Alberta Conservation Association

Grant Eligible Conservation Fund
2006 – 2007

Annual Report of Activities
&
Synopsis of Funding Recipient Projects

For the Period of
April 1, 2006 to March 31, 2007

Amy MacKinven
Calgary, Alberta
July 2007

Alberta Conservation Association

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.

Alberta Conservation Association,
101 -9 Chippewa Road
Sherwood Park, AB T8A 6J7

Amy MacKinven, Grant Eligible Conservation Fund Project Administrator
Email: amy.mackinven@ab-conservation.com

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

Front Cover Photo:
Photo: Dr. C. Cassidy St. Claire
From the University of Alberta's project 'Ya Ha Tinda Elk Aversive Conditioning Project' (030 10 90 104)

Alberta Conservation Association

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Alberta Conservation Association

Executive Summary

The **Grant Eligible Conservation Fund** (GECF) formally began in 2002, making this the 5th 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 $5 million dollars have been provided to 286 conservation project implemented by the conservation community, which has leveraged an estimated $29 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 2006/2007 and relate them to the ACA Strategic Business Plan.

KEY PROGRAM HIGHLIGHTS for the GECF 2006/2007:

- 122 funding requests were received requesting a total dollar value of ~$2.26 million.
- A total of **$1,151,122.00** was granted to **57** projects.
- **50** projects were completed, **6** projects currently have extensions and **1** project had the grant rescinded.
- Project budgets ranged from $600.00 to $70,000.00.

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 2006/2007 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 2006/2007 and an overview of accepted projects carried out between April 1, 2006 and March 31, 2007. A synopsis of objectives, activities and deliverables is provided for each of the 57 conservation projects funded.

2. Purpose:

The **Grant Eligible Conservation Fund** aims to aid the delivery of ACA's mission and Strategic Business Plan (SBP 2006-2009). 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 2005 via the ACA website and an announcement was made in the ACA magazine. Details of the 2006/2007 funding cycle are in the Table below:

2006/2007 FUNDING CYCLE DATES

Posting of the Guidelines and Application Forms on ACA's website	December 15 2005
Window to receive completed applications	January 1-31 2006
Proposal Review Committee Adjudication Meeting	February 28 2006
Notification of Applicants as to Funding Status	March 2006
Projects Work Occurred	April 1 2006 through March 31 2007

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 Tuesday, February 28, 2006 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 2006-07.

6. Funding Allocations:

For the 2006/2007 funding cycle almost **$1.2 million dollars** were available for project funding via the GECF.

- 122 funding requests were received requesting a total dollar value of ~$2.26 million.
- A total **$1,151,122.00** was granted to **57** projects.
- **50** projects were completed, **6** projects received extensions and **1** project had the grant rescinded.
- Project budgets ranged from $600.00 to $70,000.00.

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 2006-2007 please see Appendix B.

7. Major Funding Goals & Priorities 2006 – 2007:

Major Funding Goals & Priorities of the Conservation Fund 2006 – 2007

Grants made to partners are intended to aid in the delivery of the ACA mission and Strategic Business Plan. The following list of funding goals and priorities for the GECF is derived from the Strategic Business Plan 2006-2009 and was contained in GECF document the "Project Submission Guidelines for Funding in 2006-2007" (for full document see Appendix A), which is used by project applicants and was downloadable from the ACA website.

ACA Wildlife Program Priorities for 2006-2007

ACA's Wildlife Program is designed to enhance the sustainability of wildlife species through science-based conservation. Our focus will be on four thematic areas, including ungulates, upland game birds, waterfowl and species at risk. Our objectives are prioritized at the provincial scale within the following five activities: (i) Identification of Wildlife Conservation Priorities; (ii) Population Inventory and Assessment; (iii) Applied Ecological Studies; (iv) Recreational Opportunities; and (v) Species-at-Risk Recovery Plan Support and Implementation. Pivotal steps in our program development are timely discussions with external experts and stakeholders to gain insight and build opportunities for collaboration.

ACA Fisheries Program Priorities for 2006-2007

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. We view conservation as the sustainable and responsible participation in the social and consumptive use of fish and aquatic resources, while realizing the importance of protecting healthy ecosystems.
Recognizing the importance of different spatial scales and processes that sustain healthy ecosystems, we have identified seven priority landscapes or aquatic resource types representing rivers and streams in the northeast and southern slopes of the Rocky Mountains and the prairie-parkland and boreal regions, the entire Milk River drainage, and lakes within the boreal and prairie-parkland regions.

Additionally, critical threats and stressors for each of these priorities have been identified and specific objectives and conservation strategies have been developed to diminish these threats. ACA recognizes these strategies and actions to be essential to the development and delivery of a fisheries program that both meets our responsibilities as a delegated administrative organization and meets our stakeholders' expectations.

ACA Habitat Program Priorities for 2006-2007

ACA's Habitat Program is committed to maintaining or increasing habitat for priority species or populations that are habitat limited and to provide sustainable recreational opportunities. Alberta's fish and wildlife rely on a diversity of habitats and ACA's Habitat Program works collaboratively with many conservation agencies and individuals to promote habitat stewardship. Our habitat program is designed to be orientated towards providing on-the-ground enhancements that are providing habitat for numerous wildlife and fish populations. Programs are delivered in an effective, credible and collaborative manner and are delivered to meet our habitat program vision.

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, 57 projects were approved for funding in 2006-2007 with each project contributing to at least one of the main ACA funding priority areas as outlined in the previous Section (Fisheries, Habitat, and Wildlife), and many projects contributing to two of the priority funding areas. One project had the funding rescinded (020 10 90 101) leaving 56 projects contributing to ACA priorities. 11 projects related to the Fisheries Funding Priorities, 28 to the Habitat Funding Priorities, whereas 40 of the projects related to the Wildlife Funding Priorities. For a complete overview of which projects contributed to each of the Funding Priorities for 2006-2007, see Appendix C.

Each project was assigned to the most relevant Objective(s) contained in the Strategic Business Plan (SBP) 2006-2009, as specified in the project proposal and based on actual results as reported by the grant recipients. Most results were booked for the Wildlife Program with the Fisheries Program having the least. The Fisheries Objectives are more specific than the Wildlife Objectives, coupled with the fact that less Fisheries-related proposals were received most likely accounts for this. Overall the GECF projects for 2006-2007 were strong in both supporting recreational opportunities for Albertans and increasing collaboration with other stakeholders. The most outstanding Objectives are discussed below. For the complete overview of projects and their SBP Objectives, see Appendix C.

Wildlife

The majority (40/56) of the 2006-07 projects 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 2006-09, in particular Objectives # 2 *Collect and interpret population data on select wildlife species using systematic monitoring methods* (16 projects) and # 5 *Develop and support opportunities to enhance consumptive and non-consumptive wildlife related recreational experiences for all Albertans* (16 projects). Under Objective #2 populations data were collected and evaluated for several species in ways that can be used for monitoring, e.g. sharp-tailed grouse (AGTC, 030 10 90 113), cougars (UofA Dr Boyce, 030 10 90 106) and burrowing owl (AFGA, 010 20 90 107; UofA Dr Bayne, 030 20 90 101) to name a few. A couple of examples of projects enhancing consumptive and non-consumptive wildlife related recreational experiences are: the Onoway Birdhouse project (Onoway & District Fish & Game Assoc, 030 50 90 114), which built 180 bluebird birdhouses with volunteers; and the scientific project determining wolf-densities and wolf predation on ungulates (UofA, Merrill, 030 10 90 107), which develops an important technique for establishing hunting season quotas.

Habitat

28 of the 56 projects funded in 2006-07 related to the Habitat Funding Priority. Of these projects, more than half (18/28) contributed to Objective #4 *Secure, develop, protect and maintain high-priority wildlife and fisheries habitats and habitats that provide recreational opportunities*. For example, the Recreation and wildlife in the Rockies project of the Miistakis Institute (010 20 90 104) 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. 11 projects contributed to Objective #1 *Collaborate with private landowners, government, industry and other stakeholders to maintain, enhance and protect priority riparian habitat*. Partners for Habitat Development (010 40 90 102) is a good example of a GECF which implemented this SBP Objective, as a project with a high collaborative component dedicated to habitat development. 6 project's results helped implement Objective #3 *To maintain, protect and enhance priority grassland habitats in Alberta through the development and implementation of habitat conservation initiatives*. Operation Grassland Community (AFGA, 010 20 90 107), a grassroots habitat stewardship program working directly with private landowners, worked specifically on the conservation of Alberta's grassland habitats.

Fisheries

While 11 projects related to the more general Fisheries Funding Priority, 8 projects had results contributing to specific Fisheries Objectives as listed in the SBP 2006-09, with 5 projects contributing directly to Objective #1, *provision of timely and accurate information describing the abundance and structure and use of aquatic habitats by selected fish populations,* such as, the Royal Alberta Museum's (020 10 90 104) forth-year assessment of non-game fish in Northern Alberta, which encompasses many of ACA's priority fisheries landscapes. 3 projects contributed to Objective #4 *development of a suite of*

watershed assessment indicators and report on overall disturbance of watersheds. For example, two complementary University of Alberta projects worked towards developing a suite of watershed assessment indicators (Dr Bayley 030 20 90 102 & 010 30 90 101). Perhaps also notable is the fact that none of the projects in 2006-2007 contributed to Fisheries Objectives #2 and #3.

Other SBP Objectives

In addition, 2006-2007 saw many projects (18/56) with an education and outreach component, which assists ACA implement Communication Objective #2 (*Implement public education and outreach activities that increase awareness and understanding of wildlife, fisheries and habitat issues in Alberta*). For example, the Living by Water project (FAN 090 40 90 101) educated shoreline residents of Alberta's popular recreational lakes in the importance of protecting healthy habitats and ecosystems for both wildlife and fish populations. 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 and this can be used to position ACA as a conservation knowledge centre in Alberta.

Many of the 2006-2007 GECF projects (35/56) contributed to ACA's cross-cutting Conservation Programming Key Strategy: to provide a defendable scientific basis for conservation actions. For example, the University of Alberta project "Assessing effects of sportfish stocking & aeration on communities in small boreal lakes" (090 30 90 102) 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 examining cougar predation on wild ungulates (UofA 030 10 90 106) provided management-oriented solutions which can be used to increase hunting opportunities and ensure that viable and harvestable populations of both predator and prey persist into the future.

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 70 90 101).

9. Synopsis of Approved Projects for 2006 – 2007

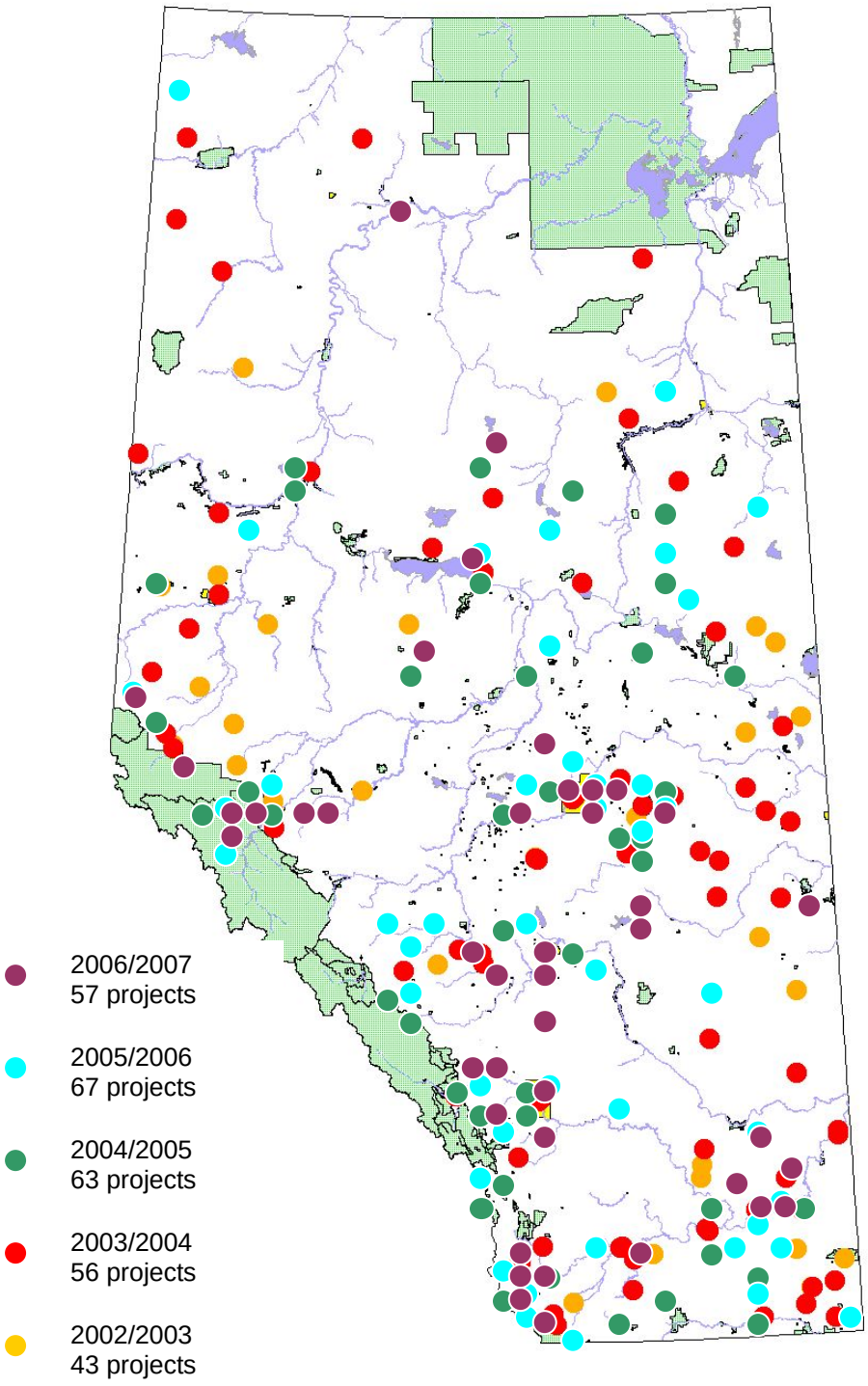
A summary description of each of the 57 approved project and the respective objectives, activities and deliverables can be found in Part II of this report.

Project Title	Grant Amount	Organization	Summary On Page
Onoway Birdhouse Project	$600.00	Onoway & District Fish and Game Association & Gun Club	10
Moth diversity in the Buffalo Lake and Lowden Springs Conservation Areas	$1,000.00	Individual	11
Sherwood Park Fish & Game Purple Martin House Project	$1,020.00	Sherwood Park Fish and Game Association	12
Distribution of fisher (and other high-profile species) in Cooking Lake/Blackfoot PRA	$1,380.00	Individual	13
Beaverhill Bird Observatory 'Steaks and Saw-whets' and 'Bird Banding Breakfast' Events	$1,900.00	Beaverhill Bird Observatory	14
White Bark Pine Survey, Castle Wilderness	$2,000.00	Alberta Wilderness Association	16
Dodds Lake Feasibility Study	$2,000.00	Society of Poplar Grove Guardians	17
South Raven River Spawning Preservation	$4,000.00	Dickson Fish & Game Association	18
McLeod River Rehabilitation Project	$5,050.00	Trout Unlimited Canada	19
Wapiti! Roaming the Plains and Pines	$5,600.00	Society of Grasslands Naturalists	21
Factors Affecting Harlequin Duck Use of a Local Breeding Stream in the Alberta Foothills	$5,980.00	Bighorn Wildlife Technologies Ltd.	22
Innovation Alberta Omnimedia Project	$7,000.00	Porcupine Stone Productions	24
Animal Resource Teaching Implements	$7,475.00	Edmonton Nature Centres Foundation	26
Reducing Bear Conflict in Rural Communities: Bear-Resistant Container Program	$7,476.00	Karelian Bear Shepherding Institute of Canada (KBSIC)	28
Landscape mechanisms behind the distribution and abundance of Ring-necked Pheasants in Southeastern Alberta	$8,000.00	University of Alberta	30
Ecological traps and temporal trends in habitat-use for waterfowl in the aspen parkland	$10,400.00	Alberta Co-operative Conservation Research Unit (ACCRU)	32
Caribou response to encounters with people in Jasper National Park (Year 2)	$12,300.00	Royal Roads University, Victoria, B.C.	34
Riparian Fencing Initiative	$12,400.00	Red Deer County	36
Biodiversity of Fungi in Alberta: a Provincial Database	$12,500.00	Edmonton Mycological Society	37
Monitoring of the Nature Conservancy of Canada's Properties in the Parkland and Boreal Forest Natural Regions of Alberta	$13,500.00	Nature Conservancy of Canada – Alberta Region (NCC)	39
Road Watch in the Pass; an innovative community- based monitoring project to identify wildlife crossing locations along Highway 3 in the Crowsnest Pass of Southwestern Alberta	$14,700.00	The Miistakis Institute for the Rockies	41
Boreal Forest Bird Research	$15,000.00	Lesser Slave Lake Bird Observatory	43
Genetic Analysis of Walleye (*Sander vitreus*) Populations in Alberta for Management and Forensic Purposes	$15,000.00	University of Alberta	45
Understanding the Dynamics of Change in Critical Subalpine Meadow Habitat	$15,380.00	University of Victoria	47
Alberta Grouse Technical Council: Status of grouse in Alberta	$15,900.00	Alberta Grouse Technical Council	49
20 Years of Bird Monitoring at Beaverhill Bird Observatory	$16,350.00	Beaverhill Bird Observatory	51
Increasing public access for wildlife-related recreation on private lands: A review and assessment of practices	$17,600.00	University of Calgary, Faculty of Environmental Design	53
Ecology and conservation of mountain goats in Alberta	$17,993.00	Laval University	55
Effects of aversive conditioning on elk migration and fescue growth	$18,580.00	University of Alberta	58

Large Woody Debris in small Streams of Alberta's Foothills	$19,300.00	Geography, University of BC	60
Fur Management: Past and Present an Alberta Perspective	$20,000.00	Alberta Trappers Association	62
Millennium Creek Project – Phase Two – Fish Habitat Enhancement 2006	$20,000.00	Bow Valley Habitat Development	63
The Living by Water Project	$20,000.00	Federation of Alberta Naturalists	64
Riparian Area Management Improvements	$20,000.00	Mountain View County a	66
Recreation and wildlife in the Rockies of Southwestern Alberta: Human Use and its effects on wildlife, riparian areas and regional connectivity	$20,000.00	The Miistakis Institute for the Rockies	68
Assessing the effects of fish on waterbird abundance in shallow lakes in the Boreal Transition Zone	$20,000.00	University of Alberta	70
Ecosystem Effects Driven by Cattle Habitat Selection	$20,000.00	University of Calgary, Faculty of Environmental Design	72
Identifying Essential Breeding Habitat for Burrowing Owls in Alberta	$22,744.00	University of Alberta	74
Re-print of Conservation and Hunter Education manuals	$24,500.00	Alberta Hunter Education Instructors' Association	76
Protecting Wolverines in Alberta Provincial Parks - How many are there and how well are they protected?	$25,000.00	Alberta Research Council Inc.	77
Modelling Mercury Biomagnification in the South Saskatchewan River Basin	$25,000.00	The University of Lethbridge	79
Rangeland Habitat Initiative	$25,700.00	Southern Alberta Land Trust Society	81
Assessing the importance of wetland productivity and upland cover characteristics to waterbird populations in the Boreal Transition Zone	$28,000.00	University of Alberta	83
Northern Alberta Non-game Fish Status Assessment – Year 4	$29,535.00	The Provincial Museum of Alberta	85
Modeling deer movements to predict CWD spread in Alberta	$30,000.00	University of Alberta	87
The Economic Benefits of Recreational Fishing on the Bow River: Canmore to Bassano	$30,000.00	University of Calgary	89
Hunting For Tomorrow Foundation – Working Group Deliverables	$32,000.00	Hunting For Tomorrow Foundation	90
New field techniques for estimating wolf densities and predation rates in the Central East Slopes of Alberta: Models for wolf sightability and kill-site identification	$33,000.00	University of Alberta	92
Ephemeral and intermittent streams: are they important in maintaining biodiversity in a forested landscape?	$35,500.00	Alberta Research Council	94
Assessing effects of sportfish-stocking and aeration on communities in small Boreal Foothills lakes	$36,709.00	University of Alberta	96
Monitoring Important Bird Areas (MIBA) – Phase II: Global Framework	$38,560.00	Federation of Alberta Naturalists	98
Cougar Predation on Wild Ungulates in a Multi-Prey, Multi-Predator System in West-Central Alberta	$39,080.00	University of Alberta	100
Operation Grassland Community	$45,010.00	Alberta Fish & Game Association	102
Community Conservation Partnership	$45,400.00	Alberta Fish & Game Association	106
Partners in Habitat Development	$50,000.00	Partners in Habitat Development	108
Atlas of Breeding Birds of Alberta: Update Project	$58,000.00	Federation of Alberta Naturalists	109
Cows and Fish: Managing Riparian Areas Through Community Collaboration	$70,000.00	Alberta Riparian Habitat Management Society - Cows and Fish	111
TOTAL	**$1,151,122.00**	**57 Projects**	

10. 2002-2007 Grant Eligible Conservation Fund Project Locations

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



PART II: 2006-2007 PROJECT SUMMARIES

In order of grant size.

Onoway Birdhouse Project

Project Location: Onoway
Identifying Code: 030 50 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.net
Telephone: 780-967-5236

ACA Grant Status: Completed

Project Objective(s):
The objectives of this project were to:

- provide nesting structures for a variety of songbirds in the Onoway area;
- increase public awareness of wildlife and their habitat requirements and for ACA and AFGA programs;
- promote and increase volunteer participation in habitat projects in the community; and
- create recreational opportunities in the form of bird watching and photography.

Activities:
180 birdhouses were constructed exceeding their estimate of 150 birdhouses. They constructed the Rocky Mountain Bluebird House and the Peterson Bluebird House. Discussions were held with volunteers constructing the bird houses as to the proper location for a birdhouse, how to look after them and what to watch for.

Link with ACA Priorities for 2006-2007:
This project encouraged volunteer involvement to address wildlife habitat needs in Alberta, as well as providing a sustainable recreational opportunity for the public to enjoy wildlife (Wildlife Objective #5).

Partnerships:
Onoway Fish & Game Club provided all labour, milage and equipment costs.
Members of the Onoway scouts and Junior Forest Wardens volunteered time to construct birdhouses.

Deliverables:
180 birdhouses distributed in the Onoway area (bluebirds returned to the area end of March)
GECF Final Report

GECF History with project:
This group received GECF funding in 2005/06 for the same project.

Moth diversity in the Buffalo Lake and Lowden Springs Conservation Areas

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Project Location: Buffalo Lake Moraine and Lowden Springs Conservation Areas
Identifying Code: 030 20 90 103
Funding Allocation: $1,000.00

Principal Investigator: Dr. Charles Durnham Bird
Contact Information: individual
Box 22, 5 Maple Close,
Erskine, Alberta, T0C 1G0
Email: cdbird@xplornet.com
Telephone: 403-742-0626

ACA Grant Status: Completed

Project Objective(s):
The objective of this project was to determine the moth diversity in the Buffalo Lake Moraine and Lowden Springs Conservation Areas by continuing to sample the moth species in the areas.

Activities:
The two areas were visited numerous times from April 1-October 1, 2006 to collect specimens. The collected moths were mounted and labeled. The majority of identifications have now been made. Reports for each area have been made and submitted.

Link with ACA Priorities for 2006-2007:
The results of this study will show the value of the two conservation areas both jointly owned by ACA and the unique habitats that are present by providing evidence of moth species that are either rare or unique to these areas (Habitat Objective #5). Moth species are, of course, present because their food plants are present.

Partnerships:
ACA (Grant Niemann, Andy Murphy, Jim Potter), Ducks Unlimited Canada (Bob Thompson), Ducks Unlimited, and Nature Conservancy Canada (Laurel Murphy). Gary Anweiler, Greg Pohl, Dr. J.-F. Landry, Doug Macaulay, Dr. George Balogh, Dr. Brian Scholtens and Chris Schmidt assisted in the identification. Felix Sperling and Danny Shepley facilitated the study of specimens in the Bowman Collection of the Strickland Museum, and Greg Pohl did the same for the Northern Forest Research Centre Entomology Collection. Ernest Mengersen of the Entomology Collection at Olds College.

Crambus girardellus, wingspan 28 mm: ALBERTA, Buffalo Lake Conservation Area, C.D. Bird, BIRD147, C.D. Bird image

Deliverables:
GECF Final Report
The report “Moths of the Buffalo Lake Moraine Conservation Area, 2001-2006”.
The report “Lepidoptera of the Lowden Springs Conservation Area, Alberta, 2002-2006”.

GECF History with project:
This is the first year of funding for this project.

Sherwood Park Fish & Game Purple Martin House Project

Project Location: Sherwood Park
Identifying Code: 030 50 90 113
Funding Allocation: $1,020.00

Principal Investigator: Frank Lee
Contact Information: Sherwood Park Fish and Game Association
PO Box 3098
Sherwood Park, Alberta, T8A 2A6
Telephone: 780-463-5953

ACA Grant Status: Completed

Project Objective(s):
The objective of this project was to provide additional multi-celled nesting boxes for purple martins, thereby providing more bird watching and photography opportunities for the members of Sherwood Park Fish & Game Association and other interested groups.

Activities:
Four twelve-unit purple martin houses were built and the steel pole supports cemented in on the Sherwood Park Fish and Game property.

Link with ACA Priorities for 2006-2007:
This project encouraged volunteer involvement to address wildlife habitat needs in Alberta, as well as providing a sustainable recreational opportunity for the public to enjoy wildlife (Wildlife Objective #5).

Partnerships:
SPF&G volunteers provided all labour, tools and shop space.

Deliverables:
4 twelve-until purple martin houses
Article in the SPF&G newsletter
A notice of ACA support at the project site
GECF Final Report

GECF History with project:
This was the first time this project was funded.

Distribution of fisher (and other high-profile species) in Cooking Lake/Blackfoot Provincial Recreation Area

Project Location:	Cooking Lake/Blackfoot Provincial Recreation Area
Identifying Code:	030 50 90 116
Funding Allocation:	$1,380.00
Principal Investigator:	Gilbert Proulx
Contact Information:	individual 229 Lilac Terrace Sherwood Park, Alberta, T8H 1W3 Email: gproulx@alphawildlife.ca Telephone: 780-464-5228
ACA Grant Status:	Completed

Project Objective(s):
Fisher (*Martes pennanti*) was introduced in the Cooking Lake/Blackfoot Provincial Recreation Area (PRA) in 1990-1992, where they successfully established themselves and reproduced. In 2003, a dead fisher was found east of the PRA, and, on the basis of observations reported by local residents, the species may still inhabit the PRA. Unfortunately, no inventory has taken place in the area since 1993. The objective of this project was to document the winter distribution of fisher in the Cooking Lake/ Blackfoot PRA on the basis of snow track surveys from January 2006 to February 2007.

Activities:
136 km were inventoried along 20 transects in areas where animals were released in the 1990s, or observed since then. Roads accessing the PRA, i.e., Central Road and Range Road 210, were also inventoried along their right-of-ways.

Link with ACA Priorities for 2006-2007:
This project meets ACA's goals and priorities (Habitat Objective #4) by:
- Identifying habitats where fisher are located, which will be useful in the development of future studies and conservation strategies to ensure the long-term presence of these species.
- Viewing fisher (and other species) signs, or the animals themselves is a high-quality experience for naturalists and visitors of the Cooking Lake/Blackfoot PRA.
- Locally fisher is a species that may be extirpated unless its valuable habitats, as determined through inventories, are maintained.

Fisher tracks
Photo: Dr. G. Proulx

Deliverables:
Fisher tracks were recorded along 13 transects. Under ideal snow conditions, it was possible to identify at least 2 different fishers, i.e., 1 fisher with a ≤ 5-6 cm-wide track, and another 1 with a 6.5-7 cm-wide track. Fishers appeared to use the north-central portion of the PRA along Elk Island National Park, and Range Road 530. One large fisher track was recorded near the junction of Round Up and Central Alleyway trails. Two lynx (*Lynx canadensis*) tracks were recorded in February 2006 near Blackfoot Lake.
GECF Final Report with maps, location of surveys, recorded tracks and photos.
An article will be submitted to the Newsletter of the International *Martes* Working Group.

GECF History with project:
This is the first time this project has received funding.

Beaverhill Bird Observatory 'Steaks and Saw-whets' and 'Bird Banding Breakfast' Events

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Project Location: Beaverhill Bird Observatory
Identifying Code: 030 50 90 117
Funding Allocation: $1,900.00

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 Objective(s):
Beaverhill Bird Observatory (BBO) hosted a spring event, *Big Banding Breakfast*, and a fall event, *Steaks and Saw-whets*. Both of these events were held at the BBO while researchers were conducting their bird banding activities. The public learned how and why birds are studied and the importance of monitoring wildlife populations in the long-term.
The main objectives of this initiative were to:
(1) Bridge the gap between science and the general public by inviting members of the public to witness science first hand,
(2) Showcase that science is happening locally,
(3) Highlight spring and fall migration (with two public events), a critical aspect of the life of many birds that breed in the north.

Activities:
The spring event *Big Banding Breakfast* was held on May 28, 2006. Visitors had a good opportunity to see bird banding in an up-close and personal manner. In fact, more birds were banded on the morning of the event than on any other morning that spring.

Steaks and Saw-whets occurred on September 22 & 23, 2006. During the course of two nights the BBO hosted 105 members of the public. Roughly 20% of these participants were children. It was amazing to see the enthusiasm that these young people had for the birds and the fieldwork that BBO is doing. Visitors were given a meal, heard about local monitoring programs and saw research techniques while biologists caught, banded and measured Northern Saw-whet Owls. Public discussion topics during the evening included fall migration, ecology of raptors, research and monitoring techniques and what life is like when you are a field researcher.

Link with ACA Priorities for 2006-2007:
This project meets ACA's goal to enhance the level of awareness and understanding of conservation issues within Alberta. The project promotes the use, protection, and enhancement of natural habitats and biological populations, whilst providing an opportunity for a non-consumptive wildlife-related recreational experience (Wildlife Objective #5). The studies BBO invite the public to view have stringent study designs and methods that are peer-reviewed. Further, this project although education-based, contributes to the larger program of collecting and interpreting population data on wildlife species using systematic monitoring methods.

Partnerships:
Volunteers, ASRD.

Deliverables:
In addition to the two events that were held, there were also two articles showcasing the *Big Birding Breakfast* and *Steaks and Saw-whets* published in The Willet.
Both events were advertised on the website.
GECF Final Report

GECF History with project:
This was the first year this project received funding.

White Bark Pine Survey

Project Location: Castle Special Management Area
Identifying Code: 035 20 90 101
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 Objective(s):
The objectives of this project were to:

- determine the location, abundance and distribution of whitebark pine (*Pinus albicaulis*);
- identify threats to the species and investigate methods to mitigate threats;
- develop recommendations for maintaining and enhancing primary habitats for whitebark pine.

Secondary objectives were to collect data on other Alberta Natural Heritage Information Centre (ANHIC) listed species; record data on non-native and weed species; and raise awareness with the general public about importance of the ecosystem.

Activities:
AWA completed 20 surveys on 13 drainages in the study area.
Data collected included tree density, cone production, and tree health. Only 16% of trees were rated as healthy and all plots contained trees infected with blister rust.
Compiled report on whitebark pine in the Castle Special Management area.

Link with ACA Priorities for 2006-2007:
This project aims to aid recovery of an ANHIC listed species (Wildlife Objective #6) and is orientated towards providing food, cover and breeding habitat for various wildlife species (Habitat Objective #4).

Partnerships:

Deliverables:
Report entitled “Whitebark Pine Communities in the Castle Special Management Area: A brief overview of ecology and health” which gives some recommendations for the conservation of whitebark pine in the Castle area.
GECF Final Report

GECF History with project:
AWA have had other small projects in previous years; this is the first time the whitebark pine project was funded.

Dodds Lake Feasibility Study

Project Location: Dodds Lake, Innisfail
Identifying Code: 090 80 90 102
Funding Allocation: $2,000.00

Principal Investigator: Ray Cerniuk
Contact Information: Society of Poplar Grove Guardians
5212 41st Street, # 404
Innisfail Alberta T4G 1C4
Email: raycer99@shaw.ca
Telephone: 403-227-1916

ACA Grant Status: Completed

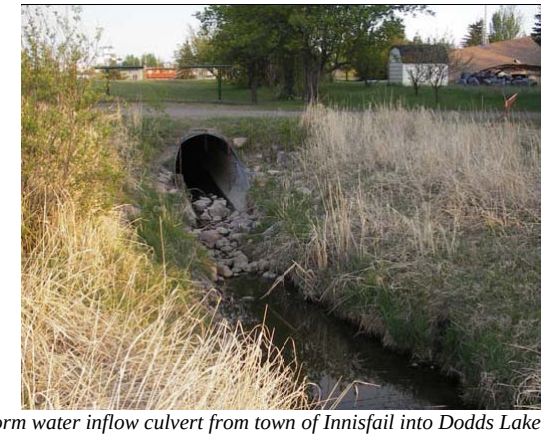
Project Objectives:
The objective of this project was to obtain an independent and comprehensive environmental impact study to determine the effects of present and future developments on Dodd's Lake and the community of Innisfail.

Activities:
The Society of Poplar Grove Guardians contracted an independent, qualified consultancy to conduct an environmental impact study and produce a report of findings.

Link with ACA Priorities for 2006-2007:
The Society of Poplar Grove Guardian's intend to use the report to help conserve, protect and enhance fish and wildlife habitat (Habitat Objective #4).

Deliverables:
A report entitled "Review of Current Developments Dodd's Lake: Environmental Effects and Legislation" was produced by Mainstream Aquatics Ltd. (Sept. 2006).

GECF History with Project:
This was a new project for 2006/07.



Storm water inflow culvert from town of Innisfail into Dodds Lake
Photo: Mainstream Aquatics Ltd.

South Raven River Spawning Preservation

Project Location: South Raven River (SE8–36–5–W5) near Caroline
Identifying Code: 020 60 90 103
Funding Allocation: $4,000.00

Principal Investigator: Dennis Hindbo
Contact Information: Dickson Fish & Game Association
Box 516
Caroline, Alberta, T0M 0M0
Telephone: (403) 722-3896

ACA Grant Status: Extended

Project Objective(s):
The objective of this project is to prevent the loss of one of the major spawning grounds by restoring habitat and preventing massive erosion.

Activities:
The planned activities are:

- To lay logs to deflect water flow.
- To install rip rap at the lower end of the new channel.
- To fill in the gap in the river bank to prevent new channel formation using rip rap.
- Photographs of the process will be taken

Link with ACA Priorities for 2006-2007:
This project will address the Fisheries Program Priorities by attempting to restore habitat for fish spawning to help sustain or improve Alberta's fish populations, i.e. trout and mountain white fish.

Partnerships:
Dickson Fish and Game members will volunteer all labour.
Land owner is cooperating with the project.

Deliverables:
This project has not yet been completed. An extension has been granted as the group had delays with obtaining the approval from the various regulators, such as the Department of Fisheries and Oceans, Alberta Environment, and Water Resources.

GECF History with project:
This is the first grant for this organization.

McLeod River Rehabilitation Project

Project Location: McLeod River, near Cadomin, Alberta
Identifying Code: 090 50 90 102
Funding Allocation: $5,050.00

Principal Investigator: Brian Meagher
Contact Information: Trout Unlimited Canada
1130-12 St SW
Calgary, Alberta, T3C 1A7
Email: bmeagher@tucanada.org
Telephone: (403) 209-5185

ACA Grant Status: Extended

Project Objective(s):
The McLeod River Rehabilitation project was initiated in 2005 to recreate over-wintering and fish holding habitat with a series of improvement project to be completed over the next three to four years. The project area had been mechanically straightened due to flooding issues in the early 1980s. The augmentation of the river that occurred reduced the fish holding capacity of the section of the McLeod River up-stream of the community of Cadomin. The objective of this project is to work with local partners to redevelop functional holding water and over-wintering habitat to benefit the local fishery for future generations.

Activities:
Work will revolve around implementing in-stream projects developed by a hydrologist consultant familiar with the area. TUC plan to implement two in-stream works over the course of 2006: creation of one rock structure (such as an in-stream V-Weir) and stabilization of the bank in an area where the soft coal slag banks are continuously being eroded.
Changes in the river will be documented to measure the value of the work.
Further data collection work will be completed to add information to the baseline study implemented in 2005.
A literature review of the area will be carried out to gain more information on the site and its history.
A clean up effort is planned along the McLeod River during the summer to involve locals, providing an opportunity to run an education program and teach identification skills to interested individuals.

Link with ACA Priorities for 2006-2007:
The McLeod River Rehabilitation Project is designed to be a collaborative effort between the many partners for an overall benefit to our coldwater resources (General Funding Priority Fisheries & Habitat Objective #1). This project will reverse past damage while maintaining and protecting sensitive habitat and aquatic diversity. When completed, this project will provide a tangible result for the conservation of Alberta's freshwater resources.

Partnerships:
ACA, Elk Valley Coals, LeHigh Cement, DFO/ASRD, Central Alberta and Yellowhead Chapters of Trout Unlimited Canada, Hardisty Creek Watershed Group, CN rail, Picses Environmental, Lakeland College

Deliverables:

This project has received a year long extension due to lack of a completed hydrological assessment and review by DFO/ASRD.
A comprehensive engineering report has been completed.
Habitat Evaluation has been completed.
GECF Interim Report is available.
A project report including field data, notes and photos (once the project is completed).

GECF History with project:
This is the first year this project has received funding.

Wapiti! Roaming the Plains and Pines

Project Location: South-East Alberta
Identifying Code: 030 10 90 112
Funding Allocation: $5,600.00

Principal Investigator: Corlene Gardner
Contact Information: Society of Grasslands Naturalists
Box 2491
Medicine Hat, Alberta, T1A 8G8
Email: grassnat@memlane.com
Telephone: 403-529-6225

ACA Grant Status: Completed

Project Objective(s):
This project has and will continue to educate people about elk ecology and their ecological role in south-eastern Alberta's grasslands and Cypress Hills. This is one of two ungulate-based interpretive projects identified as priority programming for the Medicine Hat Interpretive Program.

Activities:
- Designed and built an interpretive, multi-media display, with hands-on elements which was on display April through June at the Nature Centre.
- Produced accompanying self-guiding brochure with numbered entries to correspond to display giving more detail.
- Produced interpreter-led programs as an introduction to the opening of the display at each venue (presented to public and Grasslands Naturalist meeting in October 2006) and “on-the-ground” accompanying field trips (e.g. CFB Suffield, Cypress Hills) are to be organised**.**

Link with ACA Priorities for 2006-2007:
The project aims to educate people and to instil in them the need for protecting Alberta’s ecological resources and habitat, to maintain good populations of wildlife. The exhibit provides a recreational experience for Albertans (Wildlife Objective #5). Some elements of the display give people the opportunity to become active stewards in assisting in the maintenance of habitat and resources.

Partnerships:
Grasslands Naturalists, Medicine Hat Interpretive Program, Cypress Hills Inter-Provincial Park (AB), Canadian Wildlife Service, Canadian Forces Base Suffield

Part of the Wapiti! exhibit at the Medicine Hat Interpretive Centre
Photo: Sarah McPike

Deliverables:
Permanent display containing information on: historic and present elk ecology in SE Alberta; the niche elk fill in their community; comparison between plains (eg. Suffield) and forest (eg. Cypress Hills) elk; economic value of elk (e.g., hunting, eco-tourism)
Accompanying brochure completed.
The exhibit will be displayed in other locations including the Medicine Hat Exhibition and Stampede in July 2007.
GECF Final Report

GECF History with project:
This is the first year this project has had funding.

Factors Affecting Harlequin Duck Use of a Local Breeding Stream in the Alberta Foothills

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Project Location: McLeod River Headwaters
Identifying Code: 030 10 90 116
Funding Allocation: $5,980.00

Principal Investigator: Beth MacCallum
Contact Information: Bighorn Wildlife Technologies Ltd.
176 Moberly Drive,
Hinton, Alberta, T7V 1Z1
Email: ovis@telusplanet.net
Telephone: 780-865-3390

ACA Grant Status: Completed

Project Objective(s):
This study examined the factors affecting Harlequin Duck distribution of a local breeding population at the home range scale. This local breeding population is located adjacent to the Boreal Transition zone in west central Alberta in the headwaters of the McLeod River.

The purpose of this study was to determine the importance of small scale habitat features, prey availability, and human activity to a local breeding population of Harlequin Ducks using the McLeod River watershed in the east slope of Alberta

This project builds on wildlife, fisheries and terrestrial vegetation studies completed for the Cheviot Mine application and subsequent monitoring programs. Results can be used to develop a predictive habitat model for Harlequin Ducks in east slope streams of Alberta's Northern Foothills with characteristics similar to the McLeod River. Predictive models can improve planning and provide context for regional conservation initiatives.

Activities:
Field work, analysis, and preparation for two papers has been completed.
Below are some excerpts from the paper: 'Modeling Harlequin Duck brood-rearing habitat in a Rocky Mountain east slope stream' by Beth MacCallum, Chiarastella Feder and Barry Godsalve

Brood locations were identified during the multi-year study of harlequins in the McLeod River, 1:20,000 stream classifications, and a suite of habitat variables collected during the summer of 2006 to identify the factors affecting habitat use by brood-rearing females at the home range scale. The brood-rearing portions of the McLeod watershed are referred to as "brood use" and those areas where broods were not found are referred to as "brood non-use".

38 locations were selected in "brood use" and 38 locations in "brood non-use" areas by random means and these sites were sampled during a 14 day field session between July 31 and August 24, 2006. A crew of 4 persons was used to measure a suite of variables within a 30m stream segment at each of the 76 sites. The following general stream characteristics were measured: percent hydraulic type, number of islands, number of loafing sites, maximum horizontal view upstream and downstream, percent of bank covered by overhanging vegetation, percent of channel covered by overhanging vegetation, and evidence of human activity within 100 m of bank full edge.

Link with ACA Priorities for 2006-2007:
This project meets is an applied ecological study on a priority species (Wildlife Objective #4). Waterfowl is one of the four thematic priority areas. Various studies throughout the North American range indicate that harlequins show regional differences in selection of habitat, however there is little published information regarding habitat use by harlequins in the east slope of the Alberta Rocky Mountains. This study will advance our understanding of the ecology and conservation management of the Harlequin Duck.

Partnerships:
Elk Valley Coal Corporation; Alberta NAWMP Partnership; University of Calgary; Whitehorse Wildland Park; Bighorn Wildlife Technologies Ltd.

Deliverables:
Two papers entitled:
'Modeling Harlequin Duck brood-rearing habitat in a Rocky Mountain east slope stream' by Beth MacCallum, Chiarastella Feder and Barry Godsalve

'Phase-specific habitat selection by Harlequin Ducks during the reproductive season' by Beth MacCallum, Chiarastella Feder and Barry Godsalve

GECF Final Report

GECF History with project:
This is the first year this project has received funding.

Innovation Alberta Omnimedia Project

Project Location:	Edmonton-based, with area of influence encompassing Alberta and beyond
Identifying Code:	002 40 90 102
Funding Allocation:	$7,000.00
Principal Investigator:	Cheryl Croucher
Contact Information:	Porcupine Stone Productions 8552 – 79 Avenue Edmonton, Alberta, T6C 0R4 Email: cheryl@innovationalberta.com Telephone: 780-701-7763
ACA Grant Status:	Completed

Project Objective(s):
The *Innovation Alberta Omnimedia Project* (IAOP) is a web-based initiative which began in 2002 as a multimedia project focused on promoting science and research activity in Alberta. This includes a weekly half hour audio program which is archived on the Innovation Alberta website and syndicated to CKUA Radio. A weekly on-line newsletter is emailed to about 3000 subscribers in Canada and several other countries. As a partner with the ACA, the objective of the IAOP is to help the Alberta public become more aware of the scientific and conservation related activities supported by the ACA, thereby helping to raise the profile of ACA.

Activities:
10 interviews have been produced and posted on the *Innovation Alberta* website and aired on CKUA Radio (Titles listed in the Deliverables section).

Several of the presenters as well as the ACA Chair were interviewed at the ACA Conference in January 2007. Interviews were also done with several researchers supervised by Dr. Mark Boyce, ACA Research Chair in Fisheries and Wildlife.

Link with ACA Priorities for 2006-2007:
The IAOP will help the ACA meet its need for greater awareness and appreciation among other agencies and the general public of the role of ACA and the conservation and research work supported by the ACA.

Partnerships:
University of Lethbridge, Sustainable Forest Management Network, Alberta Ingenuity Fund, Alberta Research Council, CKUA Radio Network, NSERC/ACR/UofA Integrated Landscape Management Research Program, Alberta Innovation and Science, iCORE (Informatics Circle of Research Excellence), Alberta Heritage Foundation for Medical Research

Deliverables:
10 ACA related interviews: audio and written transcripts were posted on the ***Innovation Alberta*** website (see http://www.innovationalberta.com/archives.php) and were aired on CKUA radio. Banff Park Radio also broadcast a selection of the half-hour ***Innovation Alberta*** programs. Because of the conservation and environment focus of the radio station, several of the selected programs were those which included ACA interviews.

The titles are as follows:
1) Shevenell Mullen, Masters Graduate, Biological Sciences, University of Alberta and Research Associate, Lab of Dr. Mark Boyce, ACA Chair in Fisheries and Wildlife
SUBJECT: #220 Impact of Industrial Development on Marten Populations

2) Carrie Roever, Masters Graduate, Biological Sciences, University of Alberta
SUBJECT: #220 Why Foothills Grizzlies Are Attracted to Roads

3) Cheryl Chetkiewicz, PhD Candidate, Biological Sciences, University of Alberta
SUBJECT: #222 Wildlife Corridors for Cougars and Grizzlies

4) Brian Bildson, Chair, Alberta Conservation Association
SUBJECT: #227 ACA Partners in Conservation Conference

5) Dr. Vic Adamowicz, Canada Research Chair in Environmental Economics, Dept of Rural Economy, University of Alberta
SUBJECT: #227 ACA Conference: Trade-offs Between Environment and Economy

6) Dr. Stan Boutin, NSERC Industrial Chair in Integrated Landscape Management, Dept of Biological Sciences, University of Alberta
SUBJECT: #227 ACA Conference: Best Practices Not Enough To Save Wildlife Habitat

7) Dr. Mark Boyce, ACA Research Chair in Fisheries and Wildlife, Dept of Biological Sciences, University of Alberta
SUBJECT: #227 ACA Conference: Access Management

8) Dr. Cormack Gates, Professor, Faculty of Environmental Design, University of Calgary
SUBJECT: #227 ACA Conference: Environmental Decision-Making

9) Jaime Pinzon, Graduate Student, Renewable Resources, University of Alberta
SUBJECT: #231 Forest Spiders
SYNOPSIS: Thanks to the *Alberta Conservation Association Biodiversity Challenge Program,* two young graduate students will be studying forest spiders and horned grebes in Alberta's north.

10) Eva Kuczynski, Graduate Student, Biological Sciences, University of Alberta
SUBJECT: #231 Horned Grebes and Borrow Pits
SYNOPSIS: Thanks to the *Alberta Conservation Association Biodiversity Challenge Program,* two young graduate students will be studying forest spiders and horned grebes in Alberta's north.

ACA is a featured theme section on ***Innovation Alberta*** website, traffic to the website has continued to increase over the last year with about 295,000 visits per year, visitors from 137 countries have browsed the website and downloaded programs.

ACA items were mentioned in Innovation Alberta Online e-newsletter.

GECF Final Report

GECF History with project:
This project has received funding since 2002/03.

Animal Resource Teaching Implements

Project Location: John Janzen Nature Centre, Edmonton
Identifying Code: 030 40 90 106
Funding Allocation: $7,475.00

Principal Investigator: Juanita Spence
Contact Information: Edmonton Nature Centres Foundation
PO Box 2359
Edmonton, Alberta, T5J 2R7
Email: juanita.spence@edmonton.ca
Telephone: 780-496-2930

ACA Grant Status: Completed

Project Objective(s):
The Edmonton Nature Centres Foundation supports programs and exhibits at the John Janzen Nature Centre. One of the key focuses of the Centre is providing hands-on opportunities for visitors to learn about local natural history. They believe that hands-on experiences with animals strengthen the bonds between children and those animals, which encourages life-long attitudes of respect and appreciation for wildlife. The two ways that they offer these experiences are through live animal encounters and the utilization of taxidermy specimens that the children can handle themselves. The Nature Centre's specimen collection has been showing noticeable, but not unexpected, signs of deterioration due to years of use by children. Through this project, the collection was revitalized by replacing the most highly damaged specimens, and providing protective casings for some of the new and existing bio-facts.

Activities:
40 taxidermy specimens were produced - ENCF were fortunate to acquire numerous specimens (many rarely found ones) from Alberta Fish and Wildlife.

Services were contracted to create protective casings for some of these specimens: tubes, designed to hold study skins to prevent damage when being handled and cases, to house rare specimens that they would be unlikely to receive again. In total 9 tubes and 5 cases were built to house specimens.

Link with ACA Priorities for 2006-2007:
This project connects with the overall goal of the ACA to promote an increased appreciation of nature by exposing the public (especially children) to the natural wonders of Alberta. The project fits into the strategic business plan of the ACA by Developing and supporting opportunities to enhance consumptive and non-consumptive wildlife related recreational experiences for all Albertans (Wildlife Objective #5). Program participants leave with an increased knowledge that they are able to share with others. By exposing Albertans to examples of birds, small mammals and other wildlife an appreciation for these creatures is fostered, which encourages these people to participate in wildlife recreational experiences in the future.

Partnerships:
Edmonton Nature Centres Foundation; City of Edmonton Recreation Facility Services – Child and Youth Education Unit; ACA; Fish and Wildlife

Deliverables:
40 taxidermy specimens were produced (see list).

Raptors:

Swainson's Hawk	Red-tailed hawk	American kestrel
Barred owl	Great gray owl	Short-eared owl
Northern hawk owl	Long-eared owl	Northern goshawk
Sharp-shinned hawk	Osprey	Great horned owl (mount & study skin)
Snowy owl (mount & study skin)		

Woodpeckers:

Northern flicker	Hairy woodpecker	Downy woodpecker
Pileated woodpecker	Yellow-bellied sapsucker	

Waterfowl & other non-passerines

Loon	Ring-billed gull	Black crowned night heron
Mallard	Green-winged teal	

Passerines:

Crow	Magpie	Ruby-throated hummingbird
Pine grosbeak (2)	Belted kingfisher	Bohemian waxwing
Ovenbird	White-crowned sparrow	Swainson's thrush
Myrtle warbler	Yellow warbler (2)	Pine siskin
Common redpoll	American goldfinch	White-throated sparrow

Mammals:

Short-tailed weasel	Northern Flying Squirrel

Each specimen has a label that indicates the common name of the species as well as displaying the ACA logo and acknowledgement of funding.

9 tubes and 5 cases were built to house specimens.

GECF Final Report

GECF History with project:
This was the first year of funding for this project.

Reducing Bear Conflict in Rural Communities: Bear-Resistant Container Program

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Project Location: Bragg Creek
Identifying Code: 030 40 90 105
Funding Allocation: $7,476.00

Principal Investigator: Jay Honeyman
Contact Information: Karelian Bear Shepherding Institute of Canada (KBSIC)
313, 8 Ave
Canmore, Alberta, T1W 2E6
Email: kbsic@telus.net
Telephone: 403 609 2242

ACA Grant Status: Extended

Project Objective(s):
Bragg Creek, Alberta has a history of bear-human conflict, much of which arises from unnatural attractants being made available to bears. The purpose of this project was to provide Bragg Creek and area residents with tools to reduce or eliminate bear attractants and reduce the potential for bear-human conflicts. Specifically, the objectives of the project are:

1. to purchase and disseminate bear-resistant containers to Bragg Creek and area residents experiencing bear problems resulting from on-site artificial attractants;
2. to work with ASRD in monitoring the outcome of container use in terms of eliminating bear attractants and reducing problem bear activity;
3. to educate residents regarding the effective management of bear attractants; and
4. to encourage residents to take proactive measures to eliminate bear attractants and reduce the potential for bear-human conflicts in the long-term.

Activities:
Twelve bear-resistant containers were purchased from UnBearAble Bins Inc. (UBB) and delivered to Bragg Creek in the spring of 2006. Five containers were then delivered to Cochrane and High River Fish and Wildlife District Offices to facilitate the effective distribution of containers in response to bear-human conflicts.

In 2006, the number of reported bear incidents in Bragg Creek, and in southern Alberta as a whole, was relatively low. Therefore, there were few opportunities to work directly with residents experiencing conflicts with bears and to provide them with bear-resistant containers.

To introduce and build awareness of the Bear-resistant Container Program in 2006, KBSIC:

- created and displayed a poster to introduce the container program and to explain how the program works.
- distributed roughly 500 BearSmart brochures (included inserts describing the Bear-resistant Container Program) from 5 locations in Bragg Creek over the course of the bear season.
- worked with Redwood Meadows Townsite to deliver over 400 packages of BearSmart and Bear-resistant Container Program information to all Redwood Meadows residents;
- provided a local real estate agent with BearSmart and bear-resistant container materials for their clients;
- wrote articles for the local “High Country News” on Bragg Creek Bear*Smart*, the Bear-resistant Container Program, how to deter bears from your acreage, and bear incidents in 2006; and

- created a display for Bragg Creek Days, which allowed for the dissemination of Bear*Smart* materials and the opportunity to talk to locals about the containers and bear-human conflict issues in Bragg Creek.

Link with ACA Priorities for 2006-2007:
Grizzly bears are provincially identified as “May Be At Risk” and as such, are considered a species of special management concern. In Bragg Creek, bear-human interactions resulting from the introduction of artificial attractants threaten human safety as well as human property, while also influencing the health and long-term viability of bear populations in the region (General Wildlife Funding Priority).
By providing the results of the bin loaner program to both ASRD, local government officials and communities this project complies with the ACA conservation objectives of improving the flow of scientific information to policy makers, resource managers and other stakeholders.

The public education focus of this project complies with *ACA objectives related to communication, specifically relating to implementing public education and outreach activities that increase awareness and understanding of wildlife issues in Alberta*. Public education and acknowledgement of responsibility for reducing bear attractants is a key step in promoting wildlife stewardship in rural communities. The bear-resistant container program will be catalyst for encouraging Bragg Creek residents to become wildlife stewards.

Partnerships:
ASRD and UnBearAble Bins Inc..

Deliverables:
Deliverables completed in 2006 include the Bear-Resistant Container Program poster, program inserts for brochures, and articles for the local new paper. A database for reporting container information was created to evaluate the program in 2006. There was minimal data to report due to the lack of data on container use, but the format will be used in future program initiatives to allow us to adapt the program to best fit current bear management conditions in Bragg Creek. There was a lack of data to support the completion of a series of public presentations devoted to highlighting the results of Bear-resistant Container Program in 2006.

An extension was given to cover bear season 2007 to give the project a chance to use the bear-resistant containers, as the 2006 season had an unusually low number of bear-human incidents.

GECF Final Report

GECF History with project:
This is the first year of funding for this project.

Landscape mechanisms behind the distribution and abundance of Ring-necked Pheasants in Southeastern Alberta

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Project Location: Eastern Irrigation District surrounding Brooks, Alberta
Identifying Code: 030 10 90 111
Funding Allocation: $8,000.00

Principal Investigator: Dr. Mark Boyce
Contact Information: University of Alberta
Dept. Biological Science, Z 907
Edmonton, Alberta, T6G 2E1
Email: boyce@ualberta.ca
Telephone: 780-492-0081

ACA Grant Status: Completed

Project Objective(s):
The overall goal of this research is to identify landscape characteristics that govern the distribution and abundance of ring-necked pheasants in south-eastern Alberta.
The specific project objectives were as follows:

1) To investigate the relationship between ring-necked pheasants' distribution/abundance in south-eastern Alberta and the landscape structure (configuration and composition) by integrating satellite imagery, aerial photographs, Geographic Information Systems, and habitat modelling (resource selection functions).
2) To develop habitat-use maps that will assist in the identification of key pheasant habitats in Alberta.
3) To develop a model that will allow managers to understand the ecological context of habitats selected by ring-necked pheasants and to use this information to develop habitat-management protocols for Alberta.

Activities:
Crow-count surveys were conducted in April and May 2006 supplementing data from the Eastern Irrigation District (EID) crow-count surveys to estimate trends and relative abundance of ring-necked pheasants across landscapes of southeastern Alberta.

EID data was analyzed and GIS layers were compiled between June and December 2006. The relationship between ring-necked pheasant distribution/abundance and the landscape in southeastern Alberta was analyzed at two geographic scales. The large-scale analysis examined how ring-necked pheasants are distributed throughout their range in southeastern Alberta. The small-scale analysis explored landscape features within buffers around each crow-count survey route relative to the abundance of ring-necked pheasants.

Resource selection functions (RSF) were estimated and data analyzed between January and April 2007. RSF have been used to develop habitat models to predict the distribution/abundance of ring-necked pheasants at small and large landscape scales.

Link with ACA Priorities for 2006-2007:
This research project addresses the population inventory/assessment and applied ecological study objectives mentioned in ACA Wildlife Program Priorities for 2006-2007 (Wildlife Objectives #2 & 4). In addition, the focus of this study is on one of the ACA's Wildlife Program's thematic areas, upland game birds. The study area in the Eastern Irrigation District includes sampling on the Mattheis Ranch, which

ACA has committed to purchase in collaboration with Ducks Unlimited. This research provides wildlife managers with the scientific information necessary to make decisions concerning pheasants and their habitats.

Partnerships:
Pheasants Forever Calgary; Eastern Irrigation District (in kind support – crow count records); North American Waterfowl Management Plan, Alberta Sport Recreation Parks and Wildlife; Alberta Ingenuity Fund; ACA

Deliverables:
The end date for this project is August 2007
Presentation was made in March, 2006 at the Wednesday Night Seminar Series at the University of Alberta.
Presentation was made in April, 2006 at the Partners in Habitat Development meeting in Brooks.
Presentation was made in February 2007 at the Prairie Universities Biological Symposium in Regina, Saskatchewan.
MSc Thesis (expected to be completed September 2007)
Final report to project partners (September 2007)
Peer-reviewed scientific publication (2008)
GECF Final Report

GECF History with project:
This is the first year this project has had funding.

Ecological traps and temporal trends in habitat-use for waterfowl in the aspen parkland

Project Location:	Buffalo Lake Moraine
Identifying Code:	030 10 90 115
Funding Allocation:	$10,400.00
Principal Investigator:	Cam Stevens/Dr. C. Paszkowski
Contact Information:	Alberta Co-operative Conservation Research Unit (ACCRU) Biological Sciences Building Edmonton, Alberta, T6G 2E1 Email: stevens@ualberta.ca Telephone: 780-993-0785
ACA Grant Status:	Completed

Project Objective(s):
The goal of this project is to begin an in-depth analysis of the Buffalo Lake Moraine (BLM) data set. The objectives of this particular project included:

1. Building habitat models to identify high-quality breeding habitats for waterfowl species by correlating local pond and broader landscape features with occurrence of breeding pairs and broods. Specifically the hypothesis 'wetlands in close proximity to disturbance, such as roads and nearby cropland, are ecological traps (defined as poor-quality habitat that nevertheless attracts large numbers of individuals) for northern pintail and lesser scaup' has be examined.
2. Developing spatially predictive maps in GIS that identify landscapes correlated with areas of high waterfowl diversity and density, and high per capita brood production. These maps will provide a cost-effective basis for future conservation programming by resource managers in the BLM.
3. Addressing the question of whether ecological thresholds resulting in low brood production change over time. Can waterfowl adapt to human disturbance given sufficient time in terms of both avoiding ecological traps and seizing ecological opportunities?

After Cam Stevens left the project in August 2006, analyses took a new direction with an emphasis on waterbird communities (ducks, grebes, and coots) rather than single species. These analyses compare landscape variables (e.g., proportion of land in forest, pasture, crop, and wetland at various distances from a wetland) with waterbird species richness and diversity.

Activities:
Aerial photos of the project obtained and were scanned and digitized; study wetlands were delineated; landscape type was characterized and roads identified.

Relationships between species richness and landscape variables, examining one wet year (1997), one dry year (1989) and one year (1993) with intermediate precipitation have been examined. The digitized aerial photos and the linked data from their MS Access database was used to run stepwise linear regressions using S-Plus.

Hamilton has found that waterbird use of the BLM responds to inter-annual variation in climate and long-term changes in habitat variables. Linear regression models were built for 1989, 1993 and 1997 based on landscape variables generated through GIS work. Each regression used landscape variables within circles of 200m, 400m or 800m radius centered on each surveyed wetland. These models were built to predict the species richness and diversity on the landscape and to determine which habitat variables influenced these waterbird community metrics.

Models of species richness and species diversity built to date include the 1989, 1993 and 1997 data set (at 200m, 400m and 800m distances; see Appendix 1). The statistical models compared the landscape variables with one of two dependent variables: species richness measured as the total number of waterbird species on a wetland (19 species were documented in surveys) and diversity (based on the Shannon diversity index). Landscape variables included in analysis were: wetland area, perimeter water depth, coverage by forest, roads, wetlands, pasture, or cropland, northing and easting. Preliminary analyses indicate that greater of numbers of species and individuals of waterbirds are associated with the northern portion of the BLM than with the southern portion.

Link with ACA Priorities for 2006-2007:
This project directly aligns with numerous objectives and strategies outlined in the ACA 2006 – 2009 Strategic Business Plan, specifically, the collection and interpretation population data. This project builds on an existing data set collected using systematic monitoring for waterfowl in the Buffalo Lake Moraine (Wildlife Objective #2). The Buffalo Lake Moraine has been identified as a priority landscape by the ACA for conservation programming and land securement (Habitat Objective #5).
This is an applied conservation studies on the status and ecology of priority species. Specifically, identify population trends of select waterfowl in the Buffalo Lake Moraine (Wildlife Objective #4).

Partnerships:
ACA and ASRD through the use of existing data sharing agreement and project collaboration. NAWMP (funding 2005 for Rob Corrigan's community analysis of BLM dataset).
University of Alberta: funding of Dr. Stevens post-doctoral position and in-kind support, including lab space and access to GIS laboratory, hardware, software and departmental technician.

Deliverables:
MS Access Database for the entire BLM data including waterbird, local and landscape habitat parameters.

A complete report and BLM Access database is to be Rob Corrigan (ACA) by the end of April, 2007. Spatially predictive maps will be provided in the report to the ACA outlining a framework for cost-effective partnerships with landowners through the identification of waterbird 'hot-spots' and high priority breeding areas that should be targets for new or expanded stewardship programs.

Submission of a manuscript to a peer-reviewed journal (e.g., *Wetlands, Journal of Wildlife Management*) is targeted for January 2008.

GECF Final Report (contains preliminary results)

GECF History with project:
This is the first year this project has had funding.

Caribou response to encounters with people in Jasper National Park (Year 2)

Project Location: Jasper National Park
Identifying Code: 030 10 90 102
Funding Allocation: $12,300.00

Principal Investigator: Tracy McKay
Contact Information: Royal Roads University,
Box 1223
Victoria, B.C.
Email: mattracy@shaw.ca
Telephone: 780-852-5042

ACA Grant Status: Completed

Project Objective(s):
Woodland caribou (*Rangifer tarandus caribou*) are a species at risk, and the Jasper population is threatened. Possible threats to the Jasper population include a lack of high quality habitat, increased predation, climate change, and human disturbance. Parks Canada data suggest that caribou avoid human activity and habitat near trails. Building on this information, it is important to characterize caribou behaviour in response to people.

To investigate potential impacts of human disturbance, this research project investigated the response of caribou to hikers in Jasper National Park (JNP). Researchers observed caribou in the presence of people (disturbed) and when caribou were unaware of people (undisturbed). A behavioural time budget was calculated for both situations. In addition, factors that could affect caribou behaviour were identified and measured.

The specific objectives were to:
- Establish a baseline (undisturbed) behavioural time budget for woodland caribou in JNP.
- Determine if significant changes occur in caribou behaviour in response to people (comparison of baseline data versus interaction data).
- Determine what factors may affect a caribou's response to encounters with people (age, sex, presence/absence of calves, location, human activity in the area, radio collaring).
- Determine if caribou avoid areas after encounters with people.
- Determine at what human-to-caribou distances caribou start to show changes in behaviour.

Activities:
Preparation and planning for this project took place in March and April of 2006, and the field season took place from May to September 2006.
Data entry was completed in September/October 2006, and data analysis was carried out from October 2006 until March 2007.

A total of 211 caribou were encountered, including 175 adults (89 females, 73 males, and 13 of unknown sex), 8 yearling caribou (3 females, 1 male, and 4 of unknown sex), and 28 calves.

Focal observations were completed on 53 caribou for baseline data including 28 separate encounters in 5 different areas for a total of 32hrs, 30min, and 19s of baseline behavioural data. These data have been analyzed to meet the objective of establishing a baseline (undisturbed) behavioural time budget for woodland caribou in JNP.

Disturbance observations were completed for 63 focal caribou, including 36 encounters in 5 different areas for a total of 22hrs, 52min and 58s of disturbance behavioural data. These data have been analyzed to meet the objective of determining if significant changes occur in caribou behaviour in response to people (comparison of baseline data versus interaction data). Disturbance observations were also analyzed to meet the objective of determining what factors may affect a caribou's response to encounters with people.

Human-to-caribou distances were measured for all focal caribou during encounters, and distances recorded during behavioural changes. These distances have been used to meet the objective of determining at what human-to-caribou distances caribou start to show changes in behaviour.

Link with ACA Priorities for 2006-2007:
Woodland caribou are a species at risk, and the Southern Mountain population in south Jasper is threatened. The South Jasper Caribou Project was initiated by Parks Canada in 2002 to address potential causes of decline, and in March 2005 an action plan for caribou recovery was drafted. An observational study of caribou response to human activity was included as a recommended caribou recovery action in this plan.
As a project involving an ungulate species at risk, this caribou study falls directly within two of the ACA 2006-2007 thematic areas (Wildlife Objective #1 & #6). In particular, this research supports a species at risk recovery plan by directly addressing one of the proposed actions of the South Jasper National Park Caribou Action Plan for Caribou Recovery: to "Initiate an observational study of caribou response to human activity". This study will fill a knowledge gap by providing important information regarding the threat of human disturbance to the survival of caribou in Jasper. Results from this research will be used by the Jasper Caribou Recovery Planning Team and Parks Canada biologists in planning future recovery actions and decision-making in JNP. It is hoped that through research and recovery actions the population of woodland caribou in Jasper may be sustained.

Partnerships:
Parks Canada (as an extension of the South Jasper Caribou Project), Friends of Jasper National Park, and Yellowhead to Yukon (Y2Y) Conservation Initiative.

Deliverables:
Preliminary results indicate that there are significant differences between baseline and disturbance behaviour time budgets, and that these differences may have energetic consequences for caribou in JNP. Preliminary analysis has also identified some factors that may contribute to caribou taking flight or being displaced in response to encounters with people. Current analysis is focused on factors affecting behavioural changes.
- Results made available to Parks Canada in Jasper by January, 2007, and to be included as part of the 2006-2007 South Jasper Woodland Caribou Research Project
- The Master's thesis research paper is currently being completed, with the goal of submission for journal publication
- GECF Final Report

Looking for Caribou near Maccarib Pass.
Photo by: Mark Bradley, Parks Canada

GECF History with project:
Funding was received in 2005/06 for Year 1 of this project.

Riparian Fencing Initiative

Project Location: Red Deer County
Identifying Code: 090 20 90 102
Funding Allocation: $12,400.00

Principal Investigator: Donna Trottier
Contact Information: Red Deer County
38106 Range Road #275
Red Deer County, Alberta, T4S 2L9
Email: dtrottier@reddeercounty.ab.ca
Telephone: 403-342-8653

ACA Grant Status: Completed

Project Objective(s):
The main objectives are:

- to keep cattle from damaging riparian areas and to keep manure from entering the river.
- to increase the number of river banks and riparian areas in Red Deer County that are protected by facilitate the installation of riparian fences.
- to improve, protect and enhance habitat and protect or improve water quality.

Activities:

- A call for applications was issued.
- Applications were received for funding of riparian fencing projects in Red Deer County and four were selected for funding. (7 applications were complete and met the criteria, only four went to completion rather than the planned 10.)
- Before and after photos taken of completed projects.
- Riparian strategies drawn up for all completed projects.
- Published up-dates on the project in local newspapers.

Link with ACA Priorities for 2006-2007:
The project promotes the protection and enhancement of natural habitats, aiming to maintain, enhance and protect riparian areas. This will contribute to ACA's goal of conserving Alberta's habitat and increasing protected riparian areas by 20% by 2009. As more rivers/streams are fenced and riparian areas enhanced it is hoped the fish populations within these rivers will be improved, diversified and increased over time (Habitat Objectives 1 & 4).

Partnerships:
Farmers with land along the river systems in Red Deer County, the Medicine River Watershed Society, 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.

Deliverables:
As of March 2007, 3 fencing projects had been completed. The other applicant is currently carrying out the fencing. An extension was given until 31 May 2007 so the remaining project could be finished. GECF Final Report.

GECF History with project:
This is the first year this project received funding.

Biodiversity of Fungi in Alberta: a Provincial Database

Project Location: Alberta-wide
Identifying Code: 030 50 90 115
Funding Allocation: $12,500.00

Principal Investigator: Dr. Markus N. Thormann
Contact Information: Edmonton Myciological Society
Northern Forestry Centre 5320 - 122 Street
Edmonton, Alberta, T6H 3S5
Email: mthorman@hotmail.com
Telephone: 780-435-7321

ACA Grant Status: Completed

Project 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 were to:

- development of a searchable fungal database with digital images and distribution maps;
- identification of fungi of economic, gourmet, industrial, and medicinal values; and
- education of Albertans about the values of fungi via the development and dissemination of educational materials (postcards, bookmarks).

Activities:
Data entry: About 6,500 records of fungi have been entered into a database. Each record contains complete curatorial information, e.g., genus, species, fungal authority, museum code, accession number (previous two if existing), collection date, collection location, habitat, collector's name, taxonomic position, and associated publication (if existing). This database complements that of the *Alberta Natural History Information Centre*. Originally EMS anticipated entering 12,000 records of fungi into this database; however, crucial research on the taxonomy of all entered fungal records slowed down considerably this aspect of the project. Fungal taxonomy is very complex and changes very frequently. Each record needed to be cross-referenced with current taxonomic information to assure data quality and consistency. The database is available to the public.

Developed a poster about the edible mushrooms of Alberta.

Link with ACA Priorities for 2006-2007:
This project collects data on a poorly understood but very important group of organisms in Alberta (Wildlife Objective #2). To date, it is unknown how many fungi occur in Alberta, which is surprising given the crucial roles they perform in all ecosystems.

Partnerships:

Volunteers from the Edmonton Mycological Society.

Deliverables:
Database – 6,500 records entered; edible, medicinal, and toxic fungi have been identified; distribution maps and digital images accompany each fungal species.
Poster – “Edible Mushrooms of Alberta”
GECF Final Report

GECF History with project:
This is the first year this project has received funding.

Monitoring of the Nature Conservancy of Canada's Properties in the Parkland and Boreal Forest Natural Regions of Alberta

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Project Location: Throughout the Parkland and Boreal Forest natural regions of Alberta
Identifying Code: 010 20 90 112
Funding Allocation: $13,500.00

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: Completed

Project Objective(s):
The Nature Conservancy of Canada- Alberta region (NCC) conducts annual monitoring of all its properties (those either owned or have conservation easements placed on them by the NCC).
The main objective of this project was to monitor the properties in two natural regions within Alberta (i.e., the Boreal Forest and the Parkland) during the summer of 2006. Three Summer Conservation Interns were hired to monitor 40 properties and wrote monitoring reports for each property visited.
The NCC will use these monitoring reports to devise and implement management plans for each property, which will enhance and conserve the local biodiversity.

Activities:
The Summer Conservation Interns monitored 40 properties (totalling ~12,000 acres) data was collected on the flora, fauna, and plant communities, and management concerns, if any, were recorded.
Monitoring reports were written up for each property visited.
Information on the flora and fauna found on each property has been provided to the Alberta Natural Heritage Information Centre (ANHIC) and ASRD's Biodiversity/Species Occurrence Database.
Monitoring reports were given to the respective landowners, allowing for discussion of the contents and to plan for any required management actions. Also discussed with the landowner was the importance of any rare or tracked species on their property and how they can best manage their lands to enhance the habitat for these species.

Link with ACA Priorities for 2006-2007:
The goals/priorities of the ACA 2006-2009 Strategic Business Plan addressed by this project are:
1) Maintaining habitat for priority species or populations that are habitat limited. Annual monitoring of the NCC's properties helps to maintain these habitats for the species that depend on them. Monitoring also enables NCC to determine what species enhancements should target. Many of the species that are confirmed to be on NCC properties in the Parkland and in the Boreal Forest can be found below are habitat limited (General Habitat Funding Priority and Habitat Objective #4).
2) Many of the monitored properties are co-owned and managed with several other conservation agencies, including the ACA (Wildlife Objective #5).
2) 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. white-tailed deer, mule deer, elk & moose), upland game birds (e.g. gray partridge, sharp-tailed grouse, spruce grouse, & ruffed 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 #1 & #2).
3) Providing on-the-ground enhancements which provide habitat for numerous wildlife and fish populations. Annual monitoring identifies what enhancements we need to implement in order to provide habitat for the local biodiversity (Wildlife Objective #3).

Partnerships:
The Summer Conservation Interns monitored many properties that the NCC co-owns and manages with several other conservation agencies, including the ACA, Ducks Unlimited Canada, the Alberta Fish and Game Association, and the Rocky Mountain Elk Foundation. The NCC is generally responsible for the monitoring of these partnership projects due to its monitoring capabilities. Numerous landowners who have granted conservation easements to the NCC are also partners in this project because they allow access to their lands to the NCC through the conservation easement agreement. All of the aforementioned partners will receive a copy of the 2006 monitoring report for their respective property.

The NCC's confirmed funding partners include the W. Garfield Weston Foundation – Weston Waterton Stewardship Fund, the North American Wetland Conservation Act, and Shell Canada – Shell Conservation Intern Program.

The NCC had confirmed in-kind funding from Ducks Unlimited Canada.

Deliverables:
Occurrence data on flora and fauna found on each property has been made available to the ANHIC and ASRD Biodiversity/Species Occurrence Database.
Monitoring reports for the 40 properties.
GECF Final Report

GECF History with project:
This is the first year this project has received GECF funding.

Road Watch in the Pass; an innovative community- based monitoring project to identify wildlife crossing locations along Highway 3 in the Crowsnest Pass of Southwestern Alberta

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Project Location: Crowsnest Pass of Southwestern Alberta
Identifying Code: 030 60 90 101
Funding Allocation: $14,700.00

Principal Investigator: Danah Duke
Contact Information: The Miistakis Institute for the Rockies
c/o Environmental Design 2500 University Dr. NW
Calgary, Alberta, T2N 1N4
Email: danah@rockies.ca
Telephone: 403-220-8968

ACA Grant Status: Completed

Project Objective(s):
Road Watch in the Pass (www.rockies.ca/roadwatch) is a project that involves the local community in conservation science by monitoring wildlife crossing locations along Highway 3 through the use of an innovative web-mapping tool. The project objective was to create a valuable data set for decision makers and the community of where large mammals are crossing Highway 3. The project also provides a working model for community-based monitoring that highlights the value of data collected by volunteers and creates an environment where citizens can learn and share knowledge about local wildlife and conservation issues.

Activities:
Systematic driving survey: To validate and understand the limitations of the Road Watch dataset, a student from the University of Montana designed a systematic wildlife driving survey to compare with Road Watch data. A field assistant hired through the Road Watch project collected the data until May 2007.

Road Watch data has been extensively compared with wildlife traffic mortality data (collected by highway maintenance contractors) and local knowledge movement zones in a graduate thesis (available on-line soon on the Road Watch web-site).

Mapping tool: The mapping tool was updated in 2006/2007 to include species legend for observations and summary of participant observations.

Promoting Road Watch: Road Watch continued to release participant's updates and press releases through the project website and in the local media. A wildlife photography contest was held to engage new users in Road Watch.

Miistakis was in regular contact with Road Watch participants through email and phone calls. Suggestions and issues put forward by participants were addressed or implemented when appropriate. Attempts to establish committees to further engage participants in Road Watch had limited success in this area. Feedback highlighted that the relationship between Miistakis researchers and the community is one aspect of the project that people like.

Link with ACA Priorities for 2006-2007:
This project meets goals and priorities of both the ACA Wildlife Program and Habitat Program for 2006-2009. One of the main goals of this research project is to better understand Human/Wildlife interactions with regards to connectivity and wildlife movement. By creating a data set of locations where large

mammals are crossing Highway 3, Miistakis Institute promote the ACA objective to secure, protect and maintain high priority wildlife habitat that provide recreational opportunities (Habitat Objective #4). Results from this research contribute to identifying where on Highway 3 ungulate and carnivore are crossing or using habitat adjacent to the Highway. The mortality data exemplifies that a large number of ungulates are killed on Highway 3 in the Crowsnest Pass. Identifying where ungulates commonly cross will highlight important movement passages for wildlife that are of important recreational value to the local community.

Road Watch can also contribute to the wildlife objective to collect and interpret population data on select wildlife species using systematic monitoring methods. Most of the species identified through Road Watch are species of primary concern to ACA, including elk, moose, mule deer, bighorn sheep and white tailed deer as well as large carnivores. Although this project does not collect direct population information it does address mortality levels associated with Highway 3 in relation to local population movement in the Rocky Mountains (Wildlife Objectives # 1 & 2).

Partnerships:
Woodcock Foundation; Alberta Ecotrust Foundation; Shell Environmental Fund; TD Friends of the Environment; University of Calgary, Municipality of Crowsnest Pass, ASRD (Public Lands and Forestry Division and Fish and Wildlife).

Deliverables:
This is a three-year project which started in 2005; final deliverables are not available until 2008.
Road watch released four participants' updates; these are available for download on the Road Watch project website.

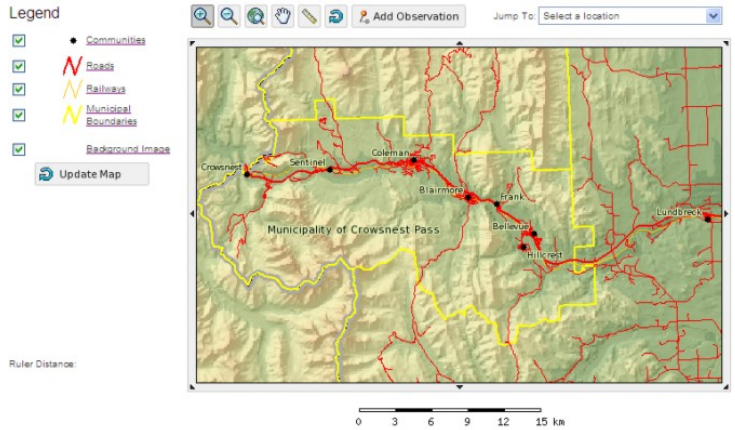
The Road Watch information poster was displayed at the Annual birding festival, Rum Runner days, Moonlight madness event and a Bear Aware meeting.

Presentations of Road Watch results and methods were given at the following local, regional and international conferences.

- Presenter Interagency Wildlife Linkage Application Workshop (Missoula, April 13-14, 2006).
- Presenter at GeoAlberta 2006 (Edmonton, AB, May 31, 2006).
- Presenter at 12th International Symposium on Society and Resource Management (Vancouver, BC, June 3-8, 2006).
- Presenter at the Valuing Nature, National Stewardship Conference (Newfoundland, July 7, 2006).
- Presenter at a Road Ecology Workshop for Conservationists (Bozeman, Montana, March 28-30, 2007).

Publications:

- Journal of Ecology and Society entitled "Citizen, science, highways and Wildlife: Using a web-based GIS to engage citizens in collecting wildlife information". (see: http://www.ecologyandsociety.org/vol11/iss1/art11/)
- Submitted a paper to Northwest Science entitled "Wildlife Vehicle high collisions zones along Highway 3 in the Crowsnest Pass of Southwestern Alberta". (currently in revision).
- Completed graduate thesis on the Road Watch project entitled "Evaluating the Contribution of Citizen Participation in Research to Understand Wildlife Movement Across Highway 3 in Crowsnest Pass, Alberta. Soon to be posted on the Road Watch website.
- Plans for a paper on integrating local knowledge and science (Not started, although this manuscript will be based on master's thesis which is near completion – Fall 2006.



GECF Final Report

GECF History with project:
This is the first year this project has received funding.

Boreal Forest Bird Research

Project Location:	Lesser Slave Lake Provincial Park and Lesser Slave Lake Watershed
Identifying Code:	030 50 90 106
Funding Allocation:	$15,000.00
Principal Investigator:	Amy Wotton/Patti Campsall
Contact Information:	Lesser Slave Lake Bird Observatory Box 1076 Slave Lake, Alberta, T0G 2A0 Email: birds@lslbo.org Telephone: 780-849-7117
ACA Grant Status:	Completed

Project Objective(s):
The research goals of this project are to document bird population status and trends, to serve as an "early-warning system" for environmental problems and an indication of general trends in biodiversity. The LSLBO expanded their research to include specific wood warblers and Northern Saw-whet owls, as well as the original songbird research. LSLBO are committed to the Canadian Landbird Monitoring Strategy, which is designed to meet the needs of Canada's *National Framework for the Conservation of Species at Risk* for periodic reporting on the status of landbird species.
The education and stewardship objectives are as follows:

- Increase Collaborative Efforts with Lesser Slave Forest Education Society.
- Partner with Alberta Learning to provide videos on banding and the Songbird Festival
- Partner with Bell to provide nest cameras for two varieties of birds

Activities:
Data Collection:

- Songbird migration data collection (both the Migration monitoring and the Monitoring Avian Productivity and Survivorship - MAPS) continued at the LSLBO. For the 13th year, the LSLBO participated as a full member of the Canadian Migration Monitoring Network.
- Northern Saw-whet owl banding commenced in late August and continued until the end of October, a total of 200 owls were banded.
- The LSLBO Canada Warbler study continued (ongoing since 2004), recorded information on territory, nesting habits, and nestling biometric data. This season 3 nests were closely monitored including video cameras recording the amount of time that adults spent on the nest.
- The final data was submitted to Bird Studies Canada/Canadian Wildlife Service for analysis
- The LSLBO Bander in charge completed the 2006 Annual report for distribution to funding partners.

Education:

- Presentations were given at the Lesser Slave Lake Bird Observatory and in the local community.
- A formalized banding lab tour was developed to minimize any visitor impact on banding operations. These successful tours were held a minimum of twice a week and hosted by LSLBO and Parks education/ banding lab staff.
- The summer educator assisted with the Parks and LSLBO environmental education programs including the development of an interactive, hands-on bird banding 101 school program. The summer educator also helped to develop and deliver a highly successful amphitheatre program on bird migration for the Marten River Campground.
- All proposed updates to the websites were completed as planned.

Link with ACA Priorities for 2006-2007:
Landbird and Waterfowl monitoring programs provide wildlife and landuse managers and industry planners with science-based data 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 (General Wildlife Funding Priority).
Through the LSLBO 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 Objective #5).
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 (Habitat Objective #4).
Education objective: The Boreal Educator, as well as LSLBO Field Staff, deliver information and education programs to Lesser Slave Lake Provincial park users and various other organizations and individuals that focus on bird conservation issues and the research of the LSLBO. The Boreal Educator works with the Lesser Slave Lake Forest Education Society to deliver education programs in schools in Slave Lake, Smith, Wabasca, High Prairie and outlying communities.

Partnerships:
Alberta Community Development/Parks and Protected Areas Division; Weyerhaeuser Canada; Canadian Wildlife Service; Manning Diversified Forest Products Trust Fund; Alberta Lottery Fund; West Fraser Timber; STEP-Summer Temporary Employment Program; Bird Studies Canada; Nature Canada; Federation of Alberta Naturalists; BirdLife International; North American Bird Conservation Initiative; Partner In Flight; Ducks Unlimited Canada; HRDC – Summer Career Program; Northern Lakes College; University of Alberta; Penn State University; Tolko Forest Products; Vanderwell Contractors Ltd.

Deliverables:
All research for 2006 has been completed

- 2773 birds were banded during the spring and fall migration monitoring programs.
- 2 of the Northern Saw-whet owls banded in 2005 were recaptured in Montana last winter.
- The 2006 LSLBO Annual Report which documents the detailed research and monitoring results.
- The LSLBO education program was increased through collaborative efforts with the Lesser Slave Forest Education Society, which enabled them to offer an expanded series of curriculum-based school programs and also take part in a Boreal Forest Discovery Camp.
- The education program was expanded this season with the opening of the new Boreal Centre for Bird Conservation and a full time educator was hired to do programming at LSLBO.
- The LSLSO education report for 2006 is available with the statistics for LSLBO environmental and community focused programming.
- The LSLBO website (www.lslbo.org) was updated and links created to the newly created Boreal Centre for Bird Conservation 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.

Western Tanager
Photo: LSLBO website

- GECF Final Report
- Scientific publications anticipated.

GECF History with project:
This project has had support from ACA since 1999. The annual funding support from ACA has enabled the LSLBO to build a widely recognized, quality research and monitoring program. LSLBO have gone from banding from the back of a truck in 1994 to operating a world class research and education facility in 2006.

Genetic Analysis of Walleye (*Sander vitreus*) Populations in Alberta for Management and Forensic Purposes

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Project Location: Lakes of Central and Northern Alberta
Identifying Code: 020 10 90 111
Funding Allocation: $15,000.00

Principal Investigator: Lindsey Burke
Contact Information: University of Alberta
Z610, Biological Sciences Building,
Edmonton, Alberta, T6G 2E9
Email: lindsey.burke@rcmp-grc.gc.ca
Telephone: 780-492-7255

ACA Grant Status: Completed

Project Objective(s):
The objectives of this project were to:

- Increase the number of livestock producers implementing Beneficial Management Practices by partially funding them.
- Identify reproductively isolated populations of walleye in Alberta.
- Measure historical and contemporary genetic diversity within and differentiation between populations.
- 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.
- Create a panel of microsatellite markers, forensic databases and statistical methods to use for population assignment of walleye.
- Detect and assist in convicting individuals who illegally take and/or traffic in walleye.
- Contribute to the management and sustainability of walleye in Alberta for use by the sport fishing and commercial industries.
- Disseminate project results to stakeholders such as: ACA, ASRD, anglers and sport fishers; through magazine articles, presentations and reports.

Activities:
11 Central and Northern Alberta lakes were chosen for the project in consultation with fisheries biologists, including ACA employees. These lakes represent walleye brood stock lakes, lakes that have been stocked with walleye and lakes that have only native walleye populations.
Walleye samples were collected for each lake from previous Fall Walleye Index Nettings (approximately 100 per lake) in coordination with Fish & Wildlife and ACA staff.
Sample preparation and extraction of DNA method optimized.
Polymorphic DNA loci chosen from the literature, primers synthesized and tested on the selected walleye populations.
Two multiplex PCR reactions organized, tested and optimized for a total of 17 microsatellite loci.
A literature review completed of walleye population studies and statistical methods for assignment of individuals to populations.

Link with ACA Priorities for 2006-2007:
In the ACA Strategic Business Plan under “Conservation Programming: Strategies”, the first strategy is to “Analyze data to provide a defendable scientific base for conservation actions”. The proposed project provides a scientific base for identification of walleye populations for management purposes.

The Fisheries priority (Objective #1) is to implement conservation efforts that will sustain or improve Alberta's fish populations. This project enables fisheries biologists to measure diversity in walleye populations so that they may be conserved.

Partnerships:
The Alberta Fish and Wildlife Forensic Laboratory
Alberta Sport, Recreation, Parks and Wildlife Foundation

Deliverables:
Planned completion date for this project is fall of 2008.
The deliverables of this project relate to dissemination of results and conclusions from the genetic data. The majority of deliverables cannot be met until all the genetic data is collected and analyzed. The expected deliverables are:

- An MSc thesis (Sept 2008) and one article in a scientific journal (Sept 2008).
- A workshop to all interested fisheries biologists
- Data will be available to interested fisheries biologists in electronic format.
- Results will be made available for enforcement purposes for the conviction of individuals who illegally take and/or traffic walleye.

GECF Final report for 2006/07 is available.

GECF History with project:
A literature review entitled 'Review and Assessment of Walleye Genetics and Stocking in Alberta' was funded by the ACA (Authors Fiona D. Johnston and Andrew J. Paul). The present study will follow recommendations 3 and 5 of the previous study: 3) Based on established Evolutionary Significant Units (ESUs) and defined management goals, use genetic markers to test the validity of ESU designations on a priority basis; and 5) Confirm existence of major genetic patterns identified in Thomas et al. (1999) using a second genetic marker (eg, microsatellite DNA).

Understanding the Dynamics of Change in Critical Subalpine Meadow Habitat

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Project Location: Castle Special Management Area and Waterton Lakes National Park
Identifying Code: 010 80 90 102
Funding Allocation: $15,380.00

Principal Investigator: Dr. Eric Higgs
Contact Information: University of Victoria
School of Environmental Studies, University of Victoria
P.O. Box 1700 STN CSC
Victoria, British Columbia, V8W 2Y2
Email: ehiggs@uvic.ca
Telephone: 250 472 5070

ACA Grant Status: Extended

Project Objective(s):
This research analyzes subalpine habitat changes over the past century using ecological field data and historical (1913-1915) and repeat (2003-2005) digital photographic images of Rocky Mountain landscapes. The goal of this research is to: Identify the magnitude and rate of change in subalpine meadow habitats in the Castle Special Management Area and Waterton Lakes National Park, and evaluate the implications of this change for land managers.

The proposed research is unique as one of a few studies in the world to use oblique historical imagery for assessing subalpine meadow habitat change. The Rocky Mountain Repeat Photography Project (RMRPP) photographic images provide comparative information of past and present landscapes which has been used to determine land conservation goals and sustainable land-use planning. The proposed research will take the RMRPP photographic images a step further by analyzing baseline ecological parameters from the original image to provide land managers with a detailed assessment of change in subalpine meadow habitat. Information such as changes to wildlife habitat, evidence of past fire activity and cultural influences on subalpine meadows will enable land managers to better determine appropriate management practices.

The objectives of this project are to:
1. Conduct a comprehensive review and inventory of existing historical and repeat photographic images of subalpine meadow habitat in the Castle Special Management Area & Waterton Lakes National Park.
2. Conduct an inventory of subalpine meadow vegetation and environmental variables through field data collection.
3. Analyze photographic images and field data to identify changes in subalpine meadow habitat.

Activities:
Field collections for fourteen meadows began in early June and were completed on in October 2006 in the Castle area and Waterton Lakes National Park.
The meadow samples were processed and analyzed at the University of Victoria last fall.
A NSERC Industrial Partnership Scholarship was secured for the Masters student Adrienne Shaw.

Link with ACA Priorities for 2006-2007:
The proposed research will provide invaluable habitat inventory information through field data collection/analysis and visual documentation of subalpine meadow habitat change over the past century

in the Southern Rocky Mountains. The repeat photographic images provide information that various other data sources (satellite imagery or aerial photography) cannot provide, enhancing the ability of land managers to effectively assess trends in habitat loss and change over time. Identifying historical reference conditions in subalpine meadows will help determine goals and objectives for ecosystem and species recovery management (Habitat Objectives #3 & #4)

Partnerships:
Partners include the University of Alberta, the University of Victoria, Library and Archives Canada, Waterton Lakes National Park.

Deliverables:
This project has been granted an extension until 15 October 2007.
GECF Interim Report
A final report documenting vegetation, environmental, and land use changes in subalpine meadow habitat (planned completion Sept 2007)
An inventory of high resolution historic and repeat photographic images that document subalpine meadow habitat will be available (planned completion October 2007).
Masters thesis documenting subalpine meadow change within the Castle Special Management Area and Waterton Lakes National Park and evaluate the implications for land managers (i.e. effects on sensitive wildlife species and potential for ecological restoration) (Planned completion January 2008).

GECF History with project:
The Rocky Mountain Repeat Photography Project had funding in 2005/2006.

Alberta Grouse Technical Council: Status of grouse in Alberta

Project Location: Alberta wide
Identifying Code: 030 10 90 114
Funding Allocation: $15,900.00

Principal Investigator: Dr. Susan Hannon
Contact Information: Alberta Grouse Technical Council
CW 405, Biological Sciences Building
Edmonton, Alberta, T6G 2E1
Email: sue.hannon@ualberta.ca
Telephone: 780-492-7544

ACA Grant Status: Extended

Project Objective(s):
Many grouse populations are suffering declines around the world, with one species listed as globally endangered. Many factors negatively affect population dynamics for grouse, but human related change in habitat over broad spatial extents is generally attributed as the major underlying factor. Alberta is fortunate to have one of the most diverse assemblages of grouse species for any jurisdiction in the world. However, this province has undergone widespread habitat change since European settlement, with large expanses of grassland, forest and alpine affected. Currently, sage grouse are listed as endangered, and sharp-tailed grouse are probably in decline through much of the province. There is little to no information on the current status of most species. Hence, there is a clear need to strengthen our understanding of the issues and challenges facing this diverse group of birds. The Alberta Grouse Technical Council (AGTC) was formed in 2005 with the major goal to conserve grouse species and their habitats across their historic range in Alberta. The council currently consists of members from Ducks Unlimited, ASRD, ACA, public at large, and Academia who have expertise in grouse biology, management and research. The objectives of this project were to 1) develop a document that will identify the current status of grouse species in Alberta (based on best available knowledge), and 2) assist with costs associated with developing and implementing a web page for AGTC.

Activities:
Consultant, Bill Glasgow, was hired to prepare two documents: "Biology, Status and Management of Sharp-tailed Grouse in Alberta" and "Potential Databases to Determine Sharp-tailed Grouse Population Trends in Alberta". These have been completed and reviewed by the AGTC.

The design and set-up of a web page has not yet occurred (an extension was granted to allow for the web-page to be developed).

Link with ACA Priorities for 2006-2007:
Project objectives relate to Objectives 1 and 2 in the wildlife section of the ACA strategic business plan. More specifically, the AGTC is a collaborative group of experts that has and will continue to identify conservation priorities for grouse species in Alberta. Moreover, the development of a status document takes stock of our current knowledge about grouse populations in Alberta, and hence a starting point for identifying the challenges that lie ahead with regards to potential population declines and range retractions. Grouse are biologically, economically and socially important resources to maintain in our province.

Partnerships:
Members of this group include representatives from ASRD, ACA, DU, Academia (and public at large). Hence, these organizations provide in-kind support through the salary dollars expended by staff to attend meetings and complete duties as assigned.

Deliverables:
Two documents were completed:
"Biology, Status and Management of Sharp-tailed Grouse In Alberta" (42pp)
"Potential Databases to Determine Sharp-tailed Grouse Population Trends in Alberta" (18pp).

Web page design and set-up (expected to be delivered by March 2008).

GECF Final Report

GECF History with project:
This is the first year this project has received funding.

20 Years of Bird Monitoring at Beaverhill Bird Observatory

Project Location: focus is on Central Alberta
Identifying Code: 030 20 90 104
Funding Allocation: $16,350.00

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 Objective(s):
The objectives of this project were to:
1) compile results of 20 years of bird monitoring data into a professional scientific report.
2) publish 5 papers on BBO's bird monitoring data.
3) continue coordinating our three major volunteer-based programs (Alberta Nocturnal Owl Survey, Alberta Raptor Nest Card Program, BBO Nestbox Program).
4) submit all data from BBO's bird monitoring programs to ASRD for their database, which will assist with bird status determination.

Activities:
- Organised the noctural owl survey, nest card program, and nestbox program with volunteers.
- Gave several presentations e.g. presentation to Lethbridge Field Naturalists on Nocturnal Owl Survey and recovery plans for Burrowing owl.
- Compiled data from 2000 through 2006 onto one computer and one database.
- Saw-whet owl migration completed, data entered and submitted to SRD
- Submitted all data to FAN for bird atlas update
- 20 Years of Bird Monitoring report submitted

Link with ACA Priorities for 2006-2007:
This project's main aim is to collect and interpret long-term data sets. The project focused on data capture and analysis of data collected in the programs of BBO. The owl survey has been running full time since 2002, and over 2000 nestcards have been collected since 1988, to name a couple of examples. In addition to this, with 10 years of data BBO looks at population trends. Four years of saw whet owl migration population trends are looked into and compared (Wildlife Objective #2).

This project also provides the opportunity for the public to get involved with research by conducting owl surveys, collecting information on raptor nests, participating in banding with researches at Beaverhill and monitoring songbird or saw-whet nestboxes. Thereby providing non-consumptive wildlife related recreational experiences (Wildlife Objective #5).

Partnerships:
ASRD, STEP and SCPP, Mountain Equipment Co-op, Manning Diversified, CWS, Environment Canada, Science Horizons, Shell Environmental Fund, Alberta Sports Recreation Parks and Wildlife Fdn.

Deliverables:
1) Beaverhill Bird Observatory – 20 Year Report.
2) Analysis on population trends of 5 species of birds captured at Beaverhill Bird Observatory.
3) Video on songbird banding for classroom, public presentations.
4) Banding data and owl survey data files for import into BSOD.
5) GECF Final Report

GECF History with project:
This is the first year this project has received funding, although the BBO has received funding for other work.

Increasing public access for wildlife-related recreation on private lands: A review and assessment of practices

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Project Location: Focus is on Alberta
Identifying Code: 030 60 90 102
Funding Allocation: $17,600.00

Principal Investigator: Cormack Gates
Contact Information: University of Calgary, Faculty of Environmental Design
2500 University Drive NW
Calgary, Alberta, T2N 1N4
Email: ladowney@ucalgary.ca
Telephone: 403-278-5879

ACA Grant Status: Extended

Project Objective(s):
In collaboration with Alberta Habitat Working Group (ABHWG), this research will involve compiling knowledge on and reviewing the range of programs used by wildlife agencies in the northwestern US and western Canadian provinces, and an assessment of options that may be applicable, useful, and feasible in the Alberta context. A body of knowledge will be generated that will support informed dialogue on enhancing public access for wildlife-related recreation to private lands in the province. The results of this work will provide background information to the subcommittee of ABHWG that is addressing the issue of wildlife-related recreation access to private lands.

Activities:
1) Review of current programs offered, evaluated or planned in the NW US and Western Canadian provinces.
2) Review current programs, policies, legislation and regulations, and issues pertaining to public access to private lands for wildlife-related activities in Alberta.
3) Assessment of program options that may be applicable, useful, and feasible in the Alberta context. This will be achieved by discussing the information obtained from the two reviews with key informants and through focus group meetings. Key informants and focus groups will be identified through consultation with the ABHWG sub-committee.

Link with ACA Priorities for 2006-2007:
1) This project directly supports development of opportunities to enhance consumptive and non-consumptive wildlife related recreational experiences for all Albertans (Wildlife Objective #5) by: consolidating information on existing practices by wildlife agencies and assessing the options and applicability in Alberta. These products can be used by the ACA, conservation and landowner organizations, and Alberta Fish and Wildlife to inform dialogue on program development concerned with public access for wildlife-related recreation to private lands in the province.

2) This project directly supports the commitment of the ACAs Habitat Program to provide sustainable recreational opportunities and to “secure, develop, protect and maintain high-priority wildlife and fisheries habitats and habitats that provide recreational opportunities” (Habitat Objective #4), by focusing on management tools that may be used to improve landowner/leaseholder and the public’s sense of value of wildlife on private lands and leases, and to enhance public access for wildlife-related recreation to these lands.

Partnerships:
ACA, the Hunting for Tomorrow Foundation and ASRD – Fish and Wildlife. A graduate scholarship has been provided by EVDS

Deliverables:
This project has received a year long extension due to staffing problems. Below are the anticipated deliverables:
1) Review of current programs offered or planned, and existing program evaluations in north-western states and provinces. Anticipated completion of draft report: November 2007.

2) Review of current programs, policies, legislation and regulation pertaining to public access to private lands for wildlife-related activities in Alberta. Anticipated completion of draft: January 2008.

3) Assessment of options for Alberta. Anticipated completion of draft: March 2008.

4) Publication of an article in a peer reviewed Journal (e.g. Human Ecology). Anticipated submission of paper: November 2008.

GECF History with project:
This is the first year of funding for this project.

Ecology and conservation of mountain goats in Alberta

Project Location: Caw Ridge, west central Alberta
Identifying Code: 030 10 90 103
Funding Allocation: $17,993.00

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 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, the project objectives were 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, habitat productivity (Normalized Deviation Vegetation Index, etc).
c) quantify variation in survival and population sex-age structure among years.
d) assess the effects of current reproduction on foraging behaviour, survival, growth, and future reproductive success in adult females.
e) identify the factors that affect population size and that are therefore important for management.
f) monitor the dispersal of juvenile goats.
g) examine whether mountain goats can habituate to helicopter and all-terrain-vehicle traffic.

Activities:
In 2006, 12 previously unmarked goats were caught, marked and released and 40 marked goats were recaptured, for a total of 52 captures.
Seven new radio collars were fitted on 2-year-old males.
Two new Stevenson's box traps were purchased and installed on Caw Ridge, allowing for a decrease in the use of self-tripping Clover traps, and increased control on the identity of animals captured.
336 weights of individuals of varying age-sex classes were recorded over this field season.
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 our initial assessment of helicopter impact on mountain goats, goat behavioral responses to helicopter flights were recorded. Helicopter impact on wildlife over alpine areas is not a trivial issue because both industrial and recreational uses of helicopters are rapidly increasing. Their 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 2005-2006.

Link with ACA Priorities for 2006-2007:
This project meets the ACA Wildlife Program Priorities focusing on the thematic area of ungulates through science-based conservation. The research program provides the only long-term management and conservation-related research on mountain goats in North America (Wildlife Objective #2 & 4). 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 Objectives #1 & 5). This work has provided the bulk of new information that was incorporated into the recent "Management Plan for Mountain Goats in Alberta" and led to many scientific publications (Objectives #1, 2, & 4). All this new information is extremely important to the re-establishment of sustainable hunting and conservation of mountain goats in Alberta (Objective 5).

Partnerships:
Laval University, University of Sherbrooke, ACA, NSERC, the Alberta Fish & Wildlife Division, the Alberta Recreation, Parks and Wildlife Foundation, the North American Big Game Foundation, Smoky River Coal Ltd, FQRNT-Québec, the Rocky Mountain Goat Foundation and the Alberta Wildlife Enhancement Fund.

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. The value of this long-term project is becoming increasingly evident, with the publication of results on individual reproductive strategies and population dynamics. The results of this work provide also important biological information to manage mountain goat hunting and conservation in Alberta and elsewhere.

A monograph on the ecology and behavior of mountain goats (13 chapters, 359 pages; Festa-Bianchet and Côté 2007) has recently been accepted for publication by *Island Press* and will be published next fall. 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 and uses 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 modeling of various management scenarios and population viability analyses to evaluate harvest potential for goat populations in Alberta appeared in the fall 2006 issue of the *Journal of Wildlife Management* (70: 1044-1053). A manuscript looking at the effects of variation in the onset and the rapidity of vegetation growth (using NDVI data) on juvenile growth and mortality was accepted for publication in the prestigious journal *Ecology* in September 2006. All scientific communications are listed below.

Scientific publications from the Caw Ridge research published or submitted in 2006-2007:
Festa-Bianchet, M. and S.D. Côté. Mountain goats: ecology, behavior and conservation of an alpine ungulate. Island Press, Washington, in press.
Hamel, S. and S.D. Côté. Trade-offs in activity budget in an alpine ungulate: contrasting lactating and non-lactating females. *Animal Behaviour*, submitted February 2007.
Hamel, S. and S.D. Côté. Habitat use patterns in relation to escape terrain: Are alpine ungulate females trading-off better foraging sites for safety? *Canadian Journal of Zoology*, submitted January 2007.

Hamel, S. and S.D. Côté. Maternal defensive behaviour and golden eagle predation in mountain goats. *Mammalia*, submitted August 2006.
Hamel, S., S.D. Côté, K.G. Smith and M. Festa-Bianchet. 2006. Population dynamics and harvest potential of mountain goat herds in Alberta. *Journal of Wildlife Management*, 70: 1044-1053.
Pettorelli, N., F. Pelletier, A. von Hardenberg, M. Festa-Bianchet, and S.D. Côté. Early onset of vegetation growth vs. rapid green-up: impacts on juvenile mountain ungulates. *Ecology*, in press.
Mainguy, J., K. Worley, S.D. Côté and D.W. Coltman. Low MHC *DRB* class II diversity in the mountain goat: past bottlenecks and possible role of pathogens and parasites. *Conservation Genetics*, in press.

Scientific communications of the Caw Ridge study presented in 2006-2007:

Côté, S.D and M. Festa-Bianchet. 2006. Density-dependence in vital rates and population growth in mountain goats: population regulation or limitation? 15th *Northern Wild Sheep and Goat Council Symposium*, Kananaskis, Alberta, Canada, 2 April 2006.
Côté, S.D. and M. Festa-Bianchet. 2006. Density-dependence in life-history traits and population growth in Rocky mountain goats (*Oreamnos americanus*) from Alberta, Canada. 4th *World Congress on Mountain ungulates*, Munnar, India, 14 September 2006.
Hamel, S. and S.D. Côté. 2006. Proximate costs of reproduction in female mountain goats. 15th *Northern Wild Sheep and Goat Council Symposium*, Kananaskis, Alberta, Canada, 2 April 2006.
Hamel, S., S.D. Côté, K.G. Smith and M. Festa-Bianchet. 2006. Population dynamics and harvest potential of mountain goat herds in Alberta. 15th *Northern Wild Sheep and Goat Council Symposium*, Kananaskis, Alberta, Canada, 2 April 2006.
Hamel, S. and S.D. Côté. 2006. Trade-offs in the foraging behaviour of lactating mountain goats. 45th Annual Meeting of the *Canadian Society of Zoologists*, University of Alberta, Edmonton, Alberta, Canada, 3 May 2006 (Hoar award finalist).
Hamel, S. and S.D. Côté. 2006. Summer mass gain in female mountain goats: trade-off between growth and lactation. 31th Annual Meeting of the *Société Québécoise pour l'Étude Biologique du Comportement*, UQAM University, Montréal, Québec, Canada, 11 November 2006.
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, 7 March 2007 (invited seminar).
King, W.J., M. Festa-Bianchet and S.D. Côté. 2006. Age specific reproductive success of female bighorn sheep and mountain goats. 4th *World Congress on Mountain ungulates*, Munnar, India, 14 September 2006.
Mainguy, J., S.D. Côté and D.W. Coltman. 2006. Rutting behaviour of male mountain goats in relation to age. 15th *Northern Wild Sheep and Goat Council Symposium*, Kananaskis Country, Alberta, Canada, 2 April 2006.
Mainguy, J. and S.D. Côté. 2007. Reproductive effort and mate choice in male mountain goats. 27th Annual Meeting of the *Centre d'études nordiques*, Québec, Canada, 1 February 2007.
Weladji, R.B., S.D. Côté and M. Festa-Bianchet. 2006. Age and sex specific growth allometry between horn length and body mass of mountain goats (*Oreamnos americanus*) (poster). *Canadian Society for Ecology and Evolution* Inaugural meeting, Montréal, Québec, Canada, 4 April 2006.
Weladji, R.B., S.D. Côté and M. Festa-Bianchet. 2006. Age and sex specific growth allometry between horn length and body mass in mountain goats (poster). 4th *World Congress on Mountain ungulates*, Munnar, India, 15 September 2006.

GECF Final Report contains a summary of the results of the project.

GECF History with project:

The Caw Ridge mountain goat project was supported by GECF in 2004-2005 and in 2005-2006).

Effects of aversive conditioning on elk migration and fescue growth

Project Location: Ya Ha Tinde Ranch Elk winter range
Identifying Code: 030 10 90 104
Funding Allocation: $18,580.00

Principal Investigator: Holger Spaedtke
Contact Information: University of Alberta
Dept. Biological Science
Edmonton, Alberta, T6G 2E1
Email: holgers@ualberta.ca/cstclair@ualberta.ca
Telephone: 780-492-9685

ACA Grant Status: **Completed**

Project Objective(s):
Fescue grasslands (*Festuca campestris*) 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. The majority of fescue grasslands are in the foothills region east of the Canadian Rocky Mountains. 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 moving them from the entire grassland or moving to different portions of the grassland.
2) to 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) to 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) to monitor calf survival using calf:cow surveys using broad scale surveys comparable to those conducted in pre- and conditioning years.

Activities:
Trapping for known individuals (residents) was successful using a combination of corral trapping and helicopter netgunning, recaptured 15 known resident elk and 2 known migratory elk.
Captured and fit 14 with VHF radio collars on previously unmarked elk
Between May and August, conducted aversive conditioning treatments, 44 conditioning trials were ridden.
Re visit existing vegetation plots, add range cages to the design, and conduct monthly vegetation re-visits.
Conducted elk location surveys (aerial and ground) in August
Conducted elk group and cow-calf relation observations, and assessed pregnancy rates.

Monitor elk mortalities: 5 mortalities prior to the aversion training and 5 during the aversion training. Completed preliminary analysis of field data, see GECF final report for more information.

Link with ACA Priorities for 2006-2007:
This project addresses many of ACA's broad goals in habitat and wildlife, science-based conservation. This project helps meet ACA Habitat Objectives 2 and 3 outlined in the strategic plan. Specifically implementing research on a threatened fescue grassland will help developing tools to maintain high priority ungulate habitat (Objective 2), as well as enhance and restore this grassland (Objective 3)

In terms of wildlife priorities, this project will help ACA meet Objective 4, applied conservation studies on the status, movement patterns and ecology of priority species. Tools to encourage elk migrational movements will be applied. This will not only enhance the wildlife habitat (as mentioned above), but also contribute to maintenance of wildlife-oriented recreation area (Objective 5).

Partnerships:
Parks Canada, Banff National Park; University of Alberta; Weyerhaeuser Canada; Rocky Mountain Elk Foundation Canada

Deliverables:
6 public talks were given.
Information from last year was updated and distributed during guided ranch tours, the daily campground check and during opportunistic encounters with other horse riders and ranch visitors.
Copies of the folder were distributed in the Sundre Fish and Wildlife office, the Ya Ha Tinda ASRD field house and the Mountain Aire lodge.
The 2007 Sundre workshop and public talk was covered with a half page article in the Sundre Round Up (February 13th).
The project web page has been updated and extended (www.ualberta.ca/~holgers) and had 801 visits as of March 2007.
GECF Final Report (contains preliminary results of the project)

GECF History with project:
This project received funding in 2005/06.

Large Woody Debris in Small Streams of Alberta's Foothills

Project Location: Foothills Model Forest
Identifying Code: 020 80 90 101
Funding Allocation: $19,300.00

Principal Investigator: Dr. Lori Daniels
Contact Information: Geography, University of British Columbia
1984 West Mall,
Vancouver, BC, V6T 1Z2
Email: daniels@geog.ubc.ca
Telephone: 604-822-3442

ACA Grant Status: Completed

Project Objective(s):
Logs in streams, commonly called large woody debris (LWD), provide channel structure and create step-pools, providing in-stream habitat and contributing to invertebrate and fish biodiversity. This research of LWD focused on headwater streams in the Foothills of Alberta. Tree-ring analyses were used to answer three research questions: What is the fate of LWD that is created by forest fires? How fast does post-fire LWD decay? How long does it reside in streams and contribute to steam habitat and biodiversity? To answer these questions, the abundance and age of LWD in post-fire riparian forests of two different ages: <5 years (Dogrib fire near Sundre) and >100 years (Foothills Model Forest near Hinton) since last fire was compared.

Activities:
9 streams were sampled for LWD (4 streams > 100 years since disturbance and 5 streams < 5 years since disturbance) surrounded by black and white spruce forests in the Sundre area (Dogrib fire 2001) as well as in the Foothills Model Forest (FMF).

In each stream all LWD were surveyed along a 50-100 m transect. The species, size (length and diameter), position relative to the stream and stage of decay of each log were noted. Disks from every log within the stream reach and increment cores from 20 dominant trees in the surrounding riparian forest were collected for tree-ring analyses. The disks and cores were dried and sanded with successively finer sandpaper (to 600 grit) so that rings were clearly visible. Rings were measured and cross-dated to determine the outermost ring date of each sample.

Link with ACA Priorities for 2006-2007:
This project directly contributed to Objective 1 of ACA's Habitat Program as follows:
Objective 1 - Collaborate with government and industry to maintain, enhance and protect riparian habitats. The focus on small, headwater streams which provide critical habitat for ensuring viable, healthy fish populations in the foothills of Alberta. LWD is now recognized as a critical component of naturally functioning riparian habitats. This study provides scientific information on natural variation in quantity and quality of LWD in streams and identifies the processes that contribute LWD to streams. By collaborating with the Foothills Model Forest, who represent many industrial partners, guidelines are provided for assessing the impacts of human disturbances (e.g. logging, fire suppression, and recreation) on LWD and to identify where mitigation and restoration of riparian habitats is needed.

Partnerships:
Dr. D.W. Andison, Natural Disturbance Program, Foothills Model Forest; R. McCleary, Fish and Watershed Program, Foothills Model Forest; Dr. R. Bonar, Hinton Wood Products of West Fraser Mills, Hinton; and Mr. G. Branton, Alberta Newsprint Company, Whitecourt

Deliverables:
Trevor Jones presented preliminary results to the Natural Disturbance Program of the Foothills Model Forest in November 2006.
Sonya Powell presented preliminary results at the Northwest Scientific Association meeting on February 23 in Victoria, BC.
The LWD project, on the UBC geography tree-ring lab website, has been updated and ACA has been acknowledged. http://www.geog.ubc.ca/~ldaniels/index.php?content=Projects&type=project&id=17
A draft copy of the April 2007 Quicknote has been submitted to the Natural Disturbance Program of the Foothills Model Forest.
Manuscript for submission to Ecological Applications has been submitted.
A second manuscript is in preparation for the Canadian Journal of Forest Research has been submitted.
A field tour (April 18, 2007) of some representative sites, in conjunction with the “Intermountain Health Workshop”, highlighted the work that has been accomplished to date.
Preliminary results can also be found in the GECF Final Report.

GECF History with project:
This is the first year this project has received funding.

Fur Management: Past and Present an Alberta Perspective

Project Location: Edmonton & region
Identifying Code: 030 40 90 104
Funding Allocation: $20,000.00

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: Completed

Project Objective(s):
The grade 4 &5 elementary school program discusses the fur trade as part of the history program. This presents an opportunity for the Alberta Trappers Association (ATA) to speak on the topic of animal management and solicit respect for the fur resource.

Activities:
A brochure was developed and sent out to Edmonton Schools. In addition a booth was set up at the Northern Alberta Teachers Convention in Edmonton in Feb. 2007.
The main activity was to give fur management presentations to the students discussing the history of the fur trade, animal management and respect and humane trapping.

Link with ACA Priorities for 2006-2007:
The project enhances the level of awareness and understanding of conservation issues within Alberta that will promote the use, protection and enhancement of natural habitats and biological populations, thereby addressing the ACA Habitat Program Priorities.

Partnerships:
Alberta Trappers Association, Tolko forest industries and ASRD

Deliverables:
Presentations were made to 3482 students at 109 schools since project began.
GECF Final Report and lists of presentations made.

GECF History with project:
This project received ACA Board Special Projects funding in 2005-06.

Presentation to school children
Photo: Jim Mitchell

Millennium Creek Project – Phase Two – Fish Habitat Enhancement

Project Location: Millennium Creek in the town of Cochrane
Identifying Code: 020 60 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 Objective(s):
The 2006 Phase Two Project objective is to create a natural stream environment, conducive to a wild-sport fish population. In addition to the enhancement of fish habitat, some in-stream structures have been constructed to help maintain the stability of the new channel.

Activities:
- approximately 3000 willow cuttings of various species were planted;
- log and rock v-weirs were constructed, creating pools;
- a flow by pass system was built;
- silt collection fences were repaired;
- applied for an addendum to the permit to add a short length of stream north of the project area.

Link with ACA Priorities for 2006-2007:
The successful completion of this program addresses the Fisheries Program Priority (implementing fish conservation efforts…that will sustain or improve Alberta's fish populations) by creating a stable nursery and recruitment habitat for wild trout and mountain whitefish; the benefits will also be evident in the main stem of the Big Hill Creek and the Bow River. The Millennium Creek Project also educates the public about the importance of the many small spring creek tributaries and their relationship to the main-stem fishery of our trout streams.

Partnerships:
In 2004, Kevin Fitsimmons of the ACA assisted ASR biologist Jim Stelfox in electro-fishing Millennium Creek to establish whether or not there were sport fish present in the creek.

Volunteer labour with the planting (in excess of 112 hours), Town of Cochrane, Parks and Facilities; Inter-Pipeline Fund; TransAlta Utilities Corporation; Spray Lakes Sawmills Ltd.; MGM Developments; Angel Enterprises Ltd.

Volunteers collect cuttings to be planted along creek
Photo: Guy Woods

Deliverables:
Project reports.
On the longer term a stable nursery and recruitment habitat for wild trout and mountain whitefish.

GECF History with project:
This project received a grant in 2005-06.

The Living by Water Project

Project Location: Alberta (specifically for 2006-07 Moose Lake and Lac La Nonne)
Identifying Code: 090 40 90 101
Funding Allocation: $20,000.00

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 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 promote individual actions to protect the shoreline and riparian habitat
- To build more local capacity for stewardship of Alberta's shorelines and riparian environment through training of community volunteers, delivery of *LbyW* programs and provision of tools such as the On the Living Edge: Your Guide for Waterfront Living book, poster and Workshop in a Box modules
- 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 further monitor and support owners of Shoreline and back-lot properties initially assessed in 2004/05.
- To train student interns in conducting home-site evaluations, providing them with a *LbyW* Intern Induction handbook and providing opportunities to gain hands on learning in riparian/shoreline issues.

Activities:
During the spring and summer months, the *LbyW* Project focused on the delivery of the Homesite Consultation Program. This year FAN was able to hire four summer interns to deliver the Homesite Consultation Program. The Homesite Consultation Program was available to the following communities: 1.Moose Lake, 2. Lac La Nonne, 3. Nakumun Lake, and 4. Sandy Lake. However, two lake communities (Nakumun Lake & Sandy Lake) were not able to solicit homesite evaluations over the 2006 field season. Within the community of Lac La Nonne the Homesite Program returned for a second field season. In total: 46 homesite evaluations were completed within the communities of Moose Lake and Lac La Nonne.

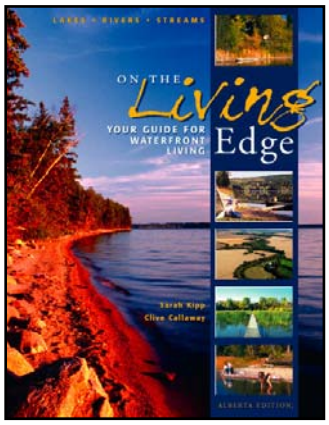
FAN carried out fundraising activities for the Naturalization & Water Quality Improvement Pilot Project for Stormwater Lakes, resulting in a three-year pilot project beginning April 2007.

Link with ACA Priorities for 2006-2007:
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 (Habitat Objective #4). It has been estimated that two-thirds of the world's game fish species rely on the land-water interface for spawning, feeding, refuge or nursery habitat. By educating shoreline resident about their lifestyle choices in regards to riparian health, *LbyW* can play a vital role in mitigating and maintaining riparian areas which are essential to sustaining healthy fish habitats (Habitat Objective #1).

Over 80% of all birds, reptiles and amphibians and 20% of all mammals in Alberta utilize shoreline areas sometime during their life and two thirds of Alberta's "at risk" birds use shoreline areas for all or part of their habitat needs as do four "at risk" amphibians. 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 (Wildlife Objective #6).

Partnerships:
Matching funds provided by Weyerhaeuser Company Limited.
Volunteers carried out the homesite evaluations.
City of Edmonton
For a complete list of project partners, see http://www.livingbywater.ca/links.html

Deliverables:
1) 4 summer interns were trained in homesite evaluations within the communities on Lac La Nonne and Moose Lake. Each intern received a working draft of the Intern Induction Handbook.
2) 46 Homesite Consultations completed within the communities of Moose Lake and Lac La Nonne. Each community received a final report summarizing shoreline activities identified through the homesite evaluation process.
3) 21 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. These activities also served to promote positive individual actions to protect the shoreline and riparian habitat.
4) Funds were raised for the stormwater lake project anticipated to begin April 1, 2007.



5) "Living Near Urban Lakes: your guide to everyday living in urban lake communities" was published in December 2006. This book has been available to the public since February 1, 2007. 2500 copies of the book will be distributed by the City of Edmonton.
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) GECF Final Report

GECF History with project:
This project has received support since 2002/03.

Riparian Area Management Improvements

Project Location: Throughout Mountain View County
Identifying Code: 010 20 90 106
Funding Allocation: $20,000.00

Principal Investigator: Lesley Lovell
Contact Information: Mountain View County and Little Red Deer River Watershed Initiative c/o
Mountain View County
Bag 100
Didsbury, Alberta, T0M 0W0
Email: lesley.lovell@mountainviewcounty.com
Telephone: 780-335-3311

ACA Grant Status: Completed

Project 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.
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 2006-2007:
Projects chosen will help meet ACA's Habitat Program Priorities for riparian habitat and for wildlife habitat. Mountain View County's watersheds are home to many of ACA's priority wildlife species including moose, elk, and deer. Many areas in MVC fall into ACA's priority areas and or contain habitat where ACA's priority species live. The parkland eco-region makes up a large percentage of MVC and approx. 75% of the Little Red Deer River Watershed is the Parkland Ecoregion (Habitat Objective #1). When looking at improving recreational opportunities, angling for sport fish could improve by improving the health of the lotic riparian areas (Habitat Objective #4). 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:
The landowner contributed the other portion of the project including any outstanding material cost and all the labour and equipment costs which usually worked out to approx 50-66% of the total costs for a fencing project.

Deliverables:
9 fencing projects were completed improving the management of the riparian areas at the project locations; projects were located in the following watersheds: four in the Bearberry Watershed, three in the Little Red Deer River Watershed, and two in the Rosebud Watershed.
Projects completed in 2006 are helping to improve the overall health of the watersheds in the area and are helping to promote these types of practices to other farmers and landowners in the area.
GECF Final Report

Mountain View County fencing project
Photo: Lesley Lovell

GECF History with project:
This project received funding in 2005-06.

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

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Project Location: South-western Alberta (Livingstone Range)
Identifying Code: 010 20 90 104
Funding Allocation: $20,000.00

Principal Investigator: Danah Duke
Contact Information: The Miistakis Institute for the Rockies
c/o Environmental Design
2500 University Dr. NW
Calgary, Alberta, T2N 1N4
Email: danah@rockies.ca
Telephone: 403-220-8968

ACA Grant Status: Completed

Project Objective(s):
The Livingstone Range is comprised of public lands wherein a wide range of opportunities for "unmanaged" recreational activities are available. The area is characterized by features that are particularly attractive to OHV users, random access campers and anglers. These activities all have the potential to impact wildlife use of the area, especially in riparian, montane, and sub-alpine areas with features necessary for meeting critical habitat requirements for many species. Over the past few years, recreational use has been increasing significantly. This study aims to analyze the relationships between human use of trails, with a particular emphasis on OHV use, and wildlife movement by using remote cameras and counters. This innovative use of new technology allows us to collect valuable data without disturbing the animals or the recreationists. 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.

Overall goals of the project:

- Determine wildlife use and human use of OHV trails in the study area using remote cameras and counters,
- Quantify the spatial and temporal relationships between OHV use and wildlife 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.

In 2006, Miistakis completed its 4th field season and have been successful in establishing a unique research project to address the spatial and temporal relationships between wildlife and human recreation.

Activities:
The relationship between OHV use and wildlife was examined through the use of remote cameras (mounted on trees and automatically take pictures of any person or animal using the trail) and counters (device buried under the trail and records any metal object passing over it).

Field methods include simultaneous monitoring of human use trails and adjacent wildlife trails.

The technology was tested in the summers of 2004 and 2005 resulting in a tested and reliable approach to data collection. The area will be stratified into 8 sampling units to ensure representational coverage.

Analysis of data collected from 2003-2006

Link with ACA Priorities for 2006-2007:
This project meets goals and priorities of both the ACA Wildlife Program and Habitat Program. 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) in order to secure, protect and maintain high priority wildlife and fisheries habitat that provide recreational opportunities (Habitat Objective #4). 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 (Wildlife Objective #5). These results may be used to recommend measures to mitigate human and wildlife interactions.

Partnerships:
Support to the project was also given by: University of Calgary, Suncor Energy Foundation, Shell, Woodcock Foundation and Yellowstone to Yukon Conservation Initiative.

Deliverables:
Some of the highlights of the first four years of data collection include:

- 576 social surveys were conducted with recreational users of the area to gain input regarding user activities and attitudes towards management alternatives for the region. The results of these surveys can be found in “Planning for Recreation on Public Lands: An Examination of the Livingstone River Valley “(N. St. Arnaud , Masters Degree Project 2004)
- Comprehensive mapping of recreation trails throughout the study area
- Monitored a total of 787 remote camera stations (14-day period) which includes over 297,000 hours of camera operation
- Captured 4467 unique wildlife events including 327 large carnivores
- Captured 7902 human use events
- “Spatial and Temporal interactions between wildlife and off highway vehicles in Southwestern Alberta.” Progress report, Nov. 2006, Miistakis Institute
- GECF Final Report

Photo taken with remote camera by Miistakis Institute

A couple of preliminary results are: Motorized use represents >87% of the human use recorded on recreation trails with all terrain vehicles or quad representing 42% of the overall use.

Motorized use peaks between 11:00 and 18:00 while large mammal use of OHV trails peaks between 05:00 and 12:00 and again between 20:00 and 01:00. Large mammal use of wildlife trails follows a similar pattern to use of OHV trails.

GECF History with project:
This project has had support since 2003.

Assessing the effects of fish on waterbird abundance in shallow lakes in the Boreal Transition Zone

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Project Location: Boreal Transition Zone of Alberta
Identifying Code: 030 20 90 102
Funding Allocation: $20,000.00

Principal Investigator: Dr. Suzanne E. Bayley
Contact Information: University of Alberta
Dept. Biological Science, CW405 BSB
Edmonton, Alberta, T6G 2E1
Email: sbayley@ualberta.ca
Telephone: (780) 492-4615

ACA Grant Status: Completed

Project Objective(s):
Shallow lakes of the Boreal Transition Zone (BTZ) of Alberta are highly productive and diverse systems that are especially rich in waterfowl. The relationship between waterfowl density and other shallow lake biota in the BTZ is unclear. Fish have not been well studied in the BTZ, even though they are an important force in structuring shallow lake communities. Although fish have been reported to compete with waterfowl for macroinvertebrate food resources in other regions, the influence of fish on waterfowl density in the highly productive BTZ is unknown. The overall goal of this study is to determine the composition and abundance of fish and the relationship between fish and waterfowl communities in shallow lakes of Alberta's BTZ.

Activities:
Fish and waterfowl communities were sampled in 28 lakes between May - August 2006.
Water chemistry samples from all lakes were collected in both May and August 2006. These samples have been analyzed by the University of Alberta Limnology Lab.
Physical environmental variables were measured or calculated during summer and fall 2006.

The statistical relationship between fish communities and the environment is presently being examined.

Link with ACA Priorities for 2006-2007:
This project aims to understand the relationship between fish and waterfowl abundance, water quality and landscape features of boreal lakes to enhance management of shallow lakes in the boreal transition zone. Currently these lakes are undergoing increasing pressures in areas of agricultural encroachment, and comprise one of the "priority landscapes" for Fisheries identified in the ACA Strategic Business Plan. Specifically, this project's activities address Objectives 1 and 4 of ACA's Fisheries Program. In that information is provided on the abundance, structure, and use of aquatic habitats by select fish populations in this priority landscape. By working collaboratively with the DUC and the ACA/NAWMP projects they will also be able to develop a suite of watershed assessment indicators and assess the quality of those indicators to the aquatic community. In addition this project will contribute indirectly to objectives of ACA's Wildlife and Habitat Programs.

Partnerships:
Several partnerships and collaborators for this project including: University of Alberta, Ducks Unlimited Canada, North American Waterfowl Management Plan (NAWMP) and ACA.

Deliverables:
17 waterfowl species and 8 fish species were found in the study lakes.
Some preliminary results: 15 of the 28 study lakes were fishless. Fish species richness in study lakes ranged from 1 species to 5 species. Small bodied fish present in study lakes include Fathead Minnows (*Pimephales promelas)*, Brook Stickleback (*Culea inconstans)*, Spothead Shiners (*Notropis hudsonius)*, and Iowa Darter (*Etheostoma exile)*. Large bodied fish present in study lakes include Northern Pike (*Esox lucius),* Cisco (*Coregonus artedi)*, Rainbow Trout (*Oncorhynchus mykiss)* and Yellow Perch (*Perca flavescens).* Preliminary analysis reveals that waterfowl and fish communities are concordant; that patterns in one community reflect patterns in the other community.
Waterfowl breeding pair density is significantly greater in fishless lakes than in lakes with fish. However, there is no difference in waterfowl breeding pair density in lakes with small-bodied fish only and lakes with small and large-bodied fish. Lakes with large-bodied fish also had less waterfowl species than lakes with no fish or lakes with small bodied only fish.

The preliminary results were presented at the Graduate Student Research Days at the University of Alberta in February, 2007.

M.Sc. thesis is expected to be complete in April 2008.

GECF Final Report, which also contains more details on the preliminary results.

GECF History with project:
This is the first year of funding for this project.

Ecosystem Effects Driven by Cattle Habitat Selection

Project Location: Bob Creek Wildland, South-western Alberta
Identifying Code: 010 40 90 103
Funding Allocation: $20,000.00

Principal Investigator: Joann Skilnick
Contact Information: University of Calgary, Faculty of Environmental Design
2500 University Drive NW
Calgary, Alberta, T2N 1N4
Email: jlskilni@ucalgary.ca
Telephone: 403-220-2475

ACA Grant Status: Completed

Project Objective(s):
This project evaluated the relationship between cattle and the environment comprehensively. The purpose of the study is to gain more detailed knowledge of cattle habitat selection and the effects of husbandry in a complex landscape. Where there is economic pressure to increase cattle production, local densities of cattle might influence the biodiversity and productivity of the plant communities they rely upon. In turn, forage quality has effects on other herbivore species and on carnivores relying on these. Therefore, the study deals with broader ecosystem effects, sustainability and biodiversity issues.

The specific objectives were as follows:
Domestic and wild herbivore ecology:

- Evaluate cattle distribution across the Bob Creek Wildland during different grazing seasons.
- Identify the abiotic and biotic factors that are influencing cattle grazing behaviour and distribution.
- Develop a GIS-based predictive model of cattle grazing behaviour based on such factors.
- Evaluate forage quality and productivity –i.e. dependent or not from cattle density.
- Contribute to modeling carrying capacity for domestic and wild herbivores –i.e. species with and without niche-overlap with cattle.

Herbivore management:

- Evaluate how human presence and husbandry practices influence cattle distribution.
- Make recommendations to government authorities and lease holders on cattle distribution and range management.
- Use this Alberta study as a sample case for husbandry practices conducted in all other areas where domestic animals are kept at large or on large properties.
- Contribute to assessing targets for densities of domestic and wild herbivores.

Activities:
Archival data for collared cattle in the Bob Creek Wildland was received prior to the project beginning. Completed an initial overview analysis of cattle distribution and resource selection functions (spring 06). This analysis was written into a report (listed under Deliverables) that was submitted to Alberta Environmentally Sustainable Agriculture and was presented at the Prairie University Biological Symposium.

Second and final season of field research began in July 2006. Twelve cattle were collared with GPS 3300 collars. Collars were removed at the end of the grazing season in September 2006 and the data downloaded. Forage quality samples were also collected over the summer. These samples have been prepared and are undergoing analysis at Norwest Labs.

Analyses of the data and preparation of publications for the *Journal of Rangeland Ecology and Management* and Thesis is due to be completed in 2007.

Link with ACA Priorities for 2006-2007:
This project clearly falls under the ACA's Wildlife goals/priorities. In addition, the project has substantial ripple-effects relevant to ACA's Habitat goals/priorities.

This project helps identify wildlife conservation priorities (Wildlife Objective #1). Cattle are the dominant top-herbivores in most grassland ecosystems in Alberta, and only a few ecological studies address specifically the effects of cattle behaviour and distribution on ecosystem functioning and biodiversity. Using the knowledge gained from this study, managers will be able to make decisions that promote sustainable grazing strategies and prevent the deterioration of grazing opportunities. Such an approach to grazing management would benefit the functioning of plant communities. As a consequence, habitat for cattle and other wild herbivores would be preserved, with beneficial effects for the whole ecosystem –i.e. from forage to top carnivores.

Preliminary data show that cattle preferentially select certain plant communities (particularly in riparian areas). Cattle can exert detrimental effects on ecosystems when densities are concentrated onto localized areas. Findings will support management actions that diminish cattle density locally and therefore enhance riparian functioning and upland grassland health. Proper grassland management is essential for maintaining the sustainability of the cattle industry and also ecosystem functioning. This project will give managers and ranchers information on how to ensure the proper management of grasslands (Habitat Objectives #1 & #3).

Partnerships:
ASRD; Cows and Fish; Alberta Environmentally Sustainable Agriculture Program; Bob Creek Wildland Watershed Group; Alberta Beef Producers; Rocky Mountain Forest Range Association.

Deliverables:
Presentations, posters and reports that have been developed since receiving funding are listed below:

- Skilnick, J.L. 2006, April. Habitat selection and effects on plant communities by a top herbivore: cattle. Public Lands Conference, ASRD, Edmonton, AB.
- Skilnick, J.L. 2006. Nov. 'Wildlife Conflict Management in the Eastern Slopes': plant and animal interactions, livestock and resource development, fieldwork and techniques. EVDS 725. University of Calgary, Calgary, AB.
- Skilnick, J.L, M. Musiani and M. Alexander. 2006. May. Habitat selection and effects on plant communities by a top herbivore: cattle. Organization of Wildlife Planners Conference. Poster presentation. Canmore, Canada.
- Skilnick, J.L, M. Musiani and M. Alexander. 2007. March. Habitat selection and effects on plant communities by a top herbivore: cattle. Prairie Conference and Endangered Species Conference. Poster presentation. Regina, SK.

GECF Final Report

GECF History with project:
This is the first year this project has received funding.

Identifying Essential Breeding Habitat for Burrowing Owls in Alberta

Project Location: Grassland Natural Region in Southern Alberta
Identifying Code: 030 20 90 101
Funding Allocation: $22,744.00

Principal Investigator: Dr. Erin Bayne
Contact Information: University of Alberta
Dept. Biological Science
Edmonton, Alberta, T6G 2E1
Email: bayne@ualberta.ca
Telephone: 780-492-4165

ACA Grant Status: Completed

Project Objective(s):
The western burrowing owl (*Athene cunicularia hypugaea*) is classified as an endangered species in Canada under the Species at Risk Act, and was recently uplisted from threatened to endangered under Alberta's Wildlife Act. Retaining and increasing habitat is one of the main approaches listed in the Alberta Species at Risk Recovery Plan for the burrowing owl. Identifying essential habitat is a vital component to this approach. The main objectives of this two-year project were to 1) develop spatially-predictive habitat models, at multiple scales, for burrowing owls in the prairie region of Alberta; 2) gather nesting success and productivity information at current nest sites in order to determine habitat characteristics associated with high productivity areas; and 3) integrate these predictive models into mapping software to effectively illustrate essential habitat for burrowing owls in Alberta. Specifically, the following questions have been addressed: 1) How is burrowing owl breeding habitat in Canada quantified with different species distribution models? How does method and resolution affect predictive capability? 2) Is there a link between high-occurrence areas and reproductive success for the burrowing owl? Is it possible to build and illustrate an environmental model that predicts high reproductive success?

Activities:
1. Collected and entered data into the database designed in Year 1 of this project. The database was designed to compile all recent and historical locations of Burrowing Owl nests in Alberta (and within the prairie region), thereby defining the species' current and former distribution. This element of the project will continue for the foreseeable future.
2. Completed identification of coarse-scale land use and environmental characteristics surrounding burrowing owl nests from 2003-2006. Developed three different preliminary models using three different techniques and this coarse-scale data and have refined two of these methods, Ecological Niche Factor Analysis and a logistic regression Resource Selection Function in order to compare specific qualities of the two models and their utility in defining burrowing owl habitat. Fine-scale data was also collected (ground-truthed using airphotos) from all nests from 2003-2005 and this data was digitized for use in a GIS database.
3. Nest success and productivity data was collected each year (2003-2006) during the summer breeding season at all nesting sites that were located. This past year, 80 burrowing owl sites – 65 new sites and 15 re-used were located and monitored. 69 of these sites were confirmed to be nests with nest success and fledging data.
4. The preliminary models created above with GIS software were integrated to create preliminary maps illustrating where potential habitat is located.

Link with ACA Priorities for 2006-2007:
This project, focused on a designated species at risk in Alberta, meets four of the five general Wildlife Funding Priorities for 2006-2007 and four of the Wildlife Objectives.
This project identifies suitable, essential habitat for Burrowing Owls in order to target habitat management and stewardship initiatives, allowing for the identification of priority areas for the conservation of the species. The burrowing owl is also associated with other grassland fauna, such as ground squirrels and badgers. Understanding the species-environment relationship for the burrowing owl will ultimately aid in the identification of additional Conservation Priorities regarding these other species (Wildlife Objective #1).

Population inventory and assessment is achieved by incorporating nest-site locations into a GIS, thereby defining the past and present ranges of the species, resulting in a year-by-year picture of the Burrowing Owl's distribution in Alberta (Wildlife Objective #2).

This project uses ecological concepts related to habitat evaluation studies, and applies these principles to model the species-environment relationship for a designated species at risk and identify known and potential breeding habitat. This will aid in the conservation and management of the owl, as well as contribute to the overall ecological knowledge of the species (Wildlife Objective #4).

The identification of essential habitat is an important part of both the Provincial and National Recovery Plans, a step that has yet to be completed. This project contributes to the implementation of these Recovery Plans by creating predictive models that can be integrated into mapping products to show areas of essential Burrowing Owl breeding habitat within Alberta. This project is also integrated within the Recovery Plan for the Burrowing Owl in Alberta (Wildlife Objective #6).

Partnerships:
University of Alberta; Environment Canada (Canadian Wildlife Service); Alberta Fish and Wildlife; Alberta Sport, Recreation, Parks and Wildlife Foundation – Development Initiative Program; Department of National Defense (Canadian Forces Base, Suffield); Environment Canada – Science Horizons Youth Internship Program; ACA

Burrowing owl
Photo: Erin Bayne

Deliverables:
The entire project is scheduled for completion in August 2007

- Database of all known Burrowing Owl nest sites in Alberta
- Multiple GIS maps (and models) of potential critical habitat for Burrowing Owls in Alberta (December 2006 and August 2007)
- Alberta Fish and Wildlife report (May 2007)
- Thesis publication, final reports and journal submissions (August 2007)
- GECF Final Report and a draft version of the first data chapter for inclusion in the final thesis publication.

GECF History with project:
This project received funding in 2005/06.

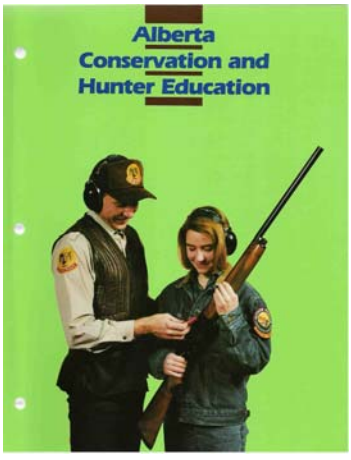
Re-print of Conservation and Hunter Education manuals

Project Location:	Coordinated from the Calgary office - Alberta-wide
Identifying Code:	002 40 90 105
Funding Allocation:	$24,500.00
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 Objective(s):
The Alberta Conservation and Hunter Education Program is noted as one of the finest in North America. This international award winning program is presented to Albertans by the Alberta Hunter Education Instructors' Association (A.H.E.I.A.), with approximately 15,000 students participating in the program annually. The Alberta Conservation and Hunter Education program manuals are an integral aspect of the Conservation Program, providing students with a comprehensive resource, which facilitates their learning to conserve, protect and enhance Alberta's biological natural resources. The manual is approved as part of the Alberta Education Curriculum and is distributed throughout both the public and private school systems as part of an accredited program in both the Alberta Junior and Senior High School Curriculum. The International Association of Fish and Wildlife Agencies have recognized this manual as the most outstanding of its kind in North America. The objective of this project is to re-print 15,000 copies of the Conservation and Hunter Education Manuals.

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 2006-2007:
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. 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 (General Habitat Funding Priority) Program participants, consumptive and non-consumptive alike, are taught the value of Alberta's unique biodiversity (Wildlife Objective #5).



Partnerships:
Rocky Mountain Elk Foundation, Alberta Professional Outfitters Society, Orion Foundation of Calgary

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

GECF History with project:
This project received support in 2004/05 and 2005/06.

Protecting Wolverines in Alberta Provincial Parks - How many are there and how well are they protected?

Project Location: West central Alberta: Willmore Wilderness Park
Identifying Code: 030 50 90 118
Funding Allocation: $25,000.00

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

ACA Grant Status: Completed

Project 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:
Three field data collection sessions were completed between December 2006 – March 2007.
All sites are equipped with state-of-the-art digital remote cameras (the initial proposal had roughly half of the sites with cameras), as well as hair-capture stations.

The following overall results were available (as of March 15, 2007):
- Session 1 (Dec - Jan): 14/30 sites with wolverine.
- Session 2 (Jan - Feb): 23/30 sites with wolverine.

In addition, this session ARC had close to 400 images of wolverine alone (and 70 at one site) and also have wolverine hair samples.
Total so far (Dec - Feb): 24/30 sites with wolverine (80% is unprecedented and well beyond expectations).

Link with ACA Priorities for 2006-2007:
This project focuses on the species-at-risk theme, and specifically addresses the following 2006-2007 Wildlife Objectives: 1) Identification of Wildlife Conservation Priorities, because as a *data deficient* species in Alberta, lack of information restricts an appropriate and defensible assessment (Wildlife Objective #1); 2) Population Inventory and Assessment because this project provides estimates of wolverine abundance in west central Alberta (Wildlife Objective #2); 3) this research is Applied Ecological Research because of the statistical rigour with which it is conducted, and the management recommendations originating from it will contribute to wolverine conservation (Wildlife Objective #4); 4) Recreational Opportunities as the study takes place within the boundaries of at least three Alberta Provincial Parks and Protected Areas (Wildlife Objective #5); and, 6) Species-at-risk Recovery Plan Support and Implementation because population estimates from this study will support future development of a wolverine management plan (Wildlife Objective #6). The wolverine is currently a quota furbearer, managed by the Province in the complete absence of any population inventory or trend information; this study will help supply some of these this sorely needed data. Information we collect on wolverine abundance will directly contribute to the Province's ability to designate a legal status for wolverine.

Partnerships:
ARC, ACA, Alberta Community Development (Parks and Protected Areas) and Parks Canada

Deliverables:
This is a 3-year project.
The 2006-2007 year-end report will be produced in Fall 2007, including 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:
A prior project - Alberta Wolverine Experimental Monitoring Project - received vital support from ACA over two years

Modelling Mercury Biomagnification in the South Saskatchewan River Basin

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Project Location: Oldman River and the South Saskatchewan River

Identifying Code: 020 50 90 101
Funding Allocation: $25,000.00

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

ACA Grant Status: Completed

Project 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.

The specific project objectives were:
1) To determine if mercury levels in important sport fish high enough to warrant the advisories issued in the Alberta fishing regulations.
2) To identify a mercury gradient along the Oldman River based on data from primary consumers (suckers, dace, and invertebrates).
3) To provide much needed information on 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 hypolimnic water from reservoirs.
4) To augment the Mercury Mass Balance Model (MMBM) previously described for lakes by workers in the lab 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.
5) 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.
6) To study mercury biomagnification in new and old irrigation reservoirs throughout southern Alberta.
7) To apply our refined MMBM to the habitat ranges upstream and including the Oldman reservoir.
They plan to establish the mercury exposure gradient in these reaches and will 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:
Biota ranging from invertebrates to forage fish and top predators in the Oldman River were examined. The exposure gradient reaching from the headwaters to the centre of Alberta's viable, irrigation-based agriculture was studied and the role of urban inputs of storm and domestic sewage effluent, as well as agricultural runoff, in increasing the mercury loading to the Oldman River was also examined.

Link with ACA Priorities for 2006-2007:
This study provides valuable data on the status of the fishery and quality of fish in the SSR basin. 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 Objective #4). 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 Objective #1). This knowledge is a fundamental requirement in the decision-making process of fisheries management.

Partnerships:
The laboratory and sampling equipment is provided by CRC/ CFI funding.
Funding for the graduate student comes from NSERC.

Deliverables:
This is the first year of a three year project.
Main findings to date are as follows:

1.) Have demonstrated that mercury levels in important sport fish are high enough to warrant the advisories issued in the Alberta fishing regulations.
2.) Have identified a mercury gradient along the Oldman River based on data from primary consumers (suckers, dace, and invertebrates).
3.) Have provided information on potential anthropogenic sources of mercury in prairie river systems such as agriculture (irrigation, intensive livestock operations), domestic sewage and urban runoff, clear cut logging, and hypolimnic water from reservoirs.
4.) Have applied the Mercury Mass Balance Model (MMBM) previously described for lakes and shows that it can account for the contamination in pike and walleye on the basis of trophic transfer through the food web from primary consumers (suckers, dace and invertebrates).
5.) Initial analyses indicate that the MMBM accounts for the contamination level seen in top predators without being adjusted to account for fish movements along the exposure gradient. Thus these fish appear to be acquiring their mercury from the local food chain.

More detailed results contained in the GECF Final Report.

GECF History with project:
This is the first year this project has received funding.

Rangeland Habitat Initiative

Project Location:	Southwestern Alberta – Eastern Slopes area
Identifying Code:	010 80 90 106
Funding Allocation:	$25,700.00
Principal Investigator:	Alan Gardner
Contact Information:	Southern Alberta Land Trust Society PO Box 45016 High River Alberta T1V 1R7 Email: salts_ed@shaw.ca Telephone: 403-646-2600
ACA Grant Status:	Completed

Project Objective(s):
The objective of this project is to help protect the wildlife habitat and watershed, and thus the natural biological resources, of the Eastern Slopes within the area of focus of the Southern Alberta Land Trust Society (SALTS). Within this objective SALTS has several areas of activity:

- ecosystem study and protection
- cooperative education and public policy initiatives
- development of range management tools.

Activities:
SALTS compiled and synthesized the scientific data on cumulative landscape and environmental trends in the study area, including trend data and projections for the environmental effects of agriculture, mining, oil and gas, recreation, forestry, rural residential (acreages), and other anthropogenic disturbances, as well as natural disturbance regimes.

The ecosystem study and protection objective was met with the completion of the 'Business as Usual' scenario of the Southern Foothills Study. This showed that the key indicators of health of the ecosystem in the study area have declined significantly over the past 100 years, and continue to decline at a rate of about 2% a year. Typical of this was the water quality index based on nitrogen, phosphorous and sediment.

The education objective was met by the seven public meetings which drew over 600 people to hear a one-hour presentation by Dr. Stelfox. Participants at meetings then had the opportunity to spend an hour discussing the results of the presentation and share their concerns and ideas. One of the key thrusts of the presentation was to introduce the concept of cumulative effects. A paper survey was then used to obtain detailed feedback from participants about the types and levels of concern for various aspects of the environment, and how cumulative effects should be used as a planning tool.

Link with ACA Priorities for 2006-2007:
This project aligns with a number of the priorities and goals laid out in the Alberta Conservation Association Strategic Business Plan, partly in the Fisheries Program vis-à-vis healthy watershed and riparian areas, but mostly in the Habitat Program vis-à-vis maintaining contiguous and healthy wildlife habitat. The project brings together multiple stakeholders in a corroborative fashion to find ways to protect and enhance the biological resources of the Eastern Slopes. In particular, SALTS works closely with the people who actually live and work on the land and who therefore have a large stake and influence on how the land and habitat is stewarded. (Habitat Objectives 1 & 4)

Partnerships:
The partners for the Southern Foothills Study and ongoing work include landowner groups, local government, industry and ENGOs. Specifically: Pekisko Group; Livingstone Landowner Group; South Porcupine Group; Alberta Wilderness Association; MD of Ranchland; MD of Pincher Creek; MD of Willow Creek; PetroCanada; Shell Oil

Deliverables:
Scientific data is now available which is useful in understand how the landscape and environmental health is changing, and is a base for intelligent land use planning.

Greater public awareness and knowledge of the concept of cumulative effects, as well as awareness and knowledge of the cumulative effects of all development on the study landscape.

A public survey presented in a report which outlines the level of concern by the public about the effect of development on the landscape, and public attitudes toward using cumulative effects to guide future development approvals by regulatory agencies and boards.

A powerpoint presentation summarizing the Southern Foothills Study is available on a CD.

The project generated significant media interest and coverage of the initiative and public meetings.

GECF Final Report

There are additional benefits of the work performed in this initiative, including:

1. Improved likelihood that stakeholders with an interest in the study area landscape will understand the importance of cumulative effects and work together to avoid or minimize the effect of future change on the environmental health and ecological services of the southwest Alberta foothills.
2. Increased possibility that the provincial and local government will improve the regulatory planning structure to protect the important assets of this area.
3. Improved awareness of the general public about the key role of this landscape as a source of water, the value of riparian zones, and importance of the native fescue grassland as a watershed cover.
4. Improved likelihood that the native fescue grassland will be protected and thus continuing its role in storing carbon in the soil (improved soil fertility and mitigating global warming).
5. Increased likelihood that the biodiversity will be maintained through greater awareness of cumulative effects, and improved planning by local and provincial governments.
6. The work to-date has created the opportunity to continue the dialogue and progress about environmental protection into the future.

GECF History with project:
This was the first year the project received funding.

Assessing the importance of wetland productivity and upland cover characteristics to waterbird populations in the Boreal Transition Zone

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Project Location: Boreal transition zone of Alberta
Identifying Code: 010 30 90 101
Funding Allocation: $28,000.00

Principal Investigator: Dr. Suzanne E. Bayley
Contact Information: University of Alberta
Dept. Biological Science, CW405 BSB
Edmonton, Alberta, T6G 2E1
Email: sbayley@ualberta.ca
Telephone: (780) 492-4615

ACA Grant Status: **Completed**

Project Objective(s):
Wetlands in the Boreal Transition Zone (BTZ) of Alberta provide important breeding, moulting and staging habitat for waterfowl, however the relationships between these birds and their habitat are poorly understood. In the BTZ, land use is changing rapidly with increasing deforestation to create pasture and croplands. Destruction of adjacent forest or shrub fringe may increase nutrient loading to wetlands and accelerate changes in trophic state, altering water and habitat quality for waterbirds. The objective of this project is to better understand effects of wetland and adjacent upland cover characteristics by surveying wetlands in native and agricultural landscapes to examine the effects of land use intensity on waterbird abundance and species composition.
The specific objectives were:
1) To determine the role of trophic states and limnological conditions in BTZ wetlands under varying agricultural intensities.
2) To determine how adjacent upland cover characteristics affect waterbird abundance on BTZ wetlands.
3) Integrate limnological, trophic state, and land cover attributes to predict waterbird abundance on BTZ wetlands.
4) To relate indicators of watershed disturbance and fragmentation to structural and functional indicators of lake “health”.

Activities:
Ground and helicopter surveys of a total of 126 ponds were completed in May and August (26 ponds in the Barrhead area, 33 ponds in the County West area, 20 ponds in the Grimshaw area, 36 ponds in the Lakalend area, and 11 ponds in the One Island area).

Helicopter surveys (with DU) assessed bird abundance and submersed aquatic vegetation (SAV) abundance and trophic status of over 250 ponds as well as cover (forested/agriculture) of surrounding uplands was also assessed. Ground surveys and helicopter surveys were used to collect water chemistry parameters in 126 of the 250 DUC study ponds. All data (wetland and bird) have been collected, entered, verified and collated for 2005 and 2006. This data collection meets objective 1 determining trophic states and limnological conditions in wetlands under varying agricultural intensities.
Objective 2 of determining adjacent upland cover characteristics and waterbird abundance and species composition on BTZ wetlands has been completed.
Objectives 3 and 4 are currently being worked on.

Link with ACA Priorities for 2006-2007:

This project is located in the boreal lakes of the boreal transition zone, one of the “priority landscapes” for Fisheries identified in the ACA Strategic Business Plan. Specifically, project activities address Objectives #1 and #4 of ACA’s Fisheries Program, in that information is provided on the abundance, structure, and use of aquatic habitats by select fish populations in this priority landscape. By working collaboratively with the DUC and the ACA/NAWMP projects a suite of watershed assessment indicators will be developed and the quality of those indicators to the aquatic community assessed. In addition the project will contribute indirectly to objectives of ACA’s Wildlife and Habitat Programs.

Partnerships:
This project builds on an on-going ACA/NAWMP project. Project partners include North American Waterfowl Management Program Science Fund. Additional funding provided by NSERC operating grants (S.E. Bayley and W.M. Tonn), and research grants to students from the Canadian Circumpolar Institute and Alberta Sport, Recreation, Parks, and Wildlife Foundation. In-kind support (costs of helicopter waterfowl surveys and GIS technician) provided by Ducks Unlimited Canada through J. Thompson.

Deliverables:
This is a two-year project final deliverables are anticipated in April 2008.
GECF Final Report, preliminary results can be found in this report.
Final report on year 1 and year 2 findings expected April 2008
3 peer-reviewed journal publications expected April 2008
2 M.Sc. theses expected April 2008

GECF History with project:
This project received funding in 2005/06.

Northern Alberta Non-game Fish Status Assessment – Year 4

Project Location: Northern Alberta
Identifying Code: 020 10 90 104
Funding Allocation: $29,535.00

Principal Investigator: Mark Steinhilber
Contact Information: Royal Alberta Museum
12845-102 Avenue
Edmonton, Alberta, T5N OM6
Email: Mark.Steinhilber@gov.ab.ca
Telephone: 780-453-9189

ACA Grant Status: Completed

Project Objective(s):
The objectives for the 2006 field season were to re-visit 30 of the sites surveyed between 2002 and 2005, including 15 sites that have already been surveyed four consecutive years, and to conduct initial reconnaissance surveys of 15 new sites in the Peerless Lake area. The ultimate analytic objective of this project is the generation of statistically robust population trend lines. 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 – was also a high priority component of this study.

Activities:
63 sites in northern Alberta were sampled including 18 new sites in the Peerless Lake area, exceeding the planned 45 sites with 15 new localities.

Over 7600 voucher specimens were added to the Museum's Ichthyology research collection. All data acquired have been entered into Fisheries Management Information System (FMIS) spreadsheets and will be submitted to ASRD.

The Museum's *Creature Collection* website was updated allowing public access to the 2006 specimen information.

Link with ACA Priorities for 2006-2007:
This project supports the following elements of ACA's Fisheries Program Priorities:
The Fisheries Management Enhancement Program highlights the need to understand the health of all fish populations in the province. This project focuses on the non-game species that typically receive less attention than the sport fishes but are fundamentally important to the sustained well-being of our game species.
This study encompasses a broad area within several of the defined priority regions for the Fisheries Program – rivers, streams, and lakes in the prairie-parkland and boreal regions. Objective 1 of ACA's Fisheries Program seeks to establish a monitoring program for selected fish species on 15 Alberta water bodies. A major component of this project has a similar objective for non-game species within the study area. The resulting data can be used in combination with ACA data to help provide a more robust assessment of fish populations over a larger area and over a longer time period.

The data and specimens collected in this study will also be valuable in communicating fish conservation issues to the public. The Royal Alberta Museum is currently undertaking a $180 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 Alberta Conservation Association is a major partner in our current "*Wild Alberta*" gallery and our "*Alberta's Fish Diversity*" website.

Partnerships:
Alberta Sustainable Resource Development
An increase in survey effort was made possible through additional seasonal staff that the Royal Alberta Museum acquired through federal employment programs.

Deliverables:
7600 voucher specimens were added to the Museum's Ichthyology research collection
A detailed project report has been revised and updated to include results of the 2006 field activities.
Up-dated *Creature Collection* website
GECF Final Report

GECF History with project:
This was the fourth year of funding for this project (since 2002/03). An earlier project, also supported by ACA, provided an additional year of relevant data resulting in five consecutive years of monitoring information from some sites.

Modeling deer movements to predict CWD spread in Alberta

Project Location: Chauvin, Alberta
Identifying Code: 030 10 90 113
Funding Allocation: $30,000.00

Principal Investigator: Dr. Evelyn H Merrill
Contact Information: University of Alberta
Dept. Biological Science, CW 405
Edmonton, Alberta, T6G 2E1
Email: emerrill@ualberta.ca
Telephone: 780-492-2842

ACA Grant Status: Completed

Project 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:
A report was written evaluating 3 methods of trapping used during winter 2006 (box traps, Clover traps, drop nets) after one deer died of capture myopathy; report was submitted to Alberta Fish and Wildlife.

In summer 2006, compilation of GIS layers for the general study area was initiated in collaboration with ASRD and Saskatchewan Environment.

In July 2006, forage classes (forbs, grasses, shrubs) were sampled across the general study area for preliminary estimates of forage abundance within habitats.

Newsletters for the project and a website were developed and this information communicated to all landowners and project participants.

Chris Garrett's MSc project proposal for modeling habitat-based deer movements from Saskatchewan into Alberta was developed and accepted.

In Nov 2006, planning was initiated for the 2006-2007 winter field season. In Nov and Dec 2006, a total of 116 landowners were contacted for permission to either trap or track radiocollared deer in the area (only 4 landowners denied access to their lands). Based on field reconnaissance, four "intensive" study areas were delineated within the larger study area east of Wainwright, AB. The four intensive areas for studying

deer were chosen to represent the range of variation in landscape patterns encountered in across the area, and served for focusing deer captures in winter 2006-2007
.
Since the beginning of the study (winter 2005-2006), a total of 197 deer have been captured, with 25 of these being recaptures of 10 individuals. Of these, 81 deer were captured using a net-gun from a helicopter, 3 deer using a drop net, and 113 deer using Clover traps. Eight deer were released without handling (all fawns caught with their dams). Of the total 172 individual deer captured, 36 deer were collared with GPS and 93 VHF collars. The remaining deer could not be collared because they were either bucks (not collared during the pilot study) or fawns. During handling, 153 tissue samples were collected for genetic studies, and the condition and measurements of 68 deer were recorded. Of the 129 collared deer, *119 collars are still being tracked*. The other 10 deer are no longer being monitored (Two mule deer bucks broke the expandable collars. Two other collars are believed to have failed. The remaining 6 lost collars were from Dillberry where three deer were shot by hunters, one deer was killed in a vehicle collision, one deer died from capture myopathy, and one deer is undergoing a necropsy to determine the cause of death.)
In Feb 2007, started recording the size and composition of deer herds.
Other collected biological data includes 171 deer feces for diet analysis, and 104 coyote scats to determine how the proportion of deer in their diets changes over time.

Link with ACA Priorities for 2006-2007:
The ACA Wildlife funding priorities focus on projects designed to enhance the sustainability of wildlife species through science-based conservation. This project relates to one of the four thematic areas, ungulates. Invasion of infectious diseases into Alberta poses direct threats to the long-term abundance of wildlife in Alberta. In particular, CWD is the only transmissible spongiform encephalopathy in free-ranging cervids, including elk, moose, mule deer, and white-tailed deer. It has 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. (Wildlife Objectives #1 & 5).

Partnerships:
ASRD-Fish & Wildlife; Saskatchewan Environment Fish & Wildlife; Alberta Prion Research Institute; Rocky Mt. Elk Foundation; Alberta Fish and Game; Alberta Professional Outfitters; FNAWS.

Deliverables:
This project is the first year of a three-year field effort (2007-2009)
Presentations: Two presentations outlining the objectives and achievements of the project have been delivered to public advisory committees (PACs) in Senlac, SK (Feb 2006) and Empress, AB (Sept 2007). A poster with similar information was presented at the PrioNET 2007 conference in Calgary in Feb 2007 and at the Northwest Chapter of The Wildlife Society conference on 19 March 2007.

Newsletters were produced in June 2006, November 2006, and April 2007, which have updated over 100 landowners plus over 50 people in government and education on the projects progress and goals.

GECF Final Report (contains preliminary results on deer captures and movements)

Longer-term deliverables include:
• Strategic positioning of the province to effectively mitigate the spread of CWD and real-time assessment of response strategies for informed management and mitigation.
• Directed augmentation of surveillance & monitoring of CWD prevalence.
• Biologically meaningful delineation of population units for monitoring CWD.
• Improved projections of spatially explicit spread & transmission risk of CWD.
• Publication of innovative research in local, national and international journals (2009)

GECF History with project:
This is the first year this project has received funding.

The Economic Benefits of Recreational Fishing on the Bow River: Canmore to Bassano

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Project Location: Bow River (Canmore to Bassano)
Identifying Code: 020 10 90 101
Funding Allocation: $30,000.00

Principal Investigator: Dr. William Holden
Contact Information: University of Calgary
Department of Geography/Program of Environmental Science,
2500 University Drive NW
Calgary, Alberta, T2N 1N4
Email: wnholden@ucalgary.ca
Telephone: (403) 220-4886

ACA Grant Status: Rescinded

Project Objective(s):
The objective of this project was to study the contribution made to the economy of Southern Alberta by the recreational fishing industry on the Bow River. The Bow River is beginning to acquire a reputation as an excellent venue for trout fishing. Trout fishing, along with irrigation, is one of Alberta Environment's focal points for ensuring water quality in the Bow River. If the maintenance, or even *enhancement*, of water quality in the Bow River attracts increased numbers of trout fishers to Alberta the expense of ensuring water quality could pay for itself or possibly even act as a sustainable source of economic growth for our Province. Accordingly, the economic benefits of trout fishing would serve as a fertile area of research. Research could be conducted on: Alberta's reputation as a trout fishing destination; the amount of, and spatial distribution of trout fishing in Alberta; and the amount of income trout fishing provides the Alberta economy. These findings could then be compared and contrasted with the expense of ensuring, or even *enhancing*, water quality in the Bow River. The results could go a long way towards debunking the time honored myth that there is a "trade-off" between protecting the environment (on one hand) and having a healthy economy (on the other hand).

Activities:
This project was not completed; the researcher determined that he could not carry out this project.

Link with ACA Priorities for 2006-2007:
This project proposal was consistent with the ACA's funding priority of conserving, protecting, and enhancing Alberta's fisheries and aquatic resources.

Partnerships:

Deliverables:
The project was not completed. Grant money returned to ACA GECF.

GECF History with project:
This was the first grant for this project.

Hunting For Tomorrow Foundation – Working Group Deliverables

Project Location: Alberta wide
Identifying Code: 002 70 90 101
Funding Allocation: $32,000.00

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 Objective(s):
HFTF has three primary goals that all activities are focused towards achieving:

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.

Activities:
Fact Sheets & Display Stands: Fact sheets covering 20 topics were made available across Alberta
Media Awareness: Television and radio interviews were given and newspaper articles were prepared.
Youth & Female Hunter Kits: Over 355 Youth Kits and 157 Female Hunter Kits were distributed to youth and female hunters throughout Alberta.
Adventure of a Lifetime: An essay contest was organized with numerous trips as prizes; trips included: a whitetail deer hunt, waterfowl (migratory birds), black bear hunt to name a few.
Youth & First Time Hunter: A large focus was directed at attracting youth and first time hunters to become involved with hunting in Alberta. Specific locations were secured for mentorship programs to take place and include the Edmonton International Airport, Genesee Power Plant (Epcor) and 4 Wing Cold Lake. Mentored hunts took place for big game and waterfowl.
Economic Impact of Hunting: This survey would gather data related to direct expenditures as well as food, equipment, transportation, accommodation, license fees and ammunition costs. The data collected would be focused on Alberta rather than a national survey.
Landowner Survey**:** A subcommittee was set up of representatives of HFT, ACA and UofC. A student of Dr. C. Gates, UofC was assigned the project to carry out the landowners survey. A meeting with Alberta Beef Produces was also organized.

Link with ACA Priorities for 2006-2007:
The primary role of HFTF has a direct, complimentary link to the activities of the Alberta Conservation Association, as it is focused on recruitment and retention of hunters, which is a primary funding source to ACA (Financial Objective #1).
The coalition of hunting organizations within the Province includes all major stakeholder groups. The role of HFTF is to strengthen the work of other hunting organizations within the Province, through positive, organized and focused efforts and therefore works in a collaborative manner to provide sustainable recreational opportunities (General Habitat Program Priorities).

Considerable focus is spent on “access for hunting”, including Access/Landowner Workshops and stakeholder meetings to increase awareness and participation about cooperative efforts and opportunities, as well as promote an enhanced awareness about the relationship between landowners and resource users and the opportunities to work together (Habitat Objective #4).

The program also works to develop and support opportunities to enhance consumptive wildlife related recreational experiences for all Albertans (Wildlife Objective #5)

Partnerships:
Alberta Bowhunters Association, ACA, AFGA, Alberta Hunter Education Instructors’ Association, Alberta Professional Outfitters Society, Canadian Historical Arms Society, Canadian National Sportsmen’s Shows, Devon Fish & Game Club, Ft Saskatchewan Fish & Game Club, Foundation for North American Wild Sheep, Innisfree Fish & Game Club, Pope & Young Club, Red Deer Fish & Game Club, Rocky Mountain Elk Foundation, Safari Club International, and Sherwood Park Fish & Game Club.

Deliverables:
Fact Sheets & Display Stands: The HFT Fact Sheets are displayed at over 93 locations across Alberta, including Government offices, retail stores, tourism centers and head offices of various Alberta organizations.
Media Awareness: Television interviews were broadcast on 5 channels and radio interviews were aired across Alberta and 9 articles were published in 19 publications across Canada.
Youth & Female Hunter Kits: Over 355 Youth Kits and 157 Female Hunter Kits were distributed to youth and female hunters throughout Alberta.
Adventure of a Lifetime: An essay contest was organized with numerous trips as prizes; trips included: a whitetail deer hunt, waterfowl (migratory birds), black bear hunt to name a few.
Youth & First Time Hunter: In total, 143 mentored hunts took place for big game and waterfowl hunting opportunities.
Landowner Survey**:** Alberta-wide survey of landowner attitudes to hunting
2006 Hunting for Tomorrow Foundation Annual Report
GECF Final Report

Youth hunter from mentorship program.
Photo: Hunting for Tomorrow Foundation’s 2006 Annual report

GECF History with project:
This program has received funding since 2002/03.

New field techniques for estimating wolf densities and predation rates in the Central East Slopes of Alberta: Models for wolf sightability and kill-site identification

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Project Location: Rocky Mountain House/Nordegg region, Central East Slopes
Identifying Code: 030 10 90 107
Funding Allocation: $33,000.00

Principal Investigator: Dr. Evelyn H Merrill
Contact Information: University of Alberta
Dept. Biological Science, CW 405
Edmonton, Alberta, T6G 2E1
Email: emerrill@ualberta.ca
Telephone: 780-492-2842

ACA Grant Status: Completed

Project Objective(s):
This research, developing a new technique to identify wolf kill-sites using GPS collars, began in 2005. While the winter predation period was focused on during the first year of this effort, in 2006 the researchers utilized a similar approach to develop estimates of wolf predation rates during summer, when kills are more difficult to find due to the availability of smaller prey items in the form of ungulate young, a decline in pack cohesiveness, and frequent return trips to den and rendezvous sites to provision pups. Empirical estimates of wolf predation rates during summer have long been lacking from the body of knowledge on wolf-prey interactions, with the result that ungulate population models may not incorporate accurate species or age-specific predation rates, particularly in multiple prey systems. The specific project objectives for this work were to:

(1) Capture, collar, and monitor the small-scale movements of wolves and devise a statistical method for identifying potential “movement clusters” as predation sites.
(2) Conduct field reconnaissance at a sample of these sites to determine prey killed from remains and other signs.
(3) Model the probability of a “movement cluster” being a predation site for different ungulate species and validate the model using data collected in #2.
(4) Develop estimates of wolf kill-rates in the central east slopes of Alberta.

Activities:
Successfully deployed 4 remote-downloadable GPS collars in 2 wolf packs (the alpha male and female of each pack were collared) in May-July 2006. Complete failure of 2 of the original 6 downloadable GPS collars during the winter 2006 deployment prevented their use during the summer period, however they successful deployed 3 additional non-downloadable GPS collars in May 2006. Two of these collars were retrieved in December 2006; the third failed and has not been recovered. Remote-downloadable collars were programmed to collect locations at 15-minute intervals for 2-week periods throughout the summer, with field crews visiting all GPS locations during these periods to search for prey remains and collect scats where prey remains were not found. Using this technique, crews successfully located 18 ungulate prey items of multiple species and age classes, including deer fawns.

All field efforts associated with wolf kill-site modeling have been completed, and the data analysis for the winter component is also complete. They will complete data analysis and modeling efforts for this component of the work by summer 2007.

Link with ACA Priorities for 2006-2007:
Major goals of the ACA 2006-2009 Strategic Plan include supporting wildlife projects that collect population data and complete conservation studies on status, movement and ecology of priority species (Wildlife Objective #2 & 4), as well as enhancing consumptive wildlife recreational experiences (Wildlife Objective #5). This research provides a novel method that will not only enhance the reliability of data currently used to meet these objectives, but provide data that was not previously possible to obtain. Development of this method allows for quantification of wolf predation rates on ungulate species. A major goal of Sustainable Resource Management's wolf management program is to maintain wolf populations at a level that assures healthy ungulate populations for recreational use by humans. Because data on wolf predation rates in this area is lacking, managers are forced to use unreliable estimates of predation in models used to predict allowable ungulate harvest and set hunting season regulations. Efforts by Dr. M. Boyce (UofA) to revise ungulate harvest models used by SRD-Fish and Wildlife for establishing hunting season quotas are currently underway in this area so the timing of this project is opportune.

Partnerships:
University of Alberta; ASRD; Alberta Professional Outfitters Society; National Science and Engineering Research Council; Weyerhaeuser Company; Sunpine Forest Products; Sundance Industries; Foundation for North American Wild Sheep; Alberta Trappers Association; Safari Club International; Red Deer River Naturalists.

Deliverables:
Preliminary results: Final analyses are not yet completed; these data represent some of the first information collected on wolf summer kill-rates in North America, and highlight the utility of GPS collar locations to address this poorly understood aspect of wolf-prey relationships. Preliminary analyses suggest kill-rates of 7.3 ± 4.1 ungulate kills/pack/month, including 3.3 ± 1.2 neonates/pack/month. Analyses are currently underway to develop a logistic regression model to predict summer kill-rates using GPS collar location data collected from wolf packs during summer 2004-2006.

Final project results will be available in the form of a PhD thesis in December 2007.

The work on the winter component of the predation modeling has been completed. Results of this project have been submitted for publication in the *Journal of Wildlife Management*. This manuscript is currently under review. One to two additional peer-reviewed journal articles are anticipated.

Many presentations have been given.

GECF Final Report

Wolf kill in winter.
Photo: Nathan Webb

GECF History with project:
This project received 2005/6 funding from the GECF to develop and implement new aerial survey techniques and to develop a model to estimate wolf kill rates from GPS collar data. This project extends these efforts for a second year, allowing additional data collection and refinement of model parameters.

Ephemeral and intermittent streams: are they important in maintaining biodiversity in a forested landscape?

Project Location: North-western Alberta
Identifying Code: 010 20 90 105
Funding Allocation: $35,500.00

Principal Investigator: Brian Eaton
Contact Information: Alberta Research Council
Integrated Resource Management, P.O. Bag 4000
Vegreville, Alberta, T9C 1T4
Email: brian.eaton@arc.ab.ca
Telephone: (780) 632-8307

ACA Grant Status: Completed

Project Objective(s):
Riparian areas associated with small ephemeral and intermittent streams are poorly understood. Research on headwater streams in mountainous areas suggests these water courses are important habitat for amphibians, and support unique patterns of vegetation. However, the role of low order streams in the ecology of the boreal mixed wood forest of Alberta is virtually unknown, despite the fact that they are the most frequently-occurring type of water course on the landscape, and typically represent more than 50% of the channel length in a watershed. To address this knowledge gap this project examines the importance of ephemeral and intermittent streams and their riparian zones in terms of plant, herptile, and terrestrial arthropod biodiversity in north-western Alberta. In addition, the relationship between biodiversity levels within these groups and the distance from a stream was determined to provide data on the width of buffer strips necessary to protect biodiversity around ephemeral and intermittent streams.
The specific objectives were to determine:

(1) if understorey plant diversity is different in the riparian zone of ephemeral and intermittent streams compared to surrounding upland habitat;

(2) if it is possible to detect the presence of ephemeral and intermittent streams based on vegetation signatures;

(3) if terrestrial arthropod diversity and abundance is related to the presence of ephemeral and intermittent streams; and

(4) if ephemeral and intermittent streams are used by herptiles (amphibians and reptiles), the distribution and abundance of herptiles relative to streams, and if these parameters vary seasonally.

Activities:
Drift fence / pitfall trap arrays were established at 11 sites throughout the 2006 field season, and were monitored as often as possible to gather information on seasonal changes in amphibian use of riparian and upland habitat around the study streams.

Link with ACA Priorities for 2006-2007:
This project deals with protection of riparian zones (Habitat Objective #4) by studying the importance of ephemeral and intermittent streams. At present, riparian zones associated with ephemeral and intermittent streams, which are the most frequently encountered aquatic habitats parts of Alberta's boreal forest, are unprotected during industrial activity. Without an understanding of the importance of these

habitats to biodiversity, appropriate management and conservation plans cannot be formulated. Riparian areas are critical habitat for numerous species. Research in other regions suggests that plant, terrestrial arthropod, and herptile biodiversity and/or abundance may be highest at ephemeral and intermittent streams compared to adjacent uplands.

With regard to the wildlife program priorities, the study area supports several species of herptiles with "sensitive" status in Alberta (western toad, wandering garter snake, and red-sided garter snake), and there are reports of leopard frogs (status "at risk") approximately 100 km south of the proposed study site. Given the paucity of surveys or research in the region, it is possible that leopard frog populations may be in the region, but undetected (Wildlife Objective #6).

Partnerships:
Daishowa Marubeni International Ltd. (DMI) is committed to this project as a proactive step toward understanding the impact of timber harvesting on the biodiversity of the boreal forest in their FMA. Other partners include: ARC, the Canadian Forest Service; and Manning Diversified Forest Products Ltd.

Deliverables:
This was the first year of a two year project.

A total of 5690 trap nights were accumulated during the 2006 season. During this time, three species of amphibians were captured: wood frogs (*Rana sylvatica*), boreal chorus frog (*Pseudacris triseriata*), and boreal toad (*Bufo boreas*). In total, 264 amphibians were captured, with the majority (261) being wood frogs. Only 2 boreal chorus frogs and 1 boreal toad were trapped.

Several talks and presentations were given. A talk entitled "Small streams: buffer strip width and amphibian habitat" at the Canadian Amphibian and Reptile Conservation Network conference in Victoria, British Columbia on Oct. 28, 2006. Two presentations on amphibian ecology (which included information on this project) were given at the Forest Explorers event in Peace River and two days were spent interacting with high school kids at the same event, showing them four species of live amphibians (Nov. 1 – 2, 2006). ACA funding was acknowledged during the presentations.

A number of journal articles are planned based on this project, but will not be produced until the project in completed. Therefore, the anticipated completion date for these articles would be by the end of 2009.

Some preliminary results can be found in the GECF Final Report.

GECF History with project:
This was the first grant for this project.

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

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Project Location: Rocky Mountain House/Caroline
Identifying Code: 090 30 90 102
Funding Allocation: $36,709.00

Principal Investigator: Dr. William Tonn
Contact Information: University of Alberta
Department of Biological Sciences
Edmonton, Alberta, T6G 2H1
Email: bill.tonn@ualberta.ca
Telephone: 780-492-4162

ACA Grant Status: Completed

Project 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:
Amphibian sampling: Sampled (by transect and pit fall traps connected with plastic fencing) amphibians at 12 lakes in the Caroline and Rocky Mountain House region.

Forage fish sampling: Mark and recapture sampling was carried out on eight lakes to estimate population size for each native species. On other study lakes, catch-per-unite effort values were obtained using minnow trapping. Diel distribution and movement of forage fishes was examined using a spatially stratified sampling design over a 26-28 hr period. Traps were set in- and off- shore and at the surface, midwater and bottom of the lakes and checked every 6 hrs. For all sampling, 50-100 fish of each species was measured each time a lake was visited to describe the size-structures of the populations.

Macroinvertebrate sampling: 10 littoral/benthic sweeps were performed on each of 11 lakes in both early May and mid-late August. Samples were preserved in ethanol to be sorted later. Activity trappes were also deployed on the lakes but with limited success.

Food-web analysis: Littoral macroinvertebrates and forage fish from the sediments and macrophytes of 12 study lakes were collected. Invertebrates were sorted in the field, held for 24 hrs to void gut contents and frozen. Representatives of the forage fish species were also sorted and frozen. Trout from the 4 stocked lakes were harvested by angling, gut contents were retrieved by gastric lavage. Stable isotope

analysis was conducted on invertebrates, forage fish, and trout samples to construct a food-web for each lake.
Physical, chemical and Biological Properties: water chemistry samples were taken monthly from each of the lakes and were sent to the UofA Limnology lab for analysis. Temperature loggers were deployed mid-June and collected in mid-late August.

Presence/absence bird surveys were conducted twice on all lakes.

Detailed macrophyte surveys & bathymetric measurements were conducted on three of the lakes identified by SRD as good candidates for future stocking.

Link with ACA Priorities for 2006-2007:
This study focuses on to what extent, and how, the trout-stocking and aeration program interacts with and affect native communities, to help guide ACA (and AB-SRD) in the design and management of this program. Indeed, the goal of this 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. The researchers are incorporating basic components of ecological impact assessment to allow for “an effective, credible” study, and are working collaboratively with ACA and SRD to maximize effectiveness of the study. In this sense they hope to contribute to the Fisheries strategy of “collaboratively develop…standards for …monitoring assessments” (Fisheries Objective #1).

This project also relates to two objectives within the Habitat Program. As the research assesses amphibian populations in and around the study lakes, it can contribute to a “program that identifies priority areas, tools and monitoring protocol to be used” in the management of riparian habitat (Habitat Objective #1). More directly, the work should contribute to the development and maintenance of “habitats that provide recreational opportunities” (Habitat Objective #4). Although not specifically focused on neither the mechanics nor the limnology of aeration, the study is directed towards providing science-based information that ACA can use when they “develop and implement a lake aeration program using standard protocols” (Objective #4). Clearly, the stocking-aeration program is designed to create/enhance recreational angling opportunities. The information collected during this study should, as mentioned above, contribute to the overall success and “effectiveness…of the lake aeration program”, contributing information that should help ensure that it is operated in ways that minimize adverse impacts on the native fauna of these small-lake ecosystems.

Partnerships:
ACA East Slopes Business Unit (in-kind support); University of Alberta (equipment, facilities, student support, Canadian Circumpolar Institute); Alberta Sport, Recreation, Parks and Wildlife Foundation; NSERC (research grants, USRA)

Deliverables:
This is the second year of this two and a half year project. This project had been granted an extension until end of June 2007 to complete laboratory analysis.
GECF Final report.
Presentations to ACA staff and at public outreach meetings in Rocky Mountain House.
Presentations at provincial (e.g., PIC), national (SCL/CCFFR), and international (AFS, ESA) conferences (2006-2008)
M.Sc. theses (2008)
Articles for peer-reviewed scientific journals (2008).

GECF History with project:
This project received funding in 2005/06.

Monitoring Important Bird Areas (MIBA) – Phase II: Global Framework

Project Location: At select IBA sites throughout Alberta
Identifying Code: 030 50 90 111
Funding Allocation: $38,560.00

Principal Investigator: George Newton
Contact Information: Federation of Alberta Naturalists
11759 Groat Road
Edmonton, Alberta, T5M 3K6
Email: georgen@fanweb.ca
Telephone: 780-427-8124

ACA Grant Status: Completed

Project Objective(s):
The global Important Bird Areas (IBA) program, led by BirdLife International, has three overarching goals: the Identification, Conservation, and Monitoring of IBAs. With *identification* essentially completed for Alberta and *conservation* underway at select Alberta IBAs, for the last couple of years the Federation of Alberta Naturalists (FAN) has been attempting to establish a comprehensive *monitoring* program for the bulk of Alberta's 48 IBAs. Integral to FAN's IBA monitoring program is reliance on a core of competent birders who volunteer to conduct the appropriate field surveys at the target IBAs—citizen science at its best.

When FAN initiated this program, called the IBA Volunteer Monitoring Programme (VMP), no jurisdiction (country, state or province) in the Americas was comprehensively monitoring their suite of IBAs. Since then, BirdLife International has released its Global Framework (GF) for monitoring IBAs. Since the GF dovetailed well with FAN's VMP and, in fact, extended it by adding significant value, FAN decided to pilot the GF this field season. 'All eyes are on us' as Alberta is the first jurisdiction to actually use the latest version of the Global Framework.

FAN's main IBA project objectives in this pilot year were: 1) to have volunteers conduct reconnaissance surveys (as per our VMP) at eight 'new' IBAs; 2) pilot the more rigorous GF protocol at eight IBAs, using both volunteers and contractors; and 3) to evaluate and report on the progress of the first two objectives, and then relate them to the future of IBA monitoring in Alberta.

Activities:
At the outset FAN upgraded the original objectives, in that rather than conduct reconnaissance surveys at eight IBAs, as per "Objective 1," it was decided to survey all sites using the Global Framework protocol.

In total, fourteen IBA sites received GF treatment, as per "Objective 2." Volunteers surveyed eight IBAs: Wavy Lake; Dillberry, Killarney and Leane Lakes; Schultz Lake; Sunken and Metiskow Lakes; Hansmann Lake; St. Lawrence Lake; Gooseberry Lake; and Sounding Lake. Contractors surveyed six IBAs: Beaverhill Lake; Manawan Lake; Ministik, Joseph and Oliver Lakes; Sullivan Lake; Kirkpatrick and Fitzgerald Lakes; and Whitford and Rush Lakes. One other IBA site, Lakeland Provincial Park and Recreation Area, received GF treatment after the fact (i.e., converted an earlier survey, from 2005, into GF values).

The evaluation of this pilot project and the summary IBA monitoring report with recommendations (as per Objective 3) is being completed.

Link with ACA Priorities for 2006-2007:
The bulk of the IBA sites targeted this season for both reconnaissance and baseline surveys embrace two of four of ACA's Wildlife thematic areas, namely, *waterfowl* and *species at risk*. Additionally, the IBA monitoring contributes to at least two of the five Wildlife Objectives, in particular, *Population Inventory and Assessment* (Wildlife Objective #2), and *Species-at-Risk Recovery Plan Support and Implementation* (Wildlife Objective #6). Additionally, within the context of IBAs, *Wild(bird)life Conservation Priorities are Identified*.

Partnerships:
IBA partners include BirdLife International, Nature Canada, Bird Studies Canada, the Canadian Wildlife Service, the Royal Alberta Museum, ASRD, and Alberta Parks and Protected Areas (without the generous logistical support of Lakeland's Provincial Park staff, the Red-necked Grebe survey of Lakeland would not have occurred). Local partners at Alberta IBA sites include a number of FAN clubs, cottage associations, and other grassroots organizations. The Alberta IBA Program has received funding from ACA; Alberta Ecotrust Foundation; National Fish and Wildlife Foundation (US); and Alberta Sport, Recreation, Parks & Wildlife Foundation.

Deliverables:
FAN’s roster of volunteer bird monitors and contractors, for IBAs and other bird monitoring projects, is robust and continues to grow.

14 IBA sites received Global Framework monitoring treatment.

Additionally, FAN has constructed a GF database, one amenable to the collection and storage of qualitative data (a key part of the GF framework). When the profile for each site is complete, the data will be forwarded to the proper databases.

The summary IBA monitoring report is to be completed and is anticipated to be complete later in 2007. A draft preliminary monitoring report will be forward to ACA in the meantime (which is not intended for public consumption). The project evaluation aspect, including recommendations for future monitoring, will accompany the finished IBA summary report.

GECF History with project:
This project received funding in 2005/06.

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

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Project Location: The Rocky-Clearwater Forest, west of Rocky Mountain House
Identifying Code: 030 10 90 106
Funding Allocation: $39,080.00

Principal Investigator: Dr. Mark Boyce
Contact Information: University of Alberta
Dept. Biological Science, Z 907
Edmonton, Alberta, T6G 2E1
Email: boyce@ualberta.ca
Telephone: 780-492-0081

ACA Grant Status: **Completed**

Project 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 they intend to produce results 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 our study area and develop models capable of extrapolating population size to nearby Cougar Management Areas.

Activities:

- captured and collared 15 adult cougar (before April 1, 2006)
- monitored (and continue to monitor) each radiocollared cougar intensively—at least once every two weeks—using a combination of ground and aerial telemetry until 1) the cougar died, 2) the cougar's collar failed or 3) the collar was removed after its GPS battery was depleted. [They experienced catastrophic failure of 5 cougar collars this year and have since retrieved four of these and have returned them to Lotek for warranty.]
- GPS data from the functioning collars were downloaded bi-monthly whenever possible or monthly when this proved to be impossible. Clusters of GPS locations were visited on the ground to search for predation events. So far, >1100 GPS location clusters have been visited, identifying >450 kill or scavenging events. This provides the information used to determine the composition of cougar-killed prey and the rate at which cougars kill each prey species. This method works extremely well, but almost certainly some kills, especially of smaller prey such as hare and ungulate neonates, are missed. The data collected represent a near census of large ungulate kills for each cougar over the entire period that it was collared, constituting the most detailed information on cougar predation ever collected.
- Monitoring also allowed evaluation of cougar survival and mortality. A number of mortalities of radiocollared cougars over the course of the first year were documented. Cougar hunting is an

important recreational and economic activity in the study area and two of the collared cougars (one male and one female) were harvested legally by licensed hunters in December 2006.

- GPS radiocollar technology allowed for monitoring of habitat use and movement patterns of cougars. GPS location fixes were attempted every 3 hours by the collar. Fix success is somewhat lower than expected (averaging approximately 60%), but the collars have still managed to collect over 15,000 location points thus far.
- The GPS cluster visitation methods allowed for estimates of kill rate year round and they were able to document cougar predation on deer fawns as well as large numbers of moose and elk calves. Neonatal calf and fawn predation had been difficult to quantify prior to the advent of GPS collars and the Boyce lab can provide data to fill this gap.

Link with ACA Priorities for 2006-2007:
This project meets the Wildlife Program Priorities: Population inventory and assessment and applied ecological studies (Wildlife Objectives 2 & 4). Healthy predator populations require suitable numbers of prey using habitats amenable to successful predation. Habitats that contain high prey populations but no stalking cover, or vice versa, will not sustain predator populations. Similarly, the capacity of habitats to support ungulate populations might be a function not simply of the availability of high-quality forage but also of predation risk. This project directly addresses these issues with respect to cougars and their ungulate prey. 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.

Partnerships:
ACA, Alberta Professional Outfitters Society, Alberta Chapter of Foundation for North American Wild Sheep, Northern Alberta Chapter of the Safari Club International, National Science and Engineering Research Council of Canada, Alberta Ingenuity, Calgary Zoo, Yellowstone to Yukon Conservation Initiative, the Alberta Wilderness Association, Alberta Sport, Recreation, Parks and Wildlife, Rocky Fish and Game Association, and Alberta Sustainable Resource Development, among others.

Deliverables:
This is a two year project with an end date of November 2008

Kyle and Aliah Knopff attach a GPS radiocollar to adult female
Photo by: Jim Mitchell, SRD

- GECF Report: "Central East Slopes Cougar Study. First Field Season Progress Report: December 2005-December 2006" contains preliminary results
- Over 450 incidents of predation have been document thus far.
- Published results in the form of several journal articles (2008 or earlier)
- A final thesis detailing all project findings (2008)

GECF History with project:
This project received funding 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:	010 20 90 107
Funding Allocation:	$45,010.00
Principal Investigator:	Martin Sharren
Contact Information:	Alberta Fish & Game Association 6924-104 Street Edmonton, Alberta, T6H 2L7 Email: martin@afga.org; kerry@afga.org Telephone: 780-437-2342
ACA Grant Status:	Completed

Project Objective(s):
Operation Grassland Community (OGC) is a habitat stewardship program of the Alberta Fish & Game Association focusing its activities in the Grassland Natural Region. Since 1989, OGC has worked one-on-one with landholders in the region to maintain what remains of native grassland habitats and manage them in ways that are compatible and beneficial for species at risk, such as the Burrowing Owl and the Loggerhead Shrike, and other grassland species. The aim is to 1) protect grassland habitats through 5-year habitat stewardship agreements and habitat conservation strategies with landholders, 2) provide awareness to students, landholders, and other target groups of the status and challenges facing grassland species at risk and their habitat through live presentations, printed, electronic, and other media, 3) improve the breeding habitat of the Burrowing Owl, the Loggerhead Shrike, and multiple species at risk through habitat assessments, wildlife inventories, and the development of management plans and habitat enhancement projects, 4) streamline and coordinate our activities with government agencies, the industry, other habitat stewardship and conservation organizations working in the Grassland region through partnerships, participation on grassland working groups, committees, and recovery teams, and through communication with an increasing network of prairie conservation partners.

Activities:
1. **Long-term protection of wildlife habitat in the grassland region**:

a. Stewardship agreements: since April 1st, 26 new 5-year voluntary stewardship agreements were developed with landholders, protection of an additional 154,600 acres of native prairie habitat. This is actually 1,446% more land protection than originally projected for the year and meets the planned 25-30 agreements.
b. Vauxhall Grassland Conservation Project: Raptor, loggerhead shrike, amphibian, and snake surveys were conducted and their habitat was assessed on the 63,000 acres of land leased by the Vauxhall Stock Grazing Association. A report summarizing the findings and providing preliminary recommendations for the protection and the management of the land was produced.
c. Burrowing owl and loggerhead shrike censuses, renewal of 5 year stewardship agreements, and update of OGC's People and Land database: OGC members were called in order to re-affirm their interest in the program, update their contact information, seek to renew the commitment of 41 members whose 5 year stewardship agreement expired this year, increase the response rates for the burrowing owl and the loggerhead shrike mail censuses, and to eliminate the backlog of data to be entered in OGC's People and Land database.

2. **Ongoing growth in awareness of prairie wildlife habitat needs, species at risk, habitat conservation, and sustainable agricultural practices**:

a. Habitat stewardship and species conservation issues were discussed on a one-on-one basis with 487 landholders during phone calls, house visits, and booth attendance at 6 auctions during the Angus Advantage Week and at the Alberta Fish & Game Association's Annual Conference.
b. Presentations: 13 presentations were given to approximately 285 people.
c. Education: OGC continued their partnership with Science Alberta Foundation in promoting and lending the "Interactions and Ecosystems: Owls and Cows" educational crate to schools and youth groups across the prairie region. The crate has received a minimum of 15 bookings from locations throughout Alberta since April 1st.
d. Media opportunities: OGC produced a radio announcement for the landowner information day which aired on June 9, during the "Call of the Land" radio show on CKUA. Many articles were written and published (see final report for more details).
e. Newsletters: The first bi-annual newsletter was produced and mailed to about 370 OGC members.
f. Fact Sheets: OGC customized and re-printed 5 of the 8 anticipated fact sheets from the Saskatchewan Watershed Authority on the management of invasive species in the grassland.
g. OGC web site: was updated and maintained on an as-needed basis. Six fact sheets in a "pdf" format have been added to site.
h. Natural Resource Inventory Reports: reports were completed for 14 landowners.
i. Other outreach/awareness activities: On June 14, OGC organized a landowner information day near Cessford on the benefits of off-site watering systems to the burrowing owl and to cattle operations.

3. **Improve and enhance quality of the land**:
a. Site-specific Management Plans: A total of 12 sites were assessed and management plans for the burrowing owl were developed and printed. Another 16 sites were assessed and management plans for the loggerhead shrike were developed and printed.
b. Habitat Enhancement Projects for the Burrowing Owl: (not supported by ACA) Two off-site watering systems purchased in November 2005 were installed on one OGC member's property and fencing was completed around each in June 2006. OGC revisited three sites where foraging habitat projects were developed for the burrowing owl last year and conducted some repairs. Damages at one site were beyond repairs and that project was cancelled. OGC assisted one of its members to convert his 40 acre parcel of cropland to native grassland last October. All 26 new members were informed about OGC foraging habitat enhancement projects. Four potential sites were identified for next fiscal year and 3 could be visited.
c. Monitoring of Burrowing Owl Habitat Enhancement Projects: (not supported by ACA) visits to all active project sites showed good grass growth (prey habitat), thanks to abundant moisture in early June.
d. Impact of road mortality on prairie snakes: The snake hibernaculum on the Peigan Creek Property south of Seven Persons was visited by OGC staff on September 25. There were too few data available at this time to justify putting up signs. However, several rattlesnake road-kills were observed in late July on Highway #876 near Wardlow. The signs have been purchased and were put up in time for the spring migration.

4. **Maintain and increase prairie conservation partnerships**:
- OGC continued its partnership with the Vauxhall Stock Grazing Association, ASRD, and Ducks Unlimited Canada.
- OGC is a member of the Milk River Watershed Council Canada
- OGC participated in the Prairie Conservation Forum meetings.
- OGC provided half day training to 4 Blood Tribe researchers on grassland bird species at risk identification for their species at risk conservation program and provided training on Habitat Suitability Index modeling to 3 staff of the Tribe's Land Management Branch for their species at risk program development.
- OGC attended the Alberta Burrowing Owl Recovery Team meeting in Brooks and the National Burrowing Recovery Team in Winnipeg. Also attended the Alberta Ferruginous Hawk Recovery Team meeting in Lethbridge, and the National Prairie Loggerhead Shrike Recovery Team in Saskatoon.
- One OGC member attended the 8th Prairie Conservation and Endangered Species Conference.

- OGC participated in the Prairie Species-at-Risk Beneficial Management Practices consultation workshop in Cypress Hills.
- OGC collaborated with Alberta Fish & Game Division, Alberta Tourism, Parks, Recreation and Culture, and Alberta Infrastructure and Transportation to identify vulnerable road areas for snake crossing, as well as for the purchase, installation and maintenance of 5 road signs in the Wardlow area and on the south end of Dinosaur Provincial Park.
- OGC and its landowner members collaborated with the Canadian Wildlife Service again this year in support of their burrowing owl re-occupancy surveys and nest monitoring research project.
- Through its burrowing owl and loggerhead shrike censuses OGC and its supportive landholder members are contributing their burrowing owl or loggerhead shrike locations to the provincial Fish and Wildlife Management Information System (FWMIS). This information will be provided to ASRD in an effort to increase collaboration with the Gov't in the conservation of species at risk.

Link with ACA Priorities for 2006-2007:

The OGC program meets many of the ACA priorities. Under the Habitat priorities, it meets Objectives 1, 3, 4 and 7:

Through foraging habitat enhancement projects for the Burrowing Owl, OGC collaborates with private landowners in fencing-off riparian areas, setting up off-site watering systems, seeding trampled riparian areas with native species, and managing riparian areas to reduce or eliminate invasive species (Habitat Objective #1)

OGC is a grassroots habitat stewardship program that works directly with private landowners to secure and enhance grassland habitats for species at risk and other grassland wildlife through conservation initiatives such as voluntary habitat stewardship agreements, habitat enhancement projects, personalized land management plans, and habitat conservation strategies (Habitat Objective #3).

Through voluntary habitat stewardship agreements and awareness of best management practices for wildlife, coulees, riparian areas, and other important native grassland habitats are secured. Best management practices on members land also ensure healthy rangelands and increased water quality that contribute to the health of the entire watershed. All these practices optimize hunting and fishing opportunities and other recreational pursuits (e.g., photography, bird watching etc…) (Habitat Objective #4).

Through voluntary habitat stewardship agreements, native prairie habitats for provincial Species at Risk such at the Burrowing Owl and the Northern Leopard Frog are maintained. In addition, Burrowing Owl nesting and foraging habitats will be improved through habitat enhancement projects (e.g. off-site watering systems, native grass seeding, strategic placing of mineral blocks or cattle oilers, etc.). Burrowing Owl breeding habitat will also be directly and significantly improved through development and implementation of individualized Burrowing Owl Management Plans. Multiple SAR, including Burrowing Owl, and Northern Leopard Frog, habitat will be maintained and enhanced on the Vauxhall Grazing Association's leased-land through development of a habitat conservation strategy for the M.D. of Taber and management recommendations to the Association for the conservation of these and other grassland species. (Habitat Objective #7)

Under the Wildlife priorities, it meets Objectives 1, 2, 3 and 6:

OGC collaborates with Alberta Fish & Wildlife Division, Alberta Public Lands & Forests Division, Duck Unlimited Canada, M.D. of Taber, and the Vauxhall Grazing Association to identify knowledge gaps in the identification, distribution and management and conservation needs of species at risk on the leased lands managed by the Vauxhall Grazing Association. OGC is an active member on the Prairie Conservation Forum made up of over 40 stakeholders with interests in the development and implementation of the Prairie Conservation Action Plan. It is also part of the Grassland Conservation Working Group whose objective is to identify and initiate collaborative stewardship and conservation activities within the Grassland Natural Region (Wildlife Objective #1).

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 16th year of census for the Burrowing Owl and the 3rd year for the Loggerhead Shrike. The Burrowing Owl census represents one of the best indicators of Burrowing Owl trends in the provincial population (Wildlife Objective #2).

OGC will be conducting monitoring of prey (microtine rodents and grasshoppers) abundance at four 2005-2006, and up to eight 2006-2007 Burrowing Owl foraging habitat enhancement project sites and at a similar number of control sites to determine if the habitat enhancement projects have a positive impact on prey populations. In addition, OGC will collaborate with the Canadian Wildlife Service at those sites to determine the impact on productivity of owls (Wildlife Objective #3).

OGC participates on both the Alberta and the national recovery teams for the Burrowing Owl and on the national Loggerhead Shrike Recovery Team. OGC continues to share its annual estimates of Burrowing Owl numbers with both recovery teams. In addition, OGC's 2006-2007 program activities will have positive impacts on the recovery of species at risk (Wildlife Objective #6)

Partnerships:
Environment Canada - Habitat Stewardship Program for Species at Risk; ACA, AFGA, Alberta Fish and Wildlife Division; Alberta Sports, Recreation, Parks & Wildlife Fund; Landowners; Alberta Infrastructure and Transportation; Anadarko Canada Corporation; Shell Canada; Landholder members of OGC; Science Alberta Foundation ; Canadian Wildlife Service; Medicine Hat Interpretive Centre; Alberta Agriculture Food &Rural Development; Alberta Environment; Nature Conservancy Canada; Saskatchewan Watershed Authority; Alberta Public Lands and Forests Division; Ducks Unlimited Canada; M.D. of Taber; Vauxhall Grazing Association; Anadarko Canada Corporation

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.

Community Conservation Partnership

Project Location: Parkland Natural Region of Alberta
Identifying Code: 010 20 90 108
Funding Allocation: $45,400.00

Principal Investigator: Dave Johnson/Martin Sharren
Contact Information: Alberta Fish & Game Association
6924 – 104 Street
Edmonton, Alberta, T6H 2L7
Email: parkland@afga.org
Telephone: 780-437-2342

ACA Grant Status: Completed

Project Objective(s):
The Community Conservation Partnership works with partners to protect and enhance habitat within working landscapes. The specific project objectives are:

- To raise the awareness of local conservation priorities, and sustainable land management techniques within the parkland ecosystem to rural landowners, community groups and local municipalities.
- To provide a farm-based service that actively engages agricultural producers in both monitoring ecosystem health and developing farm projects to improve/protect the environment.
- To facilitate the development of a community-based partnership involving agriculture producers, industry and government in the conservation and enhancement of local habitat/biodiversity values.
- To develop club and volunteer resources in the achievement of the above goals.

Activities:
Extension Resource Development, Fact Sheet Series: four titles developed to complement the AFGA Landowner Toolkit Series of fact sheets.

Initial baseline water quality monitoring was collected during the spring runoff from Tide Creek, Maskwa Creek, and several creeks within the Beaver Hills moraine.

Community Meetings/Field Days were held. Farm Water Watch Program was presented. Program participants were recruited. Public were educated on local water quality issues.

On Farm Site Assessments: Surface water activity on a site-specific basis was reviewed. Land-use activities, aided by aerial photograph interpretation were also reviewed. A sampling protocol was developed.

Water Sampling and Analysis: Water collection at points and times was determined by site assessment. Samples were analyzed by a trained technician for concentrations of Phosphorus, Ammonia and Nitrate. Results were recorded for use in developing beneficial management practices.

Beneficial Management Practices: Participants were presented with a site-specific information package outlining environmental risks and opportunities for improvement, as well as potential funding opportunities for projects identified. This was based on On-farm site assessment and water sampling results.

Website was further developed.

Link with ACA Priorities for 2006-2007:
The Community Conservation Partnership fits well within the ACA 2006 – 2009 Strategic Business Plan, specifically the Habitat Objectives 1 & 4. This project facilitated the development of a community-based partnership involving agriculture producers, industry and government in the conservation and enhancement of local habitat/biodiversity values (Habitat Objective #1). This project promotes healthy ecosystems and stimulates 'Voluntary Conservation Agreements' representing locally significant habitats (Habitat Objective #4).

Partnerships:
Provincial and municipal governments as well as local watershed and conservation groups, including Lakeland County, Beaver Hills Initiative, Brazeau County, and Lac La Nonne.

Deliverables:
Five Fact Sheets written and published. Titles include: "What Water Quality Means to You", "Your Farm, and the Environment (understanding the science)", "Watersheds Alive – The Biodiversity and Ecosystems of Small Streams and Wetlands", "Riparian Buffer Strips – How much is enough?", and "Farm Runoff – Waste not Want not". Fact sheets are available to all interested parties from the AFGA.

Community meetings, in conjunction with Lac-La-Nonne watershed group, were held in Lakeland and Brazeau counties. An information session was held in conjunction with Strathcona County (Beaver Hill Moraine). Landowner meetings were held with landowners on Maskwa, Conjuring and Pipestone creeks.

On Farm Site Assessment:
Some delays were experienced due to large amount of snowfall and length of winter temperatures.

- 'Natural Resource Inventory' completed for six participants, the balance of participants to be completed this spring.
- On-farm surface water testing completed with 25 Farm WaterWatch participants in 2006. An additional 25 to be completed this spring. Original goal of seventy-five landowner participants may not be achieved given the unexpected responses from landholders.
- 'Farm Conservation Plans' for proposed habitat enhancement projects (to enhance fisheries and/or wildlife values on participating lands) completed with all program participants to date.
- AFGA have secured 'Voluntary Conservation Agreements' representing locally significant habitats.
- Support given to 20 program members in specific farm/habitat improvement projects by linking participants to additional resources of financial and/or technical support.

Beneficial Management Practices: Completed for all program participants for the spring 2006 sampling. Delayed due to weather conditions but will be completed by end of May, 2007.

Final stewardship awards and presentations have been made on an on-going basis, as it was unfeasible to have recipients from the parkland travel to Medicine Hat to receive awards.

GECF Final Report

GECF History with project:
This project builds on a two-year pilot project supported by the GECF (Conservation Lands Project).

Partners in Habitat Development

Project Location:	Southern Alberta
Identifying Code:	010 40 90 102
Funding Allocation:	$50,000.00
Principal Investigator:	Rick Martin
Contact Information:	Partners in Habitat Development c/o Eastern Irrigation District., PO Bag 8 Brooks, Alberta, T1R 1B2 Email: rmartin@eidnet.org Telephone: 403-362-1414
ACA Grant Status:	Completed

Project Objective(s):
The PHD project assists landowners with new conservation efforts and helps them modify their day-to-day farming operations to benefit a diversity of wildlife species, including upland game birds, waterfowl, numerous passerines, mule deer, white-tailed deer and various species of small mammals. Projects included planting trees and shrubs on cultivated lands, fencing, construction and food plots.

Activities:
- 126,712 trees and shrubs were planted
- 20 kilometres of fencing were installed
- 85 acres seeded to permanent grass cover
- Construction projects: 1 water delivery and 400 metres of pipeline installed to supply water to preserve existing habitat in an abandoned ditch.
- 13 kilometres of Drip Tape was applied to newly planted habitat sites to assist with irrigation of these sites.
- 2 landowners agreed to leave a total of 5.5 acres of standing grain as wildlife food plots.

Link with ACA Priorities for 2006-2007:
High collaborative component dedicated to habitat development (Habitat Objective #1). A number of species of risk will benefit from this habitat including the Loggerhead Shrike and the Northern Leopard Frog (Wildlife Objective #6).

Partnerships:
The PHD program is a unique, cooperative venture comprised of a diverse cross-section of industry, government, corporate and private sector partners, including 300 private landowners who voluntarily set aside acres of farmland and ranchland for habitat development, and water and soil conservation. Other donors include: Prairie Farm Rehabilitation Administration; Pheasants Forever – Calgary Chapter; Eastern Irrigation District; Ducks Unlimited Canada (NAWMP); Bow River Irrigation District; Newpark Drilling Fluids; Brooks and District Fish and Game Association; Brooks Pheasant Festival; Lethbridge Northern Irrigation District; Pheasants Forever – Lethbridge Chapter; Wheatland Conservation and Wildlife Association; St. Mary River Irrigation District, and many others.

Deliverables:
Many tree planting and fencing projects across Southern Alberta
GECF Final Report and PHD Annual 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.

Atlas of Breeding Birds of Alberta: Update Project

Project Location: Alberta-wide
Identifying Code: 030 40 90 103
Funding Allocation: $58,000.00

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 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 has completed 5 years of data collection with the help of volunteer atlassers across the province.
The Bird Atlas has been completing the data analysis and publication phase of the project where collected data is reviewed, processed for analysis and compiled. The processing of Bird Atlas data is targeted towards producing scientifically descriptive and defensible statistics, with an emphasis on data analysis that has management or conservation applications.

Link with ACA Priorities for 2006-2007:
The Bird Atlas will allow the ACA to meet a number of its 2006 - 2009 goals and objectives.
This project collects scientifically credible data on the distribution and abundance of breeding birds in Alberta (including two priority groups, waterfowl and game birds) to support their management (General Wildlife Funding Priority).

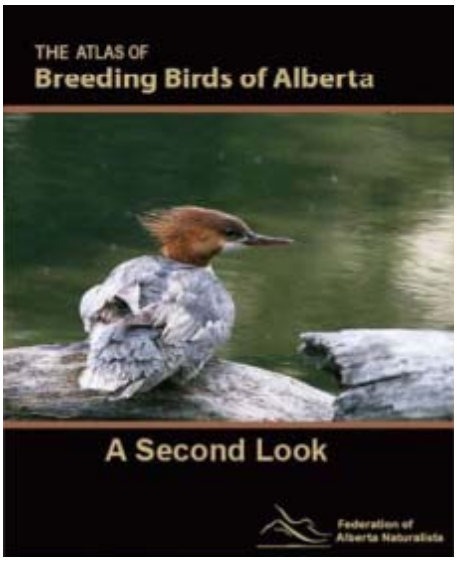
No other wildlife surveying initiative provides the broad geographic coverage of the collection and compilation of information on breeding birds in the province which is entered into a data management

system (Wildlife Objective #2). This process is being done in collaboration with researchers and volunteer atlassers across Alberta. This process will identify knowledge gaps. (Wildlife Objective #1)

The Atlas project provides an opportunity for Albertans to become involved with a natural history related activity, and to inform and educate Albertans about wildlife and the natural environment. This initiative also facilitates the reporting of more and better quality data by volunteer atlassers (Wildlife Objective #5).

Bird Atlas data is an invaluable source for identifying important habitat types, population centres and land-use practices that influence the distribution and abundance of breeding birds. As such it can play an important role in the formulation of management plans aimed at the conservation of birds and their habitats, including endangered bird species. Data collected for the Alberta Bird Atlas is currently being applied to species at risk recovery plans compiled by ASRD (Wildlife Objective #6).

Partnerships:
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 Weyerhauser.



Deliverables:
The major product is the Atlas (expected publication date June 2007), containing updated distribution maps, relative abundance estimates and comprehensive analytical results relating bird distribution and abundance to habitat availabilty, and predictive models linking projected population and distribution changes with land-use practices.

Natural History Database: Over 570,000 bird field observations have been logged in the database in over 3,200 atlas survey squares.

GECF Final Report

GECF History with project:
This project has been supported since 2002/03.

Cows and Fish: Managing Riparian Areas Through Community Collaboration

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Project Location: Alberta
Identifying Code: 090 20 90 101
Funding Allocation: $70,000.00

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 Objective(s):
Cows and Fish is a voluntary riparian stewardship program working in partnership with landowners, farmers, ranchers, lakeshore residents, communities, agencies and groups on riparian awareness and management. Cows and Fish is not exclusively about cows, creeks and fish, but about wetlands, watersheds, people and communities too.

The specific project objectives are:
1. to increase the 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. to improve understanding of range and pasture management principles, as well as provide realistic management options, to assist producers in using sustainable grazing practices.
3. to increase the appreciation and understanding of riparian health and the need to maintain or improve management, resulting in healthier riparian areas.

Activities:
Awareness and Education: Cows and Fish carried out activities relating to riparian-related education and awareness included presentations, field days, workshops and tours to watershed groups, conservation organizations and resource managers.

Team Building: Train the Trainer: This activity helps increase expertise among resource management staff across Alberta. The 'train the trainer' work is done through both formal training, as well as informal training and mentoring, including providing advice, expertise, and management decision assistance related to riparian topics. [Review of formal evaluations indicates that 100% of respondents felt that the training helped them understand more about riparian areas and their management.]

Tool Building: Landowners, land managers and resource professionals were assisted in land use and land management decisions by creating tools that allow for more effective, informed decisions.

Riparian Soils Research: A second year of riparian soil sampling was completed with LandWise Inc.. This research, when complete, will have examined 180 riparian sites at 90 unique riparian plant community and habitat types, across the Grassland and Parkland Natural Regions (including sites in the Peace Parkland, and with limited sites in the Montane Natural Subregion).

Evaluation: Evaluations from riparian awareness and management events organized and delivered by Cows and Fish were implemented and have been very positive.

Link with ACA Priorities for 2006-2007:
Cows and Fish began as a collaboration between ranchers and the biological-fisheries community; their experiences have continued to emphasize their commitment to promoting community-based, locally-led initiatives that support team building and collaboration. The Cows and Fish program supports the ACA Fisheries Program and Habitat Program Objectives:

Cows and Fish promotes a well-accepted and tested indicator of watershed condition. The riparian health assessment and inventory method, which Cows and Fish brought to Alberta nearly a decade ago, is widely accepted as the preferred method for evaluating the health of riparian areas. Saskatchewan, Manitoba, and BC have also adopted the riparian health assessment methodology as their method of choice. In addition, Cows and Fish's continual refinement and testing of riparian assessment methodology enables ACA staff, who currently use the method, to apply the best, most appropriate riparian health assessment tool available. (Fisheries Objective # 4)

The backbone of Cows and Fish activities is to connect to individuals and groups at the local level. This provides a potential window for ACA to engage with and collaborate with landowners and groups who have decided to identify and address local riparian issues. In past years, Cows and Fish have frequently linked landowners and local groups with ACA for resources and support on riparian enhancement projects. Through community-based work and riparian health inventory efforts, they regularly find interested individuals that would be candidates for riparian enhancement projects—opportunities that can be passed onto ACA (Habitat Objective #1)

The Cows and Fish riparian program is also beneficial to ACA in the development of habitat programs for ungulates and grassland habitats (Habitat Objectives #2 & 3). Cows and Fish work with the livestock grazing community has provided us many opportunities to collaborate with land managers and improve or maintain habitat. The continued collaboration with the livestock grazing community will improve grassland habitat directly, as well as provide ACA with the opportunity to connect with additional landowners.

Partnerships:
Counties and Municipal Districts, Producers and Community Groups, Alberta Beef Producers, Trout Unlimited Canada, Canadian Cattlemen's Association, Alberta Agriculture, Food and Rural Development, Alberta Environment, Alberta Sustainable Resource Development, Department of Fisheries and Oceans, Prairie Farm Rehabilitation Administration (Agriculture and Agrifood Canada), ACA, Alberta Environmentally Sustainable Agriculture, Greenhouse Gas Mitigation Program.

Deliverables:
Awareness**:**
• Provided riparian ecological function, range, and grazing awareness and management information at presentations, display booths, field days, and other activities totaling at least 270 activities, involving approximately 4,000 individuals.
• Working with Fisheries and Oceans staff and graphic designers, and input from others the field, Cows and Fish have nearly completed two new fact sheets on soil bioengineering.
• The Cows and Fish website has been very active, receiving nearly 40,000 visits from 1.3 million hits in 2006-07, resulting in an average of 3,424 visits per month.
• 11 requests for two Riparian Classification documents, 19 requests for copies of the scientific journal article "Can Cows and Fish Co-exist?", and provided digital copies of numerous evaluation reports to individuals in extension research, policy and academia.
• At least 151 information requests were filled, in addition to self-downloadable materials via web site distribution/on-line ordering of information, including fact sheets, brochures, and booklets

• At least 7 magazine, local community newspapers articles and newsletters used articles or information provided by Cows and Fish.
• Distributed 4,340 printed awareness documents and estimate that, including fact sheets and larger booklets like *Caring for the Green Zone,* approximately 7,000 copies are given away at presentations, workshops, conferences, and available at many offices of our partner organizations
• Delivered the “Cows, Fish, Cattle, Dogs, and Kids!” game show and board at parks, conservation centres, schools and other venues; 189 times this year, with an audience of 2,840
• Provided 418 youth activity sheets (via printed or downloadable versions) and provided over 1,700 at on-site events.

Tool Building**:**
• As part of their new extension tool technique using digital storytelling, Cows and Fish have profiled 3 producers, with 3 new stories that provide case studies on successful riparian management.
• Provided training to resource conservation staff on riparian ecology, riparian health and riparian management - held 10 riparian training workshops with 153 attendees.
• Due to increased numbers of other activities requested and completed, they were unable to complete the development of *The Magic and Mystery of Fish*.
• imagery of 2 watersheds (including areas in the foothills, grassland and Peace regions) was captured using low-level aerial photography.

Hands-on and field activities:
• held field days and tours on riparian health, plant identification, range/pasture health and riparian grazing strategies at 23 field-based activities, involving at least 376 people.
• provide riparian health awareness and riparian grazing information at 2 women’s grazing schools.
• Cows and Fish worked with landowners and community groups to review and assist in the development of demonstration sites and worked with partners at the county and local watershed group level to assist in the development of 2 new demonstration sites. One site involves a small river in the grassland, while the other has been established in the parkland on a small stream, both will be monitored.
• GECF Final Report

GECF History with project:
The Cows and Fish program has had GECF funding since 1997 and previously was funded via ACA trust fund since 1992.

APPENDIX A

Alberta Conservation Association

Grant Eligible - Conservation Fund

Project Submission Guidelines For Funding in 2006 - 2007

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 2006/2007 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 2006 – 2007**

Section D: **Grant Application Screening & Decision Process**

Alberta Conservation Association®
Funded by Alberta Anglers, Hunters, and Other Conservationists

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: info@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, 2006 for funding consideration in the 2006/2007 fiscal year. Applications received after **16:30** on **January 31, 2006** 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 2006-2009;
- 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, 2006 and March 31, 2007;
- 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 2006 – 2007

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

ACA Wildlife Program Priorities for 2006-2007

ACA's Wildlife Program is designed to enhance the sustainability of wildlife species through science based conservation. Our focus will be on four thematic areas, including ungulates, upland game birds, waterfowl and species at risk. Our objectives are prioritized at the provincial scale within the following five activities: (i) Identification of Wildlife Conservation Priorities; (ii) Population Inventory and Assessment; (iii) Applied Ecological Studies; (iv) Recreational Opportunities; and (v) Species-at-Risk Recovery Plan Support and Implementation. Pivotal steps in our program development are timely discussions with external experts and stakeholders to gain insight and build opportunities for collaboration.

ACA Fisheries Program Priorities for 2006-2007

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. We view conservation as the sustainable and responsible participation in the social and consumptive use of fish and aquatic resources, while realizing the importance of protecting healthy ecosystems.
Recognizing the importance of different spatial scales and processes that sustain healthy ecosystems, we have identified seven priority landscapes or aquatic resource types representing rivers and streams in the northeast and southern slopes of the Rocky Mountains and the prairie-parkland and boreal regions, the entire Milk River drainage, and lakes within the boreal and prairie-parkland regions.

Additionally, critical threats and stressors for each of these priorities have been identified and specific objectives and conservation strategies have been developed to diminish these threats. ACA recognizes these strategies and actions to be essential to the development and delivery of a fisheries program that both meets our responsibilities as a delegated administrative organization and meets our stakeholders' expectations.

ACA Habitat Program Priorities for 2006-2007

ACA's Habitat Program is committed to maintaining or increasing habitat for priority species or populations that are habitat limited and to provide sustainable recreational opportunities. Alberta's fish and wildlife rely on a diversity of habitats and ACA's Habitat Program works collaboratively with many conservation agencies and individuals to promote habitat stewardship. Our habitat program is designed to be orientated towards providing on-the-ground enhancements that are providing habitat for numerous wildlife and fish populations. Programs are delivered in an effective, credible and collaborative manner and are delivered to meet our habitat program vision.

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.

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, 2006. Successful grant applicants will normally be expected to follow the ACA Cooperative Project Agreement.

APPENDIX B

Alberta Conservation Association

Grant Eligible - Conservation Fund

April 1, 2006 to March 31, 2007

Cooperative Project Agreement

Between

ALBERTA CONSERVATION ASSOCIATION (ACA)

-and-

RECIPIENT
(Name, Address & other contact information)

Project Title:
Project Code: **000-00-00-000**
Maximum Funding:
Effective Date:

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, 7th Floor, O.S. Longman Building 6909 - 116 Street Edmonton, AB T6H 4P2 Attn: **David Fairless, GECF Project Administrator**	Telephone: 780.644.6833 Cell: 780.974.1334 Facsimile: 780.422.9685 Email: david.fairless@ab-conservation.com

B. FUNDING TERMS AND CONDITIONS

The Alberta Conservation Association Agrees to:

Provide a maximum contribution of **$0.00 dollars (zero dollars and zero cents)** during the 2006-2007 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, 2007) 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/licences 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, 2006: (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, 2007.** 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
David Fairless		
Alberta Conservation Association	Signature	Date

SCHEDULE A

PROPONENT'S PROJECT PROPOSAL

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

SCHEDULE B

PAYMENT SCHEDULE 2005 - 2006

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 Code: 000-00-00-000
Maximum Funding: $0.00

The maximum contribution of **$0.00 (zero dollars and zero cents)** for the 2005-2006 fiscal year will be divided into payments, as follows:

Payment One:
An initial contribution of **$0.00** 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:
$0.00 will be paid upon receipt of an interim report and signed Request for Payment on or before September 1, 2006.

Final Payment:
The remaining **$0.00**, which represents 15% 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, 2006

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 2006/2007:

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 7th Floor, O.S. Longman Building 6909 - 116 Street Edmonton, AB T6H 4P2 Attn: **David Fairless, GECF Project Administrator**	Telephone: 780.644.6833 Facsimile: 780.422.9685 Cell: 780.974.1334 Email: david.fairless@ab-conservation.com

APPENDIX C
Table: Project results in relation to Strategic Business Plan 2006-2009 and Major Funding Priorities of the Conservation Fund 2006-2007

Fisheries Objectives			
	# of projects	GECF projects	
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. We view conservation as the sustainable and responsible participation in the social and consumptive use of fish and aquatic resources, while realizing the importance of protecting healthy ecosystems."	**11**	Millennium Creek Project (Bow Valley Habitat Development; 020 60 90 102) Genetic analysis of walleye (UofA 020 10 90 111) N AB non-game fish status assessment Yr 4 (RAM 020 10 90 104) Living by Water (FAN 090 40 90 101) Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102) South Raven River Spawning Preservation (Dickson F&GA 020 60 90 103) McLeod River rehabilitation project (TUC 090 50 90 102) Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020 50 90 101) Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101) Assessing the effects of fish on waterbird abundance in shallow lakes in the Boreal Transition Zone (UofA 030 20 90 102) Assessing importance of wetland productivity and upland cover characteristics to waterbird populations (UofA 010 30 90 101)	
		GECF projects	GECF project result
FISHERIES OBJECTIVE 1: Provide timely and accurate information describing the abundance, structure and use of aquatic habitats by select fish populations.	**5**	N AB non-game fish status assessment Yr 4 (RAM 020 10 90 104)	A major component of this project is to monitor non-game species in north Alberta, which encompasses many of the priority fisheries landscapes. The resulting data can be used in combination with ACA data to help provide a more robust assessment of fish populations over a larger area and over a longer time period.
		Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020	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.

		50 90 101) Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101) Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102) Assessing the effects of fish on waterbird abundance in shallow lakes in the Boreal Transition Zone (UofA 030 20 90 102)	 Cows and Fish promote a well-accepted and tested indicator of watershed condition, which they continually refine and test. This riparian assessment methodology will enable ACA staff, who currently use the method, to apply the best, most appropriate riparian health assessment tool available. 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. Information is provided on the abundance, structure, and use of aquatic habitats by select fish populations in this priority landscape.
FISHERIES OBJECTIVE 2: Determine the level of watershed fragmentation and sedimentation caused by stream crossings in select drainages and collaboratively develop remediation plans to diminish these effects.	**0**		
FISHERIES OBJECTIVE 3: Describe and monitor levels of angler use, harvest and demographics on select waterbodies.	**0**		
FISHERIES OBJECTIVE 4: Develop a suite of watershed assessment indicators and report on overall disturbance of watersheds.	**3**	Modelling mercury biomagnification in S. Saskatchewan R (ULeth 020 50 90 101) Assessing effects of fish on waterbird abundance in shallow lakes in the BTZ (UofA 030 20 90 102) and Assessing importance of wetland productivity and upland cover characteristics to	This study provides valuable data on the status of the fishery and quality of fish in the SSR basin. Information on mercury contamination in important game fish, as well as identification of potential sources and locations of elevated risk is provided. A suite of watershed assessment indicators will be developed and the quality of those indicators to the aquatic community assessed.

		waterbird populations (UofA 010 30 90 101)	

Habitat Objectives

GENERAL HABITAT FUNDING PRIORITY: "ACA's Habitat Program is committed to maintaining or increasing habitat for priority species or populations that are habitat limited and to provide sustainable recreational opportunities… ACA's habitat program works collaboratively with many conservation agencies and individual to promote stewardship."	**28**	Recreation and wildlife in the Rockies of SW Alberta (Miistakis Institute 010 20 90 104) Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112) Fur Management: Past and Present an Alberta perspective (ATA 030 40 90 104) Re-print Conservation and Hunter Education Manuals (Alberta Hunter Education Instructors' Association 002 40 90 105) Partners in Habitat Development (PHD- EID 010 40 90 102) Living by Water (FAN 090 40 90 101) Riparian Area Man't Improvements (MVC 010 20 90 106) Riparian Fencing Initiative (RDC 090 20 90 102) Rangeland Habitat Initiative (SALTS 010 80 90 106) Community Conservation Partnership (AFGA 010 20 90 108) Large woody debris in small streams (UBC 020 80 90 101) Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101) Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102) Operation Grassland Community (AFGA 010 20 90 107) Ecosystem effects driven by cattle habitat (UofC 010 40 90 103) White Bark Pine Survey (AWA 035 20 90 101) Ephemeral intermittent streams (ARC 010 20 90 105) Hunting for Tomorrow – Working group deliverables (002 70 90 101) Dodds Lake Feasibility Study (Soc. of Poplar Grove Guardians 090 80 90 102) Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102) Distribution of fisher (& other high profile spp) in Cooking Lake/Blackfoot PRA (Dr. Proulx 030 50 90 116)

		Road Watch in the Pass (Miistakis Institute 030 60 90 101) Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106) Increasing public access for wildlife-related recreation on private lands (UofC 030 60 90 102) Moth Diversity in the Buffalo Lake Moraine & Lowden Springs Conservation areas. (Dr. Bird 030 20 90 103 Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115) Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101) Effects of aversive conditioning on elk migration & fescue growth (UofA 030 1090 104)	
		GECF project(s)	GECF project result
OBJECTIVE 1: Collaborate with private landowners, government, industry and other stakeholders to maintain, enhance and protect priority riparian habitats.	**11**	Partners in Habitat Development (PHD- EID 010 40 90 102)	High collaborative component dedicated to habitat development.
		Living by Water (FAN 090 40 90 101)	Worked with shoreline residents of Alberta's popular recreational lakes stressing the importance of protecting healthy habitats and ecosystems for both wildlife and fish populations.
		Riparian Area Man't Improvements (MVC 010 20 90 106)	Focussed on improving lotic riparian areas in ACA priority areas by working with local landowners.
		Riparian Fencing Initiative (RDC 090 20 90 102)	This project contributed to ACA's goal of increasing protected riparian areas by 20% by 2009 by working with farmers with land along the river systems in Red Deer County.
		Rangeland Habitat Initiative (SALTS 010 80 90 106)	Brought together multiple stakeholders in a corroborative fashion to find ways to protect and enhance the biological resources (including healthy watershed and riparian areas) of the Eastern Slopes.
		Community Conservation Partnership (AFGA 010 20 90 108)	Provided a farm-based service that actively engaged agricultural producers in both monitoring ecosystem health and developing farm projects to improve/protect the environment. Initial baseline water quality monitoring done and On-Farm Site Assessments including review of surface water activity on a site-specific basis.
		Large woody debris in small streams (UBC 020 80 90	This study provides information on natural variation in quantity and quality of large woody debris (LWD) in streams and identifies the processes that contribute

		101)	LWD to streams. The focus was on small, headwater streams which provide critical habitat for ensuring viable, healthy fish populations in the foothills of Alberta.
		Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101)	Cows and Fish connect to individuals and groups at the local level, which allows for collaboration with landowners and groups who have decided to identify and address local riparian issues. Cows and Fish have frequently linked landowners and local groups with ACA for resources and support on riparian enhancement projects.
		Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102)	As the research assessed amphibian populations in and around the study lakes, it contributes to a "program that identifies priority areas, tools and monitoring protocol to be used" in the management of riparian habitat.
		Operation Grassland Community (AFGA 010 20 90 107)	OGC collaborates with private landowners in fencing-off riparian areas, setting up off-site watering systems, seeding trampled riparian areas with native species, and managing riparian areas to reduce or eliminate invasive species
		Ecosystem effects driven by cattle habitat (UofC 010 40 90 103)	Findings support management actions that diminish cattle density locally and therefore enhance riparian functioning and upland grassland health.
OBJECTIVE 2: Implement and adaptively manage a habitat program that maintains and restores the health of ungulate winter range in priority watersheds.	**2**	Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101)	The Cows and Fish riparian program also develops habitat programs for ungulates.
		Effects of aversive conditioning on elk migration & fescue growth (UofA 030 1090 104)	Implemented research on a threatened fescue grassland to help develop tools to maintain high priority ungulate habitat.
OBJECTIVE 3: To maintain, protect and enhance priority grassland habitats in Alberta through the development and implementation of habitat conservation initiatives.	**6**	Rangeland Habitat Initiative (SALTS 010 80 90 106)	Project resulted in improved likelihood that the native fescue grassland will be protected and thus continuing its role in storing carbon in the soil.
		Understanding dynamics of change in critical subalpine meadow habitat. (UVic 010 80 90 102)	The proposed research provides invaluable habitat inventory information through field data collection/analysis and visual documentation of subalpine meadow habitat change over the past century in the Southern Rocky Mountains.

		Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101)	The continued collaboration with the livestock grazing community should directly improve grassland habitat.
		Effects of aversive conditioning on elk migration & fescue growth (UofA 030 1090 104)	This research on a threatened fescue grassland helps develop tools to maintain high priority ungulate habitat, as well as enhance and restore this grassland.
		Operation Grassland Community (AFGA 010 20 90 107)	OGC is a grassroots habitat stewardship program that working directly with private landowners to secure and enhance grassland habitats through conservation initiatives e.g. voluntary habitat stewardship agreements, habitat enhancement projects, personalized land management plans, and habitat conservation strategies.
		Ecosystem effects driven by cattle habitat (UofC 010 40 90 103)	This project gives managers and ranchers information on how to ensure the proper management of grasslands.
OBJECTIVE 4: Secure, develop, protect and maintain high-priority wildlife and fisheries habitats and habitats that provide recreational opportunities.	**18**	White Bark Pine Survey (AWA 035 20 90 101)	Project orientated towards providing food, cover and breeding habitat for various wildlife species in special man't area by conserving important tree species.
		Riparian Area Man't Improvements (MVC 010 20 90 106)	Mountain View County's watersheds are home to many of ACA's priority wildlife species. Angling for sport fish should improve by improving the health of the lotic riparian areas; bull trout are present in many streams in MVC.
		Ephemeral intermittent streams (ARC 010 20 90 105)	Protection of riparian zones by studying the importance of riparian habitats associated with ephemeral and intermittent streams.
		Living by Water (FAN 090 40 90 101)	Worked with shoreline residents to improved riparian habitats for both wildlife and fish populations.
		Hunting for Tomorrow – Working group deliverables (002 70 90 101)	Considerable focus spent on "access for hunting", including Access/Landowner Workshops and stakeholder meetings to increase awareness and participation.
		Dodds Lake Feasibility Study (Soc. of Poplar Grove Guardians 090 80 90 102)	The report will be used to help conserve, protect and enhance fish and wildlife habitat at Dodds Lake.
		Riparian Fencing Initiative	As more rivers/streams are fenced and riparian areas enhanced it is expected the

		(Red Deer County 090 20 90 102)	fish populations within these rivers will be improved, diversified and increased over time.
		Rangeland Habitat Initiative (SALTS 010 80 90 106)	The project goal is to maintain contiguous and healthy wildlife habitat.
		Community Conservation Partnership (AFGA 010 20 90 108)	The project provided a farm-based service that actively engaged agricultural producers in both monitoring ecosystem health and developing farm projects to improve/protect the environment.
		Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112)	On-the-ground enhancements provide habitat for numerous wildlife and fish populations. Annual monitoring identifies what enhancements need to be implemented in order to provide habitat for the local biodiversity.
		Understanding dynamics of change in critical subalpine meadow habitat. (UVic 010 80 90 102)	Identifying historical reference conditions in subalpine meadows helps determine goals and objectives for ecosystem and species recovery management.
		Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102)	The study provides science-based information which ACA can use when they "develop and implement a lake aeration program using standard protocols", thereby improving recreational opportunities.
		Distribution of fisher (& other high profile spp) in Cooking Lake/Blackfoot PRA (Dr. Proulx 030 50 90 116)	Locally fisher is a species that may be extirpated unless valuable habitats, as determined through inventories, are maintained. Viewing fisher or fisher signs is a high-quality experience for naturalists and visitors of the Cooking Lake/Blackfoot PRA.
		Road Watch in the Pass (Miistakis Institute 030 60 90 101)	Created a dataset of locations where large mammals cross Hwy 3. Results from this research contribute to identifying where on Hwy 3 ungulates and carnivore are crossing or using habitat adjacent to the Highway, highlighting important movement passages for wildlife that are also of important recreational value to the local community.
		Recreation and wildlife in the Rockies of SW Alberta (Miistakis Institute 010 20 90 104)	The project scientifically examined wildlife use of recreational trails and wildlife responses to recreational demands.

		Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106)	As a globally significant Important Bird Area, the LSLBO & partners have the mandate to facilitate and promote riparian habitat.
		Operation Grassland Community (AFGA 010 20 90 107)	All practices promoted by OGC optimize hunting and fishing opportunities and other recreational pursuits (e.g., photography, bird watching etc…)
		Increasing public access for wildlife-related recreation on private lands (UofC 030 60 90 102)	The goal is to enhance public access for wildlife-related recreation on private and leased lands.
OBJECTIVE 5: Manage, monitor and maintain ACA habitat conservation assets associated with former Buck for Wildlife crown properties and clarify expectations related to specific crown properties and water control structures that would be beneficial for ACA to continue to manage or maintain.	**3**	Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112)	Have monitored many properties that NCC co-owns and manages with several other conservation agencies, including the ACA.
		Moth Diversity in the Buffalo Lake Moraine & Lowden Springs Conservation areas. (Dr. Bird 030 20 90 103	Survey of the moth diversity in two areas jointly owned by ACA.
		Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115)	This project builds on an existing data set collected using systematic monitoring for waterfowl in the Buffalo Lake Moraine. The Buffalo Lake Moraine has been identified as a priority landscape by the ACA for conservation programming and land securement
OBJECTIVE 6: Lead the formation and implementation of the Alberta Habitat Conservation Working Group to address habitat conservation issues in Alberta.	**1**	Increasing public access for wildlife-related recreation on private lands (UofC 030 60 90 102)	This project collaborates with the Alberta Habitat Working Group to look at access issues.
OBJECTIVE 7: To maintain, enhance and restore habitats identified in Minister approved species at risk recovery plans.	**3**	Operation Grassland Community (AFGA 010 20 90 107)	Through voluntary habitat stewardship agreements, native prairie habitats for provincial Species at Risk such at the burrowing owl and the northern leopard frog are maintained. Burrowing owl nesting and foraging habitats are improved through habitat enhancement projects. Burrowing owl breeding habitat is also directly and significantly improved through development and implementation of individualized burrowing owl man't plans. Multiple SAR habitat is being maintained and enhanced on the Vauxhall Grazing Association's leased-land through development

			of a habitat conservation strategy.
		Partners in Habitat Development (PHD- EID 010 40 90 102)	A number of species at risk benefit from the habitat protected by this program such as the loggerhead shrike and the northern leopard frog.
		Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101)	The identification of essential habitat is an important part of both the Provincial and National Recovery Plans, a step that has yet to be completed.
Wildlife Objectives			
GENERAL WILDLIFE FUNDING PRIORITY: "ACA's Wildlife Program is designed to enhance the sustainability of wildlife species through science-based conservation. Focus is on four thematic areas, including ungulates, upland game birds, waterfowl and species at risk."	**40**	Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112) Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106) Assessing effects of fish on waterbird abundance in shallow lakes in the BTZ (UofA 030 20 90 102) Assessing importance of wetland productivity and upland cover characteristics to waterbird populations (UofA 010 30 90 101) Modeling deer movements to predict CWD spread in AB (UofA 030 10 90 113) Reducing bear conflict in rural communities: bear resistant container program (KSBIC 030 40 90 105) Road Watch in the Pass (Miistakis Institute 030 60 90 101) Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101) Caribou response to encounters with people in JNP (Royal Roads U 030 10 90 102) Alberta Grouse Technical Council: Status of grouse in AB (AGTC 030 10 90 113) Atlas of breeding birds of Alberta (FAN 030 40 90 103) Operation Grassland Community (AFGA 010 20 90 107) Ecosystem effects driven by cattle habitat (UofC 010 40 90 103) Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103) Distribution of fisher (& other high profile spp) in Cooking Lake/Blackfoot PRA (Dr. Proulx 030 50 90 116) Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112) Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101) Landscape mechanisms behind distribution & abundance of ring-necked pheasants (UofA 030 10 90 111)	

		Cougar predation on wild ungulates (UofA 030 10 90 106) New field techniques for estimating wolf-densities (…) (UofA 030 10 90 107) Alberta Grouse Technical Council: Status of grouse in AB (AGTC 030 10 90 113) Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115) Monitoring Important Bird Areas (FAN 030 50 90 111) Protecting wolverines in AB Prov. Parks (ARC 030 50 90 118) Biodiversity of fungi in AB: a provincial database (EMS 030 50 90 115) 20 years of bird monitoring at Beaverhill Bird Observatory (BBO 030 20 90 104) Effects of aversive conditioning on elk migration & fescue growth (UofA 030 10 90 104) Factors affecting Harlequin Duck use of a local breeding stream (Bighorn Wildlife Tech. Ltd. 030 10 90 116) Purple Martin House Project (Sherwood Park F&GA; 030 50 90 113) Onoway Birdhouse Project (Onoway & district F&GA; 030 50 90 114) Hunting for Tomorrow – Working group deliverables (002 70 90 101) Recreation and wildlife in the Rockies of SW Alberta (Miistakis Institute 010 20 90 104) Fur Management: Past and Present an Alberta perspective (ATA 030 40 90 104) Re-print Conservation and Hunter Education Manuals (Alberta Hunter Education Instructors' Association 002 40 90 105) 'Steaks & Saw-whets' & 'Big Birding Breakfast' (Beaverhill Bird Observatory 030 50 90 117) Wapiti! Roaming the plains & pines (Soc Grassland Naturalists 030 10 90 112) Animal Resource Teaching Implements (ENCF 030 40 90 106) White Bark Pine Survey (AWA 035 20 90 101) Living by Water (FAN 090 40 90 101) Ephemeral intermittent streams (ARC 010 20 90 105)	
		GECF project(s)	GECF project result
OBJECTIVE 1: Facilitate the identification and prioritization of wildlife knowledge gaps and conservation needs in Alberta through	**8**	Road Watch in the Pass (Miistakis Institute 030 60 90 101)	Most of the species identified through Road Watch are species of primary concern to ACA, including elk, moose, mule deer, bighorn sheep and white tailed deer. This project addressed mortality levels associated with Highway 3 in relation to local population movement in the Rocky Mts.

collaboration with experts and stakeholders.		Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101)	This project identifies suitable, essential habitat for Burrowing Owls in order to target habitat management and stewardship initiatives, allowing for the identification of priority areas for the conservation of this species at risk.
		Caribou response to encounters with people in JNP (Royal Roads U 030 10 90 102)	This study fills a knowledge gap by providing important information regarding the threat of human disturbance to the survival of caribou in Jasper.
		Alberta Grouse Technical Council: Status of grouse in AB (AGTC 030 10 90 113)	The AGTC is a collaborative group of experts that has and will continue to identify conservation priorities for grouse species in AB.
		Atlas of breeding birds of Alberta (FAN 030 40 90 103)	By doing a comprehensive data collection exercise in collaboration with experts and volunteer atlassers, gaps in knowledge have been identified.
		Operation Grassland Community (AFGA 010 20 90 107)	OGC collaborates with various organizations to identify knowledge gaps relating to species at risk. OGC is an active member on the Prairie Conservation Forum which works on the Prairie Conservation Action Plan and is also part of the Grassland Conservation Working Group.
		Ecosystem effects driven by cattle habitat (UofC 010 40 90 103)	This project makes the case that initiatives relating to wildlife conservation planning should incorporate the effects produced by cattle and grazing practices.
		Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103)	This research program provides the only long-term management and conservation-related research on mountain goats in North America.
OBJECTIVE 2: Collect and interpret population data on select wildlife species using systematic monitoring methods.	**16**	Distribution of fisher (& other high profile spp) in Cooking Lake/Blackfoot PRA (Dr. Proulx 030 50 90 116)	Inventories of fisher help in the development of future studies and conservation strategies to ensure the long-term presence of these species.
		Road Watch in the Pass (Miistakis Institute 030 60 90 101)	Most of the species identified through Road Watch are species of primary concern to ACA, including elk, moose, mule deer, bighorn sheep and white tailed deer. This project addressed mortality levels associated with Hwy 3 in relation to local population movement in the Rocky Mtns.

		Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112)	NCC systematically monitor their properties and the species found there annually. Many of the species that are confirmed on NCC properties are habitat limited.
		Atlas of breeding birds of Alberta (FAN 030 40 90 103)	No other wildlife surveying provides the broad geographic coverage of the collection and compilation of information on breeding birds in Alberta.
		Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101)	Population inventory and assessment is achieved by incorporating nest-site locations into a GIS, thereby defining the past and present ranges of the species, resulting in a year-by-year picture of the Burrowing Owl's distribution in Alberta.
		Landscape mechanisms behind distribution & abundance of ring-necked pheasants (UofA 030 10 90 111)	Crow-count surveys were conducted for this upland game bird in the Eastern Irrigation District.
		Cougar predation on wild ungulates (UofA 030 10 90 106)	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. 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.
		New field techniques for estimating wolf-densities (…) (UofA 030 10 90 107)	Captured, collared, and monitored the small-scale movements of wolves
		Alberta Grouse Technical Council: Status of grouse in AB (AGTC 030 10 90 113)	Two status documents on Sharp-tailed Grouse were produced.
		Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115)	This project builds on an existing data set collected using systematic monitoring for waterfowl in the Buffalo Lake Moraine.

		Monitoring Important Bird Areas (FAN 030 50 90 111)	Reconnaissance and baseline surveys embraced two of four of ACA's Wildlife thematic areas, waterfowl and species at risk.
		Protecting wolverines in AB Prov. Parks (ARC 030 50 90 118)	This project provides estimates of wolverine abundance in west central AB.
		Operation Grassland Community (AFGA 010 20 90 107)	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 16th year of census for the Burrowing Owl and the 3rd year for the Loggerhead Shrike.
		Biodiversity of fungi in AB: a provincial database (EMS 030 50 90 115)	Collected data on a poorly understood but very important group of organisms in AB.
		20 years of bird monitoring at Beaverhill Bird Observatory (BBO 030 20 90 104)	The project focused on data capture and analysis of data collected in the programs of BBO.
		Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103)	This research program provides the only long-term management and conservation-related research on mountain goats in North America.
OBJECTIVE 3: Develop monitoring and evaluation tools to quantify the benefits of habitat enhancement activities.	**2**	Operation Grassland Community (AFGA 010 20 90 107)	Monitoring of burrowing owl habitat enhancement projects.
		Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112)	Annual monitoring identifies what enhancements are needed in order to provide habitat for the local biodiversity. NCC provides on-the-ground enhancements for numerous wildlife and fish populations.
OBJECTIVE 4: Complete applied conservation studies on the status, movement patterns and ecology of priority species.	**7**	Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101)	This project used ecological concepts related to habitat evaluation studies, and applied these principles to model the species-environment relationship for a designated species at risk and identify known and potential breeding habitat.
		Landscape mechanisms behind distribution & abundance of ring-necked	The project goal is to develop a model that allows managers to understand the ecological context of habitats selected by ring-necked pheasants (an upland game bird) and to use this information to develop habitat-management protocols for

		pheasants (UofA 030 10 90 111)	Alberta.
		Cougar predation on wild ungulates (UofA 030 10 90 106)	This study provides insights into how to better manage predators, the ungulate populations they prey upon, and the landscapes both depend on for survival.
		Effects of aversive conditioning on elk migration & fescue growth (UofA 030 10 90 104)	Tools to encourage elk migration are applied.
		Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115)	Project identified population trends of select waterfowl in the Buffalo Lake Moraine.
		Factors affecting Harlequin Duck use of a local breeding stream (Bighorn Wildlife Tech. Ltd. 030 10 90 116)	This study advances our understanding of the ecology and conservation management of the Harlequin Duck.
		Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103)	The bulk of new information that was incorporated into the recent "Management Plan for Mountain Goats in Alberta".
OBJECTIVE 5: Develop and support opportunities to enhance consumptive and non-consumptive wildlife related recreational experiences for all Albertans.	**16**	Purple Martin House Project (Sherwood Park F&GA; 030 50 90 113)	Four twelve-unit purple martin houses were built by volunteers and cemented in on the Sherwood Park FGA property.
		Onoway Birdhouse Project (Onoway & district F&GA; 030 50 90 114)	180 birdhouses were constructed and distributed in Onoway area by volunteers.
		Hunting for Tomorrow – Working group deliverables (002 70 90 101)	Encouraged youth and first time hunters to be come involved with hunting by offering mentorship programs; project also deals with access for hunting issues.
		Recreation and wildlife in the Rockies of SW Alberta	Project allows for better understanding of human/wildlife interactions with regards to connectivity and wildlife movement through the use of recreational trail systems

		(Miistakis Institute 010 20 90 104)	in order to secure, protect and maintain high priority wildlife and fisheries habitat that provide recreational opportunities.
		Fur Management: Past and Present an Alberta perspective (ATA 030 40 90 104)	The project enhances understanding of conservation issues within AB, including animal management.
		Re-print Conservation and Hunter Education Manuals (Alberta Hunter Education Instructors' Association 002 40 90 105)	Program participants, consumptive and non-consumptive alike, are taught the value of Alberta's unique biodiversity.
		'Steaks & Saw-whets' & 'Big Birding Breakfast' (Beaverhill Bird Observatory 030 50 90 117)	BBO hosted a spring event, Big Birding Breakfast, and a fall event, Steaks and Saw-whets. Both events were held at the BBO while researchers conducted bird banding activities. The public learned how and why birds are studied and the importance of monitoring wildlife populations in the long-term.
		Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106)	Through community outreach programs, on-site information and education programs, amongst others, LSLBO enhance and deliver opportunities for non-consumptive users to enjoy Alberta's wildlife.
		Atlas of breeding birds of Alberta (FAN 030 40 90 103)	The project provided an opportunity for Albertans to become involved with a natural history related activity. To assist birders, FAN facilitated bird identification courses &/or encouraged participation in existing courses, which resulted in reporting of more and better quality data by volunteer atlassers.
		Cougar predation on wild ungulates (UofA 030 10 90 106)	This study provides management-oriented solutions which might be used to increase hunting opportunities and to ensure that viable and harvestable populations of both predator and prey persist into the future.
		Wapiti! Roaming the plains & pines (Soc Grassland Naturalists 030 10 90 112)	The project educates people and instils in them the need to protect Alberta's ecological resources and habitat, to maintain good populations of wildlife. In this case the focus is on the priority species elk. Elements of the display give people the opportunity to become active stewards in assisting in the maintenance of habitat and resources.
		New field techniques for estimating wolf-densities	The development of this methodology allows for better quantification of wolf predation rates on ungulate species, which can be applied to ungulate harvest

		(…) (UofA 030 10 90 107)	models used by SRD-Fish and Wildlife for establishing hunting season quotas.
		Effects of aversive conditioning on elk migration & fescue growth (UofA 030 10 90 104)	This project will not only enhance the wildlife habitat, but also contribute to maintenance of wildlife-oriented recreation area
		Animal Resource Teaching Implements (ENCF 030 40 90 106)	This project offers personal experiences between the public and nature, thus encouraging a life-long connection to it.
		20 years of bird monitoring at Beaverhill Bird Observatory (BBO 030 20 90 104)	Provided the opportunity for the public to get involved with research by conducting owl surveys, collecting information on raptor nests, participating in banding with researches at Beaverhill and monitoring songbird and saw-whet nestboxes.
		Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103)	All this new information is extremely important to the re-establishment of sustainable hunting and conservation of mountain goats in Alberta.
OBJECTIVE 6: Support the development of Provincial and National recovery teams, and assist with the implementation of recovery actions for species with approved recovery plans.	**10**	White Bark Pine Survey (AWA 035 20 90 101)	This project aids recovery of an ANHIC listed species.
		Living by Water (FAN 090 40 90 101)	LbyW educates shoreline residents about their impacts on species at risk in these sensitive habitats.
		Ephemeral intermittent streams (ARC 010 20 90 105)	The study area supports several species of herptiles with sensitive status in Alberta, and there are reports of leopard frogs approx. 100 km south of the proposed study site. Given the paucity of surveys or research in the region, it is possible that leopard frog populations may be in the region, but undetected.
		Atlas of breeding birds of Alberta (FAN 030 40 90 103)	Data collected for the Alberta Bird Atlas is currently being applied to species at risk recovery plans compiled by ASRD.
		Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101)	The identification of essential habitat is an important part of both the Provincial and National Recovery Plans, a step that has yet to be completed. Contributes to the implementation of these Recovery Plans by creating predictive models which can be integrated into mapping products to show areas of essential burrowing owl breeding habitat within Alberta. This project is also integrated within the Recovery Plan for the Burrowing Owl in Alberta.

		Caribou response to encounters with people in JNP (Royal Roads U 030 10 90 102)	This research supports a species at risk recovery plan by directly addressing one of the proposed actions of the South Jasper National Park Caribou Action Plan for Caribou Recovery: to "Initiate an observational study of caribou response to human activity".
		Monitoring Important Bird Areas (FAN 030 50 90 111)	Implemented monitoring of areas designated as Important Bird Areas, for the most part these areas contain species at risk.
		Protecting wolverines in AB Prov. Parks (ARC 030 50 90 118)	Population estimates from this study support future development of a wolverine management plan. The wolverine is currently a quota furbearer, managed by the Province in the complete absence of any population inventory or trend information; this study will help supply some of these this sorely needed data. Information collected on wolverine abundance will directly contribute to the Province's ability to designate a legal status for wolverine.
		Operation Grassland Community (AFGA 010 20 90 107)	OGC participates on both the Alberta and the national recovery teams for the Burrowing Owl and on the national Loggerhead Shrike Recovery Team. OGC will continue to share its annual estimates of Burrowing Owl numbers with both recovery teams.

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. **Strategy: to enhance revenue from levy sources.**	**1**	Hunting for Tomorrow – Working group deliverables (002 70 90 101) program is focused on recruitment and retention of hunters, which is a primary funding source to ACA.

Communications Objectives		
OBJECTIVE 1: **Enhance partner relations and increase the understanding of ACA's role in the conservation community.**	**56**	All GECF projects.
OBJECTIVE 2: **Implement public education and outreach activities that increase awareness and understanding of wildlife, fisheries and habitat issues in Alberta.**	**18**	Living by Water (FAN 090 40 90 101) Fur Management: Past and Present an Alberta perspective (ATA 030 40 90 104) Re-print Conservation and Hunter Education Manuals (Alberta Hunter Education Instructors' Association 002 40 90 105) Purple Martin House Project (Sherwood Park F&GA; 030 50 90 113) Onoway Birdhouse Project (Onoway & district F&GA; 030 50 90 114) Hunting for Tomorrow – Working group deliverables (002 70 90 101) Road Watch in the Pass (Miistakis Institute 030 60 90 101) Riparian Fencing Initiative (Red Deer County 090 20 90 102) Rangeland Habitat Initiative (SALTS 010 80 90 106) Community Conservation Partnership (AFGA 010 20 90 108)

		Innovation Alberta Omnimedia Project (Porcupine Stone Productions 002 40 90 102) Managing riparian areas through community collaboration (Cows & Fish 090 20 90 101) 'Steaks & Saw-whets' & 'Big Birding Breakfast' (Beaverhill Bird Observatory 030 50 90 117) Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106) Wapiti! Roaming the plains & pines (Soc Grassland Naturalists 030 10 90 112) Operation Grassland Community (AFGA 010 20 90 107) Reducing bear conflict in rural communities: bear resistant container program (KSBIC 030 40 90 105) Animal Resource Teaching Implements (ENCF 030 40 90 106)
OBJECTIVE 4: **Improve the level of interaction, information exchange and collaboration with other conservation specialists**	**56**	All GECF projects

Conservation Programming Key strategies (cross-cutting)		
Analyze data to provide a defendable scientific base for conservation actions.	**35**	White Bark Pine Survey (AWA 035 20 90 101) Recreation and wildlife in the Rockies of SW Alberta (Miistakis Institute 010 20 90 104) Genetic analysis of walleye (UofA 020 10 90 111) N AB non-game fish status assessment Yr 4 (RAM 020 10 90 104) Ephemeral intermittent streams: are the important in maintaining the biodiversity in a forested landscape (ARC 010 20 90 105) Modeling mercury biomagnification in S. Saskatchewan R (ULeth 020 50 90 101) Dodds Lake Feasibility Study (Soc. of Poplar Grove Guardians 090 80 90 102) Rangeland Habitat Initiative (SALTS 010 80 90 106) Monitoring NCC Properties in Parkland & Boreal Forest (NCC 010 20 90 112) Large woody debris in small streams (UBC 020 80 90 101) Understanding dynamics of change in critical subalpine meadow habitat. (UVic 010 80 90 102)

		Assessing effects of sportfish stocking & aeration on communities in small boreal lakes (UofA 090 30 90 102): Assessing the effects of fish on waterbird abundance in shallow lakes in the Boreal Transition Zone (UofA 030 20 90 102) Moth Diversity in the Buffalo Lake Moraine & Lowden Springs Conservation areas. (Dr. Bird 030 20 90 103 Distribution of fisher (& other high profile spp) in Cooking Lake/Blackfoot PRA (Dr. Proulx 030 50 90 116) Boreal Forest Bird Research (Lesser Slave Lake Bird Obs 030 50 90 106) Atlas of breeding birds of Alberta (FAN 030 40 90 103) Road Watch in the Pass (Miistakis Institute 030 60 90 101) Identifying essential breeding habitat for burrowing owls in AB (UofA 030 20 90 101) Landscape mechanisms behind distribution & abundance of ring-necked pheasants (UofA 030 10 90 111) Cougar predation on wild ungulates (UofA 030 10 90 106) Assessing importance of wetland productivity and upland cover characteristics to waterbird populations (UofA 010 30 90 101) Monitoring Important Bird Areas (FAN 030 50 90 111) Caribou response to encounters with people in JNP (Royal Roads U 030 10 90 102) New field techniques for estimating wolf-densities (…) (UofA 030 10 90 107) Modeling deer movements to predict CWD spread in Alberta (UofA 030 10 90 113) Alberta Grouse Technical Council: Status of grouse in AB (AGTC 030 10 90 113) Effects of aversive conditioning on elk migration & fescue growth (UofA 030 1090 104) Ecological traps and temporal trends in habitat use for waterfowl in aspen parkland (UofA 030 10 90 115) Protecting wolverines in AB Prov. Parks (ARC 030 50 90 118) Biodiversity of fungi in AB: a provincial database (EMS 030 50 90 115) Ecosystem effects driven by cattle habitat (UofC 010 40 90 103) Factors affecting Harlequin Duck use of a local breeding stream in the Alberta Foothills (Bighorn Wildlife Tech. Ltd. 030 10 90 116) 20 years of bird monitoring at Beaverhill Bird Observatory (BBO 030 20 90 104) Ecology and conservation of mountain goats in AB (Laval U 030 10 90 103)