 2008. A synopsis of objectives, activities and deliverables is provided for each of the 60 conservation projects funded.

2. Purpose:

The **Grant Eligible Conservation Fund** aims to aid the delivery of ACA's mission and Strategic Business Plan (SBP 2007-2010). Grants made to partners are intended to enhance and supplement ACA's objectives and activities.

3. GECF Funding Cycle:

The funding priorities, guidelines and application forms were made available to the public mid December 2006 via the ACA website. Details of the 2007/2008 funding cycle are in the Table below:

2007/2008 FUNDING CYCLE DATES

Posting of the Guidelines and Application Forms on ACA's website	December 15 2006
Window to receive completed applications	January 1-31 2007
Proposal Review Committee Adjudication Meeting	February 28 2007
Notification of Applicants as to Funding Status	March 2007
Projects Work Occurred	April 1 2007 through March 31 2008

4. Proposal Review Process

The ACA Board of Directors appointed a Granting Committee comprised of three board members and ten citizens of Alberta, who referee and assess the grant applications based on the established funding criteria. The proposal review meeting was held on February 28th, 2007 at the Percy Page Centre, Edmonton, Alberta.

Reviewers were tasked with:

- Providing rankings for the respective proposals based on the funding priorities and guidelines provided by ACA.
- Providing funding recommendations for suitable proposals to the ACA Board.

Proposals were evaluated on their merit and content using a three-tiered ranking system:

- A:** Top proposals; recommend funding in whole or in part.
- B:** Proposal contains merit, recommend funding in whole or in part if funds available.
- C:** Do not recommend funding

5. Funding Eligibility:

The GECF funding supports a wide variety of applicants and project types. In fact, applications are received from a diverse cross section of the population including: ordinary Albertans, community groups, conservation organizations and leading edge scientific researchers. The conservation community is responding to these funding opportunities very positively by submitting funding requests for vital conservation work. The increasing numbers of applicants shows that ACA programs are becoming widely known and that the funds are contributing to conservation efforts in Alberta.

- Any organization or individual may apply to the GECF if they have a suitable project.
- ACA and ASRD staff are not eligible to apply to the fund.
- Recipients of funding from ACA Grants in Biodiversity (www.biology.ualberta.ca/biodiversity) are not eligible to receive funding from the GECF for the same project in the same calendar year.

For more details on funding priorities and criteria see Section 7 and Appendix A: Project Submission Guidelines for Funding 2007-08.

6. Funding Allocations:

For the 2007/2008 funding cycle **\$1.2 million dollars** were available for project funding via the GECF.

- 102 funding requests were received requesting a total dollar value of ~\$2.1 million.
- A total of **\$868,155.00** was granted to **60** projects.
- **53** projects were completed, **7** projects were given extensions.
- Project budgets ranged from \$500.00 to \$50,869.00.

All projects approved for funding by the Granting Committee must sign the Cooperative Project Agreement with the approved proposal and budget appended. The Cooperative Project Agreement outlines the reporting and payment schedules and other contractual obligations between ACA and the grant recipient. All projects are expected to provide an interim and a final project report. For the full copy of the Cooperative Project Agreement used in 2007-2008 please see Appendix B.

7. Major Funding Goals & Priorities 2007 – 2008:

Major Funding Goals & Priorities of the Conservation Fund 2007 – 2008

Grants made to partners are intended to aid in the delivery of the ACA mission and Strategic Business Plan. The following funding priorities for the GECF are derived from the Strategic Business Plan 2007-2010 and was contained in GECF document the "Project Submission Guidelines for Funding in 2007-2008" (for full document see Appendix A), which is used by project applicants and was downloadable from the ACA website.

ACA Wildlife Program Priorities for 2007-2008

The Wildlife Program supports and enhances conservation activities that retain the diversity and abundance of populations and communities of wildlife in Alberta. It includes consideration of all non-fish taxa, but has a strong focus on harvested species. The Wildlife Program includes components related to wildlife populations, their habitats and the ecosystems that support them.

The ACA Wildlife Program informs and supports ASRD in their role of determination of species status; the development, communication and implementation of species recovery or management plans, and management of consumptive and non-consumptive use and users. This program supports the inventory and monitoring of priority species and their habitats, the retention and enhancement of priority habitats, and the restoration and reintroduction of priority populations. Inventory monitoring may provide a baseline for programs to assess and monitor ecological goods and services.

Program activities may include, but are not limited to, population enhancement, applied ecological studies, and understanding and facilitation of users' needs and wants. An essential element is the monitoring, evaluation and adaptation of wildlife and habitat conservation activities.

ACA strives to enhance the sustainability of wildlife species through science-based conservation. The Wildlife Team has developed a program that focuses on four thematic areas including ungulates, upland game birds, waterfowl and species at risk. Program objectives are prioritized at the provincial scale through strategic and operational planning, and fall within the following nine activities: (1) Species and population inventory, (2) Plan development and implementation, (3) Species management and enhancement, (4) Aerial Ungulate Surveys, (5) Applied research /ecological studies, (6) Status assessment, (7) Habitat inventory and enhancement (8) Recreational opportunities (9) Education and Outreach

For 2007-2010, the focus is on the implementation of programs developed in prior plans which includes implementing habitat restoration activities; monitoring the response of species and habitat indicators; continued delivery of ongoing applied ecological studies; providing input to the Land Management Program; assisting with aerial ungulate surveys; and measuring our success in achieving business plan objectives.

ACA Fisheries Program Priorities for 2007-2008

ACA's Fisheries Program views conservation as the sustainable and responsible participation in the social and consumptive use of fish and aquatic resources, while recognizing the importance of protecting healthy ecosystems. Our Fisheries Program is designed to implement fish conservation efforts in an effective, credible and collaborative manner that will sustain or improve Alberta's fish populations.

The Fisheries Program supports and enhances conservation activities that retain the diversity and abundance of fish populations and communities, and the biological communities and habitats that support them. The program supports fishing as a recreational use in the interest of Alberta anglers.

The ACA Fisheries Program supports ASRD in the determination of stocks and populations status; the development and implementation of management plans; and management of consumptive and non-consumptive use and users. The Fisheries Program includes the inventory and monitoring of priority

species and their habitats to determine distribution, abundance, status and trends. An essential element for all program components is the monitoring, evaluation, and adaptation of activities. Activities in this program support and inform an adaptive fisheries management program in Alberta.

ACA Land Management Program Priorities for 2007-2008

The Land Management Program (LMP) encompasses activities intended to conserve, protect and enhance fish and wildlife habitat, and to increase consumptive and non-consumptive recreational opportunities including angling and hunting. The three major activities of this program are habitat securement, maintenance and management of ACA Conservation Sites, and recreational opportunity initiatives.

Maintenance and management of Conservation Sites on crown and privately owned lands are completed in compliance with location-specific management plans, habitat type, or stewardship agreements that are developed by ACA in collaboration with ASRD and other conservation partners.

Recreational opportunity initiatives on private land focus on communication tools and activities required to promote and increase public access to wildlife and fisheries habitat resources where stewardship of conservation-rich habitat is recognized.

Habitat securement identifies and prioritizes important habitats as well as land that increases or enhances recreational opportunities, both consumptive and non-consumptive. Securement may occur through direct purchase, conservation easements, donations, term lease, or protective notation. **Please note:** Land Acquisition proposals are not reviewed by the Grant Eligible Conservation Fund. Direct all Land Acquisition proposals to the Habitat Securement Fund.

8. GECF project contribution to the ACA Strategic Business Plan

In total, 60 projects were approved for funding in 2007-2008, each project contributed to at least one of the main ACA funding priority areas as outlined in the previous Section (Fisheries, Land Management, and Wildlife), and many projects contributed to two of the priority funding areas. 46 related to the Wildlife Funding Priorities, 21 projects to the Fisheries Funding Priorities, and 14 to the Land Management Funding Priorities. For a complete overview of which projects contributed to each of the Funding Priorities, see Appendix C.

Each project was assigned to the most relevant Objective(s) contained in the Strategic Business Plan (SBP) 2007-2010, as specified in the project proposal and based on actual results as reported by the grant recipients. Overall the GECF projects for 2007-2008 were strong in both supporting recreational opportunities for Albertans and education and outreach. The most outstanding Objectives are discussed below. For the complete overview of which projects contributed to the SBP 2007-2010 Program Objectives, see Appendix C.

Wildlife

Over 75% of the 2007-2008 projects (46/60) related to the Wildlife Funding Priority outlined in Section 7 of this report. These projects contributed direct results that relate to the Wildlife Objectives of the SBP 2007-2010, in particular Objectives #10: Education and Outreach (23 projects) and #2: Species and Population Inventory (19 projects). Many GECF projects also related to Objectives #9: Recreational Opportunities (16 projects), #8: Habitat Inventory and Enhancement (15 projects) and #6: Applied Research and Ecological Studies (14 projects). Under Objective #10, the Operation Grassland Community project by AFGA (030-00-90-107) has a strong communication component, often dealing directly with landholders and providing useful information for improving management to benefit species at risk. The Beaverhill Bird Observatory (002-00-90-106) reaches out to the public with two events a year, demonstrating the importance of long-term monitoring and teaching how and why birds are studied. Under Objective #2 population data were collected and evaluated for several species in ways that can be used for monitoring, e.g. mountain goats (Laval U, 030-00-90-123), cougars (UofA, 030-00-90-109) and wolverine (ARC, 030-00-90-120) to name a few.

Land Management

14 of the 60 projects funded in 2007-2008 related to the Land Management Funding Priority, the majority of these (13/14) contributed to Objective #3: Recreational Opportunities. For example, the Recreation and wildlife in the Rockies project of the Miistakis Institute (030-00-90-108) identified wildlife use of recreational trails and wildlife responses to recreational demands, data which can be used to help solve the human-animal conflicts arising in this recreational area. Only two projects related to Objective #1: Habitat Securement, as this Objective relates to the Habitat Securement Fund rather than the GECF. A single project related to Objective #2: Conservation Site Management, as this Objective is specific to management of ACA habitat conservation assets, the NCC project (015-00-90-106) deals with monitoring of NCC properties some of which are co-owned by ACA.

Fisheries

21 projects related to the general Fisheries Funding Priority, 13 of these contributed to Fisheries Objective #8: Riparian Conservation Planning, several projects had the aim of improving riparian habitat by fencing (TUC Bow River Chpt 020-00-90-105; Mountain View County 015-00-90-101; Partners in Habitat Development 030-00-90-102; Red Deer County 020-00-90-103). Seven projects contributed to Fisheries Objective #1: Fish Stock Assessment and Monitoring, such as the Northern AB non game fish status assessment by the Royal Alberta Museum (020-00-90-102) and the Quirk Creek native fish initiative (TUC 020-00-90-113). No GECF projects related to Fisheries Objective #2: Sport Fishery Monitoring or #5: Fisheries Access Sites.

Other SBP Objectives

In addition, over half of the 2007-2008 GECF projects (33/60) had an education and outreach component, which assists ACA with Communication Objective #2 (*Identify strategic alliances to deliver communications, public and education outreach messages and identify opportunities to distribute materials*). Many projects involve volunteers (e.g. Bird Atlas project, FAN 030-00-90-103; Whitebark pine regeneration project, AWA 030-00-90-117), whilst others had education goals (Hunter Education Manuals, AHEIA 020-00-90-105 and Fur Management presentations by Alberta Trappers Association 030-00-90-104). All the GECF projects contribute to Communications Objectives #1 (*Enhance partner relations and increase the understanding of ACA's role in the conservation community*) and #4 (*Improve the level of interaction, information exchange and collaboration with other conservation specialists*), as the GECF encourages local conservation organizations to find out more about ACA and collaboration is an element of almost all GECF projects. A lot of valuable conservation information is generated by GECF projects.

Many of the 2007-2008 GECF projects (29/60) contributed to the key strategy applicable to all conservation programming Strategic action: Analyze data to provide a defensible scientific base for conservation actions. For example, the University of Alberta project "Assessing effects of sportfish stocking & aeration on communities in small boreal lakes" (020-00-90-106) collected data which will contribute to the overall success and effectiveness of ACA's lake aeration and fish stocking program by contributing scientific information to help ensure that it is operated in ways that minimize adverse impacts on the native fauna of small-lake ecosystems. Another project conducting long-term research on mountain goats on Caw Ridge (Laval U 030-00-90-123) is the leading research project on mountain goats in North America and is frequently referenced in the Management Plan for mountain goats in Alberta.

One of the GECF funded projects serves the strategy of enhancing revenue from levy sources under Financial Objective #1 by focusing on recruitment and retention of hunters in Alberta (Hunting for Tomorrow Foundation, 002-00-90-101).

9. Synopsis of Approved Projects for 2007 – 2008

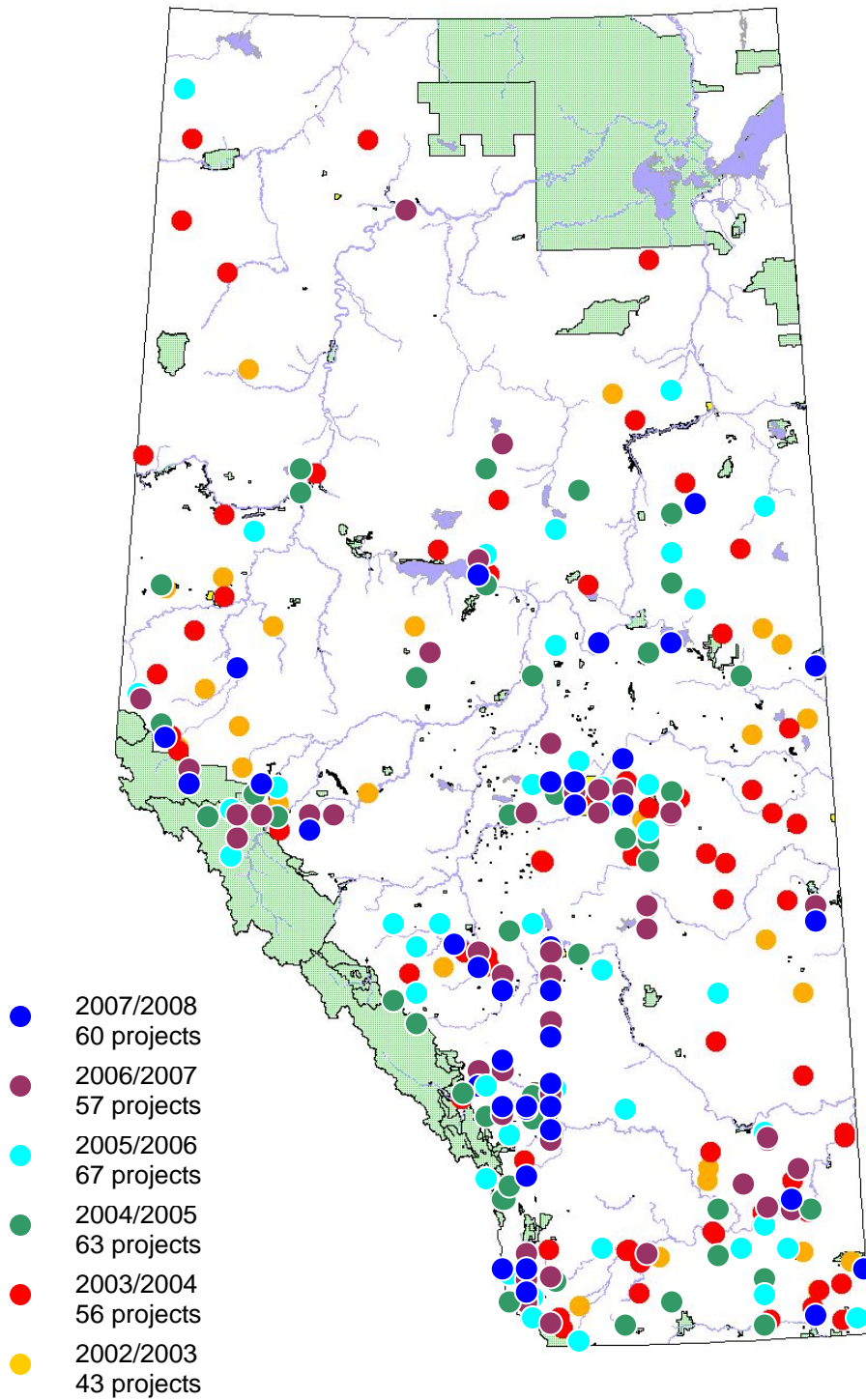
A summary description of each of the 60 approved project and the respective objectives, activities and deliverables can be found in Part II of this report. List in alphabetical order by organization.

Project Title	Funding	Organization	Summary On Page
Genetic consequences of living at the edge of the range: <i>Yucca glauca</i>	\$5,000.00	Acadia University	11
WMU408 Bighorn Sheep Surveys/Determining Mountain Goat distribution – Kananaskis Country, AB	\$2,000.00	Alberta Fish & Game Assoc.	13
Operation Grassland Community	\$50,869.00	Alberta Fish & Game Assoc.	14
Re-print of Conservation and Hunter Education manuals	\$25,000.00	Alberta Hunter Education Instructors' Association	16
Wolverine abundance and habitat use in the Rocky Mountain Parks of Central Alberta, Canada	\$30,000.00	Alberta Research Council	17
Improving Riparian Areas Through Excellence in Information and Community Collaboration	\$10,000.00	Alberta Riparian Habitat Management Society - Cows and Fish	19
Fur Management: Past and Present an Alberta Perspective	\$10,000.00	Alberta Trappers Association	21
A survey of non-native plants in the Front Range Canyons of the Castle	\$2,000.00	Alberta Wilderness Association	22
Whitebark pine (<i>Pinus albicaulis</i>) regeneration project	\$2,000.00	Alberta Wilderness Association	23
Wildlife Help Line	\$3,500.00	Alberta Wildlife Rehabilitators' Association	24
Bird Science Events, Educational Opportunities for Albertans	\$6,000.00	Beaverhill Bird Observatory	25
Long-term Songbird and Raptor Monitoring in Alberta	\$9,500.00	Beaverhill Bird Observatory	27
Millennium Creek Project – Phase Two – Fish Habitat Enhancement 2006	\$20,000.00	Bow Valley Habitat Development	29
Captive Breeding of the Endangered Whooping Crane	\$12,564.00	Calgary Zoo	31
Riparian Area Interpretive Trail Development at Aspen Ranch Outdoor Education Center	\$2,000.00	Camps for Children Education Association	33
McGillivray Creek Riparian Mitigation	\$22,265.10	Crowsnest Pass Quad Squad Association	34
Community structure and demography of waterbirds in Alberta's mixedwood boreal forest: relationships with natural and anthropogenic disturbance gradients	\$35,000.00	Ducks Unlimited Canada	36
Biodiversity of Fungi in Alberta: a Provincial Database	\$14,500.00	Edmonton Mycological Society	38
The Living by Water Project	\$10,000.00	Federation of Alberta Naturalists	40
Atlas of Breeding Birds of Alberta: Update Project	\$31,000.00	Federation of Alberta Naturalists	42
Blue Bird Project Fort Saskatchewan AFGA	\$1,800.00	Fort Saskatchewan Fish & Game Association	44
Bird House Construction and Location	\$2,000.00	Friends of Whitehorse Wildland Park Society	45
Canadian Heritage River Application Kakwa River Alberta	\$2,000.00	Greater Kakwa	46
Hunting For Tomorrow Foundation – Working Group Deliverables	\$9,000.00	Hunting For Tomorrow Foundation	47
The Lakeland Integrated Watershed and Land-Use Planning Project	\$5,000.00	Lakeland County	49
Ecology, behavior, and conservation of mountain goats in Alberta	\$18,991.00	Laval University	50
Boreal Forest Bird Research	\$15,000.00	Lesser Slave Lake Bird Observatory	53
Recreation and wildlife in the Rockies of Southwestern Alberta: Human Use and its effects on wildlife, fisheries and regional connectivity	\$20,000.00	Miistakis Institute for the Rockies	56
Developing a Web 2.0 Prototype to Promote Sustainable Decision-making About Recreational quality Group Use and the Ecological Health of	\$10,000.00	Mount Royal College, Department of Earth Sciences	58

Protected Habitats			
Riparian Area Management Improvements and Solar Aeration Demonstration	\$25,000.00	Mountain View County	60
Stewardship of Nature Conservancy of Canada's Properties in the Rocky Mountain and Foothills Natural Regions of Alberta	\$42,000.00	Nature Conservancy of Canada – Alberta Region	62
Onoway and District Fish&Game Assoc. Bird-House Project	\$600.00	Onoway & District Fish & Game Assoc. & Gun Club	64
Partners in Habitat Development	\$30,000.00	Partners in Habitat Development	65
Implementation of the Alberta Prairie Conservation Action Plan (PCAP) 2006-2010	\$9,000.00	Prairie Conservation Foundation	67
Riparian Fencing Initiative II	\$21,100.00	Red Deer County	69
Gervais Corner Biodiversity Improvement Project	\$2,000.00	REEP	71
Northern Alberta Non-game Fish Status Assessment – Year 5	\$29,339.00	Royal Alberta Museum	73
Predator control and Duck nesting facility	\$500.00	Sarcee Fish & Game Assoc.	75
Sarcee Fish and Game sponsored Alberta Junior Pheasant project	\$1,000.00	Sarcee Fish & Game Assoc.	76
Characteristics of wolf home ranges and factors contributing to wolf-livestock conflicts in Southern Alberta	\$15,000.00	Southern Alberta Conservation Cooperative	77
Southern Foothills Study Phase 3b	\$15,000.00	Southern Alberta Land Trust Society	79
Bow River Riparian Fencing Project	\$2,200.00	Trout Unlimited Canada, Bow River Chapter	81
Quirk Creek Native Fish Initiative	\$5,600.00	Trout Unlimited Canada	82
Late Fall Fisheries Investigations in Diversion Canals of Southern Alberta	\$6,100.00	Trout Unlimited Canada	84
Visitor Centre Role and Appeal at William A. Switzer Provincial Park	\$1,536.00	University of Alberta	85
Genetic Analysis of Walleye (<i>Stizostedion vitreum</i>) Populations in Alberta for Management and Forensic Purposes	\$8,000.00	University of Alberta	86
Atlas of Alberta Lakes and Aquatic Invertebrates of Alberta	\$8,000.00	University of Alberta	88
Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse (<i>Tympanuchus phasianellus jamesi</i>), Endangered Sage-Grouse (<i>Centrocercus urophasianus</i>), and their Hybrids	\$10,000.00	University of Alberta	89
Dispersal of rose-breasted grosbeaks in a fragmented landscape	\$10,000.00	University of Alberta	91
Effects of aversive conditioning on elk migration and fescue growth	\$18,400.00	University of Alberta	92
Assessing effects of sportfish-stocking and aeration on communities in small Boreal Foothills lakes	\$27,431.00	University of Alberta	94
Epidemiology modeling for proactive management of Chronic Wasting Disease in deer in Alberta	\$30,200.00	University of Alberta	96
Development of a prairie-deer sightability model for aerial surveys	\$34,742.00	University of Alberta	98
Cougar Predation on Wild Ungulates in a Multi-Prey, Multi-Predator System in West-Central Alberta	\$41,080.00	University of Alberta	100
Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park – Alberta,	\$2,000.00	University of Calgary	102
Algae as bioindicators of human impacted groundwater emerging into rivers	\$5,000.00	University of Calgary	104
Invasion and Bloom Dynamics of "Rock Snot" (<i>Didymosphenia geminata</i>) in Alberta Rivers	\$25,000.00	University of Calgary	106
Pronghorn antelope migration ecology and connectivity in the Northern Great Plains	\$26,338.00	University of Calgary	108
Modelling Mercury Biomagnification in the South Saskatchewan River Basin	\$27,000.00	University of Lethbridge	110
Publication of "People & Peaks of Willmore Wilderness Park"	\$2,000.00	Willmore Wilderness Foundation	112

10. 2002/03-2007/08 Grant Eligible Conservation Fund Project Locations

ACA's GECF projects cover a wide range of the province. Many of the projects have a provincial/regional scope and therefore are not geographically represented on the map.



PART II: 2007-2008 Project Summaries

Genetic consequences of living at the edge of the range: *Yucca glauca*

Project Location:	Wolfville
Identifying Code:	015-00-90-103
Funding Allocation:	\$5,000.00
Principal Investigator:	Elaine Schofield
Contact Information:	Acadia University Wolfville Wolfville Nova Scotia B4P 2R6 Email: elaine.schofield@acadiau.ca Telephone: (902) 585-1498
ACA Grant Status:	Completed

Project Summary & Objective(s):

The Soapweed (*Yucca glauca*) is a semi-arid grassland perennial that ranges from Texas north to the Alberta. In Canada, the species has a sole pollinator, the yucca moth *Tegeticula yuccasella*. In 'exchange' for pollination services, the yucca 'provides' incubation sites for moth eggs and seeds as food for developing larvae. Alberta populations of yuccas and yucca moths are at the extreme northern limits of the species' ranges and are isolated from the nearest populations in Montana by about 200 km. In small, isolated or northerly populations, opportunities for cross pollination may be limited resulting in increased self-fertilization and asexual reproduction. These changes can lead to further genetic isolation and erosion (e.g. inbreeding depression) which may spur speciation or drive the population to extinction. Broadly, the project aims to provide information to better inform recovery actions of the Soapweed and Yucca Moth Recovery team. To date, only ecological information is available. More specifically, the project will address the following: Do Alberta yuccas have less genetic diversity than those to the south?

Activities:

- 1) Isolate DNA from samples of Yucca moth from throughout their range from dried samples.
- 2) Obtain DNA sequence data for chloroplast DNA markers and AFLP nuclear markers to obtain estimates of the extent of genetic diversity across the range of Yucca and in particular, investigate if there is a reduction in allelic diversity towards the northern edges of the species' distributions,
- 2) Examine genetic structure within Alberta relative to other parts of the range and look for evidence of isolation by distance (reduced connectivity) in AB populations,
- 3) Use molecular population genetic analyses to detect evidence of a historical reduction in population size within AB, and
- 4) Determine if connectivity has been maintained between populations by the spread of seeds or the movement of pollinators by comparing genetic diversity at nuclear (AFLP) and chloroplast markers.

Link with ACA Priorities for 2007-2008:

This project will inform actions outlined in the Soapweed & Yucca Moth Recovery Plan (Wildlife Obj. 3) and contribute to future species assessments (Wildlife Obj. 7). It will contribute to broader scientific knowledge about populations at range edges through publications and presentation (Wildlife Obj. 6)

Partnerships:

Acadia University, University of Alberta, University of Calgary, World Wildlife Fund Canada, ACA, Alberta Sports, Recreation, Parks and Wildlife, NSERC, Shell Canada.

Deliverables:

Data set of genetic variation in *Yucca glauca* in Alberta and select populations in the US - data has been obtained from 70 samples of *Yucca glauca* (representing 2-7 individuals per population). Sequence data was completed for approximately one-half of the samples (to be completed by summer 2008). Data for the AFLP part of the analyses is underway.

Papers will be submitted for publication once the analysis is complete.

Final GECF Report

GECF History with project:

A related project received funding from the ACA Biodiversity Grants from 2000-2002. Dr. D. Hurlburt received funding in 2003-04 for related ecological studies of yuccas and moths in Alberta.

WMU408 Bighorn Sheep Surveys/Determining Mountain Goat Distribution – Kananaskis Country, Alberta

Project Location: Kananaskis
Identifying Code: 030-00-90-127
Funding Allocation: \$2,000.00

Principal Investigator: TJ Schwanky
Contact Information: Alberta Fish & Game Association
6924-104 Street
Edmonton Alberta T6H 2L7
Email: tj-afga@shaw.ca
Telephone: (780) 437-2342

ACA Grant Status: Completed

Project Summary & Objective(s):

The objective of this project was to count goat, sheep and elk numbers in WMU 408 to assist in better management of these big-game species.

Activities:

The survey consisted of aerial and ground surveys done in the spring, with this project covering 10 hours of flying time. The Alberta Sustainable Resource Development (SRD) wildlife biologist responsible for the area was contacted and agreed to assist and conduct the aerial surveys in order to keep them consistent with past aerial surveys done by ASRD.

Link with ACA Priorities for 2007-2008:

This project collects scientifically credible data on the distribution and abundance of priority species to support their management (Wildlife Obj 2: Species/Pop'n Inventory). This project is an aerial ungulate survey (Wildlife Obj. 5). The results of this project contribute to the maintenance and development of wildlife oriented recreational opportunities (Wildlife Obj 9: Recreational Opportunities).

Partnerships:

ASRD

Deliverables:

An aerial survey for bighorn sheep and elk was carried out (no goats were observed) on several winter ranges in the Canmore Area, included Wind Ridge and Mt Allan-Ribbon Creek (WMU 408) and Pigeon Mountain (within WMU 410). A report has been submitted compiled by SRD area biologist, Jon Jorgensen entitled "Bighorn Sheep Survey of Known Winter Ranges in the Mt Allan – Wind Ridge Area of the Southern Rockies 2007."

A write up about project appeared in the July/August 2007 [The Outdoor Edge](#).

Final GECF Report

GECF History with project:

Funded for similar project in 2005-06.

Operation Grassland Community

Project Location:	Grassland Natural Region of Alberta including the Dry Mixedgrass, Mixedgrass, Northern Fescue and Foothills Fescue subregions
Identifying Code:	030-00-90-107
Funding Allocation:	\$50,869.00
Principal Investigator:	Martin Sharren
Contact Information:	Alberta Fish & Game Association 6924-104 Street Edmonton Alberta T6H 2L7 Email: martin@afga.org Telephone: (780) 437-2342
ACA Grant Status:	Completed

Project Summary & Objective(s):

Operation Grassland Community (OGC) is a habitat stewardship program of the Alberta Fish & Game Association working in the Grassland Natural Region since 1989. OGC works one-on-one with landholders and land managers, and partners to maintain, increase, and enhance native prairie habitats for species at risk, including the Burrowing Owl, the Loggerhead Shrike, and the Sprague's Pipit, and the other associated grassland species. The aims are 1) protecting grassland habitats through 5-year habitat stewardship agreements and habitat conservation strategies with landholders, 2) increasing awareness of prairie wildlife and their habitats, species at risk, human impacts, sustainable agricultural and industrial practices, and habitat conservation initiatives through live presentations, printed, electronic, and other media communications, 3) improving and enhancing the quantity, quality, and sustainability of grassland habitats for cohabiting cattle and multiple species at risk through habitat assessments, wildlife inventories, and the development of beneficial management plans, habitat enhancement projects, and habitat conservation strategies, 4) monitoring trends in Burrowing Owl and Loggerhead Shrike populations through annual censuses with landholder cooperators, and 5) maximizing our program effectiveness through coordination, communication, and partnerships with an increasing network of Government agencies, industry, and other habitat stewardship and conservation organizations working in the Grassland region.

Activities:

1. Long-term protection of wildlife habitat in the grassland region: *Stewardship agreements*: 13 new 5-year voluntary stewardship agreements were developed with landholders, protection of an additional 16,395 acres of native prairie habitat, with an agreement with an Indian Reservation and 2 other agreements pending.
Vauxhall Grassland Conservation Project: Surveys for grassland breeding birds, Burrowing Owls (using call playback) and other raptors, waterbirds, amphibians, and other wildlife were completed. A presentation was given on the results to ~50 members of the Vauxhall Stock Grazing Association on February 25. A draft version of the habitat conservation strategy was presented during a meeting with partners in this project on March 26th and with the final version completed at the end of March.
2. Ongoing growth in awareness of prairie wildlife habitat needs, species at risk, habitat conservation, and sustainable agricultural practices: 51 packages of the "Landowner Conservation Toolkit" series (now 18 fact sheets) were distributed to all landholders visited and to interested individuals at various displays. Various presentations were given to industry, general public, and school groups. Articles were written for the OGC newsletter and for other magazines/newsletters and a radio interview was given. A new promotional brochure was sent to the OGC membership. Contributed to 5 species at risk reports and the State of the Watershed Report for the Milk River.
3. Monitor trends and distributions in Alberta Burrowing Owl and Loggerhead Shrike populations: A total of 145 census cards were received in the mail from members. Participation was 52%.
4. Improve and enhance quantity, quality, and sustainability of grassland habitats for cohabiting cattle and species at risk: *Beneficial Management Plans for Burrowing Owl, Loggerhead Shrike or Sprague's Pipit*: 15 sites were assessed for the burrowing owl, 14 sites were assessed for the

loggerhead shrike and 13 for the Sprague's Pipit. 42 plans have been printed and delivered to the landowners.

Reassessment of the 2003 Burrowing Owl Beneficial Management Plan Sites: 22 sites were reassessed.

Foraging Habitat Enhancement Projects for the Burrowing Owl: projects were completed at 8 wetlands/dugouts within foraging range of 7 Burrowing Owls. Seven were fenced off water points associated with an off-site watering system, and one was strictly a fenced-off ephemeral wetland. The off-site watering system was part of 10-year habitat conservation agreements.

Conversion of cropland to perennial grass: 2 projects were undertaken in collaboration with DUC.

5. Maintain and increase prairie conservation partnerships: OGC participated in many meetings e.g. Prairie Conservation Forum, Milk River Watershed Council, and the Grassland Conservation Working Group to name a few

Link with ACA Priorities for 2007-2008:

Through one-on-one meetings with landowners, OGC promotes conservation easements, or land donations as long-term means of conserving and protecting wildlife habitats (Land Man't Obj 1: Habitat Securement). This project encourages beneficial management practices on members' land to ensure healthy rangelands and increased water quality contributing to the health of the entire watershed. All these practices optimize hunting and fishing opportunities and other recreational pursuits (Land Man't Obj 3: Recreational Opportunities).

Through its participation on various stakeholders groups throughout the prairies, OGC plays an important role in sharing information and identifying wildlife knowledge gaps and conservation needs in Alberta (Wildlife Obj 1: Strategic & Operational Planning). OGC is an active member on the Burrowing Owl provincial and national recovery teams, on the Loggerhead Shrike national recovery team, and will be a member of the provincial Ferruginous Hawk recovery team, which supports Wildlife Obj 3). OGC develops habitat enhancement projects to improve Burrowing Owl productivity and nesting and fledging success (Wildlife Obj 4 & 6). Annual censuses of the Burrowing Owl and the Loggerhead Shrike with OGC members provide information on the status and trend of these populations in the province. In addition, occurrence of these species on members' property are provided to OGC on a voluntary basis to be entered in the Fish and Wildlife Management Information System, which is in turn queried to review that status of these species (Wildlife Obj 7: Status Assessment) Through development of management recommendations and a habitat conservation strategy on the ~60,000 acres of leased lands managed by the Vauxhall Stock Grazing Association, OGC assists in maintaining and enhancing the habitat of multiple species at risk on this grassland landscape. Again, such an approach serves to benefit a suite of species, including important game species (Wildlife Obj 8: Habitat Inventory & Enhancement). It is among the objectives of OGC to maintain and enhance the integrity of native prairie habitats to allow natural processes to occur and biological diversity to be maintained for the benefit of future generations of wildlife viewers, anglers, and hunters (Wildlife Obj 9: Recreational Opportunities). The OGC has an extensive communication program (Wildlife Obj 10: Education & Outreach).

Partnerships:

ACA; Environment Canada - Habitat Stewardship Program for Species at Risk; AFGA ; Alberta Fish and Wildlife Division; Alberta Sports, Recreation, Parks & Wildlife Fund; Private Landholders; ConocoPhillips Canada; Oil & Gas companies with holdings on Vauxhall Grassland Conservation Project lands; Shell Environmental Fund; Science Alberta Foundation; Landholder members of OGC; Canadian Wildlife Service; Medicine Hat Interpretive Centre; Alberta Agriculture & Food; Alberta Public lands and Forests Division; Alberta Environment; Nature Conservancy Canada; Saskatchewan Watershed Authority; Alberta Public Lands and Forests Division; Ducks Unlimited Canada; M.D. of Taber, Vauxhall Stock Grazing Association; Nature Conservancy of Canada-Alberta

Deliverables:

See activities section and for more detailed information see the GECF final report.

GECF History with project:

The project has been supported since 1999 by ACA.

Re-print of Conservation and Hunter Education manuals

Project Location: Coordinated from the Calgary office - Alberta-wide
Identifying Code: 002-00-90-105
Funding Allocation: \$25,000.00

Principal Investigator: Robert A. Gruszecki
Contact Information: Alberta Hunter Education Instructors' Association
911 Sylvester Crescent SW
Calgary Alberta T2W 0R8
Email: robert_gruszecki@ezpost.com
Telephone: (403) 319-2275

ACA Grant Status: Completed

Project Summary & Objective(s):

The project re-printed 15,000 copies of the Alberta Conservation and Hunter Education program manuals. The International Association of Fish and Wildlife Agencies have recognized this manual as the most outstanding of its kind in North America. The Alberta Conservation and Hunter Education program was approved in 1986 for use and for credit in Alberta Junior and Senior High School curriculum. The numbers of students who take the program is about 15,000 each year. Numerous Alberta teachers use a classroom set each year for several years. This program has been available to Albertans for over 40 years.

Activities:

15,000 'Conservation and Hunter Education Manuals' have been printed and received. These manuals have been distributed and are being used in their Conservation Program.

Link with ACA Priorities for 2007-2008:

Through the educational courses offered with this manual, Albertans of both sexes and all ages learn to conserve, protect and enhance Alberta's biological natural resources (Wildlife Obj 10: Education & Outreach). This manual allows for and initiates entry opportunity for Albertans to recognize the significance of Alberta's natural resources. Program participants are educated on the importance of enhancement of habitats that add value to wildlife and fish related recreational opportunities of Albertans (Wildlife Obj 9: Recreational Opportunities). Program participants, consumptive and non-consumptive alike, are taught the value of Alberta's unique biodiversity.

Partnerships:

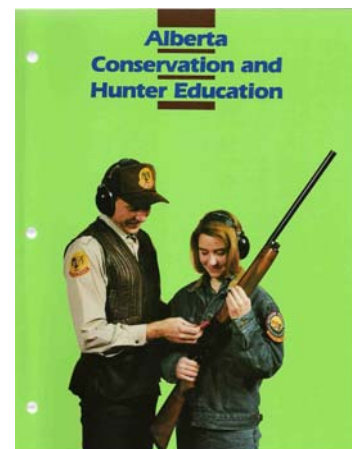
Rocky Mountain Elk Foundation

Deliverables:

15,000 'Conservation and Hunter Education Manuals'
GECF Final Report

GECF History with project:

This project received support in 2004/05, 2005/06, and 2006/07.



Wolverine abundance and habitat use in the Rocky Mountain Parks of Central Alberta, Canada

Project Location: West central Alberta: Willmore Wilderness Park
Identifying Code: 030-00-90-120
Funding Allocation: \$30,000.00

Principal Investigator: Dr. Steve Bradbury/Dr. Jason Fisher
Contact Information: Alberta Research Council Inc.
Bag 4000
Vegreville Alberta T9C 1T4
Email: jason.fisher@arc.ab.ca
Telephone: (780) 632-8305

ACA Grant Status: Completed

Project Summary & Objective(s):

The wolverine (*Gulo gulo*) is a reclusive and wide-ranging scavenging carnivore that has experienced considerable range reduction over the last two centuries. Wolverines inhabit the foothills and boreal plain of Alberta, both areas of increasingly rapid development from forest harvesting and oil and gas activities. Preliminary information from the Alberta Wolverine Experimental Monitoring Project suggests that wolverines occur in very low densities in Alberta - lower than in other jurisdictions to the south, west, and north. The monitoring project also revealed that wolverine habitat is being heavily impacted by human development. Habitat loss is likely the largest parameter affecting wolverine survivorship in Alberta. In an era of unprecedented economic growth, and concomitant habitat loss to fuel this growth, few areas in Alberta remain sufficiently remote and undisturbed to support and protect wolverines. The notable exception is Alberta's network of Parks and Protected Areas.

This project's objective is to answer two main questions: 1) What is the current population estimate of wolverines in Alberta's Willmore Wilderness Park; and 2) Will the area and habitat represented in this Protected Area be sufficient to support a viable population of wolverines? Using previously developed non-invasive monitoring techniques, population viability analysis (PVA) and GIS-based habitat analysis, numbers of wolverines in west central Alberta's Willmore Wilderness Park are estimated, and assessed as to whether this constitutes a viable population for protection. This information will greatly contribute to the currently accumulating body of knowledge on wolverines in Alberta. Under the Species-at-Risk Act, species must be assessed for vulnerability, and have a legal status assigned. Wolverines are currently *data deficient* in Alberta; abundance and distribution data are required for population assessment of this potential species-at-risk, and data from this project will provide some of this vital information.

Activities:

The final survey of 36 monitoring sites was finished March 15, 2008. Camera data obtained as of January 2008 reveal wolverine at 16 of 36 sites this year. A summary of data, and analysis of wolverine occupancy rates, is pending.

Link with ACA Priorities for 2007-2008:

This project focuses on the species-at-risk theme, and specifically addresses the following 2007-2010 program objectives: 1) estimates of wolverine abundance will be provided for a previously unstudied habitat (Wildlife Obj 2: species and population inventory); 2) results from the study will be incorporated in Alberta Park's management plans (Wildlife Obj 3: plan development and implementation); 3) this project contributes to wolverine conservation research due to the statistical rigour with which this project is conducted, and the management recommendations originating from it (Wildlife Obj 6: applied ecological research); 4) the lack of data of *May be at Risk* species in Alberta restricts an appropriate and defensible assessment (Wildlife Obj 7: status assessment); and, 5) the study is located within the boundaries of the Willmore Wilderness Park where wolverine is a trapped species and the park provides opportunities for

back-country users (Wildlife Obj 9: recreational opportunities). This project addresses these issues by providing population assessment information that will then be related to habitat data, to assess wolverine-habitat relationships and identify key habitat attributes for wolverine (Land Management Obj 3: recreational opportunities).

Partnerships:

ARC, ACA, Alberta Tourism, Parks, Recreation & Culture, Alberta Community Development (Parks and Protected Areas) and Parks Canada, ASRD, Foundation for North American Wild Sheep – Alberta Chapter

Deliverables:

This was the second year of a 3-year project.

The 2006-2007 year-end report, which includes analysis of all genetic and camera data, and preliminary analysis of available wolverine data.

The final report, containing all data and conclusions, will be released upon project completion, and is projected for Fall 2009.

Journal publications will result from this project (2009)

GECF Final Report

GECF History with project:

The GECF funded this project in its first year (2006-2007).

Improving Riparian Areas Through Excellence in Information and Community Collaboration

Project Location: Alberta
Identifying Code: 020-00-90-107
Funding Allocation: \$10,000.00

Principal Investigator: Norine Ambrose
Contact Information: Alberta Riparian Habitat Management Society - Cows and Fish
2nd Floor YPM Place, 530 8th street South
Lethbridge Alberta T1J 2J8
Email: nambrose@cowsandfish.org
Telephone: 403-381-5538

ACA Grant Status: Completed

Project Summary & Objective(s):

The goal of this project is to promote excellence in education and outreach to conserve riparian habitats, through collaboration and support to community-led initiatives. This project provides science-based riparian education and outreach tools, using feedback, evaluation and experience to continue to ensure they are the best available. Cows and Fish work with landowners and watershed groups to help maintain, promote and conserve riparian habitats. The specific objectives for this project were to:

- 1) Increase the awareness and understanding of the importance of riparian areas through delivery of riparian awareness messages to Alberta's agricultural producers, as well as other rural landowners, the general public and resource managers.
- 2) Increase the appreciation and understanding of riparian health and the need to maintain or improve management, resulting in healthier riparian areas.
- 3) Provide tools to assist landowners and land managers in understanding how to conserve and improve riparian habitats through their management.

Activities:

Awareness: Focus is on providing riparian ecology and grazing awareness information to rural landowners, producers, resource managers and the public.

Tool Building: Providing good information to those who make land management choices.

Community-based Action: By working with at least 45 groups in the province, facilitation of partnerships that assist local landowners access information, understand available riparian management strategies, and implement or maintain sustainable land-use practices.

Link with ACA Priorities for 2007-2008:

Cows & Fish's main approach is to work with watershed and stewardship groups on riparian areas and their management. These interactions provide the core delivery mechanism for education and outreach that leads to improvements in management to conserve riparian habitats (Fisheries Obj 8: Riparian Conservation Planning). Their aim is to improve the health of the landscape, initiated through improvements to riparian habitats and impacts that our land use and management choices have on these areas (Land Management Obj 3). Cows and Fish is developing a research survey to identify the knowledge gaps and conservation/management perspectives of landowners, land managers, general public and others, related to biodiversity (Wildlife Obj 1: Strategic & Operational Planning). Cows and Fish program delivery is and has been comprised for a large part in the development and delivery of education and outreach, developing tools and materials and evaluating those tools and the program delivery approach (Wildlife Obj 10: Education & Outreach).

Partnerships:

Counties and municipal districts; Producer and Community Groups; Alberta Beef Producers; TUC; Canadian Cattlemen's Association; Alberta Agriculture, Food and Rural Development; Alberta Environment, ASRD; Department of Fisheries and Oceans; Prairie Farm Rehabilitation Administrations (Agriculture and Agri-Food Canada); ACA; Alberta Environmentally Sustainable Agriculture; Alberta EcoTrust.

Deliverables:

Delivered ~ 155 awareness and education activities, such as presentations, workshops, interviews, etc.

Delivered youth presentation entitled "Cows, Fish, Cattledogs and Kids" 36 times.

More than 25 field-based activities were carried out with about 410 people.

The survey for "The Magic and Mystery of fish (Fish 101)" was completed with over 200 surveys returned.

2 training workshops were held with resource conservation staff.

Final GECF Report

For the full list of deliverables see the GECF final report.

GECF History with project:

Financial support for a variety of elements or components has been provided to Cows and Fish since 1998.

Fur Management: Past and Present an Alberta Perspective

Project Location: Alberta
Identifying Code: 030-00-90-104
Funding Allocation: \$10,000.00

Principal Investigator: Jim Mitchell
Contact Information: Alberta Trappers Association
#2, 9919 – 106 St.
Westlock Alberta T7P 2K1
Email: info@albertatrappers.com
Telephone: (780) 349-6626

ACA Grant Status: Extended until June 30, 2008

Project Summary & Objective(s):

In Alberta the grade 4 & 5 social studies program examines the fur trade. This presented an opportunity for the Alberta Trappers Association (ATA) to speak on the topic of animal management and generate a solid respect for our fur resource. ATA delivers a proven fur management education presentation to students about past and present trapping activities and wildlife values. The aim is to develop the student's appreciation for an important fur bearer in Alberta, the beaver. Program delivery consists of a two hour presentation. Prior to the presentation a 25 minute video entitled "Tale of the beaver" (Karvonen films Ltd) is sent to the school for previewing. During the actual presentation a full mount beaver is used to develop a fur bearer appreciation. In addition props such as tanned furs, native baskets and various traps are utilized to showcase our history as well as modern fur bearer management. Thus far the teachers have been accommodating and evaluation documents indicate we are satisfying both ours and the school's needs. At the end of the session the teacher is given pine cones and instructions on how to germinate and plant the seeds for a class project. This fits well with their habitat requirements in the science / ecology field. Not only is this program a direct fit with the history segment of the school curriculum, but there is aspects of food webs and habitat that is discussed. The presentation gives the students an understanding of the need for wildlife management (regulated trapping) and the food web. They gain an appreciation for our fur bearers and develop a greater appreciation for Canada's history.

Activities:

The ATA delivers a fur management presentation to the students discussing the history of the fur trade, animal management and respect and humane trapping to Grade 4 & 5 school children. A new brochure has been developed outlining the program, which is available on-line or by request. All elementary schools in Edmonton were sent a letter and already invitations for us to speak have been received.

Link with ACA Priorities for 2007-2008:

These presentations fit with the Education and Outreach component of the Wildlife program (Wildlife Obj 10: Education & Outreach).

Partnerships:

ATA, Karvonen films, Tolko forest industries (supplying pine cones), ACA and ASRD

Deliverables:

ATA presented to 78 school classes (representing 1909 students)
Final GECF Report

GECF History with project:

This project received ACA Board Special Projects funding in 2005-06 and GECF funding in 2006-07.

A survey of non-native plants in the Front Range Canyons of the Castle

Project Location:	Front Range Canyons of the Castle Special Management Area in southwestern Alberta
Identifying Code:	015-00-90-102
Funding Allocation:	\$2,000.00
Principal Investigator:	Christyann Olson
Contact Information:	Alberta Wilderness Association 455-12th ST NW Calgary Alberta T2N 1Y9 Email: awa.ed@shaw.ca Telephone: 403.283.2025
ACA Grant Status:	Completed

Project Summary & Objective(s):

Early oil & gas exploration, OHV activity, and livestock grazing have caused substantial changes to plant communities along the linear disturbance left by seismic work and other industrial activities. Most of the invading non-native plant species are tame forage species such as Timothy (*Phleum pratense*), Kentucky bluegrass (*Poa pratensis*), and clovers (*Trifolium spp.*), but weeds are also a major problem. Canada thistle (*Cirsium arvense*) and tall buttercup (*Ranunculus acris*) are listed as noxious under the Alberta Weed Control Act and both are common to abundant in the mid to lower reaches of the Front Range Canyons. Non-native plant species are detrimental to native plant communities because they displace desirable native species. For example, rough fescue (*Festuca campestris*), the dominant native grass species on climax plant communities in the Front Range Canyons provides nutritious winter forage to a variety of wildlife including elk (*Cervus elaphus*) and bighorn sheep (*Ovis canadensis*). Conversely, tame forage species provide practically no winter forage because their nutritional value during fall and winter is extremely low. The objective of this project was to study the invasion of non-native plant species in the upper ranges of the Front Range Canyons and identify ways of mitigating their deleterious effects.

Activities:

- The spatial and elevational distribution of non-native plants, focussing on weedy species, has been surveyed and mapped
- Locations where weedy species should be targeted for control and methods for control have been identified.

Link with ACA Priorities for 2007-2008:

By engaging volunteers, this project helps enhance the level of awareness and understanding of conservation issues in Alberta that will promote the use, protection and enhancement of natural habitats and biological populations (Wildlife Obj. 10). Non-native plants, particularly noxious weeds are very damaging to natural systems. They destroy valuable winter wildlife habitat by displacing desirable native species and they damage fish habitat by promoting soil erosion which compromises watershed integrity (Wildlife Obj. 8).

Partnerships:

Volunteers, AWA, Shell Canada

Deliverables:

Report of methods and results including a GIS map entitled: *An Overview of Invasive Species in the Front Range Canyons of Alberta's Castle Wildland*.
Final GECF Report

GECF History with project:

New project for 2007/08

Whitebark pine (*Pinus albicaulis*) regeneration project

Project Location:	Prairie Bluff in the Castle Special Management Area of south-western Alberta
Identifying Code:	030-00-90-117
Funding Allocation:	\$2,000.00
Principal Investigator:	Christyann Olson
Contact Information:	Alberta Wilderness Association 455-12th ST NW Calgary Alberta T2N 1Y9 Email: awa.ed@shaw.ca Telephone: 403.283.2025
ACA Grant Status:	Completed

Project Summary & Objective(s):

Much of the whitebark pine is disappearing across its range in Western North America because of fire suppression, mountain pine beetle, and white pine blister rust. In 2006, whitebark pine was added to the Alberta Natural Heritage Information Centre's (ANHIC's) vascular plant tracking list. Current methods of regenerating whitebark pine are time consuming and expensive because seed is first collected, stored, treated, and in some cases germinated in a greenhouse prior to planting. Historically, Clark's nutcrackers seed planting methods have been successful. Mimicking their methods may provide a cost effective alternative to the more costly methods currently used.

The objective of this project is to investigate cost effective methods of regenerating whitebark pine in south-western Alberta and determine the feasibility of on-site direct seeding of whitebark pine.

Activities:

In 2006 AWA completed 20 surveys on 13 drainages in the study area. Activities for the 2007 field season included: Locating rust resistant cone producing trees; caging some of the cones to prevent harvesting by Clark's nutcracker; Collecting the cones when mature in the fall and harvest the seed; identifying suitable restoration sites; establish plots and plant the whitebark pine seeds mimicking Clark's nutcracker planting methods; and Monitor germination to determine if direct seeding is a viable method of restoring whitebark pine communities. Most of the work would occur during the 2007 season, but monitoring of germination would be done during the 2008 and 2009 seasons.

Link with ACA Priorities for 2007-2008:

This project aims to aid recovery of an ANHIC listed species (Wildlife Obj. 4). Whitebark pine is an important species in the upper subalpine ecosystem because it provides biodiversity at the landscape level, it has a positive impact on watersheds by regulating stream flows, and it provides food, cover, and breeding habitat for various wildlife species (Wildlife Objective 8). The project also enhances the level of awareness and understanding of conservation issues in Alberta that will promote the use, protection and enhancement of natural habitats and biological populations (Wildlife Obj 10: Education & Outreach).

Partnerships:

Volunteers, AWA, Shell Canada

Deliverables:

Project report: *Direct seeding as a regenerating strategy for Whitebark Pine communities in the prairie bluff area of Southwestern Alberta.*

Presentation for outreach activities.

An article in Wild Lands Advocate in 2008.

Final GECF Report

GECF History with project:

This project received funding in 2006/07.

Wildlife Help Line

Project Location:	Alberta-wide
Identifying Code:	002-00-90-108
Funding Allocation:	\$3,500.00
Principal Investigator:	Deb Fettig
Contact Information:	Alberta Wildlife Rehabilitators' Association 699 Deer Park Way SE Calgary Alberta T2J 5L8 Email: dfettig@shaw.ca Telephone: (403) 278-9698
ACA Grant Status:	Completed

Project Summary & Objective(s):

This objective of this project was to provide a single province-wide toll free number operating 24 hours a day, 7 days a week, 365 days a year. An answering service took the calls and directed the caller to the nearest professional wildlife rehabilitator. The answering service was provided by Cititel and the toll-free number was provided by Telus. The first year of operation had been a pilot project funded by the AWRA with surplus funds, but was more successful than anticipated. This grant was to cover the estimated 40% increase in calls and expenses for the period of April 2007 to March 2008.

Activities:

The Wildlife Helpline was operational through the period of the grant and is continuing to operate. The answering service was provided by Cititel Inc. and the Toll-free service was provided by Telus Communications.

Link with ACA Priorities for 2007-2008:

Wildlife Help Line with its link to wildlife rehabilitation helps retain diversity and populations of Alberta wildlife and provides a service to consumptive and non-consumptive users of wildlife and engages them in stewardship of Alberta's wildlife. The Help Line provides access for all Albertans to the education and outreach resources and expertise of wildlife rehabilitators (Wildlife Obj 10: Education & Outreach). Wildlife rehabilitators record all species admitted to their facilities and report each year to SRD. This data may be useful in monitoring or indicating trends in populations, distribution or threats to wildlife (Wildlife Obj 2: Species/Pop'n Inventory).

Partnerships:

Alberta Wildlife Rehabilitators' Association

Deliverables:

An operational Wildlife Helpline, which was far more successful than anticipated. 3321 calls were received. The increase in calls was 75.7% over the same period in 2006/2007 (40% was estimated). This is likely due to the increased advertising for the Wildlife Helpline through media, word of mouth and the listing in all Yellow Pages in Alberta.
Final GECF Report

GECF History with project:

This is the first grant for this project.

Bird Science Events, Educational Opportunities for Albertans

Project Location: Beaverhill Natural Area and communities around Beaverhill Lake
Identifying Code: 002-00-90-106
Funding Allocation: \$6,000.00

Principal Investigator: Chuck Priestley
Contact Information: Beaverhill Bird Observatory
Box 1418
Edmonton Alberta T5J 2N5
Email: charles@ualberta.ca
Telephone: 780-984-6957

ACA Grant Status: Completed

Project Summary & Objective(s):

Beaverhill Bird Observatory (BBO) hosted a spring event, *Big Birding Breakfast*, and hosted a fall event, *Steaks and Saw-whets*. Both of these events were held at the BBO while researchers were conducting their bird banding activities. In addition to these open public events, there were a variety of opportunities for organized groups and members of the public to witness, and participate in, the research and monitoring activities at Beaverhill Lake. In addition, Bird Observatory staff and volunteers travelled to other sites to showcase birds, conservation and wildlife research projects. An example of this was BBO's recent participation at the Bluebird Festival at the Ellis Bird Farm near Lacombe where we spent the day doing a bird banding demonstration for the public. Through these various activities it is our hope that members of the public will learn how and why birds are studied and the importance of long-term monitoring of populations.

Activities:

Two on-site' public events were held at the BBO while researchers are conducting their bird banding activities: the '*Big Birding Breakfast*', a spring songbird migration event, and '*Steaks and Saw-whets*' a fall owl and waterfowl migration event.

'On-site' events were held for structured groups, such as organized visits from Red Deer and Edmonton Naturalist groups.

Presentations were made at the Bluebird festival, John Janzen Nature Centre, NAIT, as well as on site. Also did a banding demo at the John Janzen Nature Centre.

Link with ACA Priorities for 2007-2008:

This project meets ACA's goal to "develop and implement programs to inform Albertans of wildlife values and activities to increase their understanding of wildlife needs" (Wildlife Objective 10). The studies the public were invited to view have stringent study designs and methods that have been peer-reviewed. Further, although this project is education-based, it contributes to a larger program of collecting and interpreting population data on wildlife species using systematic monitoring methods (Wildlife Obj 2: Species/Pop'n Inventory).

Partnerships:

ASRD, Alberta Gaming and Liquor Commission; BBO; Volunteers

Deliverables:

(1) *Steaks and Saw-whets* and *Big Birding Breakfast* events were held at the bird observatory (the events had full attendance). It is estimated that BBO had direct contact with more than 1200 people at the various events off and on site.

(2) Two articles summarizing *Steaks and Saw-whets* and the *Big Birding Breakfast* were written for the BBO website, and included photographs. The *Steaks and Saw-whets* article is still posted at <http://www.beaverhillbirds.com/steaks.php>

(3) The events were advertised on the BBO's website and through posters in public libraries, announcements in naturalist newsletters (Edmonton Nature Club, Calgary Field Naturalists, and Red Deer River Naturalists, and through the media.

(4) Evaluation forms were distributed to the participants of this project. The evaluations indicated that people really enjoyed the events and many indicated they would attend again.

(5) In addition, when BBO received the 'Stewards of the Year' award at a banquet (about 100 participants were there) in Crimson Lake Provincial Park, BBO thanked ACA for all the help that we have received over the years. As was mentioned, BBO would not have been able to do the stewardship activities that it was being recognized for without ACA's support.

Final GECF Report

GECF History with project:

This project received a small grant in 2006/07.

Long-term Songbird and Raptor Monitoring in Alberta

Project Location: Focus is central Alberta; however, owl monitoring is province-wide
Identifying Code: 030-00-90-126
Funding Allocation: \$9,500.00

Principal Investigator: Lisa Priestley
Contact Information: Beaverhill Bird Observatory
Box 1418
Edmonton Alberta T5J 2N5
Email: lisa@beaverhillbirds.com
Telephone: 780-918-4804

ACA Grant Status: Completed

Project Summary & Objective(s):

Beaverhill Bird Observatory (BBO) was established in 1985. Since that time, many bird studies have been conducted, with most of them being long-term monitoring initiatives. The objectives of this project are:

- 1) To continue migration monitoring of songbirds and saw-whet owls,
- 2) To publish papers on BBO's bird monitoring data.
- 3) To continue coordinating our three major volunteer-based programs (Alberta Nocturnal Owl Survey, Alberta Raptor Nest Card Program, BBO Nestbox Program)
- 4) To submit all data from BBO's bird monitoring programs to ASRD for their database and which will assist with bird status determination.

Activities:

Spring Songbird Migration Monitoring – Migration Monitoring occurred from May 1 to June 10, 2007. 44 species were captured, which is slightly higher than previous years with similar net hours. Surprisingly, the number of songbirds captured per 100 net hours during spring migration increased for the first time since 1998. 408 birds were caught in the mist-nets and 318 of these were banded.

Fall Songbird Migration Monitoring - Fall migration at BBO in 2007 was low compared to previous years. After two years of increasing capture rates the number of birds captured dropped to 1079. The capture rate was 30.5 birds/100 net hours, the second lowest rate since 1999. A total of 3534.00 net hours were run, 64.7% of the total 5460 net hours that were possible.

Monitoring Avian Productivity and Survivorship – From June 11 to July 31 2007 BBO staff operated three MAPS stations. 2007 was the slowest year of MAPS banding to date with an average capture rate of 13.8 birds/100 net hours. 120 birds from 19 species were caught in MAPS nets and 80 birds were banded.

Tree Swallow Grid – In 2007, 42 of the 49 available nest boxes had Tree Swallow nests with eggs. An average of 6.3 eggs were laid (range 5-8) and an average of 5.7 young fledged (range 1-7) from each nest. 6.6% of eggs laid in nests with at least one fledged young did not hatch. Only one nest failed and failure was the direct result of cows knocking the box off its post, breaking the eggs.

Alberta Nocturnal Owl Survey – In 2007, there were 184 volunteers surveying 94 routes throughout Alberta. 454 owls were observed.

Alberta Raptor Nest Card Program –135 nest cards from banders and members of the public were received in 2007. Ferruginous Hawk data was analyzed for phenology paper.

Northern Saw-whet Owl Migration Monitoring – Northern Saw-whet Owl fall migration monitoring began on September 12 and was completed on November 14. A total of 49 days were covered amounting to 675.50 net hours. 183 saw-whet owls were caught (capture rate of 27.1 owls/100 net hours), the second highest capture rate since it started in 2002.

Beaverhill Bird Observatory Nestbox Program – 100 nestboxes visited

Link with ACA Priorities for 2007-2008:

This project identifies and/or monitors population size, trends and distribution of bird species, including some Species At Risk (Wildlife Objective 2). All the BBO's data is shared with ACA and with ASRD to help with Status Assessment. Furthermore the project supplies the owl survey data to the National Nocturnal Owl Survey (Bird Studies Canada), and songbird data to Bird StudiesCanada and the national Banding Office. (Wildlife Obj 7: Status Assessment). In 2007, more work was carried out on species and the habitats they occupy (in particular in the owl and nest card programs). As well, more analysis will be conducted on other species monitored by the BBO, including waterfowl (*harvested species*). Finally, this project follows ACA's Strategic Plan to continue delivery of ongoing applied ecological studies (Wildlife Obj. 6).

Partnerships:

ASRD, Canadian Wildlife Service, Environment Canada, STEP and SCPP Nature Canada, Shell Environmental Fund, Manning Diversified

Deliverables:

Data files on all banding data submitted Jan 10, 2008

Data from nocturnal owl survey submitted Mar 12, 2008

Paper on phenology of Ferruginous Hawk completed Feb 25, 2008

Habitat analysis from nocturnal owl survey program completed Mar 11, 2008

Willet/Owl Files – three issues completed

Publications on Short-eared Owl invasion sent to Blue Jay, saw-whet owl band recoveries being edited by other co-authors.

Final GECF Report

GECF History with project:

This project received GECF funding in 2006/07.

Millennium Creek Project – Phase Two – Fish Habitat Enhancement 2006

Project Location:	Cochrane
Identifying Code:	020-00-90-102
Funding Allocation:	\$20,000.00
Principal Investigator:	Guy Woods
Contact Information:	Bow Valley Habitat Development # 5 Glenport Road Cochrane Alberta T4C 1G8 Email: guywoods@telusplanet.net Telephone: 403 – 932-4467
ACA Grant Status:	Completed

Project Summary & Objective(s):

The primary objective of the Millennium Creek Project is to restore the channel and enhance the fish habitat of a small spring creek that has suffered the negative impacts of years of roadside silt loading from transportation and urban development. One of the goals of the project is to demonstrate the ability to successfully complete the reclamation and enhancement of an important feeder tributary to our watershed and fishery, using proven methodology in an environmentally sound and aesthetically pleasing manner. During Phase One of the overall program, a new channel was created during the summer of 2005; in addition, modifications were made to the source springs to increase the annual volume of flow. The largest increase in flow was gained by repairing a culvert crossing Highway 22, next to the uppermost spring. Starting in 2006, a Phase Two Program was undertaken to install structures to help stabilize the channel banks and create fish habitat for the small resident population of brook trout. The creek is also utilized as a wintering stream for juvenile mountain whitefish and trout from the Bow River and Bighill Creek.

Activities:

The 2007 enhancement work program consisted of 5 primary parts:

1. Willow and tree planting along the creek channel and pool habitats.
2. Silt containment and removal measures carried out during the in-stream activities; silt trap pools were cleaned out three times and a new silt trap pool was excavated.
3. Channel modifications to improve and maintain the gradient. Deepened 4 of the v-weir pools built in 2006.
4. Installation of log v-weirs, pool habitats and cover. Built a new by-pass, tamper, log v-weir alignment brackets, 18 plywood slings, 8 rubber tube sand bags, re-bar pin driver, modified and repaired silt fences.
5. Creation of lateral margin habitats and cover.

Link with ACA Priorities for 2007-2008:

The enhancement of fish habitat (Fisheries Obj 8: Riparian Conservation Planning) best exemplifies the Millennium Creek Project, as well as, the protection of our fisheries resource and the habitat in which they live.

Partnerships:

TransAlta Utilites Corp., ACA, the Town of Cochrane, Operational Services Department, Parks and Facilities Division, Inter Pipeline Fund, Bow Valley Habitat Development, Spray Lakes Sawmills Ltd., MGM Developments Ltd., Angel Enterprises Ltd., Shell Canada Ltd., Jumpingpound Extraction Facility.

Deliverables:

The structures that have been built over the 2006 and 2007 season are doing their job and blending into the environment. Willows planted both this year and last are taking root and will over the future years provide both cover for trout and add stability to the channel banks. This project is now three-quarters complete.

The 2007 growing season was a good one for riparian growth and recovery along some of the structures built this season. Both the willows that were planted earlier in the spring and the sod placed around the v-weir pools have come along way in the months since completion. Fortunately, most of the structures were built early enough in the season to witness optimal results by this September.

The v-weir pool habitats that were completed this summer are maintaining depth and the riparian growth around them has recovered quickly over the last few months. The willow fascines that were planted in late July are doing very well with good survival rates for the cuttings.

Trout have now been seen in Millennium Creek.

Published 4 monthly reports.

Final Summary Report



Brook trout in Millennium Creek. *Photo by: Mark Bartlett*

GECF History with project:

This project received a grant in 2005-06 and 2006-07.

Captive Breeding of the Endangered Whooping Crane

Project Location: The Devonian Conservation Wildlife Centre and Nat Christie Whooping Crane Breeding Facility at the Calgary Zoo
Identifying Code: 030-00-90-122
Funding Allocation: \$12,564.00

Principal Investigator: Robert R. Peel
Contact Information: Calgary Zoo
1300 Zoo Road, NE
Calgary Alberta T2E 7V6
Email: bobp@calgaryzoo.ab.ca
Telephone: 403-232-9304

ACA Grant Status: Extended

Project Summary & Objective(s):

Whooping cranes are one of three Canadian bird species listed as globally endangered by the World Conservation Union. Thanks to a long-term co-operative international conservation effort, whooping cranes have come back from the brink of extinction in the 1940s. Although their numbers are increasing, they remain one of the most threatened of the world's 15 crane species with only about 500 individuals in existence. In Canada, whooping cranes breed in Wood Buffalo National Park and migrate south 4000 km to Aransas National Wildlife Refuge in Texas. Successful growth of captive whooping crane populations is essential to sustain reintroductions to secure the whooping crane's future. There are three principle captive-breeding facilities in North America; The Calgary Zoo (26 birds); Patuxent Wildlife Research Center (55 birds); and The International Crane Foundation (35 birds).

Captive population growth depends on breeding success, egg hatching and rearing of young. Low egg-hatching success in captivity restricts the growth of whooping crane populations. Whooping crane captive breeding programs practice multiple clutching during the breeding season. In captivity, females are stimulated to lay another clutch of eggs by pulling the first clutch from the nest to maximize egg production in a given season. These extra eggs require an artificial incubator. The Calgary Zoo breeding program currently uses a Humidaire incubator to incubate sandhill and whooping crane eggs. Unfortunately these incubators are becoming obsolete and need to be replaced. A Kuhl forced-air incubator and a Brinsea Contaq X8 incubator have been recently donated by Shell Canada and Environment Canada. These machines need to be tested to determine if they can be used satisfactorily to replace the Humidaire incubator in the whooping crane captive breeding program.

The specific project objectives are:

1. Test the hatching success and compare microclimates of the Kuhl and Brinsea Contaq X8 artificial incubators to that of the Humidaire incubator.
2. Transport fertile Whooping Crane eggs to the US for reintroduction into a migratory flock and monitor the "Brooder" in terms of maintaining consistent temperature and humidity during transport of eggs.
3. Create a documentary on the captive breeding of the Whooping Crane to educate the public and increase awareness of endangered species recovery programs efforts, partnership and support.

Activities:

Test the hatching success of the Kuhl and Brinsea Contaq X8 incubators: On April 9/07 the Kuhl and Brinsea incubators were turned on for the breeding season. A total of 6 fertile sandhill eggs and 14 fertile whooping crane eggs were laid at the Calgary Zoo this spring. All whooping crane eggs were incubated in the Humidaire incubator (12 of the 14 eggs hatched). Both the Kuhl incubator and Brinsea Contaq X8 incubator were each tested with 3 fertile sandhill eggs during the study. All eggs tested successfully hatched from the both incubators.

Temperature, humidity and egg rotation of natural incubation were collected by placing telemetry eggs in the nest of sandhill and whooping crane pairs. Telemetry eggs were also placed in each of the incubators to compare these variables with natural incubation. Ibuttons were also placed in the incubators, in the brooder box, and near the nest to measure temperature and humidity fluctuations. Observations of crane

behaviour were recorded to insure that the telemetry eggs were recording data accurately during the incubation period.

All the data from the 2007 breeding season has been collected and a draft of the 2007 Crane Report has been completed.

Transport fertile eggs to the US:

Three shipments of fertile whooping crane eggs were transported to the US in the "Brooder" box:

- April 26, 2007, 5 fertile whooping eggs were sent to Patuxent, Maryland for reintroduction into a migratory flock. All of the eggs hatched shortly after arrival, but two had to be euthanized.
- May 10, 2007, 4 fertile whooping eggs were sent to Patuxent. 3 of the 4 eggs successfully hatched.
- May 30, 2007, 3 eggs to International Crane Foundation in Baraboo, Wisconsin. 2 of the 3 eggs successfully hatched.

Documentary Video: Calgary Zoo is currently working with Mount Royal College to produce a video documentary on the whooping crane captive breeding program. Filming began over the summer capturing images of the quickly growing whooping crane chicks. Interviews with staff involved in the program were conducted. Images of the artificial insemination process were captured late March 2008 which kicked off the beginning of the 2008 crane breeding season.

Link with ACA Priorities for 2007-2008:

This project meets the ACA mission to conserve, protect and enhance Alberta's biological natural resources. The focus is to continue the captive management and enhance population viability of this magnificent species through conservation efforts of various partnerships in Canada and the US (Wildlife Obj 4: Species Man't & Enhancement). The knowledge gained from this study may also be beneficial for reintroduction and conservation programs of other avian species.

Partnerships:

Shell Canada; Environment Canada; International Crane Foundation; Patuxent Wildlife Research Centre; The Calgary Zoo Centre for Conservation Research

Deliverables:



The main result from the project is that the new incubators were tested for hatching success with sandhill cranes eggs. Another year of testing will be needed to test incubation parameters in order to fully trust the new incubators with whooping cranes eggs in the future. Egg transportation to the US: The transfer of fertile whooping crane eggs to the US was completed in 3 trips this spring. This year 10 of the 12 eggs transported successfully hatched. Currently, 6 of the 18 whooping cranes in the ultra-light migratory flock were contributed from the Calgary Zoo. The 2 whooping cranes sent to International Crane Foundation were a part of the direct release program.

Documentary Video: The video production was delayed due to the student school year schedule and the time limitations of the whooping crane breeding season. Video production is currently underway.

Final Report: a draft of the 2007 Crane Report is complete. This report includes information on the whooping and sandhill crane breeding program for the 2007 season and detailed information on the analysis of the artificial incubation study, transportation success of eggs to the US and a summary of the video documentary. This report will be presented at the Annual Whooping Crane meeting in September 2008.

Attempts will be made to publish finding and conclusions of this study in 2008.

Final GECF Report

GECF History with project:

This is the first grant for this project.

Riparian Area Interpretive Trail Development at Aspen Ranch Outdoor Education Center

Project Location: Aspen Ranch Outdoor Education Center
Identifying Code: 015-00-90-105
Funding Allocation: \$2,000.00

Principal Investigator: Dante Muzzo
Contact Information: Camps for Children Education Association
2609-6 St
Calgary Alberta T2E 3Z4
Email: demuzzo@cbe.ab.ca
Telephone: (403) 771-0945

ACA Grant Status: Extended until May 31, 2007

Project Summary & Objective(s):

The project objective was to develop a riparian area interpretive trail for the purpose of educating the public on the importance of such areas.

Activities:

The trail has been cut.
Signs were designed and mounted on 4x4 posts.
The self-guide brochure was designed and produced.

Link with ACA Priorities for 2007-2008:

This project meets the goals by helping to preserve, protect, and educate the public on the importance of conservation of wildlife and their habitats in Alberta (Wildlife Obj 10: Education & Outreach).

Partnerships:

Deliverables:

Trail, signs and brochure are completed and on-site.
Final GECF Report

GECF History with project:

This is the first grant for this project.

McGillivray Creek Riparian Mitigation

Project Location: Crowsnest Pass – SW corner of WMU-402
Identifying Code: 015-00-90-112
Funding Allocation: \$22,265.10

Principal Investigator: Glen French
Contact Information: Crowsnest Pass Quad Squad Association
P.O. Box 308,
Bellevue Alberta T0K 0C0
Email: gjfrench@shaw.ca
Telephone: 403-564-5275

ACA Grant Status: Extended until September 1, 2008

Project Summary & Objective(s):

McGillivray Creek drainage is a Class C water system draining into the Crowsnest River. The area is multi-purpose and multi-user containing arterial trails and roads developed primarily for past industrial uses. A permanent facility known as the McGillivray Youth Camp, operated by the Lethbridge Fish and Game Association, as well as a gun range are located in the area. McGillivray Creek was stocked with cutthroat trout in the mid 1980's and evaluated in 1986. It was determined that there was a sustainable establishment of trout in this creek. With Alberta's growing population, approved trail system improvements to the north of Coleman, and the increasing demand for recreational access by RVs, this location is becoming a destination point. This project is established to mitigate the impact of increasing usage through addressing the present riparian damage and taking preventative measure to reduce future impacts. Project objectives are to lessen disturbance of watercourses, provide non-destructive repair and maintenance to bog areas, prevent run off and seepage on the trails from entering watercourses, and provide long term effective trail management for the benefit of all users and the environment. We believe that through education of users, and an effective, responsible trail system, we can encourage users to stay on the trails and be more appreciative of responsible backcountry use.

Activities:

Signage: To identify sensitive areas; encourage users to stay on existing trail systems; education/interpretive component including increasing awareness and responsibility of users.

Assessment: Assessment and evaluation of water crossings, bypass trails, and bog areas will be done involving representatives from ASRD (Lands and Forest, Fish and Wildlife), ACA and Department of Fisheries. Locations of trails signage, bridging has been identified; GPS mapped and put into Forestry GIS data system. Guidelines established to ensure that the work to be performed will meet identified standards.

Reclamation Planting of native seeds on open areas to provide ground cover to reduce future siltation problems due to run off. Closure of existing trails that are being bypassed to move users away from the creek.

Link with ACA Priorities for 2007-2008:

This project carried out assessment and evaluation of water crossings, bypass trails, and bog areas (Fisheries Obj 3: Stream Crossing Evaluation). It mitigates potential future damage to the watershed that will occur with the increasing recreational access demands of a growing Alberta population. This is becoming even more critical with the Crowsnest Pass becoming a recreation and tourism destination (Fisheries Obj 8: Riparian Conservation Planning). Enhance opportunities for hunters, anglers, and other user groups to enjoy wildlife and fish resources in a sustainable manner (Wildlife Obj 9: Recreational Opportunities). Inform and educate users about the biological resources and management (identification of/interpretive signage/stewardship/user responsibility) (Wildlife Obj 10: Education & Outreach). Increase quality of lands available to public for recreational use (Land Management Obj 3).

Partnerships:

Hillcrest Fish & Game Association; Spray Lakes Lumber; ASRD (Lands and Forest); ACA; Prairie Earth Movers

Deliverables:

Heavy rainfall early in the year delayed access to part of this trail system until mid summer when the project then faced forest closure of the Crowsnest Pass effective August 1, 2007. In late September/early October, trail relocation had been completed and bridging installed. Work on the extremely boggy sections was started however it was soon apparent that stabilization work was going fail due to subsurface seepage. It has been determined that a French Drain system will have to be put in place and a geotextile fabric matting will be placed over the affected areas and covered with a gravel layer. Work is to be completed until after spring runoff normally occurring in June. Signage has been purchased and spruce seedlings ordered which will be installed and planted in the same time frame.

Final GECF Report

GECF History with project:

This is the first grant for this project.

Community structure and demography of waterbirds in Alberta's mixedwood boreal forest: relationships with natural and anthropogenic disturbance gradients

Project Location:	North-east Alberta
Identifying Code:	030-00-90-121
Funding Allocation:	\$35,000.00
Principal Investigator:	Glenn Mack
Contact Information:	Ducks Unlimited Canada 100, 18236 105 Avenue Edmonton Alberta T5S 2R5 Email: g_mack@ducks.ca & j_morissette@ducks.ca Telephone: (780) 489-8110
ACA Grant Status:	Completed

Project Summary & Objective(s):

An estimated 12-15 million ducks use the western boreal forest (WBF) during the breeding season. Furthermore, the WBF supports millions of moulting and staging waterfowl (i.e., ducks, geese and swans) annually. Indeed, for waterfowl management and conservation, this region is second only to North America's prairie pothole region and is increasingly viewed as critical habitat for waterfowl. A number of waterfowl species experiencing rapid population declines, notably scaup *Aythya* spp., scoters *Melanitta* spp., and wigeon *Anas americana*, have their core breeding populations in boreal forests. Lastly, loons, grebes, pelicans, herons and many shorebirds, also depend on boreal and boreal transition zone wetlands but factors affecting their abundances and distributions are not fully known. Forests in Alberta's boreal and boreal transition zones are subjected to a variety of natural and anthropogenic disturbances. Fire, insect infestations and variable climatic conditions have produced a diverse landscape characterized by frequent natural disturbance. The region is also affected by industrial activities such as forest harvesting and mining, as well as fire and insect suppression. The speed and scale of industrial development has caused a growing concern for boreal habitats, their people, and the sustainability of activities increasingly at the core of our province's economy. This applied research addresses knowledge gaps concerning the effects of disturbance on breeding waterfowl and waterbirds in northeast Alberta, especially the effects of disturbance on avian community and demographic patterns. This research, which furthers our understanding of the processes underlying these patterns, is of use to waterfowl management and other conservation agencies, government resource and environment departments, and forest managers.

Activities:

Four aerial surveys in 2007 were completed: two surveys for breeding pairs (May, June) and two surveys for broods (June, July).

100% of the data entry resulting from 2007 fieldwork completed.

The necessary GIS processing for harvest and fire data is completed.

95% of the wetland mapping for 2007 data, using a newly developed technique (which will be submitted as a techniques paper).

As this is a three-year project, DUC are processing and cleaning existing data (from prior years) and then will begin data analyses using data collected in all three years.

For the preliminary results see the Final GECF report.

Link with ACA Priorities for 2007-2008:

As well as supporting the scientific basis for the conservation of Alberta's boreal wetlands and associated species and providing good stewardship by working closely with multiple partners to develop scientifically sound conservation plans to ensure habitat and its resources are available for all future generations to

enjoy and use, this project contributes to four of ACA's Wildlife Program objectives and one of ACA's Land Management Program objectives.

More specifically, this project:

- collaborates with private industry and government in Alberta to inform the *development and implementation of plans* to ensure that sustainable land use practices are used for conservation of boreal habitat and species (Wildlife Obj 1: Strategic & Operational Planning)
- conducts *species and population inventories* for 30 species of boreal waterbirds in Alberta's boreal and boreal transition habitats (Wildlife Obj 2: Species/Pop'n Inventory)
- conducts an *applied ecological research study* that is grounded in good science and directly contributes to conservation in Alberta (Wildlife Obj 6: Applied Research/Ecological Studies).
- uses GIS and aerial surveys to produce a wetland *habitat inventory* in NE Alberta (Wildlife Obj 8: Habitat Inventory & Enhancement)
- contributes to the *maintenance and management of wildlife habitat*, in partnership with private industry and government (*Land Management Obj 1*).

Partnerships:

Alberta Pacific Forest Industries Inc.; ASRD; Alberta NAWMP Science Committee; Ducks Unlimited Canada, Western Boreal Program; Environment Canada; Institute for Wetland and Waterfowl Research; NSERC; University of Saskatchewan

Deliverables:

This is the third year of a three year field project, analysis will continue without funding into 2008-09..

The fieldwork component and 100% of the data entry from 2007 fieldwork is completed.

Reports to stakeholders: ongoing.

Presentations at seminars, conferences and workshops: Presented wetland mapping technique to Canadian Cartographic Association and preliminary results presented to WBCI and to EC

Results will be submitted to peer-reviewed journals in 2008-9.

Final GECF Report

GECF History with project:

This project received GECF funding in 2005-06.

Biodiversity of Fungi in Alberta: a Provincial Database

Project Location:	Province-wide
Identifying Code:	030-00-90-115
Funding Allocation:	\$14,500.00
Principal Investigator:	Dr. Markus N. Thormann
Contact Information:	Edmonton Mycological Society 1921 - 10405 Jasper Ave Edmonton Alberta T5J 3S2 Email: mthorman@hotmail.com Telephone: (780) 432-1392
ACA Grant Status:	Extended until June 30, 2008

Project Summary & Objective(s):

This project increases the knowledge of the biodiversity of a poorly understood, but very important group of organisms in Alberta. To date, it is unknown how many fungi occur in Alberta, which is surprising given the crucial roles they perform in all ecosystems. Fungi play important roles in the nutrition and health of almost all plants on earth, perform vital roles in nutrient cycling dynamics, have diverse medicinal values, or are bioremediators in polluted habitats. This project is of great value to fungal researchers, foresters, industry, and medicine and directly improves our knowledge of the diversity and status of fungi in this province. It will also serve as an excellent reference for other natural history societies in Alberta and across Canada.

The specific project objectives are to:

- continue the development of a searchable fungal database with digital images and distribution maps;
- identify fungi of economic, gourmet, industrial, and medicinal values;
- educate Albertans about the values of fungi via the development and disseminate educational materials (poster about medicinal mushrooms of Alberta); and
- identify difficult to identify fungi, which are usually discarded and thereby lost forever following mycological surveys. The likelihood of discovering new species of fungi or uncommon ones is greatest in these often neglected groups of fungi.

Activities:

- 1) developed the searchable fungal database further in 2007-08 and the EMS began the process of designing the features of the web site for the launch of a subset of the polypores (bracket fungi) known in Alberta. Other subsets will be launched thereafter.
- 2) classified fungi in the data base as edible, medicinal, poisonous, etc.
- 3) medicinal mushrooms for the educational poster were selected.
- 4) the Alberta Foray in Lac la Biche was held in August 2007, professional mycologists assisted with the identification of many difficult to identify fungi

Link with ACA Priorities for 2007-2008:

This project increases the knowledge of the biodiversity of a poorly understood but very important group of organisms in Alberta (Wildlife Obj 2: Species/Pop'n Inventory). To date, it is unknown how many fungi occur in Alberta, which is surprising given the crucial roles they perform in all ecosystems. The project has an educational component with the poster educates Albertans about the values of fungi (Wildlife Obj 10: Education & Outreach).

Partnerships:

Edmonton Mycological Society (now known as Alberta Mycological Society)

Deliverables:

Development of a searchable data base – currently in the process of designing the lay-out and features of the data base. The first set of fungal data are to be launched soon (polypores [=bracket fungi]).

Identification of fungi of economic, gourmet, industrial, and medicinal values – This is an ongoing process, but has been completed for the 2007/08 funding period.

Educational poster – An educational poster about medicinal mushrooms of Alberta. The lay-out will follow the poster produced during the previous funding period (“*Some edible mushrooms of Alberta*”).

Identification of difficult to identify fungi – This is an ongoing process but has been completed for the 2007/08 funding period. At the Alberta Foray in Lac La Biche in August 2007, a large number of fungi from that region were identified. Two professional mycologists attended the foray and contributed to the identification of 176 different species of fungi. This was the first extensive fungal foray in the Lac La Biche area to our knowledge and greatly contributed to our understanding of the fungal flora there.

Final GECF Report

GECF History with project:

This project received funding in 2006-07.

The Living by Water Project

Project Location:	Alberta
Identifying Code:	020-00-90-101
Funding Allocation:	\$10,000.00
Principal Investigator:	Kimberley Dacyk
Contact Information:	Federation of Alberta Naturalists 11759 Groat Road Edmonton Alberta T5M 3K6 Email: shorelines@fanweb.ca Telephone: (780) 427-8127
ACA Grant Status:	Completed

Project Summary & Objective(s):

The *Living by Water Project (LbyW)* focuses on the relationship between natural shorelines and shoreline communities by ensuring that permanent and seasonal residents have the knowledge and tools necessary to understand their effect on fisheries, habitat or wildlife resources and water quality in their communities.

Specific project objectives were:

- To raise awareness in the target communities about shoreline and water issues and positive individual actions to protect the shoreline and riparian habitat by delivering presentations/year and implementing a survey of residents' attitudes and knowledge of riparian issues.
- To build more local capacity for stewardship of Alberta's shorelines and riparian environment through training of community volunteers, delivery of *Living by Water* programs and tools
- To support community-based action on shoreline/watershed issues by partnering with related programs and municipalities
- To determine measurable, positive shifts in attitudes about riparian and watershed values, uses and management amongst participating shoreline property owners
- To encourage new households to participate in the Home-site Evaluation Program and undertake at least one action to improve local stewardship
- To monitor and support owners of Shoreline and back-lot properties initially assessed in 2003 to 2005.

Activities:

During the spring and summer months, the Living by Water Project focused on the delivery of the Homesite Consultation Program. FAN successfully hired three student interns. Each was provided with LbyW Intern Induction pamphlets which helped to introduce them to the Living by Water Project and specifically the Homesite Consultation Program. Two of students were then assigned a region of the province in which they would be charged to complete Homesite Consultations. The third remained in office as support to the two field students. The Homesite Consultation Program was available to the following communities: 1. Moose Lake, 2. Lac La Nonne, 3. Nakumun Lake, 4. Sandy Lake and 5. Crane Lake.

See also the deliverables.

Link with ACA Priorities for 2007-2008:

In working with shoreline residents of Alberta's popular recreational lakes, LbyW works towards providing on-the-ground enhancements that result in the responsible participation in the social and consumptive use of fish and aquatic resources by residents while realizing the importance of protecting healthy habitats and ecosystems for both wildlife and fish populations (Land Management Obj 3). LbyW do this by enhancing the condition of riparian habitats resulting from over use by human populations and their resulting cumulative impacts (Fisheries Obj 8: Riparian Conservation Planning).

Shoreline residents can have a substantial impact through simple changes in their actions, within their houses and around their properties and on or in the water, *Living by Water* helps create and preserve healthy waterfront habitat for residents and wildlife – while protecting property values and providing safer and healthier surroundings (Wildlife Obj 8 & 10). These areas are also the preferred recreational and increasingly year-round residences of many urban dwellers. *LbyW* endeavors to educate these residents about their impacts in this sensitive habitat. Only through awareness can residents choose to make the lifestyle choices which are both environment- and wildlife-friendly (Wildlife Obj 10: Education & Outreach).

Partnerships:

Funding Partners 2001-2007: ACA, Alberta Community Lottery Board (CIP), City of Edmonton, Edmonton Community Foundation, Environment Canada, Fisheries and Oceans Canada–Prairie Region, Green Municipal Fund, Health Canada, McConnell Family Foundation, Summer Temporary Placement Program (STEP), TD Friends of the Environment Foundation. Partners – in kind: Alberta Stewardship Network, ASRD, Centre for Sustainable Watersheds, Cows and Fish Program (Alberta Riparian Habitat Management Program), Gull Lake Water Quality Management Society, Healthy Lake Project, Lac La Nonne Watershed Society, Nature Canada, North Saskatchewan Watershed Alliance, Sandy Lake Restoration Society, Summer Village of Birch Cliff, Summer Village of Ross Haven, Sylvan Lake and Watershed Stewardship Association.

Deliverables:

- 1) 3 summer interns were hired to perform homesite evaluations within the communities on Lac Ste Anne county and M.D 87.
- 2) 27 displays and presentations were given to various festivals, shoreline communities and municipalities around the province which served to raise awareness about shoreline and water issues.
- 3) 24 Homesite Consultations completed within the communities of Lac La Nonne, Lake Isle, Nakamun Lake, and Sandy Lake.
 - a. Of the 24 completed evaluations, 8 were secondary evaluations (Lac La Nonne specific).
 - b. Each community received a final report summarizing shoreline activities identified through the homesite evaluation process.
- 4) 7 community volunteers trained in Homesite Consultations.
- 5) Adaptation of LbyW programs for urban lakes was initiated. Program delivery to urban watershed residents occurred in 2 urban lake communities including Lake Beaumaris and Summerside in Edmonton, AB. 4 control lakes have been selected in which no education will occur.
- 6) A volunteer appreciation event was held late December 2006 as thank you for the volunteers time and commitment to the Homesite Program. This event also allowed the volunteers to network with each other and to discuss like problems, concerns and solutions.
- 7) *Introducing Living by Water* booklets were not distributed due to incomplete funding.
- 8) Final GECF Report

GECF History with project:

This project has received support since 2002/03.

Atlas of Breeding Birds of Alberta: Update Project

Project Location:	Alberta
Identifying Code:	030-00-90-103
Funding Allocation:	\$31,000.00
Principal Investigator:	Phillip Penner
Contact Information:	Federation of Alberta Naturalists 11759 Groat Road Edmonton Alberta T5M 3K6 Email: philipp@fanweb.ca Telephone: (780) 427-8127
ACA Grant Status:	Completed

Project Summary & Objective(s):

The main objective of the Alberta Breeding Bird Atlas (Bird Atlas) is to establish a scientifically valid snapshot of bird distribution, breeding evidence and relative abundance for Alberta. Data for this project is added to FAN's Natural History database and the results are being compiled into a final publication, the Atlas of Breeding Birds of Alberta. Through reciprocal data sharing agreements with the Canadian Wildlife Service, ASRD and industry partners, this data is readily available to government resource management agencies for use in environmental assessments, natural areas planning, and the development of endangered species and wildlife management plans. The database is also accessible to naturalists, academic researchers, non-government organizations, environmental consultants and industry.

The four main goals of the project are:

- To involve the community in a conservation project while increasing public awareness and understanding of Alberta's natural history;
- To gain current data on the distribution and relative abundance of Alberta's breeding bird species;
- To conduct data analysis to determine recent changes and patterns in the distribution and abundance of breeding birds species in Alberta;
- To provide baseline data for research, wildlife management plans, and environmental impact assessments.

Activities:

The Bird Atlas project involved the systematic collection of bird distribution and abundance data for all of Alberta over a defined time period (2000-2005) by volunteer birdwatchers or atlasers.

The species accounts were compiled consisting mainly of maps, graphs and tables generated by the analyses with accompanying explanatory text of the results.

Link with ACA Priorities for 2007-2008:

This project has collected scientifically credible data on the distribution and abundance of birds in Alberta to support their management (Wildlife Obj. 2); furthermore, the current Bird Atlas project coupled with the initial Atlas project provide a benchmark for studying provincial breeding bird population trends. Data collected for the Alberta Bird Atlas is currently being applied to species at risk recovery plans compiled by ASRD. Bird Atlas data is also provided via data requests to resource management agencies, environmental consultants, and conservation biologists to develop management and conservation plans, and to identify and design protected areas aimed at protecting birds and their habitats (Wildlife Obj 3 & 7). The Atlas project provides an opportunity for Albertans to become involved with a natural history related activity (Wildlife Obj 9: Recreational Opportunities), and to inform and educate Albertans about wildlife and the natural environment. To assist birders, each spring, FAN facilitates bird identification courses or encourages participation in existing courses. (Wildlife Obj 10: Education & Outreach).

Habitat Inventory Data: Work conducted on this project by University of Alberta researchers verifies habitat conditions existing in a particular area, based on existing biophysical and land use map information (Wildlife Obj 8: Habitat Inventory & Enhancement).

Partnerships:

The following groups have provided financial or in-kind support to the Bird Atlas: Ainsworth Lumber; ACA; Alberta Ecotrust; Alberta Sports, Park, Recreation and Wildlife Foundation; Alberta Sustainable Resource Development; Bailey Bird Fund; Carthy Foundation; Charles H. Ivey Foundation; Federation of Alberta Naturalists; George Cedric Metcalf Foundation; Imperial Oil; Mountain Equipment Co-op; Nexen Inc; North American Waterfowl Management Plan; Shell; Slave Lake Pulp; Summer Career Placement Program; Sundance Forest Industries; Weldwood; and Weyerhaeuser.

Deliverables:

The Bird Atlas project has completed 5 years of data collection with the help of volunteer atlasers across the province.

Database: Over 570,000 bird field observations have been logged in the database in over 3,200 atlas survey squares. Through reciprocal data sharing agreements this data is readily available to government resource management agencies for use in environmental assessments, natural areas planning, and the development of endangered species and wildlife management plans. The database is also accessible to naturalists, academic researchers, non-government organizations, environmental consultants and industry.

Bird-Habitat models were generated.

The data analysis and publication phase of the project has also been completed. *The Atlas of Breeding Birds of Alberta: A Second Look* has been published, featuring more than 270 of Alberta's breeding birds. Volunteers who participated on the atlas project submitted records on paper checklists or electronically using FAN's Personal Birdlist Software. Atlasers have become familiar with these reporting vehicles and continue to use them to submit records.

Final GECF Report

GECF History with project:

This project has been supported since 2002/03.

Blue Bird Project Fort Saskatchewan AFGA

Project Location: Strathcona County
Identifying Code: 030-00-90-133
Funding Allocation: \$1,800.00

Principal Investigator: Jim A Rowlett
Contact Information: Fort Saskatchewan Fish & Game Association
Box 3038,
Fort Saskatchewan Alberta T8L 2T1
Email: jarowlett@shaw.ca, jim.rowlett@bunge.com
Telephone: 780-895-7799

ACA Grant Status: Completed

Project Summary & Objective(s):

The main objective of the project was to get the youth involved in conservation of our wildlife. The project is to fabricate approx. 600 blue bird house kits which will be distributed at the Fort Saskatchewan annual Legacy Park Festival and to any other youth organizations that request bird house kits from us.

Activities:

All materials were purchased for the bird house kits.
300 kits have been distributed to youth in the Fort Saskatchewan area.

Link with ACA Priorities for 2007-2008:

This project will enhance conservation habitat for local song birds by providing more nesting sites for them (Wildlife Obj 8: Habitat Inventory & Enhancement). It will also educate our youth about the importance of preserving wildlife by getting involved in conservation activities (Wildlife Obj 10: Education & Outreach).

Partnerships:

Fort Saskatchewan Fish & Game Association volunteers

Deliverables:

335 bird house kits have been fabricated to date and approximately 350 more kits will be constructed in spring 2008.
Ft Saskatchewan FGA received the Darwin Cronkite Award at the Alberta Fish & Game Association's 100 anniversary convention in Feb 2008. This award is given to the AFGA club with the best bird rejuvenation program. Our birdhouse building program, sponsored by the ACA was a big reason we received this award.
Final GECF Report



GECF History with project:

This is the first grant for this project.

Bird House Construction

Project Location: Hinton area
Identifying Code: 015-00-90-113
Funding Allocation: \$2,000.00

Principal Investigator: Brent Simmonds
Contact Information: Friends of Whitehorse Wildland Park Society
110 Lodgepole Drive
Hinton Alberta T7V 1E4
Email:
Telephone: (780) 865-2141

ACA Grant Status: Completed

Project Summary & Objective(s):

The objective of this project is to re-establish the blue bird population in the Coal Branch and Hinton areas by putting up bird houses.

Activities:

Built 250-300 bird houses.
150 bird houses have been located on metal poles along Highway 40 south to Cadomin
Previously installed bird houses are cleaned in the fall or early spring.

Link with ACA Priorities for 2007-2008:

This project will enhance conservation habitat for local song birds by providing more nesting sites for them (Wildlife Obj 8: Habitat Inventory & Enhancement).

Partnerships:

Deliverables:

250-300 bird houses have been built and 150 of these have been installed.
Only 3 mountain blue birds have used the houses over the course of the project (other species also use the bird houses).
Final GECF Report

GECF History with project:

This is the first grant for this project.

Canadian Heritage River Application Kakwa River Alberta

Project Location:	Kakwa River
Identifying Code:	020-00-90-112
Funding Allocation:	\$2,000.00
Principal Investigator:	Neil Dobson
Contact Information:	Greater Kakwa 10109 - 80 ave Grande Prairie Alberta T8W 1Z9 Email: ndobson@telusplanet.net Telephone: (780) 532-9172
ACA Grant Status:	Completed

Project Summary & Objective(s):

The main objective of this project is to produce a video and an archive of resources to support a Canadian Heritage designation for the Kakwa River. This should result in an integrated management plan among the stakeholders, who then assume a responsibility to maintain the river quality as mandated by the designation.

Activities:

The video has been completed.

Copies have been sent to Hector Goudreau, the Minister for Tourism, Parks, Recreation and Culture, as well as the Deputy Minister, Faye Orr and Assistant Deputy Minister, Bill Werry. A copy has also been sent to Travis Sjovald the Senior Management Planner for Alberta Parks and Protected Areas. It has also been distributed to local Parks and Protected Area officials, as well as in British Columbia.

Link with ACA Priorities for 2007-2008:

The main objective of a Heritage River designation is to maintain or improve riparian habitat (Fisheries Priority). Through a collaborative stakeholder consultation process the identification and effective management plan for sensitive fisheries habitat is top priority and should lead to the long-term sustainability of the Kakwa river fish community (Fisheries Obj 8: Riparian Conservation Planning). The application and the Heritage River process itself records and documents research conducted on the Kakwa River. Through the review and collation of this research known areas of conservation priorities have been identified, such as ungulate wintering and calving grounds, mountain caribou wintering habitat and migration routes, bull trout spawning beds, and grizzly bear habitat (Wildlife Obj 8: Habitat Inventory & Enhancement). The Heritage River designation mandates the formation of an integrated management plan between the stakeholders; the management plan must have as its priority an action plan for dealing with species at risk such as bull trout, Redrock / Prairie Creek mountain caribou herd, and grizzly bears (Wildlife Obj 3: Plan Dev't & Implementation).

Partnerships:

The application has received support documents from Sustainable Resources Parks Division from both the Grande Prairie area and Prince George area in B.C. as well as Talisman Energy. The production of the video is also supported by the former area manager of Sustainable Resource, Grande Prairie.

Deliverables:

Video supporting the application for Heritage River status.
Final GECF Report

GECF History with project:

This is the first grant for this project.

Hunting For Tomorrow Foundation – Working Group Deliverables

Project Location:	Edmonton
Identifying Code:	002-00-90-101
Funding Allocation:	\$9,000.00
Principal Investigator:	Kelly Semple
Contact Information:	Hunting For Tomorrow Foundation # 87, 4003 – 98th Street Edmonton Alberta T6E 6M8 Email: ksemple@huntingfortomorrow.com Telephone: (780) 462-2444
ACA Grant Status:	Completed

Project Summary & Objective(s):

The goals of the Hunting for Tomorrow Foundation are:

1. To increase the number of people participating in hunting and its associated activities within the limits of sustainable wildlife conservation;
2. To maintain and enhance hunting opportunities and experiences in the province such that hunters are encouraged to stay in the activity and new participants are attracted to it;
3. To increase public acceptance of hunting as a traditional outdoor activity that improves awareness of our natural environment, and serves as an important wildlife management tool.

The specific objectives of this project are:

- to increase public awareness of hunting by acquiring and distributing *Leupold Big Game Profiles* DVDs a 13 episode documentary series patterned after a National Geographic special where each episode profiles at least one of the 29 species of native North American big game recognized by the Boone and Crockett Club, the nation's original conservation and record-keeping organization.
- to support youth and first-time hunters, thereby recruiting new participants to hunting.

Activities:

DVDs: Acquired 100 copies (proposed plan was 50 copies, but managed to negotiate better price) of *Leupold Big Game Profiles* DVD, an important new hunting series. Distribution of this product is ongoing; these DVDs are to be used by volunteers and instructors across the Province as a teaching aid about wildlife, wild places and the role of the hunting community in this relationship.

Youth and First Time Hunters Mentorship Program: This, the fifth year of this program, involved consistent coordination both before and during the actual hunts, as well as on-going follow-up with mentorship participants. The program included 4 formal locations and over 36 private locations. The fixed sites are areas that are not generally suitable to be open to the general hunting community (due to issues of access, security, safety, etc.), but have high concentrations of animals, which make them ideal for youth and first time hunters. The 2007 locations included the Edmonton International Airport, the 4 Wing Airport at Cold Lake, the Epcor Genesee Power Plant and the Villeneuve Airport.

Link with ACA Priorities for 2007-2008:

This project encourages hunting as a recreational pursuit on public and private lands (Land Management Obj 3 & Wildlife Obj 9). This project is making an educational aid available to volunteers and instructors across the province and provides a safe and controlled training environment for youth and first time hunters (Wildlife Obj 10: Education & Outreach).

Partnerships:

Partners of the HFTF programme: Alberta Bowhunters Association; Northern Bowhunters Club; Brazeau Bowbenders Club; ACA; AFGA; Devon Fish & Game Gun Club; Fort Saskatchewan Fish & Game Association; Rocky Mountain House Fish & Game Association; Sherwood Park Fish & Game Association; Stony Plain Fish & Game Association; Leduc Fish and Game Club; Medicine Hat Fish and

Game Club; Willow Valley Trophy Club; AHEIA; Alberta Game Warden Association; APOS – Legacy Fund; ASRD; Alberta Trappers Association; Canadian Wildlife Service; Delta Waterfowl Foundation; Foundation for North American Wild Sheep; Pope and Young Club; Retail Sporting Goods Industry; Rocky Mountain Elk Foundation – National; Safari Club International; Private donors

Deliverables:

DVDs: 100 copies of Leupold Big Game Profiles obtained to be used as teaching aid.

Youth and First Time Hunters Mentorship Program: Between Sept 1 and Dec 7, over 261 mentored hunt opportunities took place, which included the following: Designated sites: (Edmonton International Airport, Epcor, 4 Wing Cold Lake and Villeneuve Airport): 142; Waterfowl hunts: 13; First Time Big Game Hunts: Southern Alberta (In partnership with AHEIA, AFGA): 12; First Time Upland Game Hunt: Southern Alberta (In partnership with AHEIA and AFGA): 8; Private mentorship hunts: 86.

Final GECF Report

GECF History with project:

This program has received funding since 2002/03.

The Lakeland Integrated Watershed and Land-Use Planning Project

Project Location:	Lac La Biche
Identifying Code:	015-00-90-107
Funding Allocation:	\$5,000.00
Principal Investigator:	Duane Coleman
Contact Information:	Lakeland County Box 1679 Lac La Biche Alberta T0A 2C0 Email: krystle.fedoretz@lakelandcounty.com duane.coleman@lakelandcounty.com
ACA Grant Status:	Completed

Project Summary & Objective(s):

The Riparian Setback Matrix Model is a scientifically-based, legally defensible model that allows municipalities to take adequate precautions to prevent the most common forms of pollution, instead of establishing arbitrary setbacks. Municipalities that adopt this approach will protect source water (drinking water sources) within their jurisdiction and will ultimately save thousands of dollars on long term water treatment costs for example as well as other benefits. This policy and procedure is in direct synergism with the Municipal Government Act (Section 663 and 664). The specific project objectives include using the matrix to establish Environmental Reserve setbacks that protect the natural areas, wildlife and water quality. Lakeland County would also like to see more municipalities adopt a similar approach to Environmental Reserve setbacks instead of allowing the arbitrary 6m setback to be put into place.

Activities:

Both the *Developers Guide to Riparian Setback Determination* and the *Riparian Setback Matrix Model Backgrounder* have been completed and were both ratified by Lakeland County Council. They are both serving as part of Lakeland County's Land Use Bylaw and are in effect in Lakeland County. The Riparian Setback Matrix continues to be tested and challenged a bit more before it can be deemed finalized.

Link with ACA Priorities for 2007-2008:

Environmental and municipal reserve demarcation creates a buffer around water bodies. The creation of reasonable set-backs aids in nutrient removal. With excess nutrients removed, watershed health will be improved. With this increase in watershed health, an increase in fisheries health will result. The local fishery has experience a recent depression. The local fishery provides an excellent recreational opportunity, further contributing the goals/priorities of the ACA (Fisheries Obj 8: Riparian Conservation Planning).

Partnerships:

ACA, Lakeland County, Aquality Environmental Consulting, Public Lands, and Local Stakeholders

Deliverables:

The deliverables for this project include the creation of Lakeland County policy, and two documents: The *Riparian Setback Matrix Model Backgrounder* (<http://www.laculabichedcounty.com/Planning/RSMM%20Backgrounder.pdf>) A *Developers Guide To Riparian Setback Determination* which explains the matrix and the science behind it. (http://www.laculabichedcounty.com/Planning/Developers_Guide_To_The_RSMM.pdf) The matrix was presented it at the "Sustainable Community and Development Conference" Final GECF Report

GECF History with project:

This is the first grant for this project.

Ecology, behavior, and conservation of mountain goats in Alberta

Project Location:	Caw Ridge, west central Alberta
Identifying Code:	030-00-90-123
Funding Allocation:	\$18,991.00
Principal Investigator:	Dr. Steeve D. Côté
Contact Information:	Laval University Department of Biology, Laval University Québec Québec G1K 7P4 Email: steeve.cote@bio.ulaval.ca Telephone: (418) 656-2131 ext. 3490
ACA Grant Status:	Completed

Project Summary & Objective(s):

Based on the long-term study of mountain goats at Caw Ridge and aerial surveys of several populations that have been subjected to different management regimes throughout Alberta, specific project objectives are to:

- a) measure variation in individual survival and reproductive success in both sexes.
- b) identify the causes of this variation (linked to density dependence, climate, fecal crude protein, Normalized Deviation Vegetation Index (NDVI)).
- c) quantify variation in survival and population sex-age structure among years.
- d) assess the effects of current reproduction on foraging behavior, survival, growth, and future reproductive success in adult females.
- e) document the reproductive strategies and reproductive success of males using genetic markers.
- f) identify the factors (including hunting) that affect population size and that are therefore important for management.
- g) monitor the dispersal of juvenile goats.
- h) examine whether mountain goats can habituate to helicopter and all-terrain-vehicle traffic.

Activities:

In 2007, 22 previously unmarked goats were caught (in remotely controlled Stevenson's box traps to capture goats with salt blocks inside the traps for bait), marked and released and 21 marked goats, were recaptured for a total of 43 captures. If kids are excluded, as they are only marked when they are at least 1-year-old, the proportion of marked goats was 99%.

Captured goats are weighed, measured, and adults aged by counting the horn annuli

Six new radio collars were fitted on 2-year-old males.

A total of 217 weights were recorded in summer 2007 of individuals of varying age-sex classes, including kids, compared to about 30/year before.

The study area was censused daily (weather permitting and if trapping operations weren't being carried out). Goats were located visually or by following signals from radiocollars. Groups were observed with spotting scopes, and the following information was recorded:

- 1) Location (UTM) of the groups, habitat type (cliff, grassy slopes, rocky slopes, open forest), and estimated distance from escape terrain and forest.
- 2) Group size and composition (identity of marked goats; unmarked goats are classified as adult males or females, 2 year-old males or females, yearling males or females, or kids).
- 3) Reproductive status of marked females (presence/absence of a kid, sex of the kid, or whether the female is followed by a yearling or a 2-year-old).

In alpine environments, the growth of animals is tightly linked to seasonality. The researchers used the Normalized Difference Vegetation Index (NDVI) - a satellite-based measurement that correlates strongly with above-ground net primary productivity - to explore how annual variations in the timing of vegetation onset and in the rate of change in primary production during green-up affected juvenile growth.

Data were recorded on the foraging behavior and habitat use of lactating and non-lactating females during the summer.

In 2005 and 2006, more than 10 years after initial assessment of helicopter impact on mountain goats, goat behavioral responses to helicopter flights were recorded. The research confirmed that mountain goats are more sensitive to disturbance by helicopters than other ungulates. In addition, goat responses to ATVs were also recorded, as the frequency of people driving ATVs has increased in Caw Ridge from about 30-40 ATVs/summer in 1994-95 to >400/summer in 2005-2007. Goat responses to ATV groups were recorded on 106 occasions during the last three summers.

Link with ACA Priorities for 2007-2008:

This project meets the ACA Wildlife Program Priorities focusing on the thematic area of ungulates through science-based conservation. This research program provides the only long-term management and conservation-related research on mountain goats in North America (Wildlife Obj 1: Strategic & Operational Planning). Since 1997, this work has formed the basis for establishing the minimal population parameters necessary to re-open the mountain goat hunting season in Alberta and to avoid conservation problems like those that occurred in the recent past in the province (Wildlife Obj 1 and 4). This work has provided the bulk of new information that was incorporated into the "Management Plan for Mountain Goats in Alberta" and led to many scientific publications (Wildlife Obj 1, 2, and 3). More specifically, this research is 1) quantifying the sightability of mountain goats during aerial surveys, the basic inventory technique used throughout mountain goat range, 2) increasing the awareness of the impact of heliportable-seismic programs on mountain goats in Alberta and throughout the species distribution in North America, 3) investigating the effects of hunting mortality of females and monitoring the long-term reproductive success and survival of marked females and males, 4) determining the timing and causes of juvenile and adult mortality, 5) surveying the different goat herds annually, providing accurate population trend information and analyzing the factors contributing to recovery or lack of recovery of these herds since the closure of hunting in 1988, and 6) documenting the effects of low numbers of males in a herd on population dynamics (Wildlife Obj 1, 2, 3 and 4). All this new information is extremely important to the re-establishment of sustainable hunting and conservation of mountain goats in Alberta (Wildlife Obj 4: Species Man't & Enhancement).

Partnerships:

Laval University, University of Sherbrooke, ACA, NSERC, and the Alberta Fish & Wildlife Division.

Deliverables:

The Caw Ridge study is the leading research project on mountain goats in North America, as demonstrated by the number and quality of publications that have resulted from this work, by its value in training graduate students and by the frequent references to this study found in the Management Plan for mountain goats in Alberta.

A monograph on the ecology and behavior of mountain goats (13 chapters, 265 pages; Festa-Bianchet and Côté 2008) has recently been published by Island Press. This book is entirely based on research conducted at Caw Ridge and it will become the leading international publication on mountain goat ecology. This is the first scientific book on mountain goats. This book uses a lot of new ecological data to support its message on conservation of mountain ungulates. It is written to reach both a professional and a general audience. The paper about the effects of variation in the onset and the rapidity of vegetation growth (using NDVI data) on juvenile growth and mortality was published in 2007 in the prestigious journal *Ecology*. Another paper looking at genetic variation in MHC diversity in mountain goats has been published in *Conservation Genetics* in 2007. Two papers on the effects of current reproduction on the foraging behavior of females were published: one on the patterns of habitat use of females in relation to escape terrain and quality of foraging sites in *Canadian Journal of Zoology*, and one on the trade-offs in activity budget between lactating and non-lactating females in *Animal Behaviour*. Two manuscripts on the mating system of mountain goats have recently been accepted in *Behavioral Ecology and Sociobiology* and in the *Journal of Mammalogy*. A manuscript on the foraging behavior and mass gain of lactating and non-lactating females, demonstrating a trade-off between growth and lactation, was submitted to the *Journal of Animal Ecology* in October. A note on the validation of NDVI was submitted to *Ecology* in January and a manuscript comparing the foraging behavior of male mountain goats and bighorn sheep during the rut was submitted to *Behavioral Ecology and Sociobiology* in February. Finally, 6 scientific

communications have been presented on the results of the Caw Ridge study this year. All scientific communications are listed below.

Scientific publications from the Caw Ridge research published or submitted in 2007-2008:

- Mainguy, J. and S.D. Côté. Age- and state-dependent reproductive effort in male mountain goats, *Oreamnos americanus*. Behavioral Ecology and Sociobiology, in press.
- Mainguy, J., S.D. Côté, É. Cardinal and M. Houle. Mating tactics and mate choice in relation to age and social rank in male mountain goats. Journal of Mammalogy, in press.
- Festa-Bianchet, M. and S.D. Côté. 2008. Mountain goats: ecology, behavior and conservation of an alpine ungulate. Island Press, Washington.
- Hamel, S. and S.D. Côté. 2008. Trade-offs in activity budget in an alpine ungulate: contrasting lactating and non-lactating females. Animal Behaviour 75: 217-227.
- Hamel, S. and S.D. Côté. 2007. Habitat use patterns in relation to escape terrain: Are alpine ungulate females trading-off better foraging sites for safety? Canadian Journal of Zoology 85: 933-943.
- Pettorelli, N., F. Pelletier, A. von Hardenberg, M. Festa-Bianchet and S.D. Côté. 2007. Early onset of vegetation growth vs. rapid green-up: impacts on juvenile mountain ungulates. Ecology 88: 381-390.
- Mainguy, J., K. Worley, S.D. Côté and D.W. Coltman. 2007. Low MHC DRB class II diversity in the mountain goat: past bottlenecks and possible role of pathogens and parasites. Conservation Genetics 8: 885-891.
- Hamel, S. and S.D. Côté. Foraging decisions in a capital breeder: trade-offs between mass gain and lactation. Journal of Animal Ecology, submitted October 2007.
- Hamel, S. and S.D. Côté. Maternal defensive behaviour and golden eagle predation in mountain goats. Western North American Naturalist, submitted December 2007.
- Hamel, S., M. Garel, M. Festa-Bianchet, J.-M. Gaillard and S.D. Côté. Spring NDVI correlates with fecal crude protein in mountain ungulates. Ecology, submitted January 2008.
- Pelletier, F., J. Mainguy and S.D. Côté. No rest for rutting male ungulates: activity budgets support an energy-maximizing strategy. Behavioral Ecology and Sociobiology, submitted February 2008.

Scientific communications of the Caw Ridge study presented in 2007-2008:

- Hamel, S. and S.D. Côté. 2008. Compromis entre la croissance et la lactation chez la chèvre de montagne. 28th Annual Meeting of the Centre d'études nordiques, Québec, Canada, January 2008. Prize for the best student presentation.
- Hamel, S., J.-M. Gaillard, M. Festa-Bianchet and S.D. Côté. 2007. Hétérogénéité individuelle et variation du succès reproducteur maternel chez les ongulés. 32nd Annual Meeting of the Société Québécoise pour l'Étude Biologique du Comportement, Laval University, Québec, Canada, November 2007.
- Mainguy, J., S.D. Côté, M. Festa-Bianchet and D.W. Coltman. 2007. Succès reproducteur des mâles et effets paternels chez la chèvre de montagne. 32nd Annual Meeting of the Société Québécoise pour l'Étude Biologique du Comportement, Laval University, Québec, Canada, November 2007.
- Hamel, S., J.-M. Gaillard, M. Festa-Bianchet and S.D. Côté. 2007. Individual heterogeneity and variations in reproductive success in female ungulates. 44th Annual Conference of the Animal Behaviour Society, Burlington, VT, USA, July 2007.
- Côté, S.D. 2007. L'étude à long terme de la reproduction et du comportement des chèvres de montagne de l'Alberta. Laval University, Québec, Canada, April 2007.
- Hamel, S. 2007. Les compromis de la reproduction et l'influence de l'hétérogénéité individuelle chez les grands ongulés. Groupe de recherche sur les ongulés sauvages, CNRS, Université Claude Bernard – Lyon 1, Villeurbanne, France, March 2007.

GECF History with project:

This project has been supported since 2004/05.

Boreal Forest Bird Research

Project Location: Lesser Slave Lake Provincial Park and Lesser Slave Lake Watershed
Identifying Code: 030-00-90-106
Funding Allocation: \$15,000.00

Principal Investigator: Patti Campsall
Contact Information: Lesser Slave Lake Bird Observatory
Box 1076
Slave Lake Alberta T0G 2A0
Email: boreal.educator@borealbirdcentre.ca
Telephone: (780) 849-8235

ACA Grant Status: Completed

Project Summary & Objective(s):

The vision for the Lesser Slave Lake Bird Observatory (LSLBO) is to “promote bird conservation through education and research”. The LSLBO has been monitoring bird migration in the Slave Lake area since 1994 and to date over 46,000 birds have been banded as a full member of the Canadian Migration Monitoring Network. The primary research objectives are to document population status and trends of avian species. Changes in distribution, status, productivity and survivorship serve as an “early-warning system” for environmental problems and as an indication of general trends in biological diversity. While initial research programs focused on migration monitoring of songbirds, the LSLBO has since expanded their research to include the Monitoring Avian Productivity and Survivorship (MAPS) program looking at breeding birds in the area, and specific species studies on the Canada Warbler and Northern Saw-whet owl.

With the opening of the new Boreal Centre for Bird Conservation (BCBC), an objective is to expand the education and outreach stewardship programming this year. Collaborative efforts with the Lesser Slave Forest Education Society (LSFES) has increased, enabling the LSLBO to offer joint curriculum based fieldtrip and classroom programs plus take part in a Boreal Forest Discovery Camp. The LSLBO hired an educator to assist with summer programming. The new Boreal Centre serves as a first class research field station for scientists wanting to study the boreal forest.

Activities:

Bander in charge and an assistant bander were hired to deliver the research programs for 2007:

- successfully completed 14th year of migration monitoring in the Slave Lake Area, which represents one of the longest continuous avian population databases in the boreal forest. Preliminary population trend analysis and curves have been completed by Bird Studies Canada for the LSLBO data set.
- Spring Migration Monitoring program took place from April 23 – June 10, 2007. 1085 birds were banded represented one of our busiest spring seasons. In addition, there were 113 recaptures. Good weather allowed for mist nets to be operated 87.7% of the spring migration period. Daily estimated totals of migratory birds were also completed using visual and auditory counts.
- Fall migration monitoring program took place from July 12 to Sept 30, 2007. 1412 birds were banded representing 58 different species and forms. Banding numbers were lower than average, but this was typical of most Canadian Banding stations for this fall.
- All spring and fall migration monitoring data has been forwarded to the Canadian Wildlife Service.
- MAPS program commenced June 11- Aug 2, 2007. 4 net sites were visited 6 times each. A total of 237 birds were banded as well as 79 recaptures. All data was forwarded to Institute of Bird Populations at the Point Reyes Station, California.
- Significant effort was invested in the LSLBO Canada Warbler study this summer. 9 breeding pairs were identified within the study area and 5 nests were successfully monitored for breeding behaviour and reproductive success.

- Northern Saw-whet Owl Fall Migration Monitoring Program continued for the fourth year. Banding took place from Aug 22 to Oct 20, 2007. 108 owls were banded plus one foreign recapture originally banded in Fall 2006 by Millet, AB. A Barred owl, a new species for the LSLBO, was banded during this program.
- In addition, the LSLBO has initiated several new research projects including:
 - Corticosterone levels of Canada Warblers
 - Timing and duration of flight feather molt in wood warblers
 - Warbler biometric study Canada Warbler breeding ecology
 - Video surveillance study to assess mist net capture success rates.
- The BCBC hosted a banding workshop by Peter Pyle (May 2007) and the 6th General Meeting of the Migration Monitoring Network (Oct 2007)
- LSLBO research programs were highlighted in a National Geographic Wild Chronicles episode on the Boreal Forest. http://podcastmedia.nationalgeographic.com/wildchronicles/pc86_Protecting_Boreal.mp4

Education Program:

- With the new BCBC, the LSLBO education programs have been increasing at a rapid rate. Since last year, there has been a 64% increase in our participation rate for the Environmental Education Program, largely due to the increased exposure of the BCBC and the education partnership with the LSFES.
 - Over 9300 participants in both formal and informal educational programs delivered by BCBC staff.
 - 5636 people visited the new boreal centre to learn about the importance of the boreal forest for migratory birds.
 - The partnership with the LSFES has continued for a 2nd year; a shared contract educator assisted in the delivery of curriculum-based fieldtrip & classroom presentations to regional school children.
 - Several events were held at BCBC, such as the 1st Home Energy Alternatives Tradeshow and the 13th Annual Songbird Festival, as well as other special events.
 - Current curriculum based resources are being made available to interested educators and other banding stations across Canada.
- The LSLBO website (www.lslbo.org) was updated and links created to the newly created BCBC website (www.borealbirdcentre.ca). A virtual tour and an interactive bird banding activity were added to the site and a link to the ACA website was also created.

Link with ACA Priorities for 2007-2008:

As a globally significant Important Bird Area, the Lesser Slave Lake Region IBA Conservation Plan mandates the LSLBO and its partners to facilitate and promote riparian habitat and bird conservation efforts. This project supports a long term population monitoring program on landbirds and waterfowl in the boreal forest ecosystem. As the northern-most member of the Canadian Migration Monitoring Network, the LSLBO has provided 13 years of population trend information to Bird Studies Canada and the Canadian Wildlife Service. Analysis of the data collected by the network provides information on species population trends, migration patterns, breeding ranges, and identifies species that may be at risk (or on the rise) (Wildlife Obj 2: Species/Pop'n Inventory).

Landbird and Waterfowl monitoring programs provide wildlife and landuse managers and industry planners with information on population status and trends that help define appropriate conservation actions, assess the success of conservation initiatives, or indicate when populations are healthy and no action is needed. All data is publicly available to assist in making management decisions (Wildlife Obj 4: Species Man't & Enhancement).

Through community outreach programs, on-site information and education programs, fee for service tours, and site infrastructure, LSLBO enhance and deliver opportunities for non-consumptive users to enjoy Alberta's wildlife (Wildlife Obj 9: Recreational Opportunities). The Boreal Educator, as well as LSLBO Field Staff, deliver information and education programs to Lesser Slave Lake Provincial Park users; walk-in visitors to the research site; school groups; community groups; University fieldtrip classes; bus tours; and other organizations and individuals that focus on bird conservation issues and the research of the LSLBO. The Boreal Educator works with the LSFES to deliver education programs in

schools in Slave Lake, Smith, Wabasca, High Prairie and outlying communities (Wildlife Obj 10: Education & Outreach).

Partnerships:

Alberta Community Development/Parks and Protected Areas Division; Canadian Wildlife Service; Manning Forestry Research Trust Fund; Alberta Lottery Fund; West Fraser Timber; STEP-Summer Temporary Employment Program; Bird Studies Canada; Nature Canada; Federation of Alberta Naturalists; North American Bird Conservation Initiative; Partners In Flight; HRDC – Summer Career Program; Northern Lakes College; Tolko Industries Ltd.; Vanderwell Contractors Ltd.; Lesser Slave Forest Education Society; Forest Resource Improvement Association of Alberta.

Deliverables:

The *2007 LSLBO Annual Report* was completed in December 2007 and compiles all data collection. The first LSLBO peer-reviewed paper for the warbler study was published in Dec 2007 in the Wilson's Journal of Ornithology (Migration Timing of Canada Warblers near the Northern Edge of their Breeding Range, D. T. Tyler Flockhart).

The *2007 Boreal Educator Report* outlines the various education programs implemented this year. All proposed updates to the websites were completed as planned.

All proposed updates to the websites (www.lslbo.org and www.borealbirdcentre.ca) were completed as planned.

Final GECF Report

GECF History with project:

LSLBO has had support from ACA since 1999 and from the GECF since 2002/03.

Recreation and wildlife in the Rockies of Southwestern Alberta: Human Use and its effects on wildlife, fisheries and regional connectivity

Project Location:	Livingstone River Valley, north of Crowsnest Pass in Southwestern Alberta
Identifying Code:	030-00-90-108
Funding Allocation:	\$20,000.00
Principal Investigator:	Michael Quinn
Contact Information:	Miistakis Institute for the Rockies c/o Environmental Design 2500 University Dr. NW Calgary Alberta T2N 1N4 Email: quinn@ucalgary.ca Telephone: 403-220-7013
ACA Grant Status:	Completed

Project Summary & Objective(s):

This study aims to analyze the relationships between human use of trails, with a particular emphasis on OHV use, and wildlife movement. The results will be used to determine human trail use and access thresholds with respect to habitat fragmentation, and will contribute to regional land-use management that includes considerations for the maintenance and restoration of ecological connectivity while providing for appropriate levels of human use.

The specific project objectives are:

- Determine wildlife and human use of OHV trails in the study area using remote cameras and counters,
- Examine the in-stream effects of roads and trails (stream crossings) on fish habitat and connectivity,
- Quantify the spatial and temporal relationships between OHV use and wildlife (including fish) use,
- Use the information in developing a land-use model for access management and regional wildlife connectivity,
- Communicate with relevant land managers, recreational and community groups to ensure that the information contributes to regional decision-making.

Activities:

This year's field season was successful despite some delays and requirement for sampling modification due to forest closure (due to extreme fire hazard) in August 2007. The previous four field seasons have allowed the Miistakis Institute to conduct preliminary analysis, and generate adequate sample sizes required to statistically determine the spatio-temporal relationship between human uses of the landscape and wildlife use. Current efforts are focused on comprehensive data analysis, report writing and results dissemination. Time and resources are currently being dedicating to analyzing collected data and compiling results into reports, manuscripts and presentations for wide dissemination.

Link with ACA Priorities for 2007-2008:

This project meets goals and priorities of the ACA Fisheries Program, Land Management Program and Wildlife Program for 2007-2010. One of the main goals of this research project is to better understand Human/Wildlife interactions with regards to connectivity and wildlife movement through the use of recreational trail systems (both human and wildlife). Results from this research contribute to identifying human activity and access thresholds to wildlife disturbance and identify wildlife responses to various recreational demands (Wildlife Obj 9: Recreational Opportunities). These results may be used to recommend measures to mitigate human and wildlife interactions. Project activities contribute to the following elements of the wildlife funding priority: Wildlife Obj 2 (Species and population inventory), Wildlife Obj 6 (Applied research /ecological studies), Wildlife Obj 8 (Habitat inventory and enhancement),

and Wildlife Obj 9 (Recreational opportunities). In addition, this work is now moving forward towards implementation of planning processes based on the research.

This research is also relevant to the Land Management program specifically Objective 3 (Recreational Opportunities). There is the potential for increasing use and increasing conflict between different types of users at the Livingstone Range and over the past few years, recreational use in the Livingstone has been increasing significantly. Access management resulting in restricted OHV use in other areas peripheral to Calgary (Ghost, Waiprous, Big Horn Wildlands) has resulted in increased OHV use in the Livingstone area. A better understanding of human use in the area will also contribute to the long-term sustainability of recreational activities.

The area also supports a prime catch-and-release fishery which may be negatively affected by the increasing landscape disturbance both ecologically (due to stream crossings and sedimentation) as well as socially (as a result of over-crowding and user group conflicts). Therefore, this project makes a contribution to understanding cumulative effects under the Fisheries Program and contributes to adaptive fisheries management, specifically this work contributes directly to Objective 3 (Stream Crossing Evaluation).

Partnerships:

Woodcock Foundation, Shell Canada, Suncor Foundation and Alberta STEP.

Past project partners (2003-2006) include: Earthwatch Institute; University of Calgary; Alberta Environment; Suncor Energy Foundation; ACA; Woodcock Foundation; Shell Canada



Photo taken with remote camera by Miistakis Institute

Deliverables:

Deliverables include a progress report including reporting and analysis of data collected in the 2007 field season highlighting the relationships between human use and wildlife. Long-term deliverables include an article submitted to the scientific literature which will include detailed analysis on recreation and wildlife use in the Livingstone Range as well as a comprehensive report (expected completion date January 2009)
Final GECF Report

GECF History with project:

The project has been supported since 2003-04.

Developing a Web 2.0 Prototype to Promote Sustainable Decision-making About Recreational quality Group Use and the Ecological Health of Protected Habitats

Project Location: Primarily Kananaskis Country (Cypress Hills and Fish Creek Park)
Identifying Code: 015-00-90-110
Funding Allocation: \$10,000.00

Principal Investigator: Dr. Barbara McNicol
Contact Information: Mount Royal College, Department of Earth Sciences
4825 Mount Royal Gate SW
Calgary Alberta T3E 6K6
Email: bmcnicol@mtroyal.ca
Telephone: (403) 440 6175

ACA Grant Status: Completed

Project Summary & Objective(s):

The project involves the creation of a new media resource, i.e. Web 2.0 resource, and decision-making mechanism to assist with the management, recreational use and stewardship of Alberta Provincial Park protected habitats. The Web 2.0 resource targets three goals:

1. To provide managers, staff and stewardship groups in Alberta with the means to collect and/or examine empirical data and information on the nature, use and effects of large groups.
2. To target a selection of diverse user groups directly by providing opportunities to access commercial and group permits while promoting sustainable decision-making regarding protected habitats.
3. To highlight key risks to recreational and ecological health of park environments through information and implementation of sustainability indicators and indices.

The specific objectives are to create two Web 2.0 Prototypes, one for Kananaskis Country and one for the Dinosaur Provincial Park (Dinosaur PP changed to Cypress Hills with Fish Creek Park added later), which provides management- and visitor-friendly interfaces that promote sustainable decision-making. The Web 2.0 resource prototypes are being framed as participatory devices with interfaces designed for parks managers and staff, for educators, and sectors of the general public. The outcomes generated will increase interaction with, decision-making about, and the collection of data that describes park usage and habitat conservation. Risk management and responsible visitor behaviours will be promoted and advanced as a part of project outcomes.

Activities:

The original plan was that two prototypes of the Web 2.0 Resource would be developed for Dinosaur Provincial Park and Kananaskis Country. It was determined that Dinosaur PP was not initially suitable. Cypress Hills was chosen as a replacement and later Fish Creek Park was added as a new site. The focus has been primarily on Kananaskis Country.

A comprehensive review of the literature and discussion of sustainability and conservation behaviours has been completed.

The prototype for Kananaskis is complete and proceeding.

The 'Proof of concept' and validation for these indicators is being undertaken by Cypress Hills and Fish Creek parks staff continued into the spring.

The creation of the prototype includes completed academic work, sketches and modifications to sketches for the web resource, and consultations with the GoA, parks staff, K-12 educators, and the Calgary Board of Education (CBE).

Activities, with the exception of final programming and functional testing, have been achieved.

Link with ACA Priorities for 2007-2008:

The project crosses Land Management, Fisheries and Wildlife Program funding priorities. The Web 2.0 Resource may be particularly useful in the: communication of species recovery or management plans, management of consumptive and non-consumptive use and users, the identification and communication of priority habitats, recreational opportunities and education and outreach.” (Wildlife Obj. 9: Recreational Opportunities). This resource may be particularly useful in communicating and engaging large groups who, participate in the social and consumptive use of fish and aquatic resources and may highlight, for example, the ways in which experienced association and groups of anglers, “act to protect healthy ecosystems.”

Recreational opportunity initiatives based in the Land Management Program “to promote and increase public access to wildlife and fisheries habitat resources where stewardship of conservation rich habitat is recognized,” by, for example, leveraging or linking field guide initiatives with the group user resource (Land Management Obj. 3: Recreational Opportunities).

Partnerships:

Mount Royal College, The Banff Centre, & Lethbridge Community College; Alberta Government – Parks & Protected Areas: Edmonton Research Officer; Government of Alberta, Learning & Stewardship Services; Kananaskis Country Staff; Cypress Hills Park Staff;

Deliverables:

Report: Irish, C., Derbyshire, P.M., McNicol, B., 2007. Developing a Web 2.0 Prototype to Promote Sustainable Decision-making: Recreational Group Use and the Ecological Health of Protected Habitats. A synthesis of Current Literature on Sustainability Indicators and Relevant Impact Studies.

Web 2.0 Prototype for Kananaskis Country: Planning and interface design complete, tested and in the functional programming stage as described and appended. Programming completion milestones and user testing to continue at regular intervals in April and May 2008). This will be used as the basis for development of Cypress Hills prototype.

Paper Accepted: *Developing a Web 2.0 Prototype to Promote Sustainable Decision-making about Recreational Quality Group Use & the Ecological Health of Protected Habitats* Parks for Tomorrow 40th Anniversary Conference. May 8th – 14th, University of Calgary

Paper Submitted: *There’s a Grizzly Bear in Sector 7: Emotional Triggers in an On-line GIS Based Information System For Parks Management, Safety and Sustainable Decision-making.* Design and Emotion 2008 Conference. Design and Emotion Society. October 6-9, 2008

Final GECF Report

GECF History with project:

This is the first grant for this project.

Riparian Area Management Improvements

Project Location:	Mountain View County
Identifying Code:	015-00-90-101
Funding Allocation:	\$25,000.00
Principal Investigator:	Lesley Lovell
Contact Information:	Mountain View County Bag 100 Didsbury Alberta T0M 0W0 Email: lesley.lovell@mountainviewcounty.com Telephone: (403) 335-3311
ACA Grant Status:	Completed

Project Summary & Objective(s):

The objectives of this project were to:

- Improve the health of the riparian areas & wildlife habitat in Mountain View County.
- Improve the riparian health to increase the sport fish distribution and abundance, therefore the opportunities for anglers. Areas targeted will be lotic riparian areas where bull trout are present.
- Improved the riparian health to support increased biodiversity.
- Increase the awareness of sustainable agriculture.
- Make producers aware of new rules and regulations that will affect their farm.
- Increase the number of livestock producers practicing sustainable rotational grazing techniques in bush or grassland pastures.
- Increase the number of livestock producers taking steps to protect riparian areas and waterways from the potentially negative impacts of unrestricted livestock access.
- Increase the number of livestock producers taking steps to reduce the amount of livestock manure that has the potential for entering adjacent water bodies.
- Increase the number of livestock producers implementing Beneficial Management Practices by partially funding them.

Activities:

This funding was used for riparian fencing projects throughout Mountain View County. The projects are located in the following watersheds; 3 in the Bearberry Watershed, 7 in the Little Red Deer River Watershed, 1 in the Kneehill Creek Watershed.

Each project was reviewed by the MVC Agricultural Service Board and rated based on the impact it would have on improving the riparian area health, the fish and wildlife value of the area, the demo site opportunity, and other environmental or social benefits that the project would have. Based on the rating the projects received, they were allocated funding towards the project from 50-100% of the material costs.

Link with ACA Priorities for 2007-2008:

Riparian fencing projects chosen help meet ACA's fisheries objective to enhance, maintain and protect priority riparian habitats in Alberta (Fisheries Obj 8: Riparian Conservation Planning). When looking at improving recreational opportunities, angling for sport fish could improve by improving the health of the lotic riparian areas (Land Management Obj 3). Angling currently occurs in the Dog Pound, Little Red, Red Deer, and Fallen Timber systems. Bull Trout are also present in many streams in MVC including the Red Deer, Fallen Timber, Little Red, and Bearberry drainages. Since the focus was on improving the health of lotic riparian areas, this meets ACA's goal of conserving riparian habitat.

Partnerships:

MVC; ACA; AESA; Landowners

Deliverables:

A total of 11 different projects were completed improving the management of the riparian areas at the project locations.

A photo essay of projects with their profiles

Final GECF Report

GECF History with project:

This project received funding 2005-06 and 2006-07.

Stewardship of Nature Conservancy of Canada's Properties in the Rocky Mountain and Foothills Natural Regions of Alberta

Project Location:	NCC's properties in Rocky Mountain & Foothills Natural Regions of Alberta
Identifying Code:	015-00-90-106
Funding Allocation:	\$42,000.00
Principal Investigator:	Renny Grilz
Contact Information:	Nature Conservancy of Canada – Alberta Region (NCC) 830, 1202 Centre Street SE Calgary Alberta T2G 5A5 Email: renny.grilz@natureconservancy.ca Telephone: (403)262-1253
ACA Grant Status:	Extended until April 30, 2008

Project Summary & Objective(s):

The "Stewardship of Nature Conservancy of Canada's Properties in the Rocky Mountain and Foothills Natural Regions of Alberta" program supports and enhances NCC's conservation activities through annual monitoring of NCC properties. Under this specific project through ACA, Summer Conservation Interns conduct monitoring of 40 NCC properties, approximately 31,227 acres (12,637 hectares) within the Rocky Mountain and Foothills Natural Regions of Alberta. Communication tools and activities have been developed to promote and increase public awareness and access to conservation-rich habitat within the Rocky Mountain and Foothills Natural Regions of Alberta.

Activities:

Monitoring NCC properties:

- 13 interns were hired to conduct monitoring on NCC properties across Alberta. 6 interns (3 based in Calgary and 3 based in Lethbridge) were jointly responsible for the Rocky Mountain Front and Foothills area properties of this project.
- Monitoring for all properties was completed as of August 31, 2007 (except for 2 properties that were not accessible due to fire closures in the Castle area; these properties will be monitored by NCC Conservation staff as soon as it is feasible to do so).
- Monitoring reports for each property have been created, and then reviewed and edited by full-time NCC Conservation Operations staff, completed by March 15, 2008.
- Monitoring reports for joint ACA-NCC projects have been provided to ACA.

Management plans:

- Management plans were updated by NCC Conservation staff.
- Monitoring reports and updated management plans were reviewed with each landowner. Management plan recommendations will be implemented as necessary

Communication tools and activities:

- The Tool Chest publication has been designed, with distribution commencing May 15, 2008. This publication describes NCC's conservation activities, including securement of properties through fee simple purchase, conservation easements, land donations and partnerships. It also describes NCC's stewardship program, its activities and the importance of effectiveness monitoring.

Link with ACA Priorities for 2007-2008:

The goals/priorities of the ACA 2007-2010 Strategic Business Plan addressed by this project are: Enhancing the sustainability of wildlife species through science-based conservation. The ACA plan focuses on ungulates, upland game birds, waterfowl, and species at risk, with the specific objectives of identifying wildlife conservation priorities, and population assessment. There are numerous ungulates (e.g. deer, elk & moose), upland game birds (e.g. gray partridge, sharp-tailed grouse), species at risk (e.g. long-billed curlew, burrowing owl, Sprague's pipit), and waterfowl species (e.g. mallard, pintail,

canvasback) found on the monitored properties (General Wildlife Funding Priority; Wildlife Objectives 2: Species/Population Inventory & 7: Status Assessment). The monitoring data is used to prepare management plans for each property (Wildlife Obj 3: Plan Dev't & Implementation). Providing on-the-ground enhancements which provide habitat for numerous wildlife and fish populations. Annual monitoring identifies which enhancements are needed to implement in order to provide habitat for the local biodiversity. Habitat restoration activities are implemented and the response of species and habitat indicators is monitored (Wildlife Objectives 4: Species Man't and Enhancement & 8: Habitat Inventory & Enhancement). Many of the monitored properties are co-owned and managed with several other conservation agencies, including the ACA (Land Man't Obj 2: Conservation Site Man't). Recreational opportunity initiatives on private land which focus on communication tools and activities to promote and increase public access to wildlife and fisheries habitat resources where stewardship on conservation-rich habitat is recognized. NCC permits, on lands owned by NCC, recreational use, both consumptive and non-consumptive on a property-by-property basis. (Land Man't Obj 3: Recreational Opportunities). The NCC Summer Conservation Intern program does not directly impact ACA's Fisheries Program, except for compliance and effectiveness of the monitoring program relative to riparian areas on NCC properties. NCC's conservation work and monitoring activities support overall conservation goals and contribute towards retaining species diversity and communities and the habitat which support them, thus indirectly supporting the priorities of ACA's Fisheries Program.

Partnerships:

NCC co-owns and manages with several properties with other conservation agencies, including the ACA, DUC, the AFGA, and the Rocky Mountain Elk Foundation Canada. NCC also has volunteer stewards who annually monitor properties for NCC, specifically the Wagner Natural Area Society and the Rainbow Equitation Society. Numerous landowners who have granted conservation easements to the NCC are also partners in this project.

Confirmed funding partners include: The W. Garfield Weston Foundation's *Weston Waterton Stewardship Fund*, North American Wetland Conservation Act, Alberta EcoTrust's Multi-Year Implementation Grant and Shell Canada's *Shell Conservation Intern Program*. In-kind funding: DUC

Deliverables:

Monitoring reports (finalized and reviewed) for each property. A list of NCC Properties Monitored in the Rocky Mountain Front and Foothills Natural Regions can be found in the final GECF Report
Data collected on species occurrence from these reports has been forwarded to the ANHIC and ASRD's FWMIS database by NCC's Conservation Operations staff.

The finalized monitoring reports and revised management plans delivered to all landowners and agency partners, whose lands were monitored in 2007.

Landowner Toolkit Publication completed in extension period.

Website revisions to include these documents and updates about the Summer Conservation Interns on NCC's website (in the Alberta section)

Media release(s) to celebrate and acknowledge ACA's partnership on the Summer Conservation Interns and communications investment in NCC

GECF History with project:

This project received funding in 2006-07.

Onoway and District Fish&Game Assoc. Bird-House Project

Project Location: Onoway
Identifying Code: 030-00-90-114
Funding Allocation: \$600.00

Principal Investigator: Ron Johnson
Contact Information: Onoway & District Fish and Game Association & Gun Club
PO Box 231
Onoway Alberta T0E 1V0
Email: mjjohns@xplornet.com
Telephone: 780-967-5236

ACA Grant Status: Completed

Project Summary & Objective(s):

This is a project which the Onoway FGA has been involved in for a number of years. The main goal is to involve as many youth as possible in the project, by engaging them in the construction of bird houses, with the assistance of member of the club. While constructing the bird houses, the involvement of ACA is discussed, as well as the need for the bird houses, their location when put up, and any other questions posed by the youngsters are answered. Some of the bird houses are distributed around the community. The bird-house project has become so well know in the community, people often enquire if there are bird houses available.

Activities:

Material purchased, wood cut into bird houses ready to be assembled.
Scout groups, local venture group and members have assembled the bird houses.

Link with ACA Priorities for 2007-2008:

This project encouraged volunteer involvement (Wildlife Obj 10: Education & Outreach) to address wildlife habitat needs in Alberta, as well as providing a sustainable recreational opportunity for the public to enjoy wildlife (Wildlife Obj 9: Recreational Opportunities). Many of our young people did not know of these birds, but now they are making a special effort to sight them as they travel about.

Partnerships:

Onoway & District FGA provided refreshments; Members volunteered their time and the equipment necessary for the successful completion of this project.

Deliverables:

170 bird houses were constructed and distributed through-out the community.
Final GECF Report

GECF History with project:

This project has received support since 2005/06.

Partners in Habitat Development

Project Location:	Farm lands of Southern Alberta
Identifying Code:	030-00-90-102
Funding Allocation:	\$30,000.00
Principal Investigator:	Rick Martin
Contact Information:	Partners in Habitat Development c/o Eastern Irrigation District., PO Bag 8 Brooks Alberta T1 R 1B2 Email: rmartin@eidnet.org or mredelback@eidnet.org Telephone: (403) 362-1414
ACA Grant Status:	Completed

Project Summary & Objective(s):

The Partners in Habitat Development Program (PHD) is an initiative developed in 1998 to mitigate against the loss of wildlife habitat in Southern Alberta. This habitat loss is due in part to the upgrading of irrigation canal systems, as well as the intensification of agricultural practices. The PHD program works with landowners, watershed groups and other conservation organizations to create, preserve and restore critical wildlife habitat. This habitat will support a large diversity of wildlife species by providing nesting and security cover, food sources and travel corridors linking critical habitat areas.

The PHD project's goals are best accomplished by working with agricultural landowners, assisting them with new conservation efforts while at the same time providing benefits to their farming operation. The PHD program is a partnership made up of many organizations and acts as an agent for all partners, providing landowners with access to PHD technicians and resources, as well as acting as a link to other partner organizations.

Activities:

- A total of 51 new habitat tree planting sites were completed during spring 2007. The PHD assisted with the cost of installing drip irrigation system on three of these sites. Planning for 2008 tree planting projects is also complete.
- 2007 fencing projects are complete: a total of 12,245 meters of fencing was installed on 18 different projects sites.
- Two deliveries were installed to assist with irrigation of tree planting projects planned for 2008. One other delivery was installed at the time of pipelining activities to assist with the maintenance of approximately 30 acres of existing habitat which includes a wetland complex.
- During spring 2007 Southern Alberta School Children assisted PHD staff with tree planting activities at two sites. Children with Southern Alberta Scouts assisted PHD staff with tree planting activities at two additional locations.
- A total of nine feed barrels were distributed adjacent to critical wintering areas during November 2007. Three landowners were supplied grain to fill feed barrels they developed on their properties. Additionally, a total of 35.5 acres of grain was left standing by landowners, during the fall of 2007, at three separate locations to serve as wildlife food plots.
- Throughout the year PHD Technicians also conduct wildlife surveys and undertake habitat monitoring.
- Throughout the year PHD Technicians conduct evaluations on previous habitat projects and follow-up with landowners involved in the program. PHD Technicians also take part in PHD fundraising as well as promoting the program and its partners by providing presentations and setting up display boards at numerous functions and events.

Link with ACA Priorities for 2007-2008:

One of the key components of the PHD program is the protection of riparian habitat. The PHD works closely with area farmers, irrigation districts and watershed groups to fence out livestock from riparian areas, reducing livestock damage and enhancing wildlife habitat, while at the same time improving water quality by creating and protecting buffer strips. Wherever possible cattail marshes are protected, enhanced or created providing winter thermal cover and escape cover to a variety of wildlife species (Fisheries Obj 8: Riparian Conservation Planning). Although not a requirement, the PHD program encourages landowners to permit public access to project sites for both consumptive and non-consumptive uses of wildlife. Most landowners working with the PHD program permit some public access. The PHD program improves the quality of the habitat area which enhances the general aesthetics of the region (Land Man't Obj 3: Recreational Opportunities). The PHD program staff conduct wildlife census surveys throughout the seasons which provide trend information on wildlife resources in the area, help identify critical habitat areas to incorporate into PHD projects and will assist in monitoring the success of PHD projects (Wildlife Obj. 2: Species/Pop'n Inventory & 7: Status Assessment). The PHD project encourages landowners to improve the upland habitat areas and habitats benefiting species at risk, such as the loggerhead shrike and the northern leopard frog, on their farm (Wildlife Obj 8: Habitat Inventory & Enhancement).

Partnerships:

Eastern Irrigation District; St. Mary River Irrigation District; Bow River Irrigation District; Raymond Irrigation District; Western Irrigation District; Lethbridge Northern Irrigation District; Pheasants Forever – Calgary Chapter and Lethbridge Chapter; Ducks Unlimited Canada; Alberta Agriculture Food and Rural Development; County of Newell; Fish and Game Associations (Brooks and District/Pheasant Festival, Lethbridge, Wheatland Conservation and Wildlife Association); Prairie Farm Rehabilitation Administration

Deliverables:

104,041 trees and shrubs planted during spring 2007.
12,245 meters of fencing installed to protect habitat from livestock access.
3 four inch water deliveries installed to assist with habitat maintenance.
6370 meters of drip tape installed to assist landowners with irrigation of habitat plantings.
173 acres of farmland seeded to permanent grass cover.
9 feed barrels distributed and 3 food plots, totaling 35.5 acres established for winter 2007.
Final GECF Report

GECF History with project:

Received ACA support from 1998 to 2002 for wildlife habitat projects and this project received a GECF grant in 2005-06, 2006-07 and 2007-08.

Implementation of the Alberta Prairie Conservation Action Plan 2006-2010

Project Location: Grassland and Parkland Natural Regions of Alberta
Identifying Code: 015-00-90-111
Funding Allocation: \$9,000.00

Principal Investigator: Brian Laing
Contact Information: Prairie Conservation Forum
2nd Floor Provincial Building, 200 5th Ave S.
Lethbridge Alberta T1J 4L1
Email: cheryl.dash@gov.ab.ca; Olaf.Jensen@ec.gc.ca
Telephone: (403) 381 5562 (780) 951-8826

ACA Grant Status: Extended until June 15, 2008

Project Summary & Objective(s):

The objective of this project is to fully implement the Alberta Prairie Conservation Action Plan (PCAP) through a new Forum Coordinator position under the direction of the general membership of the Forum. This application is to fund the first year of three proposed years of funding related to specific activities that will be undertaken by the Coordinator. Funds for the Coordinator position have been obtained from government members (provincial and federal) and from not-for-profit organizations in the Forum.

Activities:

Expand Forum membership: New members have joined the PCF including Cows and Fish, the Oldman Watershed Council, Red Deer River Watershed Authority and Petro-Canada.

Forum Education Committee and development of a communications strategy: A survey of Alberta teachers was conducted to help in developing an education strategy for the prairie and parkland regions of Alberta. PCF presented the Grasslands Education Kit at a teacher's convention in Medicine Hat on February 22, 2008.

Travelling display/Trade shows and conferences: The website has been updated with a new look and there are new sections including an area that allows users to download a video and send postcards. A video showcasing prairie landscapes, plants and animals was created and is available on the PCF website and is intended to be displayed at tradeshow and conventions. New display is now complete (June 22, 2008). The PCF attended the Greencover TAC Fair in Regina on February 27-28, 2008. PCF attended the Milk River Watershed Group's AGM on April 8, 2008. A field tour has been planned to take place on June 24, 2008 in conjunction with the PCF spring/summer meeting. The PCF brochure has been updated, printed and now is being distributed.

The grasslands kit was presented to students at the University of Lethbridge in September, 2007

Investigate the implementation of EUB IL 2002-1: Interviews were conducted with the representatives from the EUB and Petro-Canada about the implementation of EUB IL 2002-1. Reporting format and information will be discussed at the next PCF board meeting on April 7th, 2008. Discussions are ongoing regarding the writing of report investigating the implementation of EUB IL 2002-1.

Link with ACA Priorities for 2007-2008:

The PCAP supports several of ACA's priorities: PCAP Action 2.2.1 encourages the implementation of range and riparian health assessments to enhance the level of stewardship on native prairie landscapes and Action 1.2.1 calls for Enhance inventories, data collection, and analysis activities focused on native fish species and aquatic ecosystems) (Fisheries Obj 8 - Riparian Conservation Planning). Through regular interaction with PCF members, the PCF provides a venue for identification of priority wildlife and fish habitats (Land Management Obj 1 – Habitat securement). One of the three goals of PCAP is research and supports strategic and operation planning for ACAs Wildlife Program, e.g., 1.2.2 (Coordinate the collection of data on indicators of prairie environmental conditions) (Wildlife Objective 1 - Strategic Operational Planning). PCAP Action 1.2.3 - Assess the status and priority habitat needs of the

top 100 prairie and parkland species and produce status reports on species at risk, contributing to Wildlife Objective 2 (Species and Population Inventory). These PCAP actions also support ACA Wildlife Objective 3 (Plan Development and Implementation) and Objective 7 (Status Assessment).

Partnerships:

Funding partners include Alberta Environment, ASRD, Parks Canada Agency, Environment Canada, Agriculture Canada, and the Canadian Association of Petroleum Producers (CAPP). A full list of PCF member organisations can be found in the Alberta PCAP document.

Deliverables:

- The PCF brochure has been updated and is now in distribution.
- Attendance at the Greencover TAC Fair in Regina, the Crossing the Medicine Line Spring Forum, the Milk River AGM and the Alberta's Environment Conference.
- A new, updated, very transportable and attractive display has been created and will be able to be viewed at the upcoming PCF meeting on June 24-25th, 2008 and at various tradeshows, meetings and conferences thereafter.
- Final GECF Report

GECF History with project:

The ACA has been a member of the Prairie Conservation Forum (PCF) since its inception. Through member participation ACA has contributed to the drafting of several previous versions of the PCAP and was involved in the drafting of the current PCAP (2006 - 2010). This was the first year of GECF funding.

Riparian Fencing Initiative II

Project Location:	Red Deer County
Identifying Code:	020-00-90-103
Funding Allocation:	\$21,100.00
Principal Investigator:	Ken Lewis
Contact Information:	Red Deer County 38106 Range Road #275 Red Deer County Alberta T4S 2L9 Email: klewis@reddeercounty.ab.ca Telephone: 403-342-8653
ACA Grant Status:	Completed

Project Summary & Objective(s):

The objective of the project is to facilitate the installation of 10 riparian fences in Red Deer County. These fences are intended to protect riparian areas and protect or improve water quality, by keeping cattle from damaging the riparian area and keeping manure from entering the water body. These fences will increase the number of water body banks/shores and riparian areas in Red Deer County that are protected by riparian fencing.

Activities:

- A call for fencing project proposals from among the farming communities along the river systems and riparian areas in Red Deer County was issued.
- The Ag Service Board at Red Deer County evaluated each proposal to determine which projects best meet the objectives of the project and fencing projects were then selected for funding.
- 7 riparian fences have been installed and 3 more riparian fences have been started, but were delayed by frost.
- Riparian assessments are to be carried out by Red Deer County in 2008.

Link with ACA Priorities for 2007-2008:

These fencing projects support a collaborative approach to conservation by involving producers, the municipality, watershed groups and ACA. The project promotes the protection and enhancement of natural habitats and biological populations. The project aims to maintain, enhance and protect riparian areas (Fisheries Obj 8: Riparian Conservation Planning). As more rivers/streams are fenced and riparian areas enhanced we hope the fish populations within these rivers will be improved, diversified and increased over time.

Partnerships:

Farmers and landowners in Red Deer County; the Medicine River Watershed Society; the Friends of the Little Red Deer River Society; the Pine Lake Restoration Society; Red Deer County's Ag Service Board and the conservation program at Red Deer County (staff time, advertising, project planning, riparian health assessments, riparian management strategies).

Deliverables:

7 fences have been completed and 3 more fences were started (materials purchased) but installation was delayed by frost. These fences were



Photo: Completed fence, wetland near Pine Lake, Red Deer County

completed as early as possible after spring thaw 2008. These 10 fences result in approximately 233 acres of riparian/wildlife habitat being “under new management”, in that, the fenced land can now, as a result of the fencing installation, be managed for environmental sustainability, as distinct units in the land managers’ operations.

Signs were made for each fencing project

Project brochures

Project advertisements

Articles were written on the project

Final GECF Report

GECF History with project:

This project received a grant in 2006-07.

Gervais Corner Biodiversity Improvement Project

Project Location: Sturgeon River, St. Albert
Identifying Code: 030-00-90-116
Funding Allocation: \$2,000.00

Principal Investigator: Dan Stoker
Contact Information: REEP
31 Longview Crers
St. Albert Alberta T8N 2W1
Email: loraxdan@telus.net
Telephone: (780) 460-9169

ACA Grant Status: Completed

Project Summary & Objective(s):

REEP (River Edge Enhancement Program) is a multi-year program to improve biodiversity along the Sturgeon River in St. Albert. The project objectives for 2007 were to introduce a wide variety of indigenous trees and shrubs appropriate to the semi-riparian environment along the edge of the Sturgeon River in an area known as Gervais Corner. Modification of these proposed planting beds through tillage and the application of woodchips will enable these 'islands' of larger growth plants to develop thus increasing ecotone ('edge area') environments dramatically to the benefit of a wide range of plant and animal life (increasing biodiversity). Additional 'cover' vegetation will be advantageous to waterfowl especially using the Sturgeon River for nesting and rearing but also during migration in spring and fall.

Activities:

Planting of the five beds and an extra extension along the edge of the river was completed on May 14th with approximately 130 volunteers taking part in the digging of holes, placement of plants, addition of water, spreading of wood chips and staking in some instances. Since that time, the sites have been weeded on three occasions and a few additional plants added to the beds. Some work was added to the original project when beaver activity both upstream and downstream to the site threatened existing trees along the river edge. Exclosure wire was used to prevent further destruction of trees by beavers. Due to spring flooding at the original site, an Earth Day event went ahead at a different location and gave focus to: placing wood chips around small spruce trees to reduce competition and planting additional small spruce. In addition, exclosure wire was placed around numerous aspen trees vulnerable to beaver attack. Nearly 80 people participated in this event. (This was not an objective in the original proposal and materials were obtained at no cost). Weeding was undertaken on at least four occasions during the summer. Although this was only of partial significance, it reduced the competition for light and moisture that the new plantings faced over the summer.

The final project activity involved the placement of two signage posts at either end of the Gervais Corner planting area to recognize the valuable volunteer assistance received from various St. Albert citizens and the grant assistance of the ACA.

Link with ACA Priorities for 2007-2008:

The Sturgeon River through St. Albert could be termed a priority riparian habitat because it is being impacted significantly by the changes brought on by municipal developments. It is a test case, in a sense, that can reveal if volunteer action in cooperation with municipal services can help overcome riparian area degradation and restore a more diverse river edge environment and in turn in-stream water habitat (Fisheries Obj 8: Riparian Conservation Planning).

Wildlife benefits will be numerous. The Sturgeon River in St. Albert acts as a nesting area for some duck species (especially Blue-winged Teal), as well as a migratory stop-over area for puddle ducks (especially Mallard, Gadwall, Green-winged Teal, Blue-winged Teal, Wigeon) and some divers (Lesser Scaup and Bufflehead). The river stays open later in the fall than the prime 'magnet' for waterfowl, Big Lake, and

therefore has special significance for late migrating ducks. Some years, the section of the river at Gervais Corner is heavily frequented by shorebirds (in particular Lesser Yellowlegs, Short-billed Dowitcher and Common Snipe). The added cover and buffering provided by the proposed plantings for Gervais Corner will benefit these species and many more (Wildlife Obj 8).

Partnerships:

Hundreds of volunteers were involved in this project.

Deliverables:

300+ trees and shrubs (willow, dogwood, larch, white spruce, black poplar, white birch, pin cherry, chokecherry and trembling aspen introduced into the site) to add biodiversity.

Mulch added to the base of over 100 white spruce (previously planted).

Exclosure wire (beaver prevention) around upwards of 50 substantial trees.

Two signs in place to acknowledge support received from the community and the ACA.

Obtained funding for next years work.

Final GECF Report

GECF History with project:

This is the first grant for this project.

Northern Alberta Non-game Fish Status Assessment – Year 5

Project Location:	Northern Alberta (Specific focus areas included: St. Paul, Cold Lake, Lac La Biche, Swan Hills, Grande Prairie, Edmonton, Peerless Lake and Boyle.)
Identifying Code:	020-00-90-104
Funding Allocation:	\$29,339.00
Principal Investigator:	Mark Steinhilber
Contact Information:	Royal Alberta Museum 12845-102 Avenue Edmonton Alberta T5N 0M6 Email: Mark.Steinhilber@gov.ab.ca Telephone: (780) 453-9189
ACA Grant Status:	Completed

Project Summary & Objective(s):

This was the fifth year of a Royal Alberta Museum (RAM) project which gathers information on spatial and temporal relative abundance and distribution of non-game fish in northern Alberta. These data are also submitted to FMIS and are available to resource management agencies to assist in monitoring aquatic ecosystem integrity and the health of sport fish populations. Specific objectives for 2007 were to re-visit 40 of the sites surveyed previously and to conduct initial reconnaissance surveys of 20 new sites in the Calling Lake and Athabasca areas.

The generation of statistically robust population trend lines is one analytic objective of this project. Equally important is the accumulation of non-game fish abundance and distribution data over a broad area of northern Alberta. The preservation of research-quality voucher specimens that document physical and biochemical attributes of the province's non-game fish fauna – and the changes in this fauna over time and space – is also a high priority component of this study.

Activities:

- 29 sites have been monitored following consistent protocols for three or more consecutive years. Seven sites have been monitored for six years, seven sites for five years, eight sites for four years and seven sites for three years. These data are beginning to yield population trend information although variance is high and more temporal data points are required before robust conclusions can be drawn.
- 50 new sites were inventoried for the first time in 2007. To date, 229 sites have been surveyed in the St. Paul, Cold Lake, Lac La Biche, Swan Hills, Grande Prairie, Edmonton, Peerless Lake, and Athabasca areas. In total, 75 index and inventory sites were surveyed in 2007.
- Approximately 8,000 specimens were preserved and incorporated into the research collection at the RAM. Since 2002, about 48,000 specimens have been archived and made available to any interested users, including school groups, educators, and scientists.
- A *Wild Alberta* gallery upgrade project is currently underway with one of the three focal interpretive areas being “water.” Selected specimens and data acquired as a result of this project will be incorporated into this component of the gallery.
- All specimen data acquired in this project will be incorporated into a new and improved “Creature Collection” website which will include interactive mapping, report generation and general biodiversity information specifically geared to three target levels: 1) elementary school, 2) high school, and 3) scientists (completion scheduled for late 2008).

Link with ACA Priorities for 2007-2008:

Standardized protocols are used to assess the health and population trends of the many fish species that are crucial elements aquatic ecosystems (Fisheries Obj 1: Fish Stock Assessment & Monitoring), which

can also contribute to understanding and predicting the health of sport fish populations. This project recognizes the critical importance of long-term data collection to provide statistical power, confidence and credibility to the monitoring results, all data from this project are submitted to FMIS annually so that they are available immediately to a variety of users and are available on the web (Fisheries Obj 6: Reporting).

This project also helps enhance awareness and understanding of conservation issues by communicating fish conservation issues to the public. RAM is currently undertaking a \$200 million expansion that will see new public galleries devoted to biodiversity and conservation issues. Data and specimens from this study will be incorporated into these exhibits, into other feature exhibitions, and into web presentations that discuss the challenges faced by our fish fauna. The ACA is a major partner in RAM's current "*Wild Alberta*" gallery and "*Alberta's Fish Diversity*" website.

Partnerships:

ACA, ASRD, RAM, Summer Temporary Employment Program and the Canada Summer Jobs

Deliverables:

The inventory component of this project exceeded the expectations; two and a half times as many inventory sites were sampled as originally proposed. Although fewer index sites were studied this year, seven sites were surveyed twice within a one-week period to obtain estimates of intra-annual sampling variance. FMIS returns for the 75 sites surveyed in 2007 have been submitted to ASRD.

Approximately 8000 specimens acquired in this project are now fully documented and preserved in the Museum's Ichthyology research collection. Data have been entered into a collections management database from which they will soon be extracted for use in on-line public presentations.

The Museum's web pages are currently undergoing a major upgrade that will significantly increase the functionality of presentations for a wide range of audiences (particularly school children). This web project, particularly focusing on the *Creature Collection*, is expected to be completed by late 2008.

A summary report of project activities and results is expected to be posted to the Ichthyology web page.

This report summarized inventory results (localities, species encountered and catch per unit effort) as well as graphical presentations of population trend data for selected sites and species.

A detailed project report including raw data, maps and photographs is complete.

Specimens and data from the Non-game Fish project will be incorporated into the Museum's new *Wild Alberta* gallery - Current plans are to upgrade the existing *Wild Alberta* gallery by December 2008. One of the focal areas for upgrading is the "Water" section. Specimens and data from the Non-game Fish project are planned for inclusion in displays highlighting the Province's fish fauna, its value and diversity and efforts to conserve this important resource.

GECF Summary Report

GECF History with project:

This project has received support since 2002.

Predator control and Duck nesting facility

Project Location: Calgary area
Identifying Code: 030-00-90-129
Funding Allocation: \$500.00

Principal Investigator: Art Beck
Contact Information: Sarcee Fish and Game Assoc.
Box 494, 300 – 8120 Beddington Blvd. NW,
Calgary Alberta T3K 2A8
Email: art @ beckrealestate.ca
Telephone: 403 274 5924

ACA Grant Status: Completed

Project Summary & Objective(s):

The objective of this project is to: build some skunk traps (live), duck floating nesting pads, and nesting boxes. Sarcee Fish and Game Association have been doing the duck, goose and bluebird nesting habitat project for 30 years or more. The skunk component is new this year, as skunk traps have been very effectively used by others to control skunk predation in areas where pheasants are attempting to reproduce.

Activities:

Materials for skunk traps, duck pads and duck boxes were obtained.
Skunk traps and duck nest boxes were constructed, as well as bluebird nesting boxes (not part of the proposed project).

Link with ACA Priorities for 2007-2008:

The project is designed to assist the propagation of the duck population and to control predation of migratory and upland game birds. (Wildlife Obj 4: Species Man't & Enhancement)

Partnerships:

Sarcee Fish and Game Association

Deliverables:

10 skunk traps were built and ready for use this spring
Duck pads used when ice is gone from ponds
6 duck nest boxes were constructed and placed.
112 bluebird nest boxes were constructed (not part of proposed project).
Final GECF Report

GECF History with project:

This is the first year this project was funded.

Sarcee Fish and Game sponsored Alberta Junior Pheasant Project

Project Location: East of Innisfail
Identifying Code: 030-00-90-130
Funding Allocation: \$1,000.00

Principal Investigator: Art Beck
Contact Information: Sarcee Fish and Game Assoc.
Box 494, 300 – 8120 Beddington Blvd. NW,
Calgary Alberta T3K 2A8
Email: art@beckrealestate.ca
Telephone: 403 274 5924

ACA Grant Status: Completed

Project Summary & Objective(s):

Dan Radomske, a farmer east of Innisfail, takes 10 acres of farmland out of agricultural production and seeds said acreage to a forage crop (usually corn) to be used as cover for the 1000 pheasants released at the rate of 100 per weekend for 10 weeks where volunteers and dog handlers teach youth and first time hunters, firearms safety, hunter training, hunting ethics ,along with shotgun handling and shooting. All this is followed by one hour of clay bird shooting, then the 2 miles of seeded habitat where the pheasants are hiding. This is a great project and has won the provincial award for the best youth program three years out of the six it has been operating. This project provides as a residual 10 acres of forage and cover for upland birds and mule/whitetail deer on into the winter till the following spring

Activities:

Dan Radomske took 10 acres out of production for this project.
56 youth and first time hunters participated in the project.

Link with ACA Priorities for 2007-2008:

This project creates recreational opportunities by encouraging youth to participate in hunting (Wildlife Obj 9: Recreational Opportunities); a secondary result is it provides habitat for upland birds and deer into the winter.

Partnerships:

Sarcee Fish and Game Association; volunteers

Deliverables:

In 2007 56 students participated, and the project could have handled a few more.
Final GECF Report

GECF History with project:

This project has received support via AFGA.

Characteristics of wolf home ranges and factors contributing to wolf-livestock conflicts in Southern Alberta

Project Location: Southern East Slopes, Alberta
Identifying Code: 030-00-90-131
Funding Allocation: \$15,000.00

Principal Investigator: Charles Mamo
Contact Information: Southern Alberta Conservation Cooperative
Box 314
Cremona Alberta T0M 0R0
Email: egrace@telus.net, timmothyj@earthlink.net
Telephone: 403.637.2655

ACA Grant Status: Completed

Project Summary & Objective(s):

The project goal is to develop a repeatable “working model” of livestock grazing practices and depredation avoidance tools useful to government and non-government entities for reducing livestock-carnivore conflicts at the private-public land interface that can be applied throughout rural western Alberta and North America. To achieve this goal, cooperative efforts are designed to: A) merge traditional livestock management and husbandry tools with knowledge of carnivore behavior and biology, B) collect data and conduct analysis as a basis for application of explanatory models and results that can provide spatially explicit and useful predictions of wolf behavior and movements in relation to livestock and their management, and C) apply a practical and effective regional design to sustain grazing land health and agriculture productivity while providing benefits to wildlife. This strategy is to conserve working ranches and large carnivores by reducing livestock conflicts. The specific project objectives are to:

1. Assist area ranchers in applying and evaluating depredation reduction and avoidance techniques for reducing livestock-large carnivore conflicts throughout the year;
2. Conserve working ranches by improving the knowledge of southern Alberta ranching communities about large carnivore biology and behavior;
3. Demonstrate the efficacy of conflict reduction methods for conserving and sustaining viable large carnivore populations in agricultural intensive areas;
4. Develop technical guidelines for employing successful carnivore-livestock conflict reduction methods that can be applied in southern Alberta and the Rocky Mountains.
5. Improve urban-dwellers understanding of the importance of working ranches to wildlife and habitats that are necessary for their conservation;
6. Provide a means for linking protected areas and ‘working landscapes’ to benefit wildlife connectivity, sustainable agriculture and public benefits of both.

Activities:

Assist area ranchers : assisted 19 area ranchers involving 5 wolf packs distributed from just south of Highway 1 near Jumping Pound Creek to just north of Highway 3 by applying and evaluating measures for reducing wolf- and carnivore conflicts with livestock throughout the year. This effort has produced successful results, and this work is ongoing.

Improve knowledge of southern Alberta ranching communities: Discussions throughout the southern East Slopes working ranch community continue to highlight the importance of a) understanding carnivore behavior and ecology, and b) applying this improved knowledge about carnivores such as wolves to daily operations. This is facilitated by our work with ranchers and government agencies as a full and working member of the government appointed Carnivore Advisory Group. Significant progress is being made in highlighting why particular age classes of cattle such as calves and yearlings are especially vulnerable to predation (behavior, lack of vigilance) and that practice of measures to prevent and reduce wolf-livestock conflicts must involve a) improved communication and coordination among area ranchers and b)

neighboring ranches that are likely to be affected by depredation behavior within a particular pack home range. This work is ongoing.

Demonstrate the efficacy of conflict reduction methods: Conflict reduction methods remain somewhat ineffective for sustaining large carnivores in areas where agriculture practices such as livestock grazing are practiced. This is due to the interplay of long-standing and traditional livestock and wildlife management practices, coupled with what to date have been more site-specific application of depredation avoidance measures at individual ranches. Though effective locally, the wide-spread distribution of cattle and lack of consistency among ranchers in use of depredation avoidance measures in their grazing and livestock management practice results in effective prevention of conflicts on one ranch, and large carnivores as wolves being shot indiscriminately on the next. Steady progress is being made but transition by ranchers to cooperative efforts made at an appropriate scale reflecting the environment at which carnivore behavior is learned and requires a comprehensive approach and consistency.

Develop technical guidelines: Data collected thus far suggest that our predictions on wolf home ranges and movements as related to livestock are consistent with our hypotheses. However, our analyses remain incomplete and identified relationships remain in need of further investigation. Consequently, the development of technical guidelines is premature.

Improve urban-dwellers understanding of the importance of working ranches to wildlife and linking protected areas and 'working landscapes': Findings are shared with urban stakeholders and conservation interests at regular chapter meetings and conferences. In addition, SACC are exploring venues for discussions with academic institutions and area organizations (e.g. Calgary Zoo) as a mechanism for relating this work and the role of East Slope ranches in contribution to linking protected areas and 'working landscapes', in a manner that contributes to the connectivity of transboundary wildlife populations across southern Alberta to the United States. This has been well received, and SACC continue to improve upon the content and delivery of information to the public.

Link with ACA Priorities for 2007-2008:

Specific contributions to ACA goals and priorities include: A scientific basis for conservation measures benefiting priority wildlife including ungulates, and large carnivores including species at risk (grizzly bears) at the interface of crown and private lands in southern Alberta (Wildlife Obj 6: Applied Research/Ecological Studies); Exchange of information (sharing of scientific data with livestock operators and incorporating local knowledge of southern Alberta ranchers) to improve integration of carnivore biology and behaviour with livestock husbandry and management to reduce conflicts. As well as development of technical guidelines for employing successful carnivore-livestock conflict reduction methods that can be applied throughout the Rocky Mountains (Wildlife Obj 10: Education & Outreach).

Partnerships:

Alberta Department of Sustainable Development; Defenders of Wildlife-Canada; Alberta Beef, Inc.; Craighead Environmental Research Institute; Northern Rockies Conservation Cooperative; ESRI (Environmental Systems Research Institute, Redlands, CA); Patagonia, Inc.; Mountain Thinking Science and Conservation Collaborative; Hewlett Foundation; Kaplan Foundation; Ortenberg Foundation; Calgary Foundation; Mountain Livestock Cooperative; SRD (Housing);

Deliverables:

Final project report containing data analysis, results and recommendations is pending the release of data promised by the Province under a 2007 data-sharing agreement to complete analysis. See the GECF Summary report for preliminary analysis, results and recommendations.

See Activities section.

Final GECF Report

GECF History with project:

SACC received funding from ACA in 2000.

Southern Foothills Study Phase 3b

Project Location:	Southwest Alberta Foothills
Identifying Code:	030-00-90-118
Funding Allocation:	\$15,000.00
Principal Investigator:	Alan Gardner
Contact Information:	Southern Alberta Land Trust Society (SALTS) PO Box 45016 High River Alberta T1V 1R7 Email: salts_ed@shaw.ca Telephone: 403-646-2600 282 - 7011
ACA Grant Status:	Completed

Project Summary & Objective(s):

The purpose of the Southern Foothills Study (SFS) is to educate government and the public, and to influence public policy toward recognizing and valuing the wildlife habitat and ecological goods and services flowing from the southwest Alberta foothills. SALTS believe that once these assets are properly valued then government, encouraged by public opinion, will move to protect these assets from inappropriate development pressures.

Activities:

- Established seven sectoral groups: Agriculture Livestock; Agriculture Crops; Energy – Oil and Gas; Recreation; Forestry; Residential; Mining and Wind Energy.
- Stakeholders have engaged in the sectoral meetings of this phase of the SFS to discuss the findings from the ALCES model and explore possible best practices that will mitigate the effect of all types of development on the key indicators, including water quality and quantity and megafauna populations.
- The report from earlier phases has been widely circulated to government, industry, libraries, and other stakeholders.
- A presentation was developed showing the results and where the best payback can be achieved from action. It was shown to the larger Advisory Group to stimulate discussion and show results. This presentation is available on the SFS website. Excerpts from it were used for the next round of sectoral meetings to focus attention on the key areas that will provide the most effective results.
- After the second round of sectoral meetings, each of the seven groups develop recommendations for measures to address the degradation of wildlife and fish habitat.

Link with ACA Priorities for 2007-2008:

This project is focused directly on the loss of wildlife habitat and degradation of fish habitat in the southwest foothills. The current lack of planning and cooperation between industries, government and private land owners is leading to excessive development resulting in fragmentation of habitat, loss of native fescue grass, decreased water quality and quantity, and reduced opportunities for hunting and fishing. This study brings the stakeholders together in a cooperative effort to determine how this habitat degradation can be avoided through improved best practices, and cooperative planning (Fisheries Obj 8 & Wildlife Obj 3).

Partnerships:

MD Ranchland, MD Pincher Creek, MD Willow Creek, Pekisko Group, Livingstone Landowner Group, South Porcupine Stewardship Assoc., Petro-Canada, Shell Oil, Apache, Compton, Win Energy, Oldman Watershed Council, Micrex mining, Spray Lake Sawmills, Nature Conservancy of Canada, Alberta Wilderness Assoc., Canadian Parks and Wilderness Assoc., Southwest Alberta Sustainable Community Initiative; Gordon Foundation; Alberta SRD; Alberta Ecotrust.

Deliverables:

Each of the sectoral groups are working on recommendations based on the possible trajectories developed by Dr. Stelfox from the ALCES model. The focus is on those activities and best practices which ALCES shows to provide the best value for the effort expended.

The recommendations have been presented to the larger Advisory Group in the spring of 2008, plus be outlined in a subsequent published report, and placed on the website.

This project has gathered a significant presence in the landscape planning for southwestern Alberta. The Alberta Government is planning a pilot of the Land Use Framework (LUF) in southwest Alberta and the results of the SFS will be important to this pilot.

An unexpected result of the project is the new Energy Resources and Conservation Board has agreed that the results of the SFS work can be entered as evidence by intervenors in future oil and gas development hearings.

Final GECF Report

GECF History with project:

This project, under the name Rangeland Habitat Initiative, received funding in 2006-07.

Bow River Riparian Fencing Project

Project Location: Groeneveld property (NW Section 23 Township 21 Range 27)
Identifying Code: 020-00-90-105
Funding Allocation: \$2,200.00

Principal Investigator: Jeff Petersen
Contact Information: Trout Unlimited Canada - Bow River Chapter,
Suite 160 - 6712 Fisher St SE
Calgary Alberta T2H 2A7
Email: jeff_petersen@shaw.ca
Telephone: 403- 201-0548

ACA Grant Status: Completed

Project Summary & Objective(s):

Unrestricted cattle access along the Bow River often results in severe bank degradation, soil compaction, and slumping throughout much of the watershed. This damage negatively impacts wildlife, insects, cottonwood forests and fish habitat in and along the river. In response, the Bow River chapter of Trout Unlimited Canada has created a project that will effectively manage cattle grazing activities along the Bow River to the benefit of the river's ecosystem, its recreational users, and landowners alike. This project works with landowners to establish what the specific concerns and considerations are for each property. The goal with the 'Bovines and Bows' project is to work with each landowner to help develop and implement the best grazing management strategy for each specific property. This phase works with Mr. Groeneveld to fence off the riparian area and install a solar-powered off-stream watering site for cattle on his land.

Activities:

Exclusion fencing and a solar-powered off-stream watering site for cattle was installed on the Groeneveld's property. As per the project objectives, TUC Bow River Chapter worked with Mr. Groeneveld to devise the best approach to cattle grazing management on his property. TUC Bow River Chapter continue to pursue other properties and landowners for this project.

Link with ACA Priorities for 2007-2008:

This project specifically addresses the Fisheries Program in the ACA Strategic Business Plan. This project has the potential to have a very positive impact on the water quality of the Bow River. Improved water quality will have an overall benefit on the fish habitat and the connected biological communities that support them along the riparian zone of the Bow River watershed (Fisheries Obj 8: Riparian Conservation Planning).

Partnerships:

Trout Unlimited Canada, Coldwater Conservation Fund, The Groeneveld's (landowners)

Deliverables:

Exclusion fencing and a solar-powered off-stream watering site installed.

Photographs to document the progress of the project.

Slide show regarding this project shown at the annual Trout Unlimited Fall Splash dinner.

Finally, as the project site is in a visible location – across from Legacy Island (a major boat ramp on the Bow River) – an informational sign outlining the project including a list of our project partners has been placed on the publicly accessible island.

Final GECF Report

GECF History with project:

This was the first year of funding for this project

Quirk Creek Native Fish Initiative

Project Location: Quirk Creek, a tributary of the Elbow River
Identifying Code: 020-00-90-113
Funding Allocation: \$5,600.00

Principal Investigator: Brian Meagher
Contact Information: Trout Unlimited Canada
Suite 160 - 6712 Fisher St SE
Calgary Alberta T2H 2A7
Email: bmeagher@tucanada.org
Telephone: (403) 209-5185

ACA Grant Status: Completed

Project Summary & Objective(s):

The objectives of this project are:

- To test brook trout population suppression through angling, volunteer anglers targeted brook trout and their angling efforts focused on the recovery of the native bull trout and cutthroat trout populations.
- To increase public awareness among anglers about the importance of fish identification and to educate the participants about the issues facing our native fish. This project focuses on the introduction of non-native fish and the pressures facing this small creek.
- To assist in determining if targeted, liberal brook trout harvest limits will aid in the recovery of native trout species in Alberta.

Activities:

The field work component of the project was completed successfully this season, with more independent angler hours in 2007 than previous years.

The data indicate that the population make up is changing and that there is a positive result from this work.

Link with ACA Priorities for 2007-2008:

This innovative study may help develop new methods of maintaining native fish populations across Alberta (Fisheries Obj 1: Fish Stock Assessment & Monitoring). The ACA funding has helped implement new methods of fish management techniques that could be used in many other locations to regulate non-natives in sensitive areas such as the east slope foothills of Alberta. This will be even more important as human activities in the area are increased (forestry, oil and gas, agriculture, and recreational), and with the SARA listing (threatened) of the pure native cutthroat trout stocks in this area. This unique fisheries management technique has developed over time, and positive results of this are emerging.

Partnerships:

Anadarko Canada Corporation; ASRD; University of Calgary (Students); Trout Unlimited Canada (National)

Deliverables:

The main result of this year's effort was the increase in unsupervised angling hours this summer. Dedicated volunteers and University of Calgary students helped with this process and were willing to make the effort to fish this creek.

The data tabulated during the population estimates suggested that there has been a decrease in the total number of fish collected from the creek, but the biomass has remained constant. This suggests to us that there are more adult fish in the creek which will hopefully pay off during the future spawning seasons.

There also appears to be fewer large (adult) brook trout being caught during electrofishing, suggesting that their populations may be impacted by the increased angling efforts.

Final GECF Report

GECF History with project:

In 2004 had ACA support with electrofishing the entire upper reach of the creek over two days, the procedure was then repeated in 2006 to determine if intensive electroshocking could further help to reduce the brook trout population.

Late Fall Fisheries Investigations in Diversion Canals of Southern Alberta

Project Location: Irrigation Diversion Canals of Southern Alberta
Identifying Code: 020-00-90-114
Funding Allocation: \$6,100.00

Principal Investigator: Brian Meagher
Contact Information: Trout Unlimited Canada
Suite 160 - 6712 Fisher St SE
Calgary Alberta T2H 2A7
Email: bmeagher@tucanada.org
Telephone: (403) 209-5185

ACA Grant Status: Completed

Project Summary & Objective(s):

Numerous irrigation diversion structures exist on many river systems and on-stream reservoirs in southern Alberta. However, most of these structures do not have operable fish exclusion devices to keep wild sportfish in our rivers from entering diversion canals. Wild sportfish that enter irrigation canals are generally lost to the fishery when canal structures prevent fish from returning to the river system. Until Trout Unlimited Canada's (TUC) Fish Rescues began in 1996, the extent of the problem was very poorly documented and received little attention. To date there have been more than 588,000 fish rescued from these systems across Southern Alberta.

Activities:

Many fish were collected and safely returned to their rivers of origin.
A large number of volunteers (of all ages) helped on this highly educational project.

Link with ACA Priorities for 2007-2008:

This study will help to further the ideals set out by the ACA to preserve and maintain fish stocks across the province (General Fisheries Funding Priority). The project documents the fish which would normally be lost to the fisheries (Fisheries Obj 1: Fish Stock Assessment & Monitoring). TUC hopes that through this study there is a chance to influence the way that these canals are managed and operated.

Partnerships:

Past partners have included:

Alberta Environment; TUC Chapters; Tim Hortons; Bow River Shuttles; McCain Foods; ARC Inc.; Bow River Irrigation District; City of Calgary Parks and Recreation; Calgary Field Naturalists Soc; Calgary hook and Hackle club; Navajo Metals; UofC; Alberta SRD; Scouts Canada; Jr Forest Wardens; School groups from Claresholm, Pincher Creek and Granum.

Deliverables:

Fish were collected from the irrigation canals investigated and release into local rivers successfully. They did collect some unique and rare species and also were able to save a number of bull trout and other large sportfish throughout the effort.

The project report is available on the TUC website.

Final GECF Report

GECF History with project:

This project received funding in 2005/06.

Visitor Centre Role and Appeal at William A. Switzer Provincial Park

Project Location: William A. Switzer Provincial Park
Identifying Code: 002-00-90-109
Funding Allocation: \$1,536.00

Principal Investigator: Heather Gross
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ACA Grant Status: Completed

Project Summary & Objective(s):

The goal of this research is to determine the role and appeal of environmental exhibits in a park visitor centre. This project evaluated the use of the visitor centre at Switzer Park and the role of the exhibitions in that space. To meet the project's objectives, the research included five components: interviewing decision makers, tracking visitors to the park and the visitor centre, analyzing a tally of reasons visitors enter the center, administering a brief survey to determine visitor usage of the centre and a synthesis of the first four components.

Activities:

Visitor tracking complete.
Visitor surveys complete and surveys of non-attending campers also complete.
Interviews of decisions makers also complete.

Link with ACA Priorities for 2007-2008:

The education project in question is a new series of exhibits in the William A. Switzer Provincial Park visitor centre. These exhibits deal with conservation, species at risk, local wildlife species and protected areas. This project evaluates these exhibits as a current education and outreach project in Alberta (Wildlife Obj 10: Education & Outreach). The results of this research can be applied to other park education projects in the Alberta as well as other environmental education projects the ACA is connected with.

Partnerships:

University of Alberta

Deliverables:

Some preliminary findings: Surveys revealed a high number of Edmonton users of the visitor centre; Visitors enjoyed the centre as a place to bring kids, a place to learn about trails and programs and as a social experience; Renovations were well received. Generally visitors had high expectations for the visitor centre, and were pleased it had long opening hours.
A presentation and a report will be delivered to interested staff later in 2008. A summary brochure and a web site will be available for the general public at the visitor centre the year after the study. The primary investigator will also present to the general public and interested professionals as part of a speaker series on exhibition development in the fall of 2008.
The results of this research will be part of a Master's Thesis and will also be submitted for publication to an appropriate academic journal. A conference presentation at the Alberta Recreation and Parks Association Conference in October, 2008.
Final GECF Report

GECF History with project:

This is the first grant for this project.

Genetic Analysis of Walleye (*Stizostedion vitreum*) Populations in Alberta for Management and Forensic Purposes

Project Location: Alberta
Identifying Code: 020-00-90-111
Funding Allocation: \$8,000.00

Principal Investigator: Lindsey Burke
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ACA Grant Status: Completed

Project Summary & Objective(s):

This project is determining the population structure and genetic diversity of walleye (*Sander vitreus*) in 12 Alberta lakes and the Athabasca River using DNA microsatellite markers. This allows for an assessment of the effects of management techniques on walleye populations and aids in decision-making about conservation of walleye. The data will also be used to develop a forensic test for enforcement of fishing restrictions.

The specific project objectives are:

1. To identify reproductively isolated populations of walleye in Alberta
2. To measure historical and contemporary genetic diversity within and differentiation between populations.
3. To aid in fish management by providing information that will guide decisions designed to conserve genetic diversity in general and also protect genetically distinct populations of fish.
4. To create: a panel of microsatellite markers, forensic databases and statistical methods to use for population assignment of walleye.
5. To detect and assist in convicting individuals who illegally take and/or traffic in walleye.
6. To contribute to the management and sustainability of walleye in Alberta for use by the sport fishing and commercial industries
7. To disseminate project results to stakeholders such as: ACA, ASRD, anglers and sport fishers; through magazine articles, presentations and reports.

Activities:

- 1) The project has been expanded to include two more walleye sample sites from the Athabasca River (Fort McMurray and McLeod River areas) and an analysis of the population in Lac La Biche.
- 2) The panel of microsatellite markers has been completed, 10 of the 14 populations have been genotyped and the statistical analysis is in progress. Preliminary analysis shows that 9 of the 10 populations currently genotyped are genetically distinct to some degree. Further analysis is needed to clarify and quantify the level of differentiation.
- 3) A case has been submitted to the lab that will be addressed upon the completion of the lab work and analysis.
- 4) Information about this project has been published in various newspapers as well as on the SRD website. It has also been presented to the research community at the University of Alberta as well as at an Alberta Fish & Wildlife Staff Meeting.

Link with ACA Priorities for 2007-2008:

This project provides a scientific base for identification of walleye populations for management purposes. It identifies and describes relationships between populations of walleye using genetic analysis (Fisheries Obj 1: Fish Stock Assessment & Monitoring). The project will also help the ACA with Objective 6:

Reporting by disseminating the project results to resource managers and stakeholders as well as providing managers with information to aid in adaptive fisheries management.

Partnerships:

ACA; Alberta Fish and Wildlife Forensic Laboratory; Alberta Sport, Recreation, Parks and Wildlife Foundation; University of Alberta

Deliverables:

The project expected completion date is August 2008.

Walleye populations in Alberta show genetic differentiation. The results from preliminary analysis appear to be supporting the original hypothesis that walleye populations from different lakes will be genetically distinct from each other due to reproductive isolation (lack of migration), inbreeding and genetic drift and that there will be more genetic similarity within drainage basins than between lakes of different drainages, except where stocking has been used as a management tool. Further analysis will determine if there is sufficient differentiation between populations that it will be possible to determine the lake of origin of an individual fish using assignment tests.

Dissemination of Results – see activities section, all aspects of this deliverable cannot be met until the results are finalized and the project is completed or nearing completion.

Final GECF Report

GECF History with project:

This project received a grant in 2006/07.

Atlas of Alberta Lakes and Aquatic Invertebrates of Alberta

Project Location: Alberta
Identifying Code: 002-00-90-107
Funding Allocation: \$8,000.00

Principal Investigator: Gerald Filipski
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ACA Grant Status: Completed

Project Summary & Objective(s):

The books entitled, "Atlas of Alberta Lakes" and "The Aquatic Invertebrates of Alberta" have been digitized and uploaded to their own websites making them accessible to all researchers, scientists, educators and the general public. The texts are now freely available to anyone having access to the world wide web. The digitizing and uploading included all text pages as well as all images resulting in exact copies of the books being available online.

Activities:

Digitizing and uploading of the 'Atlas of Alberta Lakes' and 'The Aquatic Invertebrates of Alberta'

Link with ACA Priorities for 2007-2008:

The ACA Strategic Business Plan addresses a need to expand communication. Specifically, to implement education and outreach activities that increase awareness and understanding of wildlife, fisheries and habitat issues in Alberta (Wildlife Obj 10: Education & Outreach). The 2 texts which are now accessible online are no longer in print and yet are considered by many to be invaluable resources on the habitat and wildlife of Alberta. These important resources are now readily available aiding in the understanding of the wildlife and habitat of the province.

Partnerships:

University of Alberta Faculty of Science; University of Alberta Dept. of Biological Sciences

Deliverables:

Both texts can be viewed at:

<http://sunsite.ualberta.ca/Projects/Alberta-Lakes/> and
http://sunsite.ualberta.ca/Projects/Aquatic_Invertebrates/

Final GECF Report

GECF History with project:

This is the first grant for this project.

Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse (*Tympanuchus phasianellus jamesi*), Endangered Sage-Grouse (*Centrocercus urophasianus*), and their Hybrids

Project Location: Edmonton
Identifying Code: 030-00-90-119
Funding Allocation: \$10,000.00

Principal Investigator: Dr. Cynthia Paszkowski
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ACA Grant Status: Completed

Project Summary & Objective(s):

Little is known about Sharp-tailed Grouse in southern Alberta as there has been only one recent research project and Alberta Fish and Wildlife annual lek counts have been sporadic. Interest has increased in Sharp-tailed Grouse in Alberta, since it is one of the major hunted upland gamebirds in the province, but there is little recent information on the population status. Sage-Grouse are endangered at both the provincial and national levels in Canada. To date, this is the only study looking at the genetic makeup of the Canadian population. The level of genetic diversity is evaluated using both microsatellites and mitochondrial DNA (mtDNA), to determine the population's genetic structure, and assess possible genetic causes for the population decline.

The following three research topics have been addressed:

1. Analyze the genetic diversity and population structure of southern Alberta Plains Sharp-tailed Grouse using 13 microsatellites
2. Using maternally inherited mtDNA to provide a secondary indicator of genetic diversity in both Sage-Grouse and Sharp-tailed Grouse.
3. Use microsatellites and mtDNA to determine the level of genetic introgression between Sharp-tail and the endangered Sage-Grouse population and between Sage-Grouse and the Sharp-tail population.

Activities:

Sharp-tailed Grouse: 1198 Sharp-tailed Grouse samples have been run at 13 microsatellite loci. A preliminary analysis was done in October 2007 for the Prairie Grouse Technical Meeting in South Dakota. A fine scale final analysis is in progress.

Sage-Grouse: 192 contemporary Sage-Grouse and Sharp-tailed Grouse samples have been sequenced. All historic samples have been sequenced, but only about 1/3 provided usable data
All of the lab work for the project has been complete. Analysis and writing is in progress and ongoing.

Link with ACA Priorities for 2007-2008:

This research falls under the ACA Wildlife Program Priorities. It address two of four (upland gamebirds and species at risk) thematic areas developed by the Wildlife team. The project addresses many of the wildlife program objectives. This applied research project collects data that aids with planning for the species; the principal investigator is a scientific advisor to the Canadian Sage-grouse recovery team and is involved with Sage-Grouse/Prairie Grouse conservation across North America (Wildlife Obj 1:Strategic & Operational Planning, 3: Plan Dev't & Implementation and 6: Applied Research/Ecological Studies). The DNA from this study can be used to estimate the number of males on each lek for both Sharp-tailed Grouse and Sage-Grouse and can be used to determine the effective population size (essentially the size of the breeding population), as well as giving an idea of minimal female attendance at leks (Wildlife Obj 2:

Species/ Population Inventory). The information from this study can be used by managers to determine the status and management of southern Alberta Sharp-tail and to adjust bag limits for different areas based on their genetic health. Genetic information from the Sage-Grouse project has been used and will continue to be used for developing management plans and have been integrated into the species at risk recovery plan (Wildlife Obj 3: Plant Dev't & Implementation, 4: Species Man't & Enhancement, and 7: Status Assessment). The work on the Sharp-tail will be used to ensure high quality hunting opportunities for the species in the future (Wildlife Obj 9: Recreational Opportunities). Numerous conference presentations on all aspects of this research and multiple papers in peer-reviewed scientific papers will be published over the next two years (Wildlife Obj 10: Education & Outreach).

Partnerships:

For the Sharp-tailed Genetics project: funding from the Alberta Sport, Recreation, Parks and Wildlife Foundation Development Initiatives Program, the Alberta Professional Outfitters Society, and the American Pheasant & Waterfowl Society. In-kind funding is provided by the University of Alberta (use of equipment) and Alberta Fish and Wildlife/ACA (molted Sharp-tail feather collection during spring lek counts). For the Sage-Grouse genetics research: funding from ACA/ACCRU, Parks Canada, Saskatchewan Environment, Frances M. Peacock Scholarship for Native Bird Habitat, American Pheasant & Waterfowl Society, Society of Canadian Ornithologists, the Prairie Ornamental Pheasant & Waterfowl Association, WWF Canada, and Alberta Sports Recreation Parks & Wildlife.

Deliverables:

Sharp-tailed Grouse preliminary results:

- 1155 individual birds were identified from the 1198 molted feathers collected from 77 leks.
- 2 populations were identified in southern Alberta: North of the South Saskatchewan River (NSSR) and South of the South Saskatchewan River (SSSR)
- Most of the genetic variation within Sharp-tailed Grouse is at the lek level
- There is a significant isolation by distance pattern within the SSSR population, but not the NSSR population
- Most birds appear to disperse within 140 km in NSSR and 350 km in SSSR
- Overall, Sharp-tailed Grouse have high genetic diversity. NSSR has less diversity than SSSR

Sage-Grouse preliminary results:

The sequenced mitochondrial DNA has not been analyzed yet, but it appears as though both species have a lot of diversity by the number of different haplotypes present. Unfortunately most of the historic hybrid samples were too degraded to sequence their DNA and determine their maternal species, but it might be possible with microsatellites.

Several talks have been given.

Synthesis/reporting (Genetic diversity analysis, population structure, inbreeding, fragmentation) – Scientific Papers are anticipated. (The microsatellite analysis for Sage-Grouse has been submitted to Molecular Ecology –funded previously by ACA)

Final GECF Report

GECF History with project:

Work on Sharp-tail Grouse has received no support in the past, but work on Alberta Sage-Grouse has in 2003 & 2004 through the GECF and in 2005/06 through the Biodiversity Program.

Dispersal of rose-breasted grosbeaks in a fragmented landscape

Project Location: Athabasca, AB
Identifying Code: 030-00-90-132
Funding Allocation: \$10,000.00

Principal Investigator: Dr. Susan Hannon
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ACA Grant Status: Completed

Project Summary & Objective(s):

Boreal mixed-wood forests are areas of very high bird species richness, however, developments such as forestry and agriculture remove and fragment forest habitat and may jeopardize persistence of bird populations. An extremely important, but understudied, life history stage for birds is the period from fledging to the initiation of migration. During this time, juveniles are thought to be searching for territories that they will occupy the next spring. Birds reared in forest fragments may have more limited options for dispersal and could suffer higher mortality than those in continuous forest. The first objective is to examine the effects of forest fragmentation on natal dispersal in the Rose-breasted Grosbeak. This species is relatively common, its young are large enough to carry 1.8g radiotags for 9-16 weeks, its nests are fairly easy to find, and, from Dr Hannon's previous studies, the species is relatively sensitive to crossing gaps in forest cover. If fragmentation deters dispersal and increases mortality of juveniles then it is predicted: 1. Longer time to leave patch after fledging; 2. Longer movement paths; and 3. Higher mortality of juveniles in fragmented landscapes than in continuous areas. The second objective is to describe habitat used by dispersing grosbeaks.

Activities:

The field work was finished. Unfortunately the project did not work out as anticipated. The researchers experienced a lot of difficulty in finding nests (only 9 nests found) and the species was much more difficult to work on than expected. The males stop singing early when they begin to share incubation with the females, the nests were often very high in trees and not easily detected. Of the nests found, 7 of them were either depredated or abandoned; this may be partly due to the fact that the parents made a huge amount of noise when researchers tried to check the nests. In addition, cold wet weather during the nestling period may have further affected failure. This left too few juveniles to radio tag and follow. A lot of effort into the project and were disappointed that it did not work out. Data was collected on territory size of males and on nest site choice, which is a contribution to basic information.

Link with ACA Priorities for 2007-2008:

Little is known about the habitat needs of migrants post-fledging and during dispersal and this applied research will increase our knowledge of this and allow enhancement of populations through habitat retention (Wildlife Obj 6: Applied Research/Ecological Studies).

Partnerships:

NSERC; ACCRU (radio tags); Fish & Wildlife Division, Athabasca; Land Stewardship Society

Deliverables:

The anticipated deliverables (posting the study information on the website and publishing a scientific paper) will not be completed, as not enough data was collected and the project will not continue.
Final GECF Report

GECF History with project:

This project hasn't received funding before, but the researcher has received grants in the past.

Effects of aversive conditioning on elk migration and fescue growth

Project Location: Ya Ha Tinda Ranch near Banff
Identifying Code: 030-00-90-105
Funding Allocation: \$18,400.00

Principal Investigator: Holger Spaedtke
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ACA Grant Status: Completed

Project Summary & Objective(s):

Fescue grasslands comprise some of the most threatened communities in the Canadian Prairie Provinces and have recently been described as endangered by Environment Canada. Concern about their loss due to development, woodland encroachment, exotic species and overgrazing has increased, because only 5% of these grasslands remain in pre-settlement condition. These grasslands are some of the most productive among the grasslands in North America, providing valuable forage for native and non-native ungulates. Continued summer grazing by elk at the Ranch may ultimately threaten the viability of the fescue and, consequently, the entire ecosystem that is built on it. At the Ranch, this means that the grassland can likely sustain grazing by both Park horses and wild elk in the winter, but it likely cannot sustain continued grazing in the summer. Parks already controls the seasonality and volume of horse grazing. What remains is to control summer grazing by elk. Paradoxically, by residing year-round on the Ranch, elk are undoubtedly reducing the overall carrying capacity of the winter range. Reinforcing migratory behavior is, thus, in the best interest of both range and wildlife management at the Ranch.

The objectives for this project are:

- 1) To determine whether it is possible to use humans on horseback to aversively condition elk away from target areas during the spring and summer by a) moving them from the entire grassland or b) moving to different portions of the grassland.
- 2) Measure responses by portions of rough fescue grasslands following each of two spring / summer seasons of removal and compare these measures to ones taken in the recent past.
- 3) Monitor the movement of radio-tagged, resident elk (i.e., those that have previously remained at the ranch during the spring and summer) for both short and long-term changes in behaviour, and to determine whether there is an increase in migratory behavior following conditioning.
- 4) Monitor calf survival using calf: cow surveys using broad scale surveys comparable to those conducted in pre- and conditioning years.

Activities:

Capture and collaring: Between January and April, elk trapping and radio collaring was conducted. 72 elk were captured in 43 trap nights in the corral trap and 1 day of helicopter netgunning. 21 VHF collars were deployed on previously untagged and uncollared elk. 23 elk (20 individuals) - 16 known resident elk and 4 known migratory elk - were recaptured. The high number of re captured residents is due to the focus on known target elk. Two elk were lost due to capture related mortalities.

Aversive conditioning treatments: Between May and August, 39 aversive conditioning treatments were ridden. The group size of horse back riders varied between 2–15. The biggest elk group moved off the grassland was ~300 animals. Greatest herd displacement was 10.3km, with a maximum trial duration of ~3 hours. During calving the team successfully left cows showing clear calf protection behavior behind.

Elk pellet densities were taken, showing a shift of elk use between summers 2001 and 2007. Elk use of the western and southern portions of the grasslands has disappeared almost completely and a clear shift of use in the eastern parts of the grasslands to the west can be seen.

Vegetation measures: conducted a total of 284 re-visits of vegetation plots with a paired range cage design in 2006 and 2007. An ungrazed control area west of the main treatment areas (only 2007) showed no differences in mean biomass re-growth between re-visits in grazed and exclosed areas.

Summer range helicopter surveys and elk aerial telemetry: A total of 15.3 hours were surveyed late July during excellent sighting conditions. A total of 238 elk were counted on summer ranges in the survey area, composed of 187 female elk, 27 young of the year and 24 bull elk. A full round of telemetry flying was conducted in the first week of August supplemented with flights in September. Most migrant and resident elk were located.

Elk mortalities: 2 elk mortalities were discovered at the ranch and another 3 in the summer ranges during aversive conditioning season. All elk mortality sites were visited, the collars picked up and the site investigated. Given the relatively high numbers of radiocollared animals this year more mortalities than average were tracked. Overall mortality rate in 2007 was 10.2%, not higher than average.

Cow Calf Observations: Given the main objective of the project, summer calf counts are difficult to conduct, if aversive conditioning is successful. Nonetheless groups were counted at the ranch on occasion for a cow: calf ratio estimate. The heli survey data was used, as well as 1 observation in a close by summer range. The total cow: calf ratio appears to be extremely low with 0.13 (Ranch cow calf ratio was only 0.10 and summer range ratio 0.16). This fits with the relatively low pregnancy rates discovered during trapping.

Communications: Information from last year was updated and distributed during guided ranch tours, the daily campground check and opportunistic encounters with other horse riders and ranch visitors. Copies of the folder were distributed in the Sunde Fish & Wildlife office, the Ya Ha Tinda ASRD field house and the Mountain Aire lodge. The project web page has been updated and extended.

Link with ACA Priorities for 2007-2008:

This project addresses many of ACA's broad goals in habitat and wildlife, science-based conservation. Tools developed under this project will enhance and restore this grassland, which will enhance the area not only for wildlife, but also for the many recreational opportunities the area provides (Land Management Obj 3: Recreational Opportunities). Aerial surveys were conducted in cooperation with scientists and ASRD (Wildlife Obj 5: Aerial Ungulate Surveys) to monitor population size as well as trends over time (Wildlife Obj 2: Species/Pop'n Inventory). With aerial surveys, the project was able to efficiently assess the management tool of aversive conditioning and use the results for future management plans (Wildlife Obj 3: Plan Dev't & Implementation). This project develops a tool to manage elk populations on endangered fescue grassland (Wildlife Obj 4: Species Man't & Enhancement). This will not only enhance the wildlife habitat, but also contribute to maintenance of wildlife-oriented recreation (Wildlife Obj 9: Recreational Opportunities). Education and outreach (Wildlife Obj. 10) is implemented by giving lectures and organizing field trips for Sunde High School students, as well as by speaking to organizations like the Friends of the Eastern Slopes.

Partnerships:

Parks Canada, Banff National Park; University of Alberta; Department of Foreign Affairs and International Trade (Scholarship); Weyerhaeuser Canada

Deliverables:

Preliminary analyses show that the time elk spent in grasslands was drastically reduced compared to years previous to the project. Further results will be published in the Masters thesis resulting from this work by mid summer 2008 latest. Two publications in peer reviewed Journals are planned.

For more detailed results of the summer range surveys a separate report was published at the end of September and is available online (www.ualberta.ca/~holgers).

5 public talks were given in the project period.

An up-dated folder was made and distributed.

The project web page has been updated and extended www.ualberta.ca/~holgers (974 visits).

The project was in the Rocky Mountain Outlook (May 24 2007) and a 5 page report was in a special edition of the Calgary Herald (Discovery Alberta, Second Issue) published on Sept 16 2007. A picture of the project made the front page.

Final GECF Report

GECF History with project:

This project received funding in 2005/06 and 2006/07.

Assessing effects of sportfish-stocking and aeration on communities in small Boreal Foothills lakes

Project Location: Caroline/Rocky Mountain House
Identifying Code: 020-00-90-106
Funding Allocation: \$27,431.00

Principal Investigator: Dr. William Tonn
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ACA Grant Status: Completed

Project Summary & Objective(s):

The ACA and ASRD currently cooperate in a trout stocking and aeration program that includes several small lakes in the foothills region. Plans are to expand the program province-wide. Understanding the impact of these practices on the receiving ecosystems assists in the formulation and management of a provincial stocking-aeration program. Using a replicated “control-impact” study design, the objectives of this study are to assess how the native forage fish, invertebrate, and amphibian communities interact with and respond to the introduction or non-native trout. As well, the position and role of the introduced trout species in the lake food webs, and the impact of trout on the trophic positions of forage fish, invertebrates and amphibians is being documented via stable isotope analysis. How aeration influences these effects and relations continue to be examined. Knowledge from this study contributes to both the current and future stocking and aeration programs and the success of the Alberta recreational fishery. The central goal of the study is to apply principles of impact assessment to the basic question: what are the consequences of trout stocking and lake aeration on invertebrate, fish, and amphibian communities in small boreal foothills lakes?

Activities:

Amphibians: 3 amphibian species (wood frog, boreal chorus frog, western toad) were sampled on all 12 study lakes. From late-June through late-August 2007, surveys were conducted on transects once every 5 days. Adult and newly metamorphosed amphibians were identified, sexed, and measured.

Forage fishes: mark-recapture sampling on 3 lakes (one from each fish-bearing category) to estimate population size for each native species, representing the 3rd year of population estimates for each of these lakes. Results suggest that lake-specific differences are unrelated to treatment. Also examined diel distribution and movement of forage fishes in 4 lakes using a spatially stratified sampling design over a 26-28 h period.

Macroinvertebrates: Samples from the littoral/benthic sweeps from the 2006 field season were preserved in ethanol. During 2007, these samples were sorted, identified, counted, and measured in the laboratory. Zooplankton tows were taken in 2007 for an anticipated Before-After-Control-Impact study in 2008-2009, given that the previously unstocked Fiesta Lake was to be stocked with trout in the fall (2007)

Trout diets/food web analysis: To provide samples for a stable isotope-based description of food webs in stocked and unstocked lakes, we collected littoral macroinvertebrates and forage fish from the sediments and macrophytes of all 12 study lakes during May and August 2007.

Physical, chemical, and biological properties: Water chemistry samples were taken in June and August 2007 from each of the lakes. Samples were sent to the U of A Limnology Lab for analysis of TDN, TN, TDP, TP, and chlorophyll-a. Water temperature and dissolved oxygen profiles were also taken monthly on each lake. Temperature loggers were deployed in mid May.

Link with ACA Priorities for 2007-2008:

This study focuses on the extent to which, and how, the trout-stocking and aeration program interacts with and affects native communities, to help guide ACA (and ASRD) in the design and management of this program (Fisheries Obj 1: Fish Stock Assessment & Monitoring, 4: Lake Aeration & 7: Enhanced Fish Stocking). Indeed, the goal of the study is not directed at documenting adverse impacts of non-native trout on aquatic communities, but to increase understanding of how non-native trout interact with the receiving lake ecosystem; such knowledge may then contribute to increasing the overall success of the stocking program, where “success” includes the retention of supporting biological communities.

Partnerships:

ACA East Slopes Business Unit (NSERC IPS; in-kind support); ASRD-Clearwater District (in-kind support); U of A (equipment, facilities, student support); Canadian Circumpolar Institute (student grants); Alberta Sport, Recreation, Parks and Wildlife Foundation (grants); NSERC (research grants, IPS (w/ ACA), USRA); Alberta Ingenuity Fund.

Deliverables:

For preliminary results see the Final GECF Report

Presentations to ACA/ASRD staff in Rocky Mtn. House – Completed December 2007.

Conferences: Canadian Conference for Fisheries Research (01/08): 2 poster presentations, Canadian Amphibian & Reptile Conservation Network, 10/07: oral presentation, Pacific Ecology & Evolution Conference (2/08): oral presentation, Biological Sciences Graduate Research Days (02/08): 1 oral, 2 poster presentations.

Graduate theses (3 MSc; completions scheduled for 2008; 1 will continue as PhD).

Articles for peer-reviewed scientific journals – Data analysis and writing are underway (end 2008).

GECF History with project:

This project received funding in 2005/06 and 2006/07

Epidemiology modeling for proactive management of Chronic Wasting Disease in deer in Alberta

Project Location: Central eastern Alberta near Chauvin, AB
Identifying Code: 030-00-90-125
Funding Allocation: \$30,200.00

Principal Investigator: Dr. Evelyn H Merrill
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ACA Grant Status: Completed

Project Summary & Objective(s):

Chronic wasting disease (CWD) has been detected in wild cervid populations in Alberta as of September 2005. This disease is perhaps the most significant issue in deer management in North America, as it has the potential to reduce wild populations and impose significant social, ecologic, and economic costs from the loss of hunting, recreational, and tourism revenues. ASRD is currently managing deer populations in the vicinity of identified CWD foci, but management strategies are currently based on data developed in the United States.

The GECF funding is directed towards the field studies which will be the basis for predicting the spatial spread of CWD within the areas of concern. The specific objectives were to:

- Describe population units, densities, and interchange of deer among populations units using radiotelemetry and compare to results from genetic studies.
- Determine changes in deer spatial structure, grouping patterns, movements, and habitat use in relation to density.

Activities:

Telemetry work and data analyses are ongoing. There are currently 130 collared deer in the study, 25 of which are GPS collars. 70 of these collars have been deployed this trapping season (since November 2007), either by ground-capture using Clover traps (n=23) or by net-gunning from a helicopter (n=47). Deer are relocated 2-3 times each month by ground and aerial telemetry. These data are used to map home ranges, chart migration and movement patterns, and determine demographic parameters.

Data collected from observations of deer groups has given a picture of how group structure changes over the year. Deer density estimates have been obtained from aerial surveys conducted by ASRD. Habitat characteristics are being obtained in order to develop a precise vegetation map GIS layer, which will be used in several habitat use and movement analyses. Snow depth measurements are being collected throughout the winter, and permanent transects have been set up in all habitat types to sample vegetation/forage biomass throughout the summer growing season. Both data collection and analysis are ongoing.

Link with ACA Priorities for 2007-2008:

The ACA Wildlife funding priorities focus on projects designed to enhance the sustainability of wildlife species through science-based conservation & applied research (Wildlife Obj. 6). This project relates to one of the four thematic areas: ungulates. Major goals of the ACA Strategic Plan include supporting wildlife projects that quantify the abundance and distribution of wildlife species (Wildlife Obj 2: Species/Pop'n Inventory) and obtain information that aid resource managers in maintaining wildlife-oriented recreational opportunities (Wildlife Obj. 9). Invasion of infectious diseases poses direct threats to the long-term abundance of wildlife in Alberta. In particular, CWD is the only transmissible spongiform

encephalopathy (TSE) in free-ranging cervids. CWD is perhaps the most significant issue in deer management in North America, with the potential to reduce wild populations and impose significant social, ecologic, and economic cost from the loss of hunting, recreational, and tourism revenues, which will have far-reaching implications for wildlife programs and local economies in Alberta. However, Alberta is in a unique position to implement an efficient program to retard the spread of CWD if we have scientific information to guide proactive and effective management actions. ASRD aerial surveys have been used to determine deer densities for this project (Wildlife Obj. 5). The proposed research strategically positions Alberta for effective management and mitigation of CWD in the future (Wildlife Obj. 3).

Partnerships:

U of A; Alberta Fish and Wildlife; Alberta Prion Research Institute; Alberta Professional Outfitters Society; Alberta Fish and Game; FNAWS

Deliverables:

For preliminary results see the Final GECF Report.

Presentations have been made at the PrioNet annual conference (Toronto, ON, Feb 2008), the Alberta Chapter of the Wildlife Society annual conference (Red Deer, AB, Feb 2008), and the Wildlife Advisory Committee Meeting (Senlac, SK, March 2008).

Two editions of the Border Deer Study newsletter (May and Oct 2007) have updated over 100 landowners plus over 50 people in government and education on project progress and goals.

Two MSc thesis proposals have been accepted by their supervisory committees.

Longer-term deliverables including mitigation of the spread of CWD, further monitoring and density effects on transmission, as well as the publication of innovative research in local, national and international journals are anticipated once the project is complete.

GECF History with project:

The project received funding in 2007/08.

Development of a prairie-deer sightability model for aerial surveys

Project Location:	Central eastern Alberta near Chauvin, AB
Identifying Code:	030-00-90-124
Funding Allocation:	\$34,742.00
Principal Investigator:	Dr. Evelyn H Merrill
Contact Information:	University of Alberta Dept. Biological Science, CW 405 Edmonton Alberta T6G 2E1 Email: emerrill@ualberta.ca nwebb@ualberta.ca Telephone: (780) 492-2842
ACA Grant Status:	Completed

Project Summary & Objective(s):

Aerial population surveys of ungulates often substantially underestimate actual densities because of visibility, or sightability bias. Statistically robust "sightability functions" can be developed to correct for factors limiting animal sightability, such as vegetation, snow conditions, and group size; the use of these models has become wide-spread for species like elk and moose, but is not common for deer. This project will use already-collared white-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hermionus*) to develop a statistically robust sightability model to correct for such underestimation; the model will be developed by conducting ~100 sightability trials over 2 years. This model will improve the accuracy of aerial population surveys for the purposes of wildlife management; in this region, there is also the particular interest of assessing deer population changes resulting from herd reductions being conducted for CWD management. The model can also be used in other prairie areas in the province. This report details the data collected during the first field season; data analysis is ongoing.

Activities:

The study design for this project was developed by the student recruited for this project and accepted by his graduate committee. The study design was also reviewed by ASRD biologist, James Allen. Three coordination meetings were held in fall 2007 with SRD biologists to coordinate aerial survey and sightability trials.

33 successful sightability trials (using similar survey procedures as ASRD aerial surveys & project personnel were trained in aerial survey protocols) were conducted, with the plan to conduct approximately half of the total number of trials this winter (snow conditions had to change before additional trials conducted).

For the sightability trials, 129 white-tailed and mule deer have been captured and fitted with radio-collars for use in this and other related projects, which includes 54 collars that were deployed during the current trapping season (Nov 2007 - March 2008). For trapping, collaring and monitoring deer, >120 landowners were contacted for permission to access their property. Monitoring of the home range of collared deer over the past 6 months has allowed us to determine the areas used. As a result, this allowed us to select specific deer for the sightability trials so that the study design includes trials from wide range of environments.

A preliminary sightability model cannot yet be developed, because this requires a number of trials conducted in a wider range of environmental conditions than experienced this winter. Once the remaining trials have been conducted, a preliminary model will be developed that will be refined with data from the second year of the study (2009). The model's robustness will be tested after all sightability trials have been conducted in 2009.

Link with ACA Priorities for 2007-2008:

In their Strategic Business Plan, ACA commits itself to providing a defensible scientific base for conservation actions, and lists review of focal wildlife inventory methods as a priority (Wildlife Obj 2: Species/Pop'n Inventory), identifying aerial surveys for ungulates as one of its top priorities (Wildlife Obj.

5). This project addresses these identified strategies directly. The project is particularly timely because credible aerial surveys are imperative for addressing the success of current management actions for the spread of Chronic Wasting Disease (CWD) into eastern Alberta. Accurate population numbers of deer are notoriously difficult to obtain due to poor animal detection. This project takes advantage of deer already radiocollared to conduct "sightability trials", which allow us to develop statistically rigorous "sightability functions" to correct aerial survey estimates for animals that are missed during the surveys.

Partnerships:

Alberta Fish and Wildlife; Alberta Prion Research Institute; Alberta Professional Outfitters Society

Deliverables:

The objectives and design of this project were discussed in a presentation in October 2007 at a meeting of CWD researchers from Alberta and Saskatchewan, and at a seminar at the University of Alberta in November 2007. A project presentation was presented at the Alberta Chapter of the Wildlife Society Meeting in Red Deer, AB in March. No other deliverables were scheduled for this period. Preliminary data analysis will be conducted in summer 2008.

For more information on the methodology and preliminary results see the final GECF Report

GECF History with project:

This was the first year of funding for this project. This project takes advantage of the already collared deer funded under another GECF project.

Cougar Predation on Wild Ungulates in a Multi-Prey, Multi-Predator System in West-Central Alberta

Project Location: The Rocky-Clearwater Forest, west of Rocky Mountain House
Identifying Code: 030-00-90-109
Funding Allocation: \$41,080.00

Principal Investigator: Dr. Mark Boyce
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ACA Grant Status: Completed

Project Summary & Objective(s):

In December 2005 the Boyce lab began a study of cougar population status, habitat use, and predation in Alberta's Clearwater County, representing the first major study of this important predator to be conducted north of the Bow River. Through this study results will be produced that can be used for the management and conservation of cougars and their prey along Alberta's Central East Slopes. In particular the study provides information that will facilitate effective mitigation of predator-caused declines in economically important or locally endangered ungulate populations while simultaneously maintaining viable and ecologically effective predator populations. The specific research objectives of this project were to:

1. Quantify year-round cougar habitat use and predation patterns in west-central Alberta
2. Determine the factors that drive variation in prey selection, prey vulnerability, and killing rates for various species of wild ungulates in a multi-prey system and produce a model that allows us to predict predation patterns well.
3. Evaluate the impact of anthropogenic change on cougar predation and population status.
4. Estimate cougar population size in the study area and develop models capable of extrapolating population size to nearby Cougar Management Areas.

Activities:

The third winter field season has been completed: thus far 40 individual cougar have been collared. > 3000 clusters of GPS locations have been visited in the field, identifying > 1100 cougar predation incidents and > 60 instances of scavenging by cougar at cluster locations. All locations believed to be kills were visited and a large subset of all other (non-kill signature) locations. Over 100km of snow-tracking of collared cougar have been conducted to assess the usefulness of GPS clusters for identifying kill sites, during which 8 ungulate kills were discovered, and all of them produced clusters of > 2 GPS locations, highlighting the usefulness of the GPS clustering approach.

Kill rate and prey composition data continues to be added to their information base (one of the largest datasets on cougar predation ever collected).

Work continues on producing the final models of ungulate distribution and abundance from the > 500km of pellet group surveys over the entire 15,000km² study area used by the cougar and wolf projects (in collaboration with Nathan Webb and Dr. Merrill of the Central East Slopes Wolf study). These models are important for our understanding of the drivers of kill rate for individual wolf packs or cougars and for assessing the degree of selection the predators show for particular species of prey. Currently on the third iteration of the data analysis.

Data collection is on-going, complete analysis will be available once data collection is complete.

Link with ACA Priorities for 2007-2008:

This project meets the Wildlife Program Priorities: Population inventory and assessment and applied ecological studies (Wildlife Objectives 2 & 6). This research represents the first intensive capture and monitoring of cougars north of the Bow River. There is little direct data regarding cougar population status

in this region, but this is where much of the increased harvest is taking place. The population data collected will be the most comprehensive available in Alberta's northern cougar management units. Moreover, by evaluating cougar habitat requirements and discriminating between competing hypotheses regarding industrial impacts on the landscape, insight will be gained on the possible causes of population change. This study directly benefits Alberta's WinCard holders by providing insights into how to better manage predators, the ungulate populations they prey upon, and the landscapes both depend on for survival. This study provides management oriented solutions that might be used to increase hunting opportunities and to ensure that viable and harvestable populations of both predator and prey persist into the future (Wildlife Obj 9: Recreational Opportunities).

Partnerships:

The first two years have been supported by: ACA, Alberta Professional Outfitters Society, Foundation for North American Wild Sheep, Northern Alberta Chapter of the Safari Club International, Ontario Chapter of Safari Club International, NSERC, Alberta Ingenuity, Calgary Zoo, Rocky Mountain Elk Foundation, Yellowstone to Yukon Conservation Initiative, Alberta Wilderness Association, Alberta Sport, Recreation, Parks and Wildlife, Rocky Fish and Game Association, Shell Canada, Grand Slam Club, ASRD, among others.

Deliverables:

Several publications are underway:

- Knopff KH, Webb N, Bertrand A, Merrill E, Boyce MS. 2008. Using count based resource selection functions to model ungulate distribution and abundance. *Journal of Applied Ecology* (In prep)
- Mogge B, Knopff KH, Webb N, Merrill E, Boyce MS. 2008. Top carnivore niche separation in west-central Alberta. *Canadian Journal of Zoology* (In prep)
- Knopff KH, Knopff ARA, Boyce MS. 2008. Optimizing the use of GPS location clustering techniques to estimate prey composition and kill rate for cougars in multi-prey systems. *Journal of Wildlife Management* (In prep)
- Knopff KH, Boyce MS. *In Press* Prey specialization by individual cougar (*Puma concolor*) in multi-prey systems. *Transactions of the 72nd North American Wildlife and Natural Resources Conference*. Wildlife Management Institute, Washington, DC.
- Knopff KH, Jalkotzy MG, Boyce MS. *In review* The status, management, and conservation of cougar in Canada. In S. Negri and M. Hornocker (eds) *Cougar: ecology and management* University of Chicago Press, Chicago.

Professional and Public Interest Articles

- Knopff KH. 2008. Cougar research in Alberta. *Wild Felid Monitor* 1(1): 18
- Knopff KH. 2007. Finding Alberta's great ghost cat. *Calgary Zoological Society Newsletter* Sept 2007: pg.7

Media Reports and Articles: (regarding research conducted by K.H. Knopff)

Edmonton Journal December, 2007 – “Cougars on the prowl, but sightings rare”
Prairie Post April, 2007 – “Central Alberta Study Follows Cougar Activities”

Invited Presentations:

- 2008 Safari Club Int'l Northern Alberta Chapter – “The Central East Slopes Cougar Study”. Edmonton, AB
- 2007 Alberta Wilderness Assoc – “Alberta's ghost cat”. Calgary, AB.
- 2007 Calgary Field Naturalists – “Alberta's ghost cat”. Calgary, AB.
- 2007 Nordegg Community Assoc – “Cougar: biology, ecology, and interactions with people”. Nordegg, AB.
- 2007 ACA – “Cougar: biology, ecology, and interactions with people”. Rocky Mountain House, AB.
- 2007 Alberta Parks Human Wildlife Conflict Prevention Specialist Group – “Cougar: biology, ecology, and interactions with people”. Canmore, AB.
- 2007 Rocky Mountain Ramblers Hiking Club – “Cougar: biology, ecology, and interactions with people”. Calgary, AB
- 2007 Jr. Forest Wardens (ages 15-18) – “Cougar: biology, ecology, and interactions with people” Nordegg, AB
- 2007 Jr. Forest Wardens (ages 7-13) – “The Cougar” Rocky Mountain House, AB.
- 2007 Spruce View Jr. High School – “The Cougar” Spruce View, AB.
- 2007 Dickson Fish and Game Annual Supper – “The Central East Slopes Cougar Study” Spruce View, AB.
- 2007 Fdn for North American Wild Sheep – “Cougar populations, predation, and management in AB” Red Deer, AB.

For more preliminary results see the final GECF Report

GECF History with project:

This project received funding in 2005/06 & 2006/07.

Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park – Alberta

Project Location: Cypress Hills Interprovincial Park
Identifying Code: 015-00-90-108
Funding Allocation: \$2,000.00

Principal Investigator: Kerri Widenmaier
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ACA Grant Status: Completed

Project Summary & Objective(s):

The purpose of this research is to provide Cypress Hills Interprovincial Park – Alberta (CHIP) with ecosystem management recommendations concerning forest encroachment into foothills fescue grasslands (*Festuca campestris*). In order to accomplish this, the research attempts to meet several objectives:

1. Determine whether the area of fescue grassland is being reduced by forest encroachment, and if so, determine the quantity and rate of loss.
2. Identify any patterns of tree establishment that are associated with the encroachment.
3. Identify any likely ecological or land-use mechanisms that have promoted encroachment.
4. Use the results of the above research to provide CHIP with management recommendations for the grassland – forest interface.

Activities:

- Aerial Photo and Spatial Analysis
- Site Selection and Field Sampling
- Data Analysis
- Recommendations for Park Management Plan

Link with ACA Priorities for 2007-2008:

This project meets the priorities of the ACA Strategic Business Plan by enhancing the level of understanding of a conservation issue, and promoting the protection of a natural habitat, which supports a wide variety of biological populations. Fescue grasslands in CHIP represent a unique ecological resource and an important source of native biodiversity for the region (Wildlife Obj 8: Habitat Inventory & Enhancement). This applied research supports the Wildlife Program by helping to preserve the habitat of several Alberta and Canadian species at risk, e.g the ferruginous hawk, long-billed curlew, Ord's kangaroo rat, and the western blue flag (Wildlife Objectives 3: Plan Dev't & Implementation & 6: Applied Research & Ecological Studies).

Partnerships:

Cypress Hills Interprovincial Park – Alberta; University of Calgary

Deliverables:

Aerial photographs taken at 15-20 year intervals between 1950-2001 have been identified. These photographs are currently being analyzed for changes in vegetation composition, location, and extent. The site selection and field sampling is complete, analysis is underway (results not available until Dec, 2008).

This research will result in a written Master's Degree. A copy of this project will be provided to CHIP in the form of a report providing recommendations for the management of forest encroachment into fescue

grasslands (Dec, 2008) and in journal publications and poster presentations (Winter/Spring of 2008/2009).

Final GECF Report

GECF History with project:

This is the first grant for this project.

Algae as bioindicators of human impacted groundwater emerging into rivers

Project Location: Elbow River between Bragg Creek and the City of Calgary city limits
Identifying Code: 015-00-90-109
Funding Allocation: \$5,000.00

Principal Investigator: Dr. Cathy Ryan
Contact Information: University of Calgary
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Calgary Alberta T2N 1N4
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Telephone: 403-220-2793

ACA Grant Status: Completed

Project Summary & Objective(s):

Side channels exist alongside the main channels of meandering streams. These side channels may be important refugia for aquatic animals during low flow periods, or as spawning grounds in the spring. If these channels serve as refugia, or spawning grounds, the water quality in the channels is of great importance in determining the survival of the aquatic animals there. Previous research in this lab indicated that side channels which are groundwater fed may be impacted by human activities to a greater extent than the main channel. The specific project objectives of this research are to determine:

1. If side channels are intercepting groundwater before it enters the Elbow River.
2. If the water in these side channels is plain, undiluted groundwater, and,
3. If certain algae in the side channels mark where human-impacted groundwater is coming to the surface.

Activities:

1. Side channels that are identified as important for this project are all chute channels, that is, the form when flood water cuts across a point bar in a meandering river system.
2. A volunteer student used GIS mapping techniques to compare bedrock type with the channel and flood plain width of the Elbow River, and her results indicate that bedrock controls strongly influence river channel morphology.
3. Five chute channels were investigated and two were selected for detailed investigation in this project. One chute channel is clearly groundwater fed during the entire year, and the other is river fed for at least part of the year. Both chute channels were surveyed to establish the exact morphology of the chute channel bars.
4. Mini-piezometer water samples were collected in a transect across one of the bars. Results from this sampling indicate that there is an impermeable barrier across the center of the bar, so that river water is not entering the chute channel, and all the water in the chute channel is groundwater. Analysis of the groundwater and the surface water from the chute channel indicates that these are the same waters, and that the groundwater is being impacted by activities up gradient.
5. Algae, including diatoms, were collected along the river and in side channels for two summers. One genus of algae, *Batrachospermum*, has been consistently found where the groundwater emerges and nowhere else.

Link with ACA Priorities for 2007-2008:

This project falls under the ACA Wildlife Objective 6 (applied research/ecological studies), and developing and monitoring habitat indicators. It also falls under the ACA General Fisheries Funding Priority, as an activity that sustain fish populations and the biological communities and habitats that sustain them.

Partnerships:

Bow River Basin Council; Elbow River Watershed Partnership; City of Calgary

Deliverables:

- 1) Two manuscripts have been prepared from the research done on this project: One on bedrock controls of river morphology and one on groundwater interception by chute channels and the associated effects on algae and other diatoms. The Elbow River Watershed Partnership has been provided with a PDF of the results.
- 2) A second product from this project is the training of summer students.
- 3) Several presentations have been made at conferences.
- 4) Final GECF Report

GECF History with project:

This is the first grant for this project.

Invasion and Bloom Dynamics of "Rock Snot" (*Didymosphenia geminata*) in Alberta Rivers

Project Location:	Central and Southern Alberta, including North and South Saskatchewan River Basins
Identifying Code:	020-00-90-117
Funding Allocation:	\$25,000.00
Principal Investigator:	Dr. Leland J. Jackson
Contact Information:	University of Calgary, Department of Biological Sciences, 2500 University Dr NW, Calgary Alberta T2N 1N4 Email: ljackson@ucalgary.ca Telephone: (403) 220-6790
ACA Grant Status:	Completed

Project Summary & Objective(s):

The diatom *Didymosphenia geminata*, commonly referred to as Didymo, has historically been described as a cosmopolitan, but rare, diatom normally found in moderately flowing montane and boreal forest rivers in Europe and North America. However, over the last decade, Didymo has emerged as a nuisance, bloom-forming species in North America and most recently, New Zealand. The occurrence of nuisance blooms in Alberta were first noticed anecdotally in the late 1990s in the upper Bow River in Banff National Park, and by the early 2000s on lower reaches of the Bow River near Calgary and the Oldman River. In 2004, our research group at the University of Calgary initiated a periphyton sampling program in the Red Deer and Bow rivers to study natural and anthropogenically driven transitions in Alberta rivers. As a consequence of this large-scale project, the occurrence, distribution and bloom development of Didymo in these rivers were documented. Unlike other algae, blooms of Didymo are not associated with elevated nutrient levels or poor water quality. In fact, blooms of Didymo generally occur under low-nutrient conditions in habitats similar to those historically described. To gain a better understanding of the biological mechanism(s) involved in nuisance bloom development and geographic expansion, the sampling program was expanded to include 47 sites along the eastern slopes of the Canadian Rockies in Southern Alberta in 2006. This is of particular importance to water and wildlife management in Alberta, as massive blooms likely impact natural flows and habitat for aquatic organisms. By learning more about the ecology and bloom dynamics of Didymo in Alberta watersheds, a risk management framework could be developed to inform Healthy Aquatic Ecosystem policy initiatives in Alberta. The specific objectives of this project are to:

1. Determine the important environmental drivers that promote *D. geminata* bloom events.
2. Assess the impacts of *D. geminata* bloom development to periphyton and invertebrate community structure (including biodiversity), via colonization/growth experiments.
3. Develop an Ecological Niche Model that uses the Alberta Environment ArchHydro database to predict spatial "hot-spots" for future invasions and/or bloom events.

Activities:

- 1) Expand seasonal sampling of *D. geminata* in 22 rivers of the South Saskatchewan River Basin to include rivers in the North Saskatchewan River Basin, a system believed to be at risk for *D. geminata* invasion, but with no baseline data.
- 2) Colonization experiments using Nutrient Diffusing Substrata will be deployed in rivers that experience *D. geminata* outbreaks and rivers that do not.
- 3) An Ecological Niche Model tool has been developed using an ArchHydro database of Alberta watersheds and *D. geminata* abundance (rather than conventionally used presence/absence data).

Link with ACA Priorities for 2007-2008:

Due to the potential impacts of *D. geminata* blooms to ecosystem function and services, this project addresses a number of priorities outlined in all three of the funding priorities. The most apparent priority is the threat *D. geminata* outbreaks pose to fish habitat, spawning grounds, and food availability (Fisheries Obj 8: Riparian Conservation Planning).

Partnerships:

Water Management Operations - Alberta Environment; Fish and Wildlife Division – ASRD; Atlantic Salmon Federation

Deliverables:

1. This project provided new baseline data on the distribution of the bloom-forming alga *D. geminata* in southern Alberta. The important environmental drivers that promote *D. geminata* bloom events in the South Saskatchewan River Basin (SSRB) were determined. Upon processing and analyzing hundreds of samples from 47 sites in the SSRB, statistical analyses reveal that the important environmental parameters correlated to bloom development are mean discharge (Q), water clarity (i.e. turbidity, total suspended solids), and temperature.
2. One peer-reviewed journal article has been published in the *Canadian Journal of Fisheries and Aquatic Sciences* and two others will be submitted for peer review by spring 2008 in the journals *Diversity and Distributions* and *Biological Invasions*.
3. Advise and inform government partners on emerging information that can contribute to river management policies and the Alberta Aquatic Invasive Species Working Group: Throughout the funding period, government partners have been consulted on emerging information relevant to river management and aquatic invasive species policy development. Notable deliverables include an insert in the 2007 Alberta Guide to Sportfishing Regulations (ASRD) and the 2007 Aquatic Invasive Species Field Guide (Ontario Ministry of Natural Resources). Government consultation will continue in kind beyond the ACA funding period.
3. Participate in community outreach/education programs to inform the public about *D. geminata*, how to identify and report it, and how to minimize spread, specific deliverables include: a full-page article on "rock snot" in Alberta, *Edmonton Journal* (Jan. 13, 2008), followed by coverage in the *Calgary Herald*, *National Post*, and *Vancouver Sun*; *D. geminata* workshop (by initiation) (August, 2007); Canadian Water Network South Saskatchewan River Basin Workshop, Calgary, AB (July 2007); Spring Naturalists Workshop, Biogeosciences Institute, Kananaskis Field Stations (June 2007); Alberta Water Quality Awareness Day initiative (June 2007); CBC radio's Wildrose Country (May 2007).
4. Final GECF Report

GECF History with project:

This is the first grant for this project.

Pronghorn antelope migration ecology and connectivity in the Northern Great Plains

Project Location: Grasslands Natural Region in southern Alberta
Identifying Code: 030-00-90-128
Funding Allocation: \$26,338.00

Principal Investigator: Michael James Suitor
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2500 University Dr NW,
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ACA Grant Status: Completed

Project Summary & Objective(s):

The distribution and abundance of pronghorn antelope (*Antilocapra americana*), an endemic grassland obligate and important socio-economic species in the Northern Great Plains, is increasingly threatened by the combination of changing landuse practices and lack of refugia. Changing landuse practices primarily from expanding cultivation have resulted in habitat loss and fragmentation. Weather (sporadic severe winters, and drought), combined with increasing barriers to movement made the prognosis poor for maintaining substantial populations of pronghorn in the 21st century. Knowledge of how and why pronghorn migrate is essential for designing landscape-specific strategies to retain this increasingly rare component of biodiversity and to maintain pronghorn resilience. Field research will produce geospatial data to be used in defining attributes of migratory pathways used by GPS collared pronghorn and to assess connectivity thresholds of current and future landscapes to those movements. This study will contribute valuable field information on the biological needs of this migratory species for regional conservation planning and landscape management.

In particular, five objectives will be met:

1. Collect quantitative and qualitative field based measures of anthropogenic disturbance (e.g. fence type and permeability to pronghorn movements) to be used in developing models assessing the cumulative effect of linear disturbances on pronghorn movements and in particular migration movements.
2. Generate descriptive data on pronghorn seasonal home range and migration ecology using regression analysis and descriptive statistics.
3. Evaluate pronghorn movements during migration to determine gradients and thresholds to movement.
4. Assess and apply landscape connectivity parameters across Northern Sage Steppe Study area to determine key core habitat areas, movement corridors, barriers, and filters and to identify areas where priority conservation actions are needed.
5. Provide ACA, ASRD, and other conservation organizations/agencies with analytical models and conceptual framework for land use and conservation planning at a regional scale.

Activities:

Fieldwork, across the range of the pronghorn in Alberta primarily focused on collecting spatial and attribute information about linear features that may affect pronghorn migration such as roads, fences, and rivers, was completed from April to July, 2007. Field work was augmented in fall of 2007 to fill in data holes from the summer sampling schedule. During fieldwork information was also collected on the presence of sensitive species all over the Natural Grassland Region and provided the appropriate authorities (ASRD, ACA, CWS) with all important sightings. Several of the pieces of data collected directly from summer surveys have contributed to the EnCana CFB Suffield environmental assessment hearing (e.g. critical river crossing locations).

Generate descriptive data on pronghorn home range and migration ecology: data is currently being developed into a publication in collaboration with ACA biologists. Key findings include the differential needs and ecology of pronghorn phenotypes, also examined environmental and anthropogenic factors that were associated with driving home range size.

Evaluate pronghorn movements during migration: At present models are being experimented with to determine which will allow us to address key management questions. Currently a Bayesian state-space model is in development with collaborators at Duke University that allows for examination both the state (e.g. resting, foraging) of an animal in time and space, which will give a better understanding of how pronghorn interact with the landscape given different behaviours.

Determine key core habitat areas, movement corridors, barriers, and filters and to identify areas where priority conservation actions are needed: Several bottlenecks and barriers to pronghorn movements have been determined on the Alberta landscape at this time. Several of these findings have already been implemented into environmental assessment hearings to ensure these bottlenecks will not be closed to movements, causing catastrophic population declines and range restrictions for pronghorn in Alberta.

Provide conservation organizations/agencies with analytical models and a conceptual framework:

Ongoing and will conclude when the project is completed. Due to a very close working relationship with ACA and ASRD biologists and managers, information is being integrated into research and management outcomes as needed.

Link with ACA Priorities for 2007-2008:

Although this project meets several of ACA's broad goals and priorities, 3 objectives in the Wildlife Program are targeted: The principal investigator has been and will continue to work with the multi-jurisdictional Pronghorn Working Group in Alberta, Montana and Saskatchewan on transboundary land management and conservation. Much of this discussion has focused on findings from the research presented in this project. Future work will focus on resolving key knowledge gaps identified by this research, the conservation of site specific locations of conservation importance to pronghorn, and will attempt to answer rigorous hypotheses formed following the completion of this project (Wildlife Obj 1: Strategic and Operational Planning).

This research program is an applied conservation study on the status and ecology of movement patterns of pronghorn antelope, an endemic, priority grassland obligate that is highly valued as a big game species in Alberta. The project will address a poorly understood and potentially threatened component of biodiversity, long-distance migration (Wildlife Obj 6: Applied Research and Ecological Studies).

A key objective of this research is to define core habitats, corridors, barriers, filters and to identify areas where priority conservation actions are needed (Wildlife Obj. 8 Habitat Inventory and Enhancement).

Partnerships:

ACA; ASRD; Canadian Forces Base Suffield; University of Calgary Graduate Student Association; Saskatchewan Environment; World Wildlife Fund USA; NSERC; Montana Fish, Wildlife, and Parks; United States Geological Survey; Bureau of Land Management.

Deliverables:

Jones, P., M. Grue, J. Landry-DeBoer, M. Suitor. 2007. Resource selection by pronghorn antelope in the Grassland Natural Region of Alberta: Progress Report 3.

Peer reviewed journal article describing differences in population phenotypes by discussing home range use and pronghorn migration ecology: April 2008.

Article discussing a new and cutting edge method of modeling animal movements: April 2008.

Present project findings at the 23rd Biennial Pronghorn Workshop, Alberta: May 2008.

Paper discussing effects of various landscape features on pronghorn migration movements: Feb 2008.

Paper in cooperation with ACA biologists on resource selection by pronghorn: anticipated Sept 2008.

Master's defense and project completion including full documentation: anticipated Sept 2008.

Synthesis chapter delivered to ASRD with recommendations on how to maintain and enhance movement corridors to ensure population goals are met allowing ASRD managers to meet or increase consumptive and non-consumptive objectives for pronghorn in Alberta: anticipated Sept 2008.

Peer reviewed journal article describing landscape connectivity to pronghorn migration movements: Dec 2008.

Final GECF Report

GECF History with project:

This is the first year this project has received a grant.

Modelling Mercury Biomagnification in the South Saskatchewan River Basin

Project Location: Oldman River sub-basin and South Saskatchewan River
Identifying Code: 020-00-90-116
Funding Allocation: \$27,000.00

Principal Investigator: Joseph Rasmussen
Contact Information: University of Lethbridge
4401 University Dr
Lethbridge Alberta T1K 3M4
Email: Joseph.rasmussen@uleth.ca
Telephone: (403) 382-7182

ACA Grant Status: Completed

Project Summary & Objective(s):

The goal of the project is to study mercury bioaccumulation in the Oldman River foodweb along the river continuum from headwater lakes and tributaries, impacted by mining and lumbering activities, to downstream reaches impacted by agriculture and urban development. Since food is the dominant pathway through which Hg enters fish, one of the long-term research goals of the Rasmussen laboratory has been the development of models for mercury bioaccumulation based on bioenergetics and foodweb interactions based on stable isotope techniques. Due to upstream downstream gradients and point sources of contamination, and large scale movements of fish, the spatial complexity makes such models challenging to apply to river ecosystems.

The specific project objectives are:

- 1) To identify the mercury gradient along the Oldman River based on data from primary consumers (suckers, dace, and invertebrates) upstream and downstream.
- 2) To provide much needed information on the ultimate sources of mercury, whether anthropogenic or natural, using mercury stable isotopes in biota and sediment cores, and to further address potential anthropogenic sources of mercury in prairie river systems such as agriculture (irrigation, intensive livestock operations) domestic sewage and urban runoff, clear cut logging, coal mining and hypolimnetic water from reservoirs.
- 3) To augment the Mercury Mass Balance Model (MMBM) previously described for lakes by workers in the research group with a statistical algorithm to account for linearity in river systems and potential migration of their biota between ranges of different mercury exposure, resulting in potential import of mercury signatures into local food webs.
- 4) To elucidate the significance of biotic transport by applying the MMBM to data collected from the SSR basin. This applies especially to Goldeye/ Mooneye and Walleye, which can roam the river freely between Lethbridge and central Saskatchewan and thus along the exposure gradient.
- 5) To study mercury biomagnification in new and old irrigation reservoirs throughout southern Alberta.
- 6) To apply the refined MMBM to the habitat ranges upstream and including the Oldman reservoir and plan to establish the mercury exposure gradient in these reaches and try to elucidate migratory patterns of Rainbow Trout between the reservoir and the upper tributaries of the Oldman River, where interbreeding of Rainbow Trout and westslope Cutthroat Trout can occur.

Activities:

Mercury biomagnification along the Oldman river continuum, exposure gradients, sewage and agricultural runoff: The initial work on this topic is completed. A manuscript illustrating the results has been prepared for peer review (see deliverables).

Mercury source tracking: A new ICP-MS instrument is on order for the new lab in the Alberta Water and Environmental Science Building. Analyses will be carried out in-house.

Mercury contamination in a new irrigation reservoir: The initial phase of this project is completed and a manuscript outlining the results has been prepared for peer-review (see deliverables). Work in this field is going on.

Link with ACA Priorities for 2007-2008:

This study provides valuable data on the status of the fishery and quality of fish in the SSR basin. Mercury is used as an ecological tracer to identify migratory patterns of fish and the status of the spatial existence of certain fish species, as well as patterns of the underlying food webs within the continuum of the river (Fisheries Obj #1: Fish Stock Assessment & Monitoring). Information on potential mercury contamination in important game fish, as well as the identification of potential sources and locations of elevated risk is provided (Fisheries Obj #6: Reporting). This knowledge is a fundamental requirement in the decision-making process of fisheries management.

Partnerships:

The equipment is provided by CRC/ CFI funding. Funding for the graduate student comes from NSERC.

Deliverables:

This is the second year of a three year project.

Preliminary results: Food web inefficiencies may be a key factor in exacerbating mercury concentrations in aquatic food webs. Poor energy transfer between predator and prey results in low growth rates at higher trophic levels, which has been shown to increase mercury levels in participant fish species. Further investigations are directed at identifying efficient and inefficient food webs that govern growth rates and mercury concentrations in northern pike and longnose dace in lake and river ecosystems.

Scientific paper prepared for peer review and submission to CJFAS: "Elevated mercury levels in biota of the Oldman River, upper South Saskatchewan River Basin, in the absence of point sources."

Scientific paper prepared for peer review and submission to CJFAS: "Can food web simplification exacerbate mercury levels in northern pike (*Esox lucius*) in a new irrigation reservoir?"

Final GECF Report

GECF History with project:

This project received funding in 2006-07.

Publication of “People & Peaks of Willmore Wilderness Park

Project Location:	Willmore Wilderness Park
Identifying Code:	002-00-90-102
Funding Allocation:	\$2,000.00
Principal Investigator:	Susan Feddema-Leonard
Contact Information:	Willmore Wilderness Foundation Box 93 Grande Cache Alberta T0E 0Y0 Email: info@willmorewilderness.com Telephone: 780-827-2696
ACA Grant Status:	Completed

Project Summary & Objective(s):

The book details the experiences of the pioneers who utilized Willmore Wilderness Park in the past. It details historical management practices such as prescribed burns, predator control, and grazing strategies. The book also discusses historic routes, campsites, and river crossings within the park, many of which are still in use today. It is an insightful look into the past which can also provide some direction for future management strategies. The main objective of the project is to publish completed book *People & Peaks of Willmore Wilderness Park*.

Activities:

The book *People & Peaks of Willmore Wilderness Park* was published and distributed.

Link with ACA Priorities for 2007-2008:

The publication promotes recreation activities (Land Management Obj 3 and Wildlife Obj 9). The book also aids education and outreach (Wildlife Objective10)

Partnerships:

ACA; Talisman Energy; Willmore Wilderness Foundation; Private contributions

Deliverables:

5000 hard covered copies of the manuscript were published and distributed to general public, government departments, and conservation groups.

Final GECF Report

GECF History with project:

This is the first grant for this project.

Alberta Conservation Association

Grant Eligible - Conservation Fund

Project Submission Guidelines For Funding in 2007 - 2008

At the **Alberta Conservation Association** (ACA), we believe it is our responsibility to join and support the collective effort to conserve, protect and enhance Alberta's natural biological resources. One of the ways in which we do this is to make grants to our partners. Grants made to partners are intended to enhance and supplement ACA activities.

The ACA is a Delegated Administrative Organization incorporated under the Societies Act of Alberta. The Alberta Government has delegated the operation of certain programs to ACA. Powers, duties and responsibilities are as indicated in the Wildlife Act, Part 9, 97(1) and AR 143/97 Wildlife Regulation, Schedule 2.

The ACA has been awarding environmental conservation grants since 1997 and is proud to enter into its 10th year of Conservation Funding. In excess of **\$1 million dollars** will be available for project funding via the Grant Eligible Conservation fund during the 2007/2008 funding cycle.

This Project Submission Guidelines package contains information to help you apply for funding to the Alberta Conservation Association - Grant Eligible Conservation Fund.

- Section A: About This Grant**
- Section B: Eligibility**
- Section C: Major Funding Goals & Priorities 2007 – 2008**
- Section D: Grant Application Screening & Decision Process**



Section A: About This Grant

Purpose:

The **Grant Eligible - Conservation Fund** aims to aid the Alberta Conservation Association in the delivery of its mission and Strategic Business Plan. Grants made to partners are intended to enhance and supplement ACA activities.

- Read the *Project Submission Guidelines* carefully to determine if your project is eligible for funding prior to preparing a formal submission to the Alberta Conservation Association.
- Download the appropriate application form based on funding request, and then submit your application by e-mailing it to the ACA. Ensure that all sections of the application are complete, clear and thorough. Attach any relevant supporting documents.

Who Can Apply:

Any organization or individual can apply if they have a suitable project. Alberta Conservation Association staff and Alberta Sustainable Resource Development staff are not eligible to apply to the fund.

How to Apply:

Use the appropriate application form based on your funding request, together with any appropriate supporting information.

- Small Grant Application Form – requests up to \$2,000.00.
- Large Grant Application Form – requests over \$2,000.00.

Successful applicants will normally be expected to follow the ACA Cooperative Project Agreement.

Where to Apply:

Submit completed **Grant Eligible - Conservation Fund** applications to:

Alberta Conservation Association, Attention: David Fairless
7th Floor, O.S. Longman Bldg.
6909-116 Street
Edmonton, AB T6H 4P2.

Telephone: 780.644.6833
Cell: 780.974.1334
Facsimile: 780.422.9685
Email: david.fairless@ab-conservation.com

In an effort to reduce paper consumption, we appreciate your effort to provide your completed application electronically. Upon receiving your proposal, we will send you an acknowledgment receipt by e-mail or telephone, within **five** business days. Fax and hard copies are also acceptable.

When to Apply:

The ACA will receive applications from January 1 to 31, 2007 for funding consideration in the 2007/2008 fiscal year. Applications received after **16:30 on January 31, 2007** local Edmonton time will not be accepted.

Section B: Funding Eligibility

With the exception of Alberta Conservation Association and Alberta Government, Sustainable Resource Development staff any organization or individual may apply to the **Grant Eligible - Conservation Fund** if they have a suitable project.

Grants Are Available For:

- Projects that meet and further the ACA mission: to conserve, protect and enhance Alberta's biological natural resources;
- Projects that contribute to the priorities as outlined in the Strategic Business Plan 2007-2010;
- Priority is given to projects that demonstrate a "self help" attitude. i.e. Partner contributions and matched funding dollars;
- Research (academic) projects that clearly meet ACA funding criteria and demonstrate initiatives, which are likely to have a wider relevance and further the practice of conservation.

Grants Are Not Available For:

Support will not be provided in response to the following types of requests:

- Funding for regular ongoing staff salary positions;
- Grants are not normally offered towards profit-making activities;
- Grants are not normally available for ongoing administration or overhead costs of the organization and for the funding of administrative staff;
- Overhead costs;
- Emergency funds or deficit financing;
- Travel to conferences and seminars, unless part of a larger project supported by the Association;
- Publication costs are not normally funded, unless part of a larger project supported by the Association;
- General fundraising;
- Land Acquisition. (Land Acquisition proposals can be submitted to the ACA Habitat Securement Fund).

Important Granting Information:

- Successful applicants will normally be expected to follow the ACA Cooperative Project Agreement;
- Project applications for funding support submitted to the ACA Grants in Biodiversity program will deem those projects ineligible to apply to the Grant Eligible - Conservation Fund.
<http://www.biology.ualberta.ca/biodiversity/>
- Payment of grants is normally made in three payments or entirely;
- Project activities must occur between April 1, 2007 and March 31, 2008;
- Grants cannot be made retrospectively, that is for works started prior to the current fiscal year April 1 to March 31;
- The ACA may charge an administration fee for any monies held in trust;
- Capital equipment purchases may remain the property of the ACA upon project completion.

Your information will be used only for the purpose for which it was originally collected, and it will be disclosed only on a strict "need-to-know" basis. Be assured that we manage the information contained in your submission in manner commensurate with its sensitivity.

Section C: Major Funding Priorities of the Conservation Fund 2007 – 2008

Funding Priorities

Grants made to partners are intended to aid ACA in the delivery of our **mission** and contribute to our **Strategic Business Plan** and should demonstrate value to local to wildlife, fish populations and/or the habitat on which they depend. The following list of funding priorities for the Grant Eligible Conservation Fund is derived from our Strategic Business Plan, available on-line at:

www.ab-conservation.com

Major Funding Priorities derived from our Strategic Business Plan

ACA Wildlife Program Priorities for 2007-2008

The Wildlife Program supports and enhances conservation activities that retain the diversity and abundance of populations and communities of wildlife in Alberta. It includes consideration of all non-fish taxa, but has a strong focus on harvested species. The Wildlife Program includes components related to wildlife populations, their habitats and the ecosystems that support them.

The ACA Wildlife Program informs and supports ASRD in their role of determination of species status; the development, communication and implementation of species recovery or management plans, and management of consumptive and non-consumptive use and users. This program supports the inventory and monitoring of priority species and their habitats, the retention and enhancement of priority habitats, and the restoration and reintroduction of priority populations. Inventory monitoring may provide a baseline for programs to assess and monitor ecological goods and services.

Program activities may include, but are not limited to, population enhancement, applied ecological studies, and understanding and facilitation of users' needs and wants. An essential element is the monitoring, evaluation and adaptation of wildlife and habitat conservation activities.

ACA strives to enhance the sustainability of wildlife species through science-based conservation. The Wildlife Team has developed a program that focuses on four thematic areas including ungulates, upland game birds, waterfowl and species at risk. Program objectives are prioritized at the provincial scale through strategic and operational planning, and fall within the following nine activities: (1) Species and population inventory, (2) Plan development and implementation, (3) Species management and enhancement, (4) Aerial Ungulate Surveys, (5) Applied research /ecological studies, (6) Status assessment, (7) Habitat inventory and enhancement (8) Recreational opportunities (9) Education and Outreach

For 2007-2010, the focus is on the implementation of programs developed in prior plans which includes implementing habitat restoration activities; monitoring the response of species and habitat indicators; continued delivery of ongoing applied ecological studies; providing input to the Land Management Program; assisting with aerial ungulate surveys; and measuring our success in achieving business plan objectives.

ACA Fisheries Program Priorities for 2007-2008

ACA's Fisheries Program views conservation as the sustainable and responsible participation in the social and consumptive use of fish and aquatic resources, while recognizing the importance of protecting healthy ecosystems. Our Fisheries Program is designed to implement fish conservation efforts in an effective, credible and collaborative manner that will sustain or improve Alberta's fish populations.

The Fisheries Program supports and enhances conservation activities that retain the diversity and abundance of fish populations and communities, and the biological communities and habitats that support them. The program supports fishing as a recreational use in the interest of Alberta anglers.

The ACA Fisheries Program supports ASRD in the determination of stocks and populations status; the development and implementation of management plans; and management of consumptive and non-consumptive use and users. The Fisheries Program includes the inventory and monitoring of priority species and their habitats to determine distribution, abundance, status and trends. An essential element for all program components is the monitoring, evaluation, and adaptation of activities. Activities in this program support and inform an adaptive fisheries management program in Alberta.

ACA Land Management Program Priorities for 2007-2008

The Land Management Program (LMP) encompasses activities intended to conserve, protect and enhance fish and wildlife habitat, and to increase consumptive and non-consumptive recreational opportunities including angling and hunting. The three major activities of this program are habitat securement, maintenance and management of ACA Conservation Sites, and recreational opportunity initiatives.

Maintenance and management of Conservation Sites on crown and privately owned lands are completed in compliance with location-specific management plans, habitat type, or stewardship agreements that are developed by ACA in collaboration with ASRD and other conservation partners.

Recreational opportunity initiatives on private land focus on communication tools and activities required to promote and increase public access to wildlife and fisheries habitat resources where stewardship of conservation-rich habitat is recognized.

Habitat securement identifies and prioritizes important habitats as well as land that increases or enhances recreational opportunities, both consumptive and non-consumptive. Securement may occur through direct purchase, conservation easements, donations, term lease, or protective notation. **Please note:** Land Acquisition proposals are not reviewed by the Grant Eligible Conservation Fund. Direct all Land Acquisition proposals to the Habitat Securement Fund.

Section D: Grant Application Screening & Decision Process:

The Alberta Conservation Association receives funding requests far in excess of our financial resources and often must decline funding to worthy projects and programs. This does not in any way reflect the value of the organization/individual involved. Applications are reviewed in the order in which they are received.

The ACA Board of Directors appoints a Granting Committee comprised of three board members and **ten citizens of Alberta**, who referee and assess the grant applications based on the established funding criteria. The Grant Eligible Conservation Fund is administered by an ACA employee.

Applicants will be notified of status of their submission by March 15, 2007. Successful grant applicants will be expected to follow the ACA Cooperative Project Agreement.

APPENDIX B

Alberta Conservation Association
Grant Eligible - Conservation Fund

April 1, 2007 to March 31, 2008

Cooperative Project Agreement

Between

ALBERTA CONSERVATION ASSOCIATION (ACA)

-and-

RECIPIENT

«Organization»

«Address», «CityTown», Alberta, «Postal_Code»

«email» «Phone_work»

Principal Applicant: «First_Name» «Last_Name»

Project Title: «Project_Title»
Project Code: 000-00-00-000
Maximum Funding: «Amount_granted»
Effective Date: April 1, 2007 to March 31, 2008

A. ACA PROJECT ADMINISTRATION CONTACT:

The funding recipient shall direct all questions and communications regarding this project to the GECF Project Administrator.

Alberta Conservation Association PO Box 40027 Baker Centre Postal Outlet Edmonton, AB T5J 4M9 Attn: Amy MacKinven, GECF Project Administrator	Telephone (cell): 403.617.5662 Facsimile: 780.427.5192 Email: amy.mackinven@ab-conservation.com
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B. FUNDING TERMS AND CONDITIONS

The Alberta Conservation Association Agrees to:

Provide a maximum contribution of «Amount_granted» («Amount_letters» dollars) during the 2007-2008 fiscal year (April 1 to March 31) to support this project. Payments are contingent upon receipt of appropriate invoice. Payments will be made as per Schedule B, attached.

The Grant Recipient Agrees to:

1. Conduct the project according to the plan specified in the project proposal submitted to ACA (Schedule A).
2. Obtain ACA's approval on any departures from the project proposal (Schedule A) that alter the potential for achieving the objectives and deliverables of the project.
3. Provide ACA with all reports specified in Section D.

4. Acknowledge the contributions of Alberta Conservation Association in all reports, presentations and publications resulting from the project.
5. Use these funds exclusively on direct expenses associated with this project as identified in the project proposal submitted to ACA (Schedule A).
6. Include with the final report (due on or before March 15, 2008) a financial accounting of all expenditures of these funds.
7. Assume responsibility for any expenditure of funds beyond those approved in Section B of this agreement.
8. The Successful Applicant shall perform all work in accordance with all applicable laws, regulations, rules, codes and ordinances of authorities having jurisdiction and will obtain any and all permits/licenses and permissions required to carry out activities described in this agreement.
9. Applicants, and the institutions and organizations they represent or by which they are employed, assume complete responsibility for carrying out their project and for the results thereof.
10. By accepting a grant of funds, the applicant and the institution or organization release, and agree to indemnify, Alberta Conservation Association and its directors and officers from and against any liability, damages, cost and expenses arising from any injury or damage whatever, that may be suffered or incurred by an individual, firm, corporation or agency and which is caused or contributed to, directly or indirectly, by the operations of the applicant, his or her institution or organization or by use and application of the grant funds.

C. BUDGET EXPENDITURES

1. Funds provided by the ACA must be spent in accordance with the budget contained in the project proposal (Schedule A) that was submitted to, and approved by ACA. Deviations from this budget must be discussed with, and approved by the ACA Contact.
2. All capital assets (items with a useful life greater than one year) purchased for your project with ACA funds are the property of the ACA, and, accordingly the ACA must be made aware of any assets purchased. In special cases assets may remain the property of the recipient. Assets purchased with ACA funds are to be returned to the ACA Contact upon completion of the project. **Capital Assets are items >\$500.00 that can be reused on other projects.**

D. REPORTING REQUIREMENTS- refer to **Schedule C** for a more detail.

The Funding Recipient will provide the ACA Project Administration Contact with the following documents:

1. **One interim update on activities related to the project will be required on or before September 1, 2007: (See Schedule C).** Included in this report should be a detailed description of activities, objectives, deliverables/achievements, Request for Payment.
2. **A final project report is required on or before March 15, 2008.** Included in this report should be a detailed description of activities, objectives, deliverables/achievements, Request for Payment, and an accounting of how ACA funds were expended including receipts, if applicable. **(See Schedule C)**
3. **Any other reports or deliverables** generated as a result of your project specified in the project proposal (Schedule A).
4. At the request of the ACA Contact, you may be invited to make a presentation of the project.

Note: Final Payment of the project grant and future funding by ACA is contingent upon meeting all of the reporting requirements listed above. Failure to comply with these conditions may impact future funding.

E. ACKNOWLEDGEMENT OF ACA

Grant recipients are expected to acknowledge the Alberta Conservation Association in all reports, presentations, publications and press releases concerning the project. Whenever possible the ACA logo should appear along with the acknowledgement. The ACA Contact will provide a copy of the ACA logo in an electronic format at your request.

Preferred Acknowledgement text:

This project is financially supported by the Alberta Conservation Association.

F. EXTERNAL FUNDS HELD BY ACA

The ACA will receive and administer external funds for your project, if requested. Cheques must be made payable to the Alberta Conservation Association and should be accompanied by a letter from the donor specifying the amount of the donation, and the project to which funds should be directed. If external funds are expected to be administered by ACA, please list below.

G. ADDITIONAL SPECIFICATIONS

Inspection and Audit. The Alberta Conservation Association is entitled to have its authorized agents review files, documents, accounting records, the premises of the Recipient, and any other locations and assets pertinent to the Project in order to assess whether the Recipient is in compliance with this Agreement.

Termination. If the Recipient declines to continue with the project once funds have been disbursed, or has breached any of its obligations pursuant to this Agreement, the Alberta Conservation Association may pursue remedies at its discretion, including giving written notice of termination of support to the Recipient, and after 10 days may demand payment of any portion of the funds that have not either been expended, or committed to be expended at that date.

H. ACKNOWLEDGED BY APPLICANT AND SIGNATURES

The Applicant and/or Project Manager acknowledge that they have read, understand, and will comply with the terms of this agreement including the attached schedules. Failure to comply with the terms of this agreement will result in the holdback of funds and may negatively impact future funding eligibility.

_____ Applicant / Project Manager (Printed Name)	_____ Signature	_____ Date
_____ Witness (Printed Name)	_____ Signature	_____ Date
Amy MacKinven		
_____ Alberta Conservation Association	_____ Signature	_____ Date

SCHEDULE A

PROPONENT'S PROJECT PROPOSAL

The attached proposal, “«**Project_Title**»” serves as a description of the Project.

Insert proposal here

SCHEDULE B

PAYMENT SCHEDULE 2007- 2008

The Alberta Conservation Association will disburse the funds according to the following schedule.

Please Note:

A Request for Payment or an invoice for each scheduled payment must be submitted to the Alberta Conservation Association before payment will be processed. Please ensure that the Project Code is clearly identified on each Request for Payment.

Project Title: «Project_Title»
Project Code: «Codes»
Maximum Funding: «Amount_granted»
Effective Date: April 1, 2007 to March 31, 2008

The maximum contribution of «Amount_granted» («Amount_letters» dollars) for the 2007-2008 fiscal year will be divided into payments, as follows:

Payment One:

An initial contribution of «First_Instalment» will be forwarded to you following receipt of this signed agreement by all parties and the attached Request for Payment. Please ensure you submit a project description for uploading to our website.

Payment Two:

«Second_Instalment» will be paid upon receipt of an interim report and signed Request for Payment on or before September 1, 2006.

Final Payment:

The remaining «Final_Instalment», which represents 10% of the total grant, will be forwarded to you following the receipt of the final report and signed Request for Payment on or before March 15, 2007 and upon approval of all other reporting requirements by the ACA Contact.

Please refer to **Section D** of the Project Agreement for details on reporting requirements.

SCHEDULE C

Reporting Requirements

Interim Update Report

Submission Date: September 1, 2007

Forms for the interim update can be found on our website at: www.ab-conservation.com. The following information should be included in your interim report:

- Project Title & Project Code;
- Update current status and recent activities of the project;
- Financial highlights;
- List any reports or deliverables that are currently available;
- Outlook for next quarter;
- Request for Payment;

Final Administrative Report

Submission Date: on or before March 15, 2007

Forms for the final administrative report can be found on our website at: www.ab-conservation.com. Included in this report should be a detailed description of:

This report should be geared toward to providing information that satisfies the conditions of your grant and the cooperative funding agreement.

- Project Title & Project Code;
- Update current status and recent activities of the project;
- Financial highlights;
- Accounting of how ACA funds were expended including receipts, if applicable.
- List any reports or deliverables that are currently available;
- Original signed Request for Payment;
- Any other key points you would like to mention.

Please send electronic copies of reports where possible, but an original copy of the Request for Payment is required.

Final Project Report

Any other reports or deliverables generated as a result of your project specified in the project proposal (Schedule A).

**Request for Payment form
Grant Recipient
Alberta Conservation Association
Grant Eligible Conservation Fund 2007/2008:**



Date: _____

Initial Payment

Interim Payment

Final Payment

Funding Recipient Information:

Project Title: _____

Name of Recipient: _____

Grant Centre Code: _____ Payment Amount: _____

Phone: _____ Email: _____

Cheque Remittance information:

Cheque payable to:

Alberta Conservation Association - Contact:

Return to:

Alberta Conservation Association
PO Box 40027 Baker Centre Postal Outlet
Edmonton, AB T5J 4M9

Attn: **Amy MacKinven, GECF Project Administrator**

Telephone (cell): 403.617.5662
Facsimile: 780.427.5192

Email: amy.mackinven@ab-conservation.com

APPENDIX C

Table: Project results in relation to Strategic Business Plan 2007-2010 and Major Funding Priorities of the Conservation Fund 2007-2008

Fisheries Objectives		
	# of projects	GECF projects
<p>GENERAL FISHERIES FUNDING PRIORITY: “ACA’s Fisheries Program is designed to implement fish conservation efforts in an effective, credible and collaborative manner that will sustain or improve Alberta’s fish populations... The fisheries program supports and enhances conservation activities that retain the diversity and abundance of fish populations and communities, and the biological communities and habitats that support them. The program supports fishing as a recreational use in the interest of Alberta anglers.”</p>	21	<p>Millennium Creek Project - Phase 2 (Bow Valley Habitat Development 020-00-90-102)</p> <p>Genetic analysis of walleye (UofA 020-00-90-111)</p> <p>N AB non-game fish status assessment Yr 5 (Royal Alberta Museum 020-00-90-104)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 020-00-90-106)</p> <p>Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020-00-90-118)</p> <p>Improving riparian areas through excellence in information & community collaboration (Cows & Fish 020-00-90-107)</p> <p>Bow River Riparian Fencing Project (TUC Bow River Chpt 020-00-90-105)</p> <p>Algae as Bioindicators (U of C 015-00-90-109)</p> <p>Canadian Heritage River Application Kakwa River Alberta (Greater Kakwa 020-00-90-112)</p> <p>The Lakeland Integrated Watershed and Land-Use Planning Project (Lakeland County 015-00-90-107)</p> <p>Riparian Area Management Improvements (MVC 015-00-90-101)</p> <p>Partners in Habitat Development (PHD EIA 030-00-90-102)</p> <p>Riparian Fencing Initiative II (Red Deer County 020-00-90-103)</p> <p>Southern Foothills Study Phase 3b (SALTS 030-00-90-118)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Quirk Creek Native Fish Initiative (TUC 020-00-90-113)</p> <p>Late Fall Fisheries Investigations in Diversion Canals of Southern Alberta (TUC 020-00-90-114)</p> <p>McGillary Creek riparian mitigation (Crownsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Invasion and bloom dynamics of “rock snot” (UofC 020-00-90-117)</p> <p>Gervais Corner Biodiversity Improvement project (REEP 030-00-90-116)</p>

		GECF projects	GECF project result
<p>FISHERIES OBJECTIVE 1: FISH STOCK ASSESSMENT & MONITORING</p> <p>Provide timely and accurate information describing the abundance, structure and use of aquatic habitats by priority fish populations.</p>	7	<p>Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020-00-90-118)</p> <p>Improving riparian areas etc. (Cows & Fish 020-00-90-107)</p> <p>Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 020-00-90-106)</p> <p>N AB non-game fish status assessment Yr 5 (Royal Alberta Museum 020-00-90-102)</p> <p>Quirk Creek Native Fish Initiative (TUC 020-00-90-113)</p> <p>Late Fall Fisheries Investigations in Diversion Canals of Southern Alberta (TUC 020-00-90-114)</p> <p>Genetic analysis of walleye (UofA 020-00-90-111)</p>	<p>Mercury is used as an ecological tracer to identify migratory patterns of fish and the status of the spatial existence of certain fish species, as well as patterns of the underlying food webs within the continuum of the river.</p> <p>Cows & Fish promote a well-accepted and tested indicator of watershed condition. This riparian assessment methodology enables ACA staff, who currently use the method, to apply the best, most appropriate riparian health assessment tool available.</p> <p>This project increases understanding of how non-native trout interact with the receiving lake ecosystem, which should contribute to the success of ACA's trout stocking and aeration program.</p> <p>Standardized protocols are used to assess the health and population trends of the many fish species that are crucial elements to aquatic ecosystems.</p> <p>This project tests brook trout suppression through angling.</p> <p>This project has been documenting numbers of fish including wild sportfish that enter irrigation canals which would normally be lost to the fishery when canal structures prevent fish from returning to the river system.</p> <p>Identifies and describes relationships between populations of walleye using genetic analysis.</p>
<p>FISHERIES OBJECTIVE 2: SPORT FISHERY MONITORING</p> <p>Describe and monitor levels of angler use, harvest and angler demographics of priority fisheries.</p>	0		
<p>FISHERIES OBJECTIVE 3: STREAM CROSSING EVALUTION</p> <p>Determine the level of watershed fragmentation caused by stream crossings in priority drainages, and collaboratively develop remediation plans to diminish</p>	2	<p>McGillivray Creek Riparian Mitigation (Crownsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Recreation and wildlife in the</p>	<p>Assessment and evaluation of water crossings, bypass trails, and bog areas.</p> <p>This project examines the in-stream effects of roads and trails (stream crossings)</p>

fragmentation.		Rockies of SW AB (Miistakis Institute 030-00-90-108)	on fish habitat and connectivity.
FISHERIES OBJECTIVE 4: LAKE AERATION Develop and maintain lentic habitats for the successful over-wintering of sport fish, creating recreational angling opportunities for Albertans.	1	Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 020-00-90-106)	This project increases understanding of how non-native trout interact with the receiving lake ecosystem, which should contribute to the success of ACA's trout stocking and aeration program.
FISHERIES OBJECTIVE 5: FISHERIES ACCESS SITES Maintain fisheries access sites to ensure access to priority fisheries, and develop new sites at priority water bodies.	0		
FISHERIES OBJECTIVE 6: REPORTING Provide timely and credible monitoring and inventory data and information on priority fish pop'ns, fish communities and their habitats to enable adaptive fisheries management	3	N AB non-game fish status assessment Yr 5 (Royal Alberta Museum 020-00-90-102) Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020-00-90-118) Genetic analysis of walleye (UofA 020-00-90-111)	Long-term data collection to provide statistical power, confidence and credibility to the monitoring results, all data from this project are submitted to FMIS annually so that they are available immediately to a variety of users and are available on the web. Information on potential mercury contamination in important game fish, as well as the identification of potential sources and locations of elevated risk is provided. Project results are disseminated to resource managers and stakeholders as well as providing managers with information to aid in adaptive fisheries management.
FISHERIES OBJECTIVE 7: ENHANCED FISH STOCKING Provide Alberta anglers with increased opportunities to catch and creel more fish where possible, while maintaining the integrity of Alberta's natural waters and fish populations.	1	Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 020-00-90-106)	To increase understanding of how non-native trout interact with the receiving lake ecosystem; such knowledge may then contribute to increasing the overall success of the stocking program.
FISHERIES OBJECTIVE 8: RIPARIAN CONSERVATION PLANNING Enhance, maintain and protect priority riparian habitats in Alberta.	13	Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107) Bow River Riparian Fencing	Cows & Fish collaborate with landowners, watershed and stewardship groups on riparian areas and their management. This project has the potential to have a very positive impact on the water quality

	<p>Project (TUC Bow River Chpt 020-00-90-105)</p> <p>Millennium Creek Project - Phase 2 (Bow Valley Habitat Development; 020-00-90-102)</p> <p>McGillivray Creek Riparian Mitigation (Crowsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Invasion and bloom dynamics of “rock snot” (UofC 020-00-90-117)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Canadian Heritage River Application Kakwa River Alberta (Greater Kakwa 020-00-90-112)</p> <p>The Lakeland Integrated Watershed and Land-Use Planning Project (Lakeland County 015-00-90-107)</p> <p>Riparian Area Management Improvements (MVC 015-00-90-101)</p> <p>Partners in Habitat Development (PHD EIA 030-00-90-102)</p> <p>Riparian Fencing Initiative II (Red Deer County 020-00-90-103)</p>	<p>of the Bow River. Improved water quality will have an overall benefit on the fish habitat and the connected biological communities that support them along the riparian zone of the Bow River watershed</p> <p>The enhancement of fish habitat best exemplifies the Millennium Creek Project, as well as, the protection of our fisheries resource and the habitat in which they live.</p> <p>Mitigate potential future damage to the watershed that will occur with the increasing recreational access demands of a growing Alberta population.</p> <p>The most apparent priority is the threat <i>D. geminata</i> outbreaks pose to fish habitat, spawning grounds, and food availability</p> <p>LbyW works towards providing on-the-ground enhancements that result in the responsible participation in the social and consumptive use of fish and aquatic resources by residents while realizing the importance of protecting healthy habitats and ecosystems for fish populations.</p> <p>The objective of this project is to obtain the Canadian Heritage River Designation for the Kakwa River.</p> <p>Environmental and municipal reserve demarcation creates a buffer around water bodies. The creation of reasonable set-backs aids in nutrient removal. With excess nutrients removed, watershed health will be improved.</p> <p>The riparian fencing projects chosen enhance, maintain and protect priority riparian habitats in Alberta.</p> <p>One of the key components of the PHD program is the protection of riparian habitat.</p> <p>The project aims to maintain, enhance and protect riparian areas by working with local producers to fence off riparian habitat from livestock.</p>
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		Gervais Corner Biodiversity Improvement project (REEP 030-00-90-116)	A project testing if volunteer action in cooperation with municipal services can help overcome riparian area degradation and restore a more diverse river edge environment and in turn in-stream water habitat
		Southern Foothills Study Phase 3b (SALTS 030-00-90-118)	This project is focused directly on the loss of wildlife habitat and degradation of fish habitat in the southwest foothills. This study brings the stakeholders together in a cooperative effort to determine how this habitat degradation can be avoided through improved best practices, and cooperative planning.
Land Management Objectives			
GENERAL LAND MANAGEMENT FUNDING PRIORITY: “ACA’s Land Management Program encompasses activities intended to conserve, protect and enhance fish and wildlife habitat, and to increase consumptive and non-consumptive recreational opportunities including angling and hunting. Three major activities of the program are habitat securement, maintenance and management of ACA Conservation Sites and recreational opportunity initiatives. ... Recreational opportunity initiatives on private land focus on communication tools and activities required to promote and increase public access to wildlife and fisheries habitat resources where stewardship of conservation-rich habitat is recognized.”	14	Stewardship of NCC’s Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106) Partners in Habitat Development (PHD- EID 030-00-90-102) Living by Water (FAN 020-00-90-101) Riparian Area Man’t Improvements (MVC 015-00-90-101) Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120) Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107) Operation Grassland Community (AFGA 030-00-90-107) Hunting for Tomorrow – Working group deliverables (HFTF 002-00-90-101) Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105) McGillivray Creek Riparian Mitigation (Crowsnest Pass Quad Squad Assoc. 015-00-90-112) Community structure and demography of waterbirds in Alberta’s mixedwood boreal forest (DUC 030-00-90-121) Developing a Web 2.0 Prototype (MRC 015-00-90-110) Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108) Publication of “People & Peaks of Willmore Wilderness Park (Willmore Wilderness Fdn 002-00-90-102)	
		GECF project(s)	GECF project result
OBJECTIVE 1: HABITAT SECUREMENT Conserve and protect priority wildlife and fish habitats, increase and enhance recreational opportunities through land securement for consumptive and non-consumptive activities.	2	Operation Grassland Community (AFGA 030-00-90-107) Community structure and demography of waterbirds	THIS OBJECTIVE RELATES TO THE HABITAT SECUREMENT FUND Through one-on-one meetings with landowners, OGC promotes conservation easements, or land donations as long-term means of conserving and protecting wildlife habitats. Contributes to the maintenance and management of wildlife habitat, in partnership with private industry and government.

		in Alberta's mixedwood boreal forest (DUC 030-00-90-121)	
OBJECTIVE 2: CONSERVATION SITE MANAGEMENT Manage and maintain ACA habitat conservation assets.	1	Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)	Many of the monitored properties are co-owned and managed with several other conservation agencies, including the ACA.
OBJECTIVE 3: RECREATIONAL OPPORTUNITIES Develop and promote stewardship of habitat resources on public and private land that ensures access and recreational opportunities are recognized, developed and enhanced.	13	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107)</p> <p>McGillivray Creek Riparian Mitigation (Crownsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Hunting for Tomorrow – Working group deliverables (HFTF 002-00-90-101)</p> <p>Developing a Web 2.0 Prototype (MRC 015-00-90-110)</p> <p>Riparian Area Management Improvements (MVC 015-</p>	<p>Beneficial man't practices on members' land ensures healthy rangeland and increase water quality, which optimize hunting and fishing opportunities and other recreational pursuits.</p> <p>The study is located within the boundaries of the Willmore Wilderness Park where wolverine is a trapped species. Population assessment information that will then be related to habitat data, to assess wolverine-habitat relationships and identify key habitat attributes for wolverine.</p> <p>Cows & Fish's aim is to improve the health of the landscape, initiated through improvements to riparian habitats and impacts that our land use and management choices have on these areas</p> <p>Increase quality of lands available to public for recreational use.</p> <p>In working with shoreline residents of Alberta's popular recreational lakes, LbyW works towards responsible participation in the social and consumptive use of fish and aquatic resources.</p> <p>This project encourages hunting as a recreational pursuit on public and private lands.</p> <p>Leveraging or linking field guide initiatives with the group user resource.</p> <p>Angling for sport fish could improve by improving the health of the lotic riparian areas</p>

		<p>00-90-101)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain & Foothills Natural Regions (NCC 015-00-90-106)</p> <p>Partners in Habitat Development (PHD EID 030-00-90-102)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p> <p>Publication of "People & Peaks of Willmore Wilderness Park (Willmore Wilderness Fdn 002-00-90-102)</p>	<p>Recreational opportunity initiatives on private land which focus on communication tools and activities to promote and increase public access to wildlife and fisheries habitat resources where stewardship on conservation-rich habitat is recognized</p> <p>The PHD program encourages landowners to permit public access to project sites for both consumptive and non-consumptive uses of wildlife. Most landowners working with the PHD program permit some public access</p> <p>A better understanding of human use in the area will also contribute to the long-term sustainability of recreational activities.</p> <p>This project implements research on threatened fescue grassland and helped develop tools to conserve high priority wildlife habitat; these gains enhance area for wildlife and for recreational opportunities.</p> <p>The publication promotes recreational activities.</p>
Wildlife Objectives			
<p>GENERAL WILDLIFE FUNDING PRIORITY:</p> <p>"The Wildlife Program supports and enhances conservation activities that retain the diversity and abundance of populations and communities in Alberta. It includes consideration of all non-fish taxa, but has a strong focus on harvested species....ACA strives to enhance the sustainability of wildlife species through science-based conservation. ... focuses on four thematic areas including ungulates, upland game birds, waterfowl and species at risk."</p>	46	<p>WMU 408 Bighorn sheep surveys/determining mountain goat distribution – Kananaskis Country, AB (AFGA 030-00-90-127)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p> <p>Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030-00-90-106)</p> <p>Epidemiology modeling for proactive management of Chronic Wasting Disease in deer in Alberta (UofA 030-00-90-125)</p> <p>Atlas of breeding birds of Alberta (FAN 030-00-90-103)</p> <p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Cougar predation on wild ungulates (UofA 030-00-90-109)</p>	

	<p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central Alberta (ARC 030-00-90-120)</p> <p>Biodiversity of fungi in AB: a provincial database (EMS 030-00-90-115)</p> <p>Long-term Songbird and Raptor Monitoring in Alberta (Beaverhill Bird Observatory 030-00-90-126)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p> <p>Onoway Birdhouse Project (Onoway & district F&GA 030-00-90-114)</p> <p>Hunting for Tomorrow – Working group deliverables (HFTF 002-00-90-101)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Fur Management: Past and Present an Alberta perspective (ATA 030-00-90-104)</p> <p>Re-print Conservation and Hunter Education Manuals (AHEIA 002-00-90-105)</p> <p>Bird Science Events, Educational Opportunities for Albertans (Beaverhill Bird Observatory 002-00-90-106)</p> <p>White Bark Pine Survey (AWA 030-00-90-117)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Wildlife Helpline (AWRA 002-00-90-108)</p> <p>Riparian Area Interpretive Trail (Camps for Children Educ. Assoc. 015-00-90-105)</p> <p>Community structure and demography of waterbirds in Alberta’s mixedwood boreal forest (DUC 030-00-90-121)</p> <p>Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park (U of C 015-00-90-108)</p> <p>Blue Bird Project (Ft Sask FGA 030-00-90-133)</p> <p>Bird house construction (Friends of Whitehorse Wildland Park Society 015-00-90-113)</p> <p>Canadian Heritage River Application Kakwa River Alberta (Greater Kakwa 020-00-90-112)</p> <p>Gervais Corner Biodiversity Improvement project (REEP 030-00-90-116)</p> <p>Predator control and Duck nesting facility (Sarcee FGA 030-00-90-129)</p> <p>Characteristics of wolf home ranges and factors contributing to wolf-livestock conflicts in S. AB (SACC 030-00-90-131)</p> <p>Southern Foothills Study Phase 3b (SALTS 030-00-90-118)</p> <p>Visitor Centre Role and Appeal at William A. Switzer Provincial Park (UofA 002-00-90-109)</p> <p>Atlas of Alberta Lakes and Aquatic Invertebrates of Alberta (UofA 002-00-90-107)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p>
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		<p>Dispersal of rose-breasted grosbeaks in a fragmented landscape (UofA 030-00-90-132)</p> <p>Development of a prairie-deer sightability model for aerial surveys (UofA 030-00-90-124)</p> <p>Pronghorn antelope migration ecology and connectivity in the Northern Great Plains (UofC 030-00-90-128)</p> <p>Publication of “People & Peaks of Willmore Wilderness Park (Willmore Wilderness Fdn 002-00-90-102)</p> <p>Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107)</p> <p>Partners in Habitat Development (030-00-90-102)</p> <p>Captive Breeding of the Endangered Whooping Crane (Calgary Zoo 030-00-90-118)</p> <p>Algae as Bioindicators ... (U of C 015-00-90-109)</p> <p>Survey of non-native plants in the Front Range Canyons of the Castle (AWA 015-00-90-105)</p> <p>McGillivray Creek Riparian Mitigation (Crownsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Developing a Web 2.0 Prototype (MRC 015-00-90-110)</p> <p>Alberta Junior Pheasant Project (Sarcee FGA 030-00-90-130)</p>	
		GECF project(s)	GECF project result
<p>OBJECTIVE 1: STRATEGIC AND OPERATIONAL PLANNING</p> <p>Identify and prioritize wildlife knowledge gaps and conservation needs in Alberta to guide the future direction of ACA’s Wildlife Program.</p>	6	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107)</p> <p>Community structure and demography of waterbirds in Alberta’s mixedwood boreal forest (DUC 030-00-90-121)</p> <p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains</p>	<p>Through participation in various stakeholders groups throughout the prairies, OGC plays an important role in sharing information and identifying wildlife knowledge gaps and conservation needs in Alberta.</p> <p>Cows & Fish is developing a research survey to identify the knowledge gaps and conservation/management perspectives of landowners, land managers, general public and others, related to biodiversity.</p> <p>Collaborates with private industry and government in Alberta to inform the development and implementation of plans to ensure that sustainable land use practices are used for conservation of boreal habitat and species.</p> <p>The only long-term management and conservation-related research on mountain goats in North America. provided the bulk of new information that was incorporated into the "Management Plan for Mountain Goats in Alberta" and led to many scientific publications.</p> <p>The principal investigator is a scientific advisor to the Canadian Sage-grouse recovery team and is involved with Sage-Grouse/Prairie Grouse conservation</p>

		<p>Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p> <p>Pronghorn antelope migration ecology and connectivity in the Northern Great Plains (UofC 030-00-90-128)</p>	<p>across North America.</p> <p>The principal investigator has been and will continue to work with the multi-jurisdictional Pronghorn Working Group in Alberta, Montana and Saskatchewan on trans-boundary land management and conservation.</p>
<p>OBJECTIVE 2: SPECIES/ POPULATION INVENTORY</p> <p>Identify and/or monitor population size, trends and distribution for priority wildlife species.</p>	<p>19</p>	<p>WMU 408 Bighorn sheep surveys (AFGA 030-00-90-127)</p> <p>Bird Atlas (FAN 030-00-90-103)</p> <p>Cougar predation on wild ungulates (UofA 030-00-90-109)</p> <p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Biodiversity of Fungi in AB (EMS 030-00-90-115)</p> <p>Long-term Songbird and Raptor Monitoring in AB (BBO 030-00-90-126)</p> <p>Bird Science Events, Educational Opportunities for Albertans (BBO 002-00-90-106)</p>	<p>This project collects data on the distribution and abundance of priority species to support their management.</p> <p>This project has collected scientifically credible data on the distribution and abundance of birds in Alberta to support their management.</p> <p>There is little direct data regarding cougar population status in west central AB, where much of the increased harvest is taking place. The population data collected is the most comprehensive available in Alberta's northern cougar management units.</p> <p>This project provides estimates of wolverine abundance in west central AB.</p> <p>Through annual census with its members, OGC conducts long-term monitoring of Burrowing Owl and Loggerhead Shrike populations in Alberta. This year will be the 17th year of census for the Burrowing Owl and the 4th year for the Loggerhead Shrike.</p> <p>Collected data on a poorly understood but very important group of organisms in AB.</p> <p>This project identifies and/or monitors population size, trends and distribution of bird species, including some Species At Risk</p> <p>Although this project is education-based, it contributes to a larger program of collecting and interpreting population data on wildlife species using systematic monitoring methods.</p>

		<p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Wildlife Helpline (AWRA 002-00-90-108)</p> <p>Community structure and demography of waterbirds in Alberta's mixedwood boreal forest (DUC 030-00-90-121)</p> <p>Boreal Forest Bird Research (LSLBO 030-00-90-106)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p> <p>Partners in Habitat Development (030-00-90-102)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p>	<p>This research program provides the only long-term management and conservation-related research on mountain goats in North America and provided the bulk of new information incorporated into the "Management Plan for Mountain Goats in Alberta" and led to many scientific publications</p> <p>Wildlife rehabilitators record all species admitted to their facilities and report each year to SRD. This data may be useful in monitoring or indicating trends in populations, distribution or threats to wildlife.</p> <p>DUC is conducting <i>species and population inventories</i> for 30 species of boreal waterbirds in Alberta's boreal and boreal transition habitats</p> <p>This project supports a long term population monitoring program on landbirds and waterfowl in the boreal forest ecosystem.</p> <p>There are numerous ungulates, upland game birds, species at risk, and waterfowl species found on the monitored properties.</p> <p>The PHD staff conduct wildlife census surveys throughout the seasons which provide trend information on wildlife resources in the area.</p> <p>4 months of monitoring with approximately 50 digital, infrared cameras.</p> <p>The DNA from this study can be used to estimate the number of males on each lek for both Sharp-tailed Grouse and Sage-Grouse and can be used to determine the effective population size, as well as giving an idea of minimal female attendance at leks.</p> <p>This project monitored elk population size at Ya Ha Tinda as well as trends over time.</p>
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<p>OBJECTIVE 3: PLAN DEVELOPMENT & IMPLEMENTATION</p> <p>Support the development of plans for priority wildlife species that will assist in species recovery and management. Implement select components of plans (i.e. species at risk recovery plans, management plans, landscape plans).</p>	11	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park (U of C 015-00-90-108)</p> <p>Bird Atlas (FAN 030-00-90-103)</p> <p>Canadian Heritage River Application Kakwa River Alberta (Greater Kakwa 020-00-90-112)</p> <p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Stewardship of NCC’s Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-</p>	<p>OGC is an active member on the Burrowing Owl provincial and national recovery teams, on the Loggerhead Shrike national recovery team, and will be a member of the provincial Ferruginous Hawk recovery team.</p> <p>The results from the study will be incorporated in Alberta Park’s management plans.</p> <p>The results of this research to provide CHIP with management recommendations for the grassland – forest interface.</p> <p>Bird Atlas data is provided via data requests to resource management agencies, environmental consultants, and conservation biologists to develop management and conservation plans, and to identify and design protected areas aimed at protecting birds and their habitats.</p> <p>The Heritage River designation mandates the formation of an integrated management plan between the stakeholders.</p> <p>This research has provided the bulk of new information that was incorporated into the "Management Plan for Mountain Goats in Alberta" and led to many scientific publications.</p> <p>There are numerous ungulates, upland game birds, species at risk, and waterfowl species found on the monitored properties. Management plans are prepared for all monitored properties.</p>

		<p>00-90-106)</p> <p>Southern Foothills Study Phase 3b (SALTS 030-00-90-118)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p> <p>Epidemiology modeling for proactive management of Chronic Wasting Disease in deer in Alberta (UofA 030-00-90-125)</p>	<p>This study brings the stakeholders together in a cooperative effort to determine how this habitat degradation can be avoided through improved best practices, and cooperative planning.</p> <p>Genetic information from the Sage-Grouse project has been used and will continue to be used for developing management plans and have been integrated into the species at risk recovery plan.</p> <p>This project was able to efficiently assess the management tool of aversive conditioning and use the results for future management plans.</p> <p>The proposed research strategically positions Alberta for effective management and mitigation of CWD in the future.</p>
<p>OBJECTIVE 4: SPECIES MANAGEMENT AND ENHANCEMENT</p> <p>Carry out activities to support priority population management, measure and monitor responses to those activities (i.e. productivity enhancement and reintroduction).</p>	<p>9</p>	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Whitebark pine regeneration (AWA 030-00-90-117)</p> <p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Boreal Forest Bird Research (LSLBO 030-00-90-106)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p>	<p>OGC will develop habitat enhancement projects to improve Burrowing Owl productivity and nesting and fledging success.</p> <p>Project aims to aid recovery of an ANHIC listed species, whitebark pine an important species in the upper subalpine ecosystem.</p> <p>This work has formed the basis for establishing the minimal population parameters necessary to re-open the mountain goat hunting season in Alberta and to avoid conservation problems like those that occurred in the recent past in the province.</p> <p>Landbird and waterfowl monitoring programs provide wildlife and landuse managers with information on population status and trends that help define appropriate conservation actions, assess the success of conservation initiatives, or indicate when populations are healthy and no action is needed.</p> <p>Providing on-the-ground enhancements which provide habitat for numerous wildlife and fish populations. Annual monitoring identifies what enhancements are needed to implement in order to provide habitat for the local biodiversity. Also monitoring the response of species and habitat indicators.</p>

		<p>Predator control and Duck nesting facility (Sarcee FGA 030-00-90-129)</p> <p>Captive Breeding of the Endangered Whooping Crane (Calgary Zoo 030-00-90-118)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p>	<p>The project is designed to assist the propagation of the duck population and to control predation of migratory and upland game birds.</p> <p>The focus is to continue the captive management and enhance population viability of the globally endangered whooping crane through conservation efforts of various partnerships in Canada and the US.</p> <p>The information from this study can be used by managers to determine the status and management of southern Alberta Sharp-tail and to adjust bag limits for different areas based on their genetic health. Genetic information from the Sage-Grouse project has been used and will continue to be used for developing management plans and have been integrated into the species at risk recovery plan.</p> <p>This project develops a tool to manage elk populations on endangered fescue grassland.</p>
<p>OBJECTIVE 5: AERIAL UNGULATE SURVEYS</p> <p>Work cooperatively with ASRD to conduct aerial surveys in support of population management and allocation of ungulate or game species.</p>	4	<p>WMU 408 Bighorn sheep surveys (AFGA 030-00-90-127)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p> <p>Epidemiology modeling for proactive management of Chronic Wasting Disease in deer in Alberta (UofA 030-00-90-125)</p> <p>Development of a prairie-deer sightability model for aerial surveys (UofA 030-00-90-124)</p>	<p>Aerial surveys were carried out in Kananaskis country.</p> <p>Aerial surveys for elk will be conducted in cooperation with scientists and ASRD</p> <p>ASRD aerial surveys have been used to determine deer densities for this project.</p> <p>Credible aerial surveys of are imperative to address the success of current management actions for deer (e.g. CWD spread into eastern Alberta).</p>
<p>OBJECTIVE 6: APPLIED RESEARCH AND ECOLOGICAL STUDIES</p> <p>Facilitate applied research to address ecological knowledge gaps for priority</p>	14	<p>Operation Grassland Community (AFGA 030-00-90-107)</p>	<p>OGC partnered with a researcher from an academic institution to assess the impact of the Burrowing Owl foraging habitat enhancement projects on the abundance of prey populations. Results from the research will permit to determine how effective these projects are at enhancing prey populations and whether they should be promoted or modified.</p>

<p>species, their landscapes and human use to aid in conservation. Research projects should focus on answering questions that support, evaluate and/or improve the delivery of the wildlife program.</p>		<p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>Long-term Songbird and Raptor Monitoring in AB (Beaverhill Bird Obs 030-00-90-126)</p> <p>Algae as Bioindicators (U of C 015-00-90-109)</p> <p>Community structure and demography of waterbirds in Alberta's mixedwood boreal forest (DUC 030-00-90-121)</p> <p>Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park (U of C 015-00-90-108)</p> <p>Characteristics of wolf home ranges and factors contributing to wolf-livestock conflicts in S. AB (SACC 030-00-90-131)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p>	<p>Due to the statistical rigour with which this project is conducted, and that management recommendations originating from it will contribute to wolverine conservation</p> <p>In 2007, more work was carried out on species and the habitats they occupy (in particular in the owl and nest card programs). As well, more analysis will be conducted on other species monitored by the BBO, including waterfowl (harvested species).</p> <p>Applied research to determine if certain algae in the side channels mark where human-impacted groundwater is coming to the surface.</p> <p>Conducts an applied ecological research study that is grounded in good science and directly contributes to conservation in Alberta</p> <p>This applied research project helps to preserve the habitat of several Alberta and Canadian species at risk, including the ferruginous hawk, long-billed curlew, Ord's kangaroo rat, and the western blue flag.</p> <p>A scientific basis for conservation measures benefiting priority wildlife including ungulates, and large carnivores including species at risk (grizzly bears) at the interface of crown and private lands in southern Alberta.</p> <p>This project determines wildlife use and human use of OHV trails in the study area using remote cameras and counters.</p> <p>Applied genetic research which can directly be used to help manage these up-land game bird species.</p>
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<p>OBJECTIVE 7: STATUS ASSESSMENT Inform and support the assessment and designation of the status of priority wildlife species.</p>	<p>7</p>	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>Long-term Songbird and Raptor Monitoring in Alberta (BBO 030-00-90-126)</p> <p>Bird Atlas (FAN 030-00-90-103)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p>	<p>Annual censuses of the Burrowing Owl and the Loggerhead Shrike with OGC members provide information on the status and trend of these populations in the province. In addition, occurrence of these species on members' property are provided to OGC on a voluntary basis to be entered in the Fish and Wildlife Management Information System.</p> <p>This study provides data for this <i>May be at Risk</i> species in Alberta.</p> <p>All the BBO's data is shared with ACA and with ASRD to help with Status Assessment.</p> <p>Data collected for the Alberta Bird Atlas is currently being applied to species at risk recovery plans.</p> <p>There are numerous ungulates, upland game birds, species at risk, and waterfowl species found on the monitored properties. Summer Conservation Interns record the occurrence of any rare species on NCC properties; this data is used, with other data that is collected by other organizations, in determining the provincial status of species at risk.</p>

		<p>Partners in Habitat Development (030-00-90-102)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p>	<p>PHD conducts wildlife surveys, such as winter ungulate monitoring and spring surveys include pheasant crowing counts and sharptail lek surveys.</p> <p>The information from this study can be used by managers to determine the status and management of southern Alberta Sharp-tail and to adjust bag limits for different areas based on their genetic health.</p>
<p>OBJECTIVE 8: HABITAT INVENTORY & ENHANCEMENT</p> <p>Identify priority habitats for enhancement activities or land securement. Implement activities to support the enhancement of identified habitats.</p>	<p>15</p>	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Survey of non-native plants in the Front Range Canyons of the Castle (AWA 015-00-90-105)</p> <p>Whitebark pine regeneration (AWA 030-00-90-117)</p> <p>Community structure and demography of waterbirds in Alberta's mixedwood boreal forest (DUC 030-00-90-121)</p> <p>Forest and Tree Encroachment into Fescue Grasslands in Cypress Hills Interprovincial Park (U of C 015-00-90-108)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Bird Atlas (FAN 030-00-90-103)</p>	<p>Through management recommendations and a habitat conservation strategy on the leased lands managed by the Vauxhall Stock Grazing Association, OGC will assist in maintaining and enhancing the habitat of multiple species at risk on this grassland landscape.</p> <p>Non-native plants, particularly noxious weeds, are very damaging to natural systems. They destroy valuable winter wildlife habitat by displacing desirable native species and they damage fish habitat by promoting soil erosion which compromises watershed integrity.</p> <p>This project is orientated towards conserving an important species in the upper subalpine ecosystem that provides food, cover and breeding habitat for various wildlife species.</p> <p>Uses GIS and aerial surveys to produce a wetland <i>habitat inventory</i> in northeast Alberta</p> <p>Fescue grasslands in Cypress Hills Interprovincial Park represent a unique ecological resource and an important source of native biodiversity for the region. ecosystem management recommendations concerning forest encroachment into foothills fescue grasslands</p> <p>Shoreline residents can have a substantial impact through simple changes in their actions, within their houses and around their properties and on or in the water, <i>LbyW</i> helps create and preserve healthy waterfront habitat for residents and wildlife.</p> <p>Researchers will verify habitat conditions existing in particular areas.</p>

		<p>Blue Bird Project (Ft Sask FGA 030-00-90-133)</p> <p>Bird house construction (Friends of Whitehorse Wildland Park Society 015-00-90-113)</p> <p>Canadian Heritage River Application Kakwa River Alberta (Greater Kakwa 020-00-90-112)</p> <p>Stewardship of NCC's Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p> <p>Partner in Habitat Development (PHD EIA 030-00-90-102)</p> <p>Gervais Corner Biodiversity Improvement project (REEP 030-00-90-116)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Pronghorn antelope migration ecology and connectivity in the Northern Great Plains (UofC 030-00-90-128)</p>	<p>This project enhances habitat for local song birds by providing more nesting sites for them.</p> <p>This project will enhance conservation habitat for local song birds by providing more nesting sites for them.</p> <p>Through the review and collation of research on the Kakwa R., Greater Kakwa have identified the known areas of conservation priorities such as ungulate wintering and calving grounds, mountain caribou wintering habitat and migration routes, and grizzly bear habitat.</p> <p>Providing on-the-ground enhancements which provide habitat for numerous wildlife and fish populations. Annual monitoring identifies what enhancements are needed to implement in order to provide habitat for the local biodiversity. Also implement habitat restoration activities.</p> <p>The PHD project encourages landowners to improve the upland habitat areas and habitats benefiting species at risk, such as the loggerhead shrike and the northern leopard frog, on their farm.</p> <p>The added cover and buffering provided by the proposed plantings for Gervais Corner will benefit waterfowl species and other species.</p> <p>This project quantifies the spatial and temporal relationships between OHV use and wildlife (including fish) use.</p> <p>A key objective of this research is to define core habitats, corridors, barriers, filters and to identify areas where priority conservation actions are needed.</p>
<p>OBJECTIVE 9: RECREATIONAL OPPORTUNITIES</p> <p>Develop and support opportunities that enhance or maintain recreational use, habitat integrity and user interest while encouraging current and future</p>	16	<p>WMU 408 Bighorn sheep surveys (AFGA 030-00-90-127)</p> <p>Operation Grassland Community (AFGA 030-00-90-107)</p>	<p>The results of this project contribute to the maintenance and development of wildlife oriented recreational opportunities.</p> <p>It is among the objectives of OGC to maintain and enhance the integrity of native prairie habitats to allow natural processes to occur and biological diversity to be maintained for the benefit of future generations of wildlife viewers, anglers, and</p>

<p>generations to value, enjoy and use our biological natural resources.</p>		<p>Re-print Conservation and Hunter Education Manuals (AHEIA 002-00-90-105)</p> <p>Wolverine abundance and habitat use in the Rocky Mountain Parks of Central AB (ARC 030-00-90-120)</p> <p>McGillivray Creek Riparian Mitigation (Crowsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Bird Atlas (FAN 030-00-90-103)</p> <p>Hunting for Tomorrow – Working group deliverables (HFTF 002-00-90-101)</p> <p>Boreal Forest Bird Research (LSLBO 030-00-90-106)</p> <p>Developing a Web 2.0 Prototype (MRC 015-00-90-110)</p> <p>Bird house project (Onoway FGA 030-00-90-114)</p> <p>Alberta Junior Pheasant Project (Sarcee FGA 030-00-90-130)</p> <p>Recreation and wildlife in the Rockies of Southwestern Alberta (Miistakis Institute 030-00-90-108)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains</p>	<p>hunters.</p> <p>A large percentage of program participants may actually hunt. Of equal importance, participants in our program – consumptive and non-consumptive alike, are taught the value of Alberta’s unique biodiversity.</p> <p>This project is located within the boundaries of Willmore Wilderness Park where wolverine is a trapped species.</p> <p>Enhance opportunities for hunters, anglers, and other user groups to enjoy wildlife and fish resources in a sustainable manner</p> <p>The Atlas project provides an opportunity for Albertans to become involved with a natural history related activity.</p> <p>This project encourages hunting as a recreational pursuit.</p> <p>LSLBO enhance and deliver opportunities for non-consumptive users to enjoy Alberta’s wildlife.</p> <p>Management of consumptive and non-consumptive use and users, the identification and communication of priority habitats, recreational opportunities.</p> <p>This project encouraged volunteer and youth involvement to address wildlife habitat needs in Alberta, as well as providing a sustainable recreational opportunity for the public to enjoy wildlife</p> <p>Creates recreational opportunities by encouraging youth to participate in hunting.</p> <p>Results from this research will contribute to identifying human activity and access thresholds to wildlife disturbance and will identify wildlife responses to various recreational demands.</p> <p>The work on the Sharp-tail will be used to ensure high quality hunting opportunities for the species in the future.</p>
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<p>OBJECTIVE 10: EDUCATION AND OUTREACH</p> <p>Develop and implement programs to inform Albertans of wildlife values and activities to increase their understanding of wildlife needs and provide the tools and materials necessary to achieve priority outcomes.</p>	<p>23</p>	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Re-print Conservation and Hunter Education Manuals (AHEIA 002-00-90-105)</p> <p>Improving Riparian Areas Through Excellence in Information & Community Collaboration (Cows & Fish 020-00-90-107)</p> <p>Fur Management: Past and</p>	<p>Communication involved: meeting one-on-one with private landholders, booths at trade shows or cattle auctions, annual newsletter and articles in other existing agricultural newsletters and rural newspapers, interviews and presentations to targeted rural community groups and industry representatives on these topics, and fact sheets.</p> <p>This manual is the core information that the Conservation Education program is based on. Through the educational courses offered with this manual, Albertans of both sexes and all ages learn to conserve, protect and enhance Alberta’s biological natural resources.</p> <p>Cows and Fish program delivery is and has been comprised for a large part in the development and delivery of education and outreach, developing tools and materials and evaluating those tools and the program delivery approach.</p> <p>The Alberta Trappers Association delivers a fur management presentation to the students discussing the history of the fur trade, animal management and respect</p>

	<p>Present an Alberta perspective (ATA 030-00-90-104)</p> <p>Survey of non-native plants in the Front Range Canyons of the Castle (AWA 015-00-90-105)</p> <p>Whitebark pine regeneration (AWA 030-00-90-117)</p> <p>Wildlife Helpline (AWRA 002-00-90-108)</p> <p>Bird Science Events, Educational Opportunities for Albertans (BBO 002-00-90-106)</p> <p>Riparian Area Interpretive Trail (Camps for Children Educ. Assoc. 015-00-90-105)</p> <p>McGillivray Creek Riparian Mitigation (Crowsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Biodiversity of Fungi in AB (EMS 030-00-90-115)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Bird Atlas (FAN 030-00-90-103)</p> <p>Blue Bird Project (Ft Sask FGA 030-00-90-133)</p>	<p>and humane trapping to Grade 4 & 5 school children.</p> <p>By engaging volunteers, this project helps enhance the level of awareness and understanding of conservation issues in Alberta.</p> <p>By engaging volunteers, this project helps enhance the level of awareness and understanding of conservation issues in Alberta.</p> <p>Provides access for all Albertans to the education and outreach resources and expertise of wildlife rehabilitators.</p> <p>This education-based project invited public to view studies which have stringent study designs and methods that have been peer-reviewed.</p> <p>This project meets the goals by helping to preserve, protect, and educate the public on the importance of conservation of wildlife and their habitats in Alberta.</p> <p>Inform and educate users about the biological resources and management (identification of/interpretive signage/stewardship/user responsibility).</p> <p>The poster educates Albertans about the values of fungi.</p> <p>Areas where LbyW work are also the preferred recreational and increasingly year-round residences of many urban dwellers. <i>LbyW</i> endeavors to educate these residents about their impacts in sensitive habitat.</p> <p>To assist birders, each spring, FAN facilitates bird identification courses or encourages participation in existing courses.</p> <p>Blue bird house kits have been distributed at the Fort Saskatchewan annual Legacy Park Festival and to other youth organizations with the goal of educating youth about the importance of preserving wildlife by getting involved in conservation activities.</p>
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GECF Project Contributions to Other ACA SBP Objectives:

Financial Objective		
Objective 1: To increase operating revenue from alternate sources and develop new revenue partners from corporate, industry and foundation partnerships.	1	Hunting for Tomorrow – Working group deliverables (002-00-90-101) program is focused on recruitment and retention of hunters, which is a primary funding source to ACA.

Communications Objectives		
OBJECTIVE 1: Identification of stakeholder relations priorities: Enhance partner relations and increase the understanding of ACA's role in the conservation community.	60	All GECF projects.
OBJECTIVE 2: Identification of public information and education priorities: Identify strategic alliances to deliver communications, public and education outreach messages and identify opportunities to distribute materials.	33	<p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Re-print Conservation and Hunter Education Manuals (AHEIA 002-00-90-105)</p> <p>Improving riparian areas through excellence in Information and community collaboration (Cows & Fish 020-00-90-107)</p> <p>Fur Management: Past and Present an Alberta perspective (ATA 030-00-90-104)</p> <p>A survey of non-native plants in the Front Range Canyons of the Castle (AWA 015-00-90-102)</p> <p>Whitebark pine regeneration project (AWA 030-00-90-117)</p> <p>Wildlife Help Line (AB Wildlife Rehabilitators' Assoc. 002-00-90-108)</p> <p>Bird Science Events, Educational Opportunities for Albertans (Beaverhill Bird Observatory 002-00-90-106)</p> <p>Bow River Riparian Fencing Project (TUC-Bow River Chpt 020-00-90-105)</p> <p>Riparian Area Interpretive Trail Development at Aspen Ranch Outdoor Education Centre (Camps for Children Education Assoc. 015-00-90-105)</p>

		<p>McGillivray Creek Riparian Mitigation (Crownsnest Pass Quad Squad Assoc. 015-00-90-112)</p> <p>Biodiversity of Fungi in Alberta: a Provincial Database (Edmonton Mycological Soc 030-00-90-115)</p> <p>Living by Water (FAN 020-00-90-101)</p> <p>Atlas of Breeding Birds of Alberta: Update project (FAN 030-00-90-103)</p> <p>Blue bird project (Ft Saskatchewan FGA 030-00-90-133)</p> <p>N AB non-game fish status assessment Yr 5 (Royal Alberta Museum 020-00-90-104)</p> <p>Hunting for Tomorrow – Working group deliverables (002-00-90-101)</p> <p>Boreal Forest Bird Research (Lesser Slave Lake Bird Observatory 030-00-90-106)</p> <p>Developing a Web 2.0 Prototype to Promote Sustainable Decision-making about Recreational quality Group Use and the Ecological Health of Protected Areas (Mount Royal College 015-00-90-110)</p> <p>Riparian Area Management Improvements (Mountain View County 015-00-90-101)</p> <p>Stewardship of NCC’s Properties in the Rocky Mountain and Foothills Natural Regions (NCC 015-00-90-106)</p> <p>Onoway Birdhouse Project (Onoway & district FGA 030-00-90-114)</p> <p>Partners in Habitat Development (PHD 030-00-90-102)</p> <p>Implementation of the Alberta Prairie Conservation Action Plan 2006-2010 (Prairie Conservation Forum 015-00-90-111)</p> <p>Riparian Fencing Initiative II (Red Deer County 020-00-90-103)</p> <p>Gervais Corner Biodiversity Improvement Project (REEP 030-00-90-116)</p> <p>Alberta Junior Pheasant Project (Sarcee FGA 030-00-90-130)</p> <p>Southern Foothills Study Phase 3b (SALTS 030-00-90-118)</p> <p>Quirk Creek Native Fish Initiative (TUC 020-00-90-113)</p> <p>Late Fall Fisheries Investigation in Diversion Canals of Southern Alberta (TUC 020-00-90-114)</p> <p>Visitor Centre Role and Appeal at William A. Switzer Provincial Park (UofA 002-00-90-109)</p> <p>Atlas of Alberta Lakes and Aquatic Invertebrates of Alberta (UofA 002-00-90-107)</p> <p>Publication of “People & Peaks of Willmore Wilderness Park” (Willmore Wilderness Park 002-00-90-102)</p>
<p>OBJECTIVE 4: Identification of external communications priorities: Improve the level of interaction, information exchange and collaboration with other conservation specialists</p>	<p>60</p>	<p>All GECF projects</p>

Conservation Programming Key strategies (cross-cutting)

<p>Analyze data to provide a defensible scientific base for conservation actions.</p>	<p>29</p>	<p>Genetic consequences of living at the edge of the range: <i>Yucca glauca</i> (Acadia U 015-00-90-103)</p> <p>WMU 408 Bighorn Sheep Surveys (AFGA 030-00-90-127)</p> <p>Operation Grassland Community (AFGA 030-00-90-107)</p> <p>Wolverine abundance and habitat use in the Rocky Mtn Parks of Central AB (ARC 030 00 90 120)</p> <p>A survey of non-native plants in the Front Range Canyons of the Castle (AWA 015-00-90-102)</p> <p>Whitebark Pine regeneration project (AWA 030-00-90-117)</p> <p>Long-term songbird and raptor monitoring in AB (BBO 030-00-90-126)</p> <p>Biodiversity of fungi in AB: a provincial database (EMS 030-00-90-115)</p> <p>Atlas of breeding birds of Alberta (FAN 030-00-90-103)</p> <p>Ecology and conservation of mountain goats in AB (Laval U 030-00-90-123)</p> <p>Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030-00-90-106)</p> <p>Recreation and wildlife in the Rockies of SW Alberta (Miistakis Institute 030-00-90-108)</p> <p>Stewardship of NCC Properties in the Rocky Mountain & Foothills natural regions of AB (NCC 015-00-90-106)</p> <p>Northern AB non-game fish status assessment – year 5 (RAM 020-00-90-104)</p> <p>Characteristics of wolf home range and factors contributing to wolf-livestock conflicts in Southern AB (SACC 030-00-90-131)</p> <p>Quirk Creek native fish initiative (TUC 020-00-90-113)</p> <p>Genetic analysis of walleye (UofA 020-00-90-111)</p> <p>Genetic Diversity Analysis of Southern Alberta Plains Sharp-Tailed Grouse, Endangered Sage-Grouse, and their Hybrids (UofA 030-00-90-119)</p> <p>Dispersal of rose-breasted grosbeaks in a fragmented landscape (UofA 030-00-90-132)</p> <p>Effects of aversive conditioning on elk migration & fescue growth (UofA 030-00-90-105)</p> <p>Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 020-00-90-106)</p> <p>Epidemiology modeling for proactive management of CWD in deer in AB (UofA 030-00-90-125)</p> <p>Development of a prairie-deer sightability model for aerial surveys (UofA 030-00-90-124)</p>
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	<p>Invasion and bloom dynamics of “rock snot” in AB rivers (UofC 020-00-90-117)</p> <p>Algae as bioindicators of human impacted groundwater emerging into rivers (UofC 015-00-90-109)</p> <p>Forest and tree encroachment into fescue grasslands in Cypress Hills Interprovincial Park (UofC 015-00-90-108)</p> <p>Modelling mercury biomagnification in S. Saskatchewan R Basin (ULeth 020-00-90-116)</p> <p>Cougar predation on wild ungulates... (UofA 030-00-90-109)</p>
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