

# Grants Fund Annual Report 2017/18



For the period of April 1, 2017 to March 31, 2018







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### ACA's Mission

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

### ACA's Vision

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

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Front Cover Photo: *Volunteers Dan Tulik and John Marple angling for Arctic grayling*

Photo: *Paul Fitt*

Relating to the project: *Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed – Habitat Restoration Planning Northern Lights Fly Fishers/TUC Edmonton, 020-00-90-197*

# Grant Program 2017/18

## **KEY PROGRAM HIGHLIGHTS for the Grants 2017/18:**

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The ACA Conservation, Community, and Education Grants received a record-breaking 147 funding applications requesting a total dollar value just under \$2.1 million. A total of \$970,056 was allocated to 81 projects.

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The ACA Research Grants received 27 funding applications requesting \$610,513. A total of \$329,990 was allocated to 18 projects.

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Project budgets ranged from \$800 to \$44,000.

## **Executive Summary**

Funded by the province's hunters and anglers, ACA's Grants Program supports annually a variety of projects both small and large which benefit Alberta's wildlife and fish populations, as well as the habitat they depend on. Operational since 2002, the ACA Grants (formerly known as the Grant Eligible Conservation Fund or GECF), as of the 2017/18 funding round, has provided just under \$16.7 million to 1,078 projects carried out in Alberta by the conservation community. Furthermore, the funding provided by the Grants continues to leverage approximately six times its value in conservation dollars, estimated at approximately \$100 million—money that has been directly used for conservation work and more recently to support the recruitment and retention of hunters, anglers, and trappers in Alberta.

These popular grant programs received a record 174 applications (147 to Conservation, Community, and Education Grants and 27 to the ACA Research Grants) requesting just over \$2.7 million in 2017/18. A total of \$1.3 million was allocated to 99 projects (81 Conservation, Community, and Education projects and 18 ACA Research Grants projects). The aim of this report is to document the procedures for 2017/18 and to provide an overview of activities and results of projects financially supported through the ACA Grants (the Conservation, Community, and Education Grants and the ACA Research Grants) in 2017/18.

# Annual Report of Activities and Synopsis of Funding Recipient Projects

## Introduction

Alberta Conservation Association (ACA) believes it is our responsibility to join and support the collective effort to conserve, protect, and enhance Alberta’s biological natural resources. One of the ways in which ACA does this is to make grants to other members of the conservation community. The projects supported by ACA’s grants are intended to enhance and supplement ACA activities, and aid in the delivery of ACA’s Vision, Mission, and Strategic Business Plan. ACA has been awarding conservation grants since 1997, with the GECF process starting in 2002/03. As of the 2017/18 funding round, the Grants program has granted approximately \$16.7 million dollars since 2002/03 to 1,078 projects implemented in Alberta; these projects have leveraged an estimated \$100 million in conservation work across the province. After the project selection process, a total of \$970,056 was granted to 81 ACA Conservation, Community, and Education Grants (CCEG) and \$329,990 was granted to 18 ACA Research Grants (ACA RG) projects. This document provides an overview of the activities of the CCEG and the ACA RG for the 2017/18 funding cycle.

We have some impressive results and outreach coming from the ACA Grants supported projects in 2017/18: over 5,300 youth and novices participated in fishing, archery, hunting, and trapping activities across Alberta, approximately 11,000 youth and their families were involved in outdoor conservation activities, and outreach activities educating Albertans about conservation-related issues is estimated as at least another 70,000 people. Over 2,300 Albertans dedicated their time as mentors to take out youth and novice outdoorspeople. Three hundred and eleven teachers and instructors were trained in various outdoor pursuits, taking programs such as Hunter Education or Fishing Education. At least 700 sites have been improved in collaboration with land owners and are now managed with more sustainable practices thereby improving riparian and ecologically sensitive areas. This year, about 660 bird or bat boxes were built and installed. Thousands of pounds of invasive species have been removed from sensitive areas. The ACA RG focused on various topics, including monitoring the status of *Threatened* species like sharp-tail grouse leks and Canada warbler breeding, and wildlife diseases threatening Alberta wildlife such as Chronic Wasting Disease in deer and White Nose Syndrome in bats. These are just a few examples, in the Projects Summaries section of this report, you can read about all the achievements of each of the projects that received funding in 2017/18.

## The Funding Cycle

The funding priorities, guidelines, and application forms were made available to the public October 12, 2016 via the ACA website, by email to existing contacts, and by environmental list servers. Details of the 2017/18 funding cycle are in the table below:

### 2017/18 FUNDING CYCLE DATES

Posting of the Guidelines and Application Forms on ACA’s website	October 12, 2016
Window to receive completed ACA RG applications	November 1, 2016 – December 1, 2016
Window to receive completed CCEG applications	January 1-25, 2017
ACA RG adjudication meeting	February 12, 2017
CCEG adjudication meeting	February 23, 2017
ACA Board approval and notification of applicants as to funding status	End of March 2017
Cooperative Project Agreements signed, initial payments made, and project work begins	From April 1, 2017
Interim reports due and second payments made (if required)	September 1, 2017
Final reports due	March 15, 2018
Projects end and final payments made (if required)	March 31, 2018

## Funding Eligibility

The ACA Grants (CCEG and ACA RG) support a wide variety of applicants and project types. Anyone with a suitable project working in Alberta can apply for funding, with the exception of ACA staff, Alberta Environment and Parks (AEP) staff, and individuals without the proper insurance. Certain project types and budget items are not covered by the CCEG and the ACA RG, for example land acquisition, emergency funding, or overhead costs. Since fiscal year 2009/10, funding priorities have been used by the Grants to guide applicants in drafting their applications. The funding priorities for both the CCEG and the ACA RG stayed the same this year: the CCEG had the same seven funding priorities and the ACA RG had the same 12 funding priorities as used in 2016/17. See "Major Funding Priorities Grants 2017/18" for the full list. These grants do accept applications that do not relate to the suggested areas; however, projects that address one or more of these priority areas have a better chance of being funded than those that do not. The eligibility criteria and funding priorities can be found in full in the documents "Project Submission Guidelines for Funding 2017/18: ACA Conservation, Community, and Education Grants" and "Project Submission Guidelines for Funding in 2017–2018: ACA Research Grants" (these documents are available from the Grants Project Administrator).

The CCEG offers small grants for projects with budgets of \$3,000 and under and large grants for projects with budgets over \$3,000. The small grants have a simplified application form; although the eligibility criteria and funding guidelines are the same for both small and large grants.

The CCEG and the ACA RG are widely known amongst the conservation community working in Alberta and applications were received from a diverse cross-section of the population including: community groups, grassroots organizations, provincial and national institutes, as well as leading scientific researchers.

## Major Funding Priorities Grants 2017/18

This text is taken from Section C of the Project Submission Guidelines for Funding 2017-2018.

### Funding Priorities for the Conservation, Community and Education Grants

All applicants to the ACA Conservation, Community and Education Grants should be aware that this grant is fully funded by the hunters and anglers of Alberta. All proposals should be able to demonstrate how the proposed project will aid ACA in meeting its mission of conserving, protecting and enhancing fish, wildlife and habitat for all Albertans to enjoy, value and use. To help direct potential applicants the following list of priority areas has been developed. While the ACA Conservation, Community and Education Grants will accept applications that do not relate to these suggested areas, projects that address one or more of these priority areas will have a higher probability of being funded than those that do not.

1. Habitat enhancement activities specifically listed on provincial recovery plans for Alberta's endangered species (to be done in cooperation with recovery teams). (See: [aep.alberta.ca/fish-wildlife/species-at-risk/species-at-risk-publications-web-resources/default.aspx](http://aep.alberta.ca/fish-wildlife/species-at-risk/species-at-risk-publications-web-resources/default.aspx))
2. Site specific enhancements of habitat, structures and facilities aimed at increasing recreational angling or hunting opportunities, improving habitat or increasing wildlife/fish productivity on the site (i.e. planting/seeding vegetation, development of new fisheries access sites, nest box initiatives, food plot trials and cover plot trials, spawning bed enhancement, culvert removals, fishing docks, etc.).  
  
Stewardship Initiatives (e.g. on-going maintenance of conservation sites or fisheries access sites; adopt a fence; property inspections for invasive weeds; manual weed control; grass mowing).
3. Urban fisheries development, including: initial evaluation of water quality aspects of existing ponds to determine their suitability for fish stocking; purchase of equipment needed to ensure suitable water quality for fish stocking (e.g. aeration equipment); fish stocking in public ponds; promotion of an urban fishery (including natural water bodies).

4. Impacts of non-native species on the persistence of native species.
5. Improvements and innovation in matching sportsmen with landowners (e.g. facilitating hunter access to depredated waterfowl, elk and deer).
6. Projects related to the retention, recruitment and education of hunters, anglers or trappers (including attracting new mentors, training mentors and providing mentors for new hunters/ anglers/trappers; sharing information in schools and with the general public about the link between conservation and hunters/ anglers/trappers; this category also includes educating new hunters/anglers/trappers; 'Kids Can Catch' and archery events for kids). Generate awareness of the hunting/angling/trapping opportunities available to the public.
7. Projects related to outdoor conservation education.

**Funding Priorities for ACA Research Grants**

All applicants to the ACA RG should be aware that this grant is fully funded by the hunters and anglers of Alberta. All proposals should be able to demonstrate how the proposed project will aid ACA in meeting its mission of conserving, protecting and enhancing fish, wildlife and habitat for all Albertans to enjoy, value and use. To help direct potential applicants the following list of priority areas has been developed. While the ACA RG will accept applications that do not relate to these suggested areas, projects that address one or more of these priority areas will have a higher probability of being funded than those that do not.

1. Research activities specifically listed on provincial recovery plans for Alberta's endangered species (to be done in cooperation with recovery teams). (See: [aep.alberta.ca/fish-wildlife/species-at-risk/species-at-risk-publications-web-resources/default.aspx](http://aep.alberta.ca/fish-wildlife/species-at-risk/species-at-risk-publications-web-resources/default.aspx))
2. Impacts of non-native species on the persistence of native species.
3. Develop and validate inventory tools to determine the relative density and range of ungulate species using innovative techniques such as trail cameras or passive DNA/eDNA samples.
4. Evaluate the effect of pesticides or herbicides on wildlife species' food availability and/or quality in agricultural landscapes.
5. Evaluate the effect of recreational access (mode, timing, duration) on wildlife & fish populations and habitat.
6. Investigation of methods for reducing the spread and/or impact of wildlife or fish related diseases.

7. Evaluate the impact of various harvest management regimes on fish or wildlife populations (e.g. fish size limits, three-point or larger elk requirements, etc.).
8. Evaluate the social demographics of hunting and angling to determine the factors influencing the decision to become involved in hunting or angling and the reasons why people opt out in a particular year.
9. Evaluate the effect of biological solutions of carbon sequestration on grasslands and treed lands.
10. Evaluate the effects of agricultural run-off on fisheries.
11. Evaluate approaches for improving the abundance of pollinators in agricultural landscapes.
12. Work towards clarifying status of current data deficient species.

Please refer also to the document below for research topic suggestions; however, the above funding priorities have the greatest weighting. "Research needs for fisheries and wildlife in Alberta" available on the ACA website: [www.ab-conservation.com/downloads/grants/Research\\_Needs\\_Paper\\_by\\_Dr\\_%20Boyce.pdf](http://www.ab-conservation.com/downloads/grants/Research_Needs_Paper_by_Dr_%20Boyce.pdf)

## Proposal Review Process

The ACA Board of Directors appointed Adjudication Committees for both the CCEG and ACA RG.

### CCEG Adjudication:

The CCEG adjudication committee typically consists of five citizens of Alberta representing the conservation community in Alberta, one public-at-large member of the ACA Board of Directors, and one ACA staff member, and is chaired by a member of the ACA Board of Directors. Unfortunately, one of the adjudicators had to pull out of the grants adjudication at the last minute, as it was too late to invite another external person, an ACA staff member stepped in to help with the adjudication. Adjudicators were tasked with providing rankings and making funding recommendations for all CCEG applications based on the funding priorities and guidelines provided by ACA.

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.

Due to the growing volume of CCEG applications, the adjudicators were sent approximately half of the applications at random (excluding any applications for which they had obvious conflict of interest) and were asked to electronically submit their rankings ahead of the adjudication meeting. A compilation of application scores was presented at the meeting, leaving time to focus discussions on those projects with mixed rankings.

The CCEG adjudication meeting was held on February 23, 2017 at ACA's Sherwood Park office, Alberta. The list of funding recommendations made by the Adjudication Committee was then approved by the ACA Board at the March 2017 Board Meeting.

### ACA Research Grants Review Process

The application deadline for the ACA RG was earlier than that of the CCEG to allow for a more rigorous academic review procedure; the same procedure tried and tested for many years by the ACA Grants in Biodiversity Program. All applications were sent out for review by experts in the subject of the research application. The academic review process was coordinated by the Administrator of the ACA Grants in Biodiversity. An attempt was made to get at least two reviews per application. The adjudication committee consisted

of a representative from each of Alberta's three largest universities (University of Alberta, University of Calgary, and University of Lethbridge), an industry representative, ACA's Wildlife Program Manager, ACA's Fisheries Program Manager, and the Chair of ACA's Research Adjudication Committee. Two adjudicators were assigned to review (using the application and academic reviews) and rank a selection of the applications. This year the ACA RG adjudicators used a five-tiered numerical ranking system (see below), which is the same ranking scale used by the reviewers, rather than the three-tiered A, B, C system used in previous years.

1. Outstanding proposal. Must fund. Highest priority for support. This category reserved only for truly outstanding proposals.
2. Very good proposal. Not first class, but fundable. Should be supported.
3. Good proposal. Worthy of support. Do your best to fund.
4. Fair or poor proposal. Possibly worthy of support.
5. Poor proposal. Do not fund.

Applications ranked by the adjudicators with 1 and 2 are usually all funded, those ranking a 3 are sometime funded, and those ranking 4 and 5 are generally not funded. Funding recommendations were then made after the ranking process. The ACA RG adjudication meeting was held on February 12th, 2017 at the University of Alberta.

## Funding Allocations

For the 2017/18 funding cycle, a total of \$1,300,000 was made available for project funding via the Grants: \$970,000 for CCEG and \$330,000 for ACA RG. Of the 147 applications requesting just over \$2.1 million to CCEG, 81 were funded (a 55 percent success rate for applications receiving full or partial funding). Of the 81 CCEG projects funded in 2017/18, 44 (54 percent) had been funded by ACA in previous years and 37 were new projects.

The ACA RG received 27 applications requesting a total of \$610,513 for the 2017/18 competition, of these 18 were funded (a success rate of 67 percent for applications receiving full or partial funding). Three of the funded research projects had been funded in previous years and the rest were new projects.

To receive an ACA grant, the grant recipient must sign the ACA Cooperative Project Agreement, which has the approved application and budget appended. The ACA Cooperative Project Agreement outlines the reporting and payment schedules and other contractual obligations between ACA and the grant



recipient. Grant recipients provide two project reports, an interim report due September 1, 2017 and a final report due March 15, 2018. If the project was completed at the time of the interim report (September 1), then applicants could submit a final project report.

Three applicants did not accept the grant money (by not returning the ACA Project Agreement); all three were CCEG applicants (Calgary Bird Banding Society, Carson Nuttig, and Junior Forest Wardens – Bezons Brown Bears). The reasons for not accepting the grant, if provided by the applicant, can be found in the ACA Grants Program Project Summaries section of this report.

Another three projects did not go ahead, these applicants signed the ACA Project Agreement, but then did not request the funds or returned the funds when they realised the project could not proceed as planned. One ACA RG project (Foothills Restoration Forum) and two CCEG projects (Safari Club International – Red Deer Chapter and Zone 4&5 FGA) were in this situation. Again, the reasons for the projects not going ahead or the funds not being dispersed can be found in the ACA Grants Program Project Summaries section.

Six projects were granted extensions due to unforeseen circumstances. To be granted a project extension, grant recipients had to submit a Request for Extension Form along with their final report, so the extension could be considered. If a project received an extension, it is mentioned in the Project Status of the Project Summaries section of this report.

## Grant Projects' Contribution to the Funding Priorities

In total, 99 projects were approved for funding in 2017/18: 81 CCEG projects and 18 ACA RG. All projects selected were to support ACA with meeting its mission of conserving, protecting, and enhancing fish, wildlife, and habitat for all Albertans to enjoy, value, and use; and the funding priorities were used to further guide and direct applicants by providing priority areas of specific interest to ACA. The funding priorities were set by ACA staff and approved by the ACA Board of Directors. As was done for the last few years, two lists of Funding Priorities were produced, one for the CCEG and another one for the ACA RG. The Funding Priority lists remained the same for 2017/18 as the 2016/17 list. There is some overlap between the two lists. Applications did not have to relate to the funding priorities, but applications that address one or more of the funding priorities fare better in the project selection procedure. Whether or not a project

relates to a funding priority is to some degree subjective. Some projects clearly addressed one or more of the funding priorities, whilst others only indirectly related to a funding priority. Applicants were asked to specify how their projects related to ACA's mission and funding priorities and this information was used to determine which of the selected projects for 2017/18 contributed to ACA's funding priorities. All the CCEG funded projects indicated they related to at least one funding priority. One research project did not mention a link with any of the funding priorities. For a complete overview of project contribution to the ACA Funding Priorities 2017/18, see page 57.

Again, this year the most cited CCEG funding priorities were: #6 *Retention and recruit and education of hunters, anglers and trappers...* (with 40 percent of projects citing this funding priority) and #7 *Projects related to outdoor conservation education* (40 percent), followed by #2 *Site specific enhancement of habitat & stewardship initiatives* (38 percent). Since the funding priorities began, the CCEG funding priority #5 *relating to matching sportsmen with landowners* has been very rarely cited by projects; this year one project mentioned a link with this funding priority.

The most cited Research funding priority in 2017/18 was #12 *Work towards clarifying status of current data deficient species* (with 33 percent of projects citing this funding priority). Funding priority #6 *Investigation of methods for reducing the spread and/or impact of wildlife or fish related diseases* was mentioned by 28 percent of the projects. Funding priorities #1 *Research activities specifically listed on provincial recovery plans for Alberta's endangered species*, #2 *Impacts of non-native species on persistence of native species*, and #7 *Evaluate the impact of various harvest management regimes on fish or wildlife populations* were mentioned by four of the 18 funded projects. Three of the 12 funding priorities were not mentioned by any of the funded projects: #4 *effect of pesticides/herbicides on wildlife species' food availability...*; #8 *Evaluating the social demographics of hunting and angling...*; and #9 *effects of biological solutions on carbon sequestration...* #10 *effects of agricultural run off on fisheries* was mentioned by one project. Funding priorities #4, #8, #9 and #10 have very rarely been addressed by projects since the introduction of the funding priorities. Researchers do not appear to be tailoring their research application to the funding priorities, despite listing Research funding priorities in our application guidelines for many years now.

## Synopsis of Approved Projects for 2017/18

A summary description of each of the 99 approved projects containing the project's objectives, activities, and deliverables can be found starting on page 9 of this report. The list below is in alphabetical order by organization for CCEG and ACA RG.

### ACA Conservation, Community, and Education Grants

#### Small Grants \$3,000 and under

**Alberta Hunter Education Instructors' Association;** 14th Annual OWL Day – "Outdoor Wildlife Learning"; \$3,000

**Alberta Hunter Education Instructors' Association;** AHEIA Teachers' Workshop; \$3,000

**Alberta Hunter Education Instructors' Association;** Educational Development of the Conservation Education Wildlife Museum; \$3,000

**Alberta Hunter Education Instructors' Association;** Outdoor Bound Mentorship Program; \$3,000

**Alberta Hunter Education Instructors' Association;** Outdoor Youth Seminar; \$3,000

**Alberta Hunter Education Instructors' Association;** Lethbridge College Conservation Enforcement Student Workshop; \$2,000

**Alberta Riparian Habitat Management Society (Cows & Fish);** Grazing Schools for Women: Promoting habitat and improved grazing stewardship to livestock producers in south and central Alberta; \$3,000

**Bow River Chapter – Trout Unlimited Canada;** Legacy Island; \$2,500

**Camrose Wildlife Stewardship Society;** 2017 Camrose Purple Martin Festival; \$2,450

**Edmonton Nature Club;** 2017 Snow Goose Chase; \$3,000

**Edmonton Valley Zoo;** Edmonton Valley Zoo ACA Go Wild Activity Tent; \$2,934.44

**Friends of Fish Creek Provincial Park Society;** Beaver, Poplars, and More: Education, stewardship, and conservation for a healthy Fish Creek watershed; \$3,000

**Shoot 'im Up Archery;** Archery Days; \$2,500

**Helen Schuler Nature Centre;** "Extreme by Nature" Environmental Education for 11 to 15 Year Olds; \$2,700

**Helen Schuler Nature Centre;** Community Engagement in River Valley Conservation; \$3,000

**Innisfail Fish & Game Association;** Waterfowl Nesting Habitat Enhancement; \$1,500

**Junior Forest Wardens – Bezanson Brown Bears;** Outdoor Conservation Education for BBB JFW; \$1,300 – GRANT NOT ACCEPTED

**JFW Glory Hills;** Fall Wilderness Family Camp; \$2,000

**JFW St Albert Sturgeons;** Fall Wilderness Family Camp; \$2,000

**Onoway & District Fish & Game Association;** 1st Annual OFGA Ladies League Outdoor Education Camp; \$2,500

**Onoway & District Fish & Game Association;** Bluebird / Bat House Project; \$800

**Safari Club International Red Deer Chapter;** Red Deer SCI Wild Game Processing Events; \$2,500

**Safari Club International Red Deer Chapter;** Red Deer, Kids Can Fish Event (mentored youth fishing day); \$2,000 – PROJECT DID NOT PROCEED

**Slave Lake Rod and Gun Club;** Youth Archery Equipment; \$3,000

**Spruce Point Park Association;** Outdoor Safety Expo; \$1,495

**Trout Unlimited Canada;** Girardi Creek Bioengineering Project; \$3,000

**Warne in the Wild;** American Kestrel Nest Box Program in Alberta; \$2,000

**Weaselhead/Glenmore Park Preservation Society;** Weaselhead Invasive Plant Program; \$3,000

**Willingdon and District Fish & Game Association;** Willingdon Fish Pond and Park; \$1,600

#### Large Grants (over \$3,000)

**Alberta Fish & Game Association;** Increasing Habitat for Species at Risk in Alberta's Grassland Region through Adaptive Management, Habitat Enhancement, and Outreach; \$37,400

**Alberta Fish & Game Association;** Nevis Property Wildlife Friendly Fencing; \$4,500

**Alberta Fish & Game Association;** North Raven Riparian Conservation Project; \$40,000

**Alberta Fish & Game Association;** Pronghorn Antelope Migration Corridor Enhancement; \$36,288

**Agroforestry and Woodlot Extension Society;** Enhancing Woodlots for Wildlife; \$13,000

**Alberta Hunter Education Instructors' Association;** 24th Annual Outdoor Women's Program; \$24,000

**Alberta Hunter Education Instructors' Association;** Alberta Fishing Education Program – Electronic Course; \$25,000

**Alberta Hunter Education Instructors' Association;** HTML5 Course Conversion; \$10,000

**Alberta Hunter Education Instructors' Association;** Provincial Hunting Day Initiatives; \$20,000

**Alberta Hunter Education Instructors' Association;** Youth Hunter Education Camp (Weeks 1,2,3,4); \$44,000

**Alberta Council for Environmental Education;** Get Outside and Play Week – Promoting outdoor nature play in the early years, May 27 - June 3; \$6,000

**Alberta Hunters Sharing the Harvest;** Wild Game for Food Bank Project; \$8,000

**Alberta Junior Forest Wardens Association;** JFW National Camp 2017, Canadian Home Grown; \$25,000

**Alberta Riparian Habitat Management Society (Cows & Fish);** Implementing Riparian Habitat Management Improvements for Westslope Cutthroat Trout; \$6,150

**Beaverhill Bird Observatory;** Public Engagement, Wildlife Conservation, and Monitoring at Beaverhill Lake; \$16,500

**Calgary Bird Banding Society;** Cypress Hills Landbird Monitoring and Educational Programs; \$12,000 – GRANT NOT ACCEPTED

**Calgary River Valleys;** River Access Education; \$15,500

**Canadian Parks and Wilderness Society (CPAWS) Southern Alberta Chapter;** Kids for Conservation: Celebration 20 year of getting kids outside to experience Alberta's wilderness; \$15,000

**Castle-Crown Wilderness Coalition;** Education and Reclamation in the Castle; \$17,500

**Central Alberta Fish & Game Association;** Bennett Pond Access Trail and Dock; \$6,500

**Cloudy Ridge Ranch;** Cloudy Ridge/Yarrow Creek Off-site Water and Riparian Improvement Project; \$18,000

**Edwin Parr Composite High School;** Edwin Parr Composite High School NASP Archery Program; \$12,700

**Foothills Restoration Forum;** Foothills Restoration Forum Outreach and Extension: Range health assessment training and fall information session; \$8,400

**Glenbow Ranch Park Foundation;** 2017 Vegetation Management at Glenbow Ranch Provincial Park; \$18,800

**H. A. Kostash School;** H. A. Kostash Youth Mentorship Programs; \$15,900

**Highway 2 Conservation;** Alberta Bat Education and Habitat Protection: Enhancement of the Cache Park Bat Reserve and the “Save a Barn, Save a Bat Program”; \$4,700

**Highway 2 Conservation;** Riparian Education/Restoration Program; \$5,750

**Inside Education;** Wildlife Education Student Field Trips; \$7,491

**Junior Forest Wardens – Yellowhead Regional Council;** Regional Camp 2017 support; \$3,875

**Junior Forest Wardens – Yellowhead Regional Council;** Wild Women Training Week; \$6,000

**Junior Forest Wardens – Yellowhead Regional Council;** Winter Skills Camp; \$3,500

**JFW Lobstick Lynx;** Archery; \$5,100

**Lesser Slave Lake Bird Observatory;** Avian Monitoring and Education Programs at Lesser Slave Lake; \$22,500

**Lethbridge Fish & Game Association;** 7th Annual LFGA/ACA Youth Fishing Recruitment Day; \$12,000

**Lethbridge Fish & Game Association;** Hooked on Fishing Program by ACA & AFGA; \$18,328

**Living Lakes Canada c/o Wildsight;** Lac La Biche Shoreline Management Guidelines; \$10,000

**Mountain View County;** Riparian & Ecological Enhancement Program; \$20,000

**Nature Alberta;** Expanding Family Nature Nights across Alberta; \$32,470

**Nature Alberta;** Living by Water; \$40,000

**Northern Lights Fly Fishers/TUC Edmonton;** Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed – Habitat Restoration Planning; \$27,910

**Nuttig, Carson;** Car Creek Riparian Conservation; \$7,000 – GRANT NOT ACCEPTED

**Oldman Watershed Council;** Engaging Recreationists in the Oldman Headwaters through Restoration and Education Project; \$35,750

**Partners in Habitat Development;** Partners in Habitat Development; \$15,000

**Red Deer County;** Wildlife and Native Habitat Enhancement in Red Deer County via ALUS; \$40,000

**SARDA Ag Research;** Importance and Protection of Native Pollinators for Sustainable Crop Production in Peace Region of Alberta; \$7,600

**Society of Grassland Naturalists;** Beware the Wetland Invaders; \$6,525

**Trout Unlimited Canada;** Quigley Creek Fish Passage Project; \$17,925

**Trout Unlimited Canada;** Water Edu-kits; \$20,000

**Trout Unlimited Canada;** Yellow Fish Road; \$25,000

**University of Lethbridge;** Outdoor Education; \$5,000

**Wildlife Conservation Society Canada;** Going to Bat for Bats: Citizen science in Alberta; \$28,715

**Zone 4&5 Alberta Fish & Game;** Narrow Lake Conservation Centre; \$15,000 – GRANT FUNDS NOT DISPERSED

## ACA RG

**Athabasca University (Dr. Glover);** Taking the Strain: Assessing the sensitivity of rainbow trout strains to hypoxia and ammonia associated with agricultural run-off; \$16,800

**Avocet Environmental Inc. (Mr. Scobie);** Efficacy of Detecting Sharp-tailed Grouse Leaks in Fall Surveys; \$9,600

**Foothills Restoration Forum (Dr. Desserud);** Use of Native Hay and Construction Matting to Improve Restoration Outcomes in Dry Mixedgrass Habitats; \$7,430 – PROJECT DID NOT PROCEED

**Hillcrest Fish and Game Preservation Assoc (Mr. Paton);** Highway 3 and Bighorn Sheep; \$14,630

**Miistakis Institute (Ms. Lee);** Grizztracker: Testing the efficacy of public participation in grizzly bear science; \$10,420

**STRIX Ecological Consulting (Ms. Priestley);** Canada Warbler Rapid Assessment Protocol – Phase 1; \$5,725

**The King’s University (Dr. Visscher);** Implication of Anthropization for Host Partitioning and Epidemiology of Emerging Zoonotic Parasites in Wild Canids; \$24,250

**Trout Unlimited Canada (Ms. Peterson);** Discovering Didymo Distribution (D3); \$13,210

**University of Alberta (Dr. Bayne);** Automating Identification of Wildlife in Audio Recordings; \$16,800

**University of Alberta (Dr. Boyce);** Evaluating Alternative Elk Harvest Strategies in SW Alberta; \$7,650

**University of Alberta (Dr. Merrill);** Chronic Wasting Disease in Deer: Modelling transmission from contract rates; \$27,600

**University of British Columbia (Dr. Burton);** Evaluating Camera Trap Surveys as an Effective Means of Monitoring Remote Ungulate Populations; \$31,700

**University of Calgary (Dr. Galpern);** Wild Pollinator Conservation and Restoration in Southern Alberta Croplands III: Experimental tests of crop yield; \$17,820

**University of Calgary (Dr. Kutz);** Development and Application of Molecular Epidemiology Tools to Define Bighorn Sheep Parasite Communities and Guide Management; \$35,200

**University of Manitoba (Dr. Koper);** Effects of Anthropogenic Noise Associated with Oil and Gas Development on Survival and Reproductive Performance of Grassland Songbirds in Alberta’s Mixed-grass Prairie; \$18,300

**University of Montana (Dr. Hebblewhite);** Bull Elk Recruitment, Survival, and Harvest in a Partially Migratory Elk Herd in the Ya Ha Tinda; \$30,060

**University of Winnipeg (Dr. Lingle);** Assessing the Risk of CWD: A microbiological-behavioural metric to quantify the risk of prion transmission between deer; \$16,800

**Wildlife Conservation Society Canada (Dr. Lausen);** Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions; \$25,995

# ACA Grants Program Project Summaries

## ACA Conservation, Community, and Education Grants

### Enhancing Woodlots for Wildlife

#### *Agroforestry and Woodlot Extension Society*

Grant: \$13,000

Project Code: 015-00-90-256

Project Status: New; Extended until August 1, 2018

Project Website: [www.awes-ab.ca/projects/enhancing-woodlots-for-wildlife](http://www.awes-ab.ca/projects/enhancing-woodlots-for-wildlife)

Forests in Alberta are highly fragmented and disturbed, substantially reducing the amount and quality of habitat for fish and wildlife. AWES and partners have found that land managers throughout the province (e.g., counties, land trusts, acreage owners, crop producers, and ranchers) are increasingly concerned about wildlife, and are interested in improving and managing their land to provide high-quality habitat and wildlife corridors. Currently, a lack of awareness on these issues and their potential solutions is the primary barrier for these stakeholders to make substantial improvements to their properties that are logistically and economically feasible (e.g., partial vs. full harvests, tree planting, and riparian fencing). AWES, in conjunction with their partners, is educating land managers on how to improve areas for wildlife through workshops and extension materials.

Deliverables/Results:

- AWES has been slightly delayed in initiating the project, but several workshops were completed; however, the Peace River workshops were not completed due to time conflicts and not ideal weather for the best outcome of the workshop. For this reason, the project was extended to allow the remaining sessions to be scheduled and completed.
  - A workshop was held in central Alberta within the County of Lac St. Anne, near Sanguedo. This workshop, with 16 participants, focused on woodlots and some of the wildlife habitat that can be provided by vegetation management in the woodlot. This was both an indoor and outdoor session.
  - A second workshop was held in Grande Prairie County in BeaverLodge, Alberta. This workshop, with 15 participants, focused on riparian areas and functionality of these areas for several reasons, including wildlife habitat. This workshop was a two-day session and was completed in conjunction with another AWES project and ACA staff from the Peace River area.
- A workshop was conducted in the Didsbury Area, in Rocky View County of the province on June 4–5, 2018 on enhancing riparian habitats. This workshop was a two-day event that had 12 attendees interested in habitat development and restoration around specific wetlands.
- A final workshop was completed in Northern Sunrise County south of Peace River on June 14–15, 2018. This workshop was a two-day event and had ten attendees focused on riparian areas and enhancement.
- Four pasture tours were conducted in the Peace River area in conjunction with Cows & Fish and the Peace River Beef & Forage Association. These occurred in May and June of 2018. The following is a listing of the events and details of outcomes. The AWES project supported the events and assisted in the financial costs.
  - Intro to Ranching for Profit & Grazing School. Date: June 19, 2018. Location: BrownVale, Alberta. Description: This event featured Dave Pratt of Ranch Management Consultants. 20 people attended the session.
  - Intro to Ranching for Profit/ABP Pasture Project Field Day. Date: June 20, 2018. Location: Rycroft, Alberta. Description: This event featured Dave Pratt of Ranch Management Consultants. 23 people attended the session.
  - Alberta Envirothon. Date: May 25, 2018. Description: Twenty high school students participated in three days of learning, testing, and oral presentations on a topic of environmental significance. A total of 26 people attended the session.
  - MD of Greenview Cows, Crops, Creeks and Sloughs. Date: June 25, 2018. Description: Riparian 101 workshop included classroom and in-field session on riparian areas in agricultural landscapes and included discussions about wildlife and the value of healthy riparian areas for their habitat as well as grazing management principles and strategies to help maintain and improve riparian areas for the benefit of wildlife as well as the many other goods, services, and ecological and social benefits riparian areas provide. A total of 25 people attended the session.
- One article on developing woodlot improvement plans for wildlife habitat: one article that can be posted in both the ACA and AWES websites to illustrate the results of the workshop sessions that will assist in the promotion of the project objective and work (available on request).
- One article on pasture management for wildlife: one article/fact sheet illustrating the results of the grazing tours and sessions on improved management for wildlife (available on request).

## 14th Annual OWL Day – “Outdoor Wildlife Learning”

### *Alberta Hunter Education Instructors’ Association*

Grant: \$3,000

Project Code: 002-00-90-223

Project Status: Funded since 2014/15, and by R&R fund; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

Outdoor Wildlife Learning (OWL) day provides a safe, responsible, and fun introductory opportunity to introduce young people to the outdoors that will nurture and develop their interest in outdoor pursuits. AHEIA held a one-day workshop, complete with hands-on experiences at the Calgary Firearms Centre. This day was made available free of charge to the general public and focused on two age groups: youth aged six – 12 years of age and students aged 13 – 20. Youth had the opportunity to participate in the following education sessions: Black Powder Shotgun Demonstration (ages nine – 20): Wildlife Identification and Shot Placement; “Making Tracks” (ages six – eight) participants make plaster casts of various wildlife that they take home; Dog Training Demonstration; Fishing Education; Firearms Safety Lecture; Shotgun Shooting; Archery; Firearms Safety Walk; Waterfowl Calling; and Use of Scents.

Deliverables/Results:

- The event was held April 8, 2017. This year’s OWL day had 93 youth participants and 11 AHEIA instructors to run the various activities.

## 24th Annual Outdoor Women’s Program

### *Alberta Hunter Education Instructors’ Association*

Grant: \$24,000

Project Code: 002-00-90-219

Project Status: Funded since 2014/15, and by R&R fund; Completed

Project Website: [www.aheia.com/owp](http://www.aheia.com/owp)

The 24th Annual Outdoor Women’s Program (OWP) hosted 178 women with 35 mentors for five days of learning, camaraderie, fun, and an opportunity to begin to master the outdoors. This year’s OWP took place August 2–6, 2017 at the Alford Lake Conservation Education Center for Excellence. Women of all ages were encouraged to experience, explore, and develop an understanding of the natural world through over 30 different hands-on programs. The following sessions were provided: Archery, Canoeing – basic and advanced, Chainsaw Basics, Firearms Basics – shotguns, rifles, and handguns, Advanced Shotgun, Fly Fishing, Wilderness Survival, Introduction to ATVing, Let’s Go Bow Hunting, Waterfowl Hunting, The Science of Fishing, GPS and Geo-caching, Humane Trapping, Edible Plants, Outdoor Cooking, Advanced Hunting Session – upland game birds & waterfowl, Advanced Hunting Session – big game animals, Crossbows, Longbow Building, Predator Awareness – preventing conflicts with carnivores, Trailing, Game Calling, etc. Patient and knowledgeable instructors encouraged each woman towards her own level of confidence and competence with each new skill. The purpose is to encourage women to enjoy the great outdoors and to become advocates of hunting and angling by providing opportunity to gain confidence, increase competence, acquire experience, and promote personal growth. This is done through information, inspiration, and involvement.

Deliverables/Results:

- OWP had 178 women graduate this year, leaving with expanded knowledge, skills, and confidence in Alberta’s wilderness environment. Many of these women will become hunters and anglers as have their predecessors of the OWP program. Additionally, they will influence their families to join them in the enjoyment and appreciation of the outdoors. As expected, each of these participants learned many new skills. There is continuing interest and learning among the women who go outdoors and the many activities in which they can participate that expose and develop hunting, angling, trapping, camping, and survival skills. This ensures training in a safe and enjoyable manner of the wilderness experience.

## AHEIA Teachers’ Workshop

### *Alberta Hunter Education Instructors’ Association*

Grant: \$3,000

Project Code: 002-00-90-248

Project Status: Funded in 2016/17; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

The purpose of the Teachers’ Workshop was to directly train and impact the educators and influencers of outdoor education in the province, especially with respect to skills and credentials equipping them for leadership in outdoor wildlife pursuits. The workshop promoted continual learning regarding new certification as an Alberta Conservation and Hunter Education Instructor, the Alberta Fishing Education Program Instructor, and the optional International Bowhunter Education Program. Through a series of workshops, teachers also received the following training: Survival and Camping Program, Shooting Program, Compass Program, Fishing Program, Archery Program, and Boating Safety Program.

Deliverables/Results:

- A Teachers’ Workshop was held July 20–23, 2018, with 18 students who are teachers with Alberta Education. Seven instructors provided the teaching for the workshop. This workshop provided the necessary instruction and certification allowing teachers in the Alberta Educational system to be able to teach the courses offered through the Department of Education for the Career and Technology Wildlife Strand of the Alberta Educational programming.

## Alberta Fishing Education Program – Electronic Course

### *Alberta Hunter Education Instructors’ Association*

Grant: \$25,000

Project Code: 002-00-90-276

Project Status: New; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

The Alberta Fishing Education Program has existed in the Conservation Education Program in Alberta since 1982. This initiative expanded the reach of the education program that has been successfully used in Alberta for nearly 40 years. Current education standards and the technology were applied to this program, bringing it to today’s standards, enabling users the best possible learning experience. The purpose of the project was to make the Fishing Education Program

available online through development of the Fish Identification Program, including writing the script and text, filming, editing, sourcing updated information and images, and narrating the program. Implementation and access is then to be provided through online program access from AHEIA's website. This four-hour program includes meaningful simulations of real-life events, placing learners in the moment and forcing them to contemplate their actions and the best ways to approach different situations.

Deliverables/Results:

- The online Alberta Fishing Education Program has been scripted, filmed, edited, narrated, and is now live online.

## Educational Development of the Conservation Education Wildlife Museum

### *Alberta Hunter Education Instructors' Association*

Grant: \$3,000

Project Code: 002-00-90-266

Project Status: New; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

AHEIA houses the Conservation Education Wildlife Museum (CEWM) in its large facility/classroom in Calgary, Alberta. The Museum is comprised of approximately 1,000 exhibits located at its main location with extensive exhibits on long-term and short-term loan throughout the province for educational purposes. The exhibits have had minimal signage or identification. This initiative has been creating low-tech, interactive signage that encourages participants to identify the wildlife exhibits including their natural habitats and behavioural features. Focus has been given to display these exhibits in a pleasing visual fashion in the facility, enhancing the learning experience. The project is now complete. The CEWM has received repairs and upgrades to the taxidermy and signage in the museum. New fur displays have replaced worn out displays. Training by professionals has also been conducted with AHEIA staff to ensure future self-reliance to maintain this collection.

Deliverables/Results:

- The CEWM is currently visited by 5,000 visitors annual, including numerous classes, school groups, and various youth groups, such as the Scouts and Junior Forest Wardens. These visitors are always curious to know the names and general facts about the wildlife they are viewing. By providing displays with such information, the visitors are now leaving with a more satisfactory learning experience and are encouraged to be more comfortable and knowledgeable in their forays into wild spaces of Alberta. AHEIA is also finding that museum tours are gateway experiences that entice participants to sign up for other courses and class offerings. The Museum is open and free-of-charge to the public five days a week from 8:30am – 4:30pm daily and tours are often provided on weekends.
  - Current displays have been cleaned and repaired.
  - Fur displays have replaced current worn out fur displays.
  - Signage has been added for some of the displays including video stations giving footage of animal behaviour in the wild pertinent to the displays.

## HTML5 Course Conversion

### *Alberta Hunter Education Instructors' Association*

Grant: \$10,000

Project Code: 002-00-90-281

Project Status: New; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

This project is a one-time conversion of all AHEIA's electronic learning programs into HTML5 compatible format. Technology is rapidly changing. The software and systems that were once considered cutting edge are quickly giving way to new systems. In the past, Flash was the only way for AHEIA to produce the complex multimedia assets for its e-learning programs. However, this is no longer the only method. Thanks to advances in the way programs interact, HTML5 is now the ideal solution for future-proofing AHEIA's offerings. It provides a rich-media platform that requires no special plug-ins or installations, but still allows AHEIA to maintain the same great visuals and interactives that have become synonymous with its brand. As a result, it is time for AHEIA to begin the process of converting its existing products to an HTML5 format.

Deliverables/Results:

- Conversion of AHEIA's electronic learning programs into the HTML5 format: the HTML5 conversion of the Conservation Education Program has been completed up to the alpha stage. This means that the work necessary to convert the program is completed. The beta stage of testing is about to happen (at the time of the 2017/18 final report) and the newly converted program will be used by those preparing for the fall hunting season.

## Lethbridge College Conservation Enforcement Student Workshop

### *Alberta Hunter Education Instructors' Association*

Grant: \$2,000

Project Code: 002-00-90-272

Project Status: New; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

This was a five-day course held in September 2017 for students in the Lethbridge College Bachelor of Applied Science in Conservation Enforcement Program at the Alford Lake Conservation Education Centre for Excellence. The course is designed to give hands-on instruction to students who will be the future Fish and Wildlife, and Parks Enforcement Officers in Alberta. Lethbridge College students undertake an intensive firearms familiarization course while at Alford Lake. They are taught safe handling and storage principles as well as being instructed on how to become proficient in shooting firearms.

Deliverables/Results:

- The workshop was held September 10–16, 2017 with 18 students attending at the Alford Lake Conservation Education Centre for Excellence. Students became familiar with firearms and safe, proficient firearms handling. This will lead to safer hunters in the field and to students who may not have otherwise had the opportunity to handle firearms, being able to do so. Students also developed skills in trapping and handling problem wildlife species.

## Outdoor Bound Mentorship Program

### *Alberta Hunter Education Instructors' Association*

Grant: \$3,000

Project Code: 002-00-90-222

Project Status: Funded since 2014/15 and by R&R fund; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

The "Outdoor Bound!" program creates a series of opportunities for youth and adults to participate in a formalized wilderness mentorship program that provides a greater understanding and respect for wildlife and wild places. This mentorship program focused on interpersonal support and growth, guidance, material exchange, sharing of wisdom and experience, coaching, and role modelling. The Outdoor Bound Mentorship Program provided mentorship for 3,410 youth and novice participants; 339 mentors provided this great learning opportunity over 4,804 hunt days in total during fall 2017.

Deliverables/Results:

- This year the program had 3,410 participants, 339 mentors, and 4,804 hunt days.

## Outdoor Youth Seminar

### *Alberta Hunter Education Instructors' Association*

Grant: \$3,000

Project Code: 002-00-90-215

Project Status: Funded since 2014/15 and by R&R fund; Completed

Project Website: [www.aheia.com/youthprograms](http://www.aheia.com/youthprograms)

The Outdoor Youth Seminar took place August 25–27, 2017, with 124 participants in the program, 24 volunteer instructors, and five staff. This seminar provided two fun-filled days of learning for young outdoor enthusiasts and parents and guardians. It was designed to help young people develop basic skills that will help them use the outdoors with confidence. At the seminar, the youth practiced archery, shooting, map and compass, survival skills, wildlife identification, and fishing, to name a few of the sessions available. Numerous experts shared information and instruction in various outdoor pursuits. This seminar was the 15th annual Outdoor Youth Seminar. This project also mobilized a large workforce of volunteer coaches, mentors, and instructors. It also acts as an important gateway of introduction into certificate conservation education programs. Large numbers of adults, parents, and supervisors attended and received a positive first-time introduction into the realm of conservation education. The project concluded with a giant pig-roast and a celebration. The celebratory conclusion instilled a tremendous connection to the cause and sense of belonging to all who participated.

Deliverables/Results:

- There were 124 participants in the program with 24 volunteer instructors and five staff for the two-day seminar (August 25–27, 2017). It remains a popular camp for youth with many returning to participate in additional sessions. Sessions were offered with excellent learning and interaction taking place. All around, the Outdoor Youth Seminar was once again a huge success.

## Provincial Hunting Day Initiatives

### *Alberta Hunter Education Instructors' Association*

Grant: \$20,000

Project Code: 030-00-90-245

Project Status: Funded by CCEG since 2014/15 and previously via the R&R fund; Completed

Project Website: [www.aheia.com](http://www.aheia.com)

The fourth Saturday of September has been designated as Provincial Hunting Day. On this day, Albertans are encouraged to introduce a new person to outdoor sports such as hunting, fishing, trapping, shooting, or archery. Provincial Hunting Day was September 24, 2017. AHEIA hosted events at the Alford Lake Conservation Education Centre for Excellence near Caroline, Alberta and at the Calgary Firearms Centre for Excellence in DeWinton and numerous smaller scale experiences province-wide. Albertans of all ages were invited to try their hand at fishing, target archery, trap shooting, and shotgun shooting from blinds, viewed dog demonstrations, and many more training events. These AHEIA events were completely free of charge and were open to Albertans of all ages.

Deliverables/Results:

- Provincial Hunting Day was celebrated at various venues throughout the province, including AHEIA's Calgary Firearms Centre, with many activities related to hunting on September 24, 2017. Approximately 300 students, and 20 volunteers/ instructors participated in total between the two locations mentioned above. Activities included: fishing, archery, bow hunting, crossbows, firearms basics with handguns, rifles, shotguns, tools and equipment seminars, predator awareness, tree-stand safety, waterfowl identification, fur-bearing animal identification, field dressing/field techniques, wild game calling, and upland bird identification.
- Numerous notifications were posted with various media as well as posted to AHEIA's social media feeds (Facebook, Twitter, and Instagram) to publicize the event before, during, and after. Numerous media were invited to participate, and these events received positive media coverage.

## Youth Hunter Education Camp (Weeks 1,2,3,4)

### *Alberta Hunter Education Instructors' Association*

Grant: \$44,000

Project Code: 002-00-90-224

Project Status: Funded by CCEG since 2014/15 and previously via the R&R fund; Completed

Project Website: [www.aheia.com/youthprograms](http://www.aheia.com/youthprograms)

The Outdoor Youth Camps were an amazing opportunity for young people to leave their urban lifestyles for a week to experience "roughing it in the bush," all conducted in a safe, supervised, educational, yet fun and challenging program. The popularity of the camps attests to how much youth enjoy this opportunity to be in the natural habitat of Alberta's wildlife and waterfowl. The four Youth Hunter Education Camps were each six days in length, having evolved from a single week camp years ago. These camps filled months before they started and continue to increase in popularity. Even the volunteers submitted their applications early so they wouldn't miss out on the opportunity to assist at these well-received camps. Conservation Education instructors and volunteers shared their knowledge and provided instruction in the

Alberta Conservation and Hunter Education Program, the Canadian Firearms Safety Course, the Canadian Boating Safety Course, and a number of other outdoor pursuits and shooting/fishing/water safety activities.

#### Deliverables/Results:

- Four Youth Hunter Education Camps had 192 campers, 76 volunteers, and 29 staff and were held from July 2 – 28, 2017 at AHEIA's Alford Lake Conservation Education Centre for Excellence near Caroline, Alberta. Many parents have reported the positive influence that AHEIA has had on their children/teenagers through the high degree of knowledge and skill that is transferred at the Youth Hunter Education Camps. Along with teaching the basic skills in hunting, fishing, archery, shooting activities, boating safety, and related programming, there was intentional teaching of courtesy, patience, and respect for one another. These interpersonal skills are built into the program. Through the promotion, education, and development of skills and the value system taught through AHEIA's Youth Hunter Education Camps, participants learned to respect wildlife and their habitat, and how to conserve, protect, restore, and enhance habitat for the protection and enjoyment of the various wildlife and waterfowl species. Education in the outdoors at the Alford Lake Conservation Education Centre for Excellence ensures that young Albertans are not just introduced to wildlife through a textbook but are able to encounter wildlife and waterfowl in their natural habitats at Alford Lake's forest, lakefront, and field facility. This leads to a love for these areas and a greater future investment in the preservation of these natural environments for enjoyment by both people and the wildlife and waterfowl that live there.

## Get Outside and Play Week – Promoting outdoor nature play in the early years, May 27 – June 3

### Alberta Council for Environmental Education

Grant: \$6,000

Project Code: 002-00-90-279

Project Status: New; Completed

Project Website: [www.abcee.org/getoutsideandplay](http://www.abcee.org/getoutsideandplay)

Get Outside and Play Week is a new Alberta-wide celebration of outdoor nature play in early childhood. Childcare centres, families, and communities used this week to jumpstart active outdoor nature play through direct, hands-on experiences. Events took place across the province in parks, childcare centres, and backyards. Participants registered their activity and received resources, inspiration, and ideas to help them incorporate outdoor nature play into daily life. The project goal is to increase the awareness amongst parents and early childhood educators about the value and benefits of outdoor play and support them with resources and ideas to increase their capacity and comfort level working and playing outside with young children. The following objectives were identified for this project: 2,000 young children ages 0-6, and 250 childcare providers and parents will connect with their communities and nature through outdoor nature play; 250 early childhood educators and parents will receive and use resources that increase their capacity and confidence in getting young children outside to play in nature; communities learn more about the value and importance of outdoor play in nature. These objectives were accomplished through the following activities: public campaign, family and community events, childcare centre engagements, online community, and resource creation.

#### Deliverables/Results:

- 2,600 children and 500 adults engaged in the week by registering family events, attending community events, or participating in an event at a childcare centre.
- Resources were created and distributed to parents and early childhood educators.
- An engaging, easy-to-use website was created at [getoutsideandplay.ca](http://getoutsideandplay.ca)
- Media picked up the story and a larger audience was reached with the benefits and value of outdoor play in the early years.
- Public campaign – Alberta Council for Environmental Education (ACEE) successfully attracted media attention during this week with the following opportunities:
  - CTV Morning Show Calgary five-minute segment
  - *Calgary Herald* article on-line and on page A2 of the paper [www.calgaryherald.com/news/local-news/fortney-getting-kids-to-play-outside-a-21st-century-challenge](http://www.calgaryherald.com/news/local-news/fortney-getting-kids-to-play-outside-a-21st-century-challenge)
  - Several interviews on local radio stations in Alberta
- The program had four outdoor digital billboards and 30 transit ads in Calgary. These ads ran for four weeks in May.
- Four bloggers were recruited to write an article about this week to reach new audiences. ACEE was happy with the media pick up for this event and the articles were supportive and encouraging. The outdoor advertising did not generate the traffic to the website they were targeting, so this is not something ACEE will do next year.
- Family Events – 69 families registered their activities for the week. This was the first time ACEE targeted families directly with the program. This component will be kept next year, and the approach refined. Community events will be the main activity next year.
- Community Events – 27 public events were organized during this week. ACEE was delighted by the number of organizations who latched on to this idea and under their own initiative organized events. For example, the Stettler Early Years Coalition hosted an event everyday of Get Outside and Play Week and the Haysboro Community Preschool in Calgary engaged their community in three unique events. In 2018, support will be increased for these community organizers by providing more resources and honoraria to organize and host events. It is the best way to shine a light on outdoor play in nature, attract media attention and engage provincial and municipal leaders. It also helps families connect and create a community around outdoor nature play.
- Childcare Centre Engagements – 32 childcare centres participated in this week-long celebration. Next year, a more specific theme would help the educators in their planning as well as more notice to prepare and plan. Childcare centres did use the resources on the website.
- Online community – The website and registration system were a large investment in development time but now that it is in place, it will be easier next year. An online map was not developed; this may be something to consider for next year.
- Resources – an artist was engaged to design a logo and images to illustrate the why and how of outdoor play in a fun and playful way that is accessible to everyone. These resources were distributed during Get Outside and Play Week in May and are available for anyone to download and will definitely have a life beyond this event. The ACA logo is listed on these resources.



- Parent resource – Two-page resource Why and How of Outdoor Play.
- Childcare resource – Complete Resources posted online with ideas and activities.
- Community event resource – Ideas and activities posted online.
- Online registration system – System created for families, educators, and community events to be registered online.
- Online hub with map and resources – Engaging, easy-to-use webpages were created at [getoutsideandplay.ca](http://getoutsideandplay.ca). Online map was not created.
- Promotional materials and templates – Logo and images provided for poster and promotions.

### **Increasing Habitat for Species at Risk in Alberta's Grassland Region through Adaptive Management, Habitat Enhancement, and Outreach**

#### **Alberta Fish & Game Association**

Grant: \$37,400

Project Code: 030-00-90-127

Project Status: Funded since 1999 as Operation Grassland Community; Completed

Project Website: [grasslandcommunity.org](http://grasslandcommunity.org)

Operation Grassland Community (OGC) collaborates with stakeholders across Alberta's prairie region to develop, implement, evaluate, and adapt management actions to protect and enhance wildlife habitats, and support diverse socio-economic interests. The OGC vision is a sustainable prairie landscape where communities thrive, diverse interests are balanced, and wildlife and their habitats are in abundance. The OGC's objectives are to enhance wildlife habitat through sustainable practices by: (1) Ranch-wide monitoring and adaptive management practices using Land EKG. (2) Quantifying economic incentives required for management compliance at local scale to protect wildlife habitats. The project seeks new and renews expiring five-year voluntary stewardship agreements, promotes Beneficial Management Practices (Species-at-Risk Conservation Plans – SARC plans), and monitors annual population trend in burrowing owl and loggerhead shrike. The project also affects change through awareness: partnerships with other groups and initiatives, multiple news-media, presentations and open-houses for public and government, school-aged curriculum-based programs, materials, field-trips, and summer camps; ongoing outreach through OGC website, blog, and videos.

Deliverables/Results:

- Enhance Wildlife Habitat through Sustainable Practices: Addressing proximate causes of habitat loss and degradation using ranch-wide monitoring and adaptive management ('Land EKG'):
  - Land EKG – two new OGC members implement ranch-wide Land EKG (management area 1,500 – 2,500 acres). First-year/base-line wildlife surveys were conducted, and wildlife habitat indicators measured along transects (data entered in Land EKG database and incorporated into ranch management goals). Two additional members have expressed serious interest, but OGC was unable to complete the individual projects due to high fire hazard conditions at the end of the 2017 grazing season which precluded safe access.
  - Land EKG – supported 11 of the 14 existing Land EKG practitioners (2013 – 2017 installations) toward self-sustaining projects. Assisted monitoring and collection of range and habitat data at 11 ranches;

when required to assist data entry and report interpretation, one-on-one coaching wildlife surveys conducted, and wildlife habitat indicators measured along Land EKG transects (minimum two transects/ranch); population and habitat data entered in Land EKG database; production of summary report on findings with methods evaluation and progress to date.

- Habitat Enhancements – projects benefitting SAR and other wildlife (re-seeding, cross-fencing, off-site watering, shrub/tree complex protection).
  - Ferruginous Hawk projects: (1) completed installations of one new Artificial Nesting Structures (ANS) with assistance from Fortis Alberta (2) 10 ANS underwent maintenance work in 2016 at Bullpound Pasture were inspected in 2017.
  - Seven new landholders entered into five-year voluntary habitat stewardship agreement with OGC and 18 renewals have been made to date. New members are stewards to several thousand acres of native prairie.
  - One SARC plan was completed.
- Monitor annual trend and distribution in burrowing owls and loggerhead shrikes: Burrowing owl numbers are up slightly over the 2016 and 2017 census years, indicating this population is somewhat stable, albeit at very low numbers. A good response rate was recorded. The next loggerhead shrike census is scheduled for 2018. Results to recovery teams and published in suitable media.
- Awareness and Outreach Activities (various media – print, television, radio, web):
  - Five "Prairie Acres e-BULLETINS" (>1500 urban and rural readers).
- OGC website communications have been updated in an ongoing manner due including information on projects and updating social media links. Update of website was completed in March 2017.
- Meetings/Conferences: Attended two Prairie Conservation Forum meetings, Open House & Field day Rangeland Research Institute, and two watershed council meetings (Oldman Watershed Council AGM and Milk River Watershed Council Canada), Calgary Stampede Cattle Trail exhibit was attended by OGC staff (90 – 95,000 attendees) and the Medicine Hat Stampede was attended, and educational materials were shared with many rural and urban attendees. The Medicine Hat Pen Show resumed in December 2017 and OGC attended tradeshow and set up an information venue.

### **Nevis Property Wildlife Friendly Fencing**

#### **Alberta Fish & Game Association**

Grant: \$4,500

Project Code: 015-00-90-258

Project Status: New; Completed

The Nevis Property is a 366-acre habitat property that provides critical winter forage for mule deer, white-tailed deer, moose, and is a home for a variety of small mammals and bird species. There is no domestic livestock grazing permitted on the property. Vehicular trespass has become a serious issue and AFGA would like to install a mile of four-strand smooth wire fence on north boundary to prevent vehicle trespass while providing easy passage by ungulates and recreational users on foot. The fence utilises wildlife-friendly spacing: 18, 24, 30, and 42-inches and serves as an example and demonstration site for proper fencing on habitat properties.

Deliverables/Results:

- Barbed wire was completely removed on 1.2 kilometres of fence line and replaced with four strands of smooth wire spaced at 18, 24, 30, and 42 inches. In heavily treed areas, existing wire was respaced to wildlife-friendly spacing so as not to remove trees that serve as natural buffer against vehicle trespass and provide important habitat to area wildlife. Additionally, three new fence braces were installed, and 25 new posts were installed. The main results of the project are easier movement by ungulates and demonstrating wildlife-friendly fencing standards to neighbours and other conservation groups. An unexpected result was much easier passage through the fence by recreational users accessing the property on foot. This project was completed with a combination of a fencing contractor, four AFGA volunteers (approximately 75 volunteer hours), and one AFGA staff member.

### North Raven Riparian Conservation Project

**Alberta Fish & Game Association**

Grant: \$40,000

Project Code: 015-00-90-244

Project Status: Funded in 2016/17; Completed

The ecological integrity and health of rivers, streams, and surrounding landscapes in Alberta are often negatively affected by ongoing human development. ACA's Riparian Conservation Program identifies priority watersheds where conservation efforts are focused to give these areas the best chance of restoration. Every year, ACA contacts new landowners along its priority streams to offer them an opportunity to participate in the program. In 2017, the goal was to secure new agreements and construct ten kilometres of streambank fences and install two new off-site watering systems to eliminate livestock from watering directly out of the Raven River. With AFGA's contribution, four new riparian agreements with one landowner on Clear Creek and three landowners along the Raven River were secured. The funding helped support improvements to facilitate the new agreements. These improvements included removing 500 metres of old dilapidated fence, improving 4.88 kilometres of fence to protect 33 riparian acres and 19 upland acres along 2,922 metres of the Raven River and 14 riparian acres along 1,056 metres of Clear Creek. Livestock panels were also provided to improve two river-crossings to facilitate cattle movement from one side of the Raven River to the other. ACA's North Raven River Riparian Conservation Program has now protected over 500 acres of riparian and upland habitat along more than 23 kilometres of river.

Deliverables/Results:

- Main results of the project include improved straight-line fencing along Clear Creek and the Raven River to exclude livestock from sensitive riparian habitat. Straight-line fences are easier for the landowner to maintain throughout the term of the agreement. New fences were constructed using wildlife-friendly specifications. One off-site watering system provides livestock with fresh clean water and eliminates cattle from riparian areas and from damaging sensitive streambanks. Livestock panels were installed at two river crossings to direct livestock from one side of the river to the other. Gravel was also added to the banks to reduce siltation into the river.

- Removal of 500 metres of old dilapidated streambank fence.
- Construction of 4,885 metres wildlife-friendly fencing.
- Supply and install of livestock panels, gates, and posts for two river crossings.
- Installation of one off-site watering system.
- Protection of 33 riparian acres and 19 upland acres along 2,922 metres of the Raven River and 14 riparian acres along 1,056 metres of Clear Creek.

### Pronghorn Antelope Migration Corridor Enhancement

**Alberta Fish & Game Association**

Grant: \$36,288

Project Code: 030-00-90-160

Project Status: Funded since 2009/10; Completed

Project Website: [www.afga.org/antelope-corridor-enhancement.html](http://www.afga.org/antelope-corridor-enhancement.html)

Migratory corridors are important in ensuring pronghorn remain at sustainable populations. Fences in particular create great difficulties for pronghorn as they are unwilling to jump over them. Traditional barbed wire fences' lower strands are generally very low so that crawling under often results in serious scrapes that can significantly impact the antelope's health. Page wire fencing is also present which does not allow any passage of pronghorn. This project, in the case of barbed wire fencing, remedies this situation by replacing lower barbed wire strands with smooth wire and at the same time raising them to a height easily navigable by the pronghorn. Where page wire fencing is encountered the entire fence will be replaced, again with a smooth wire lower strand at the appropriate height. The project goal was to remove the bottom strand of wire in select locations along the fence line and add a fourth smooth wire to bottom of barbed wire fence in prime pronghorn migration corridor as identified by ACA. Bottom wire to be set at 18-inch height to facilitate easier movement of pronghorn through fence. The project objectives were: to remove barriers and minimize impediments on migration corridors for antelope, to increase public awareness of antelope and effects of man-made barriers, to illustrate the efficacy of on-the-ground projects based on scientific research, and to enhance hunters' image as proactive conservationists. The main activities were: to identify antelope migratory corridor pinch points, to identify landholders willing to participate, to organize and orient work crews, to stage the event making sure that all necessary materials are onsite.

Deliverables/Results:

- This year's wildlife-friendly fencing work was carried out at the following locations: Bogi Ranching/Laqua Ranching (July 27–30 and August 8–10, 2017), Wegner Ranching/Lost River Ranching/Escape Coulee (August 21–27, 2017), Onefour Heritage Rangeland (Oct 10–15, 2017).
- Smooth wire installed: 42 kilometres.
- Barbed wire manipulated to wildlife-friendly standards: 135 kilometres.
- Page wire fence removed: 1.2 kilometres.
- Total amount of re-configured to enhance antelope migration: 177 kilometres.

## Wild Game for Food Bank Project

### *Alberta Hunters Sharing the Harvest*

Grant: \$8,000

Project Code: 030-00-90-255

Project Status: Funded in 2002/03, 2003/04, 2008/09, 2009/10, and 2015/16; Completed

The Wild Game for the Food Bank Project's primary objective is to provide a high-quality food source to those in need. It does this by encouraging hunters to participate by harvesting deer, moose, or elk in dozens of wildlife management units including several where control is needed to reduce crop and habitat damage. Hunters are specifically asked to donate game not only taken with their general tags, but also to fill supplemental tags issued in high-density game areas. This program has expanded over the years to include several of those areas through consultation with AEP. The program runs through each hunting season and the project activities include notifying hunters about the program and then administering the program with the Edmonton and Calgary Food Banks and the various meat processors. The program deliverables are threefold: (1) Those in need get fed, (2) hunters are involved in the larger community, (3) It encourages hunters to harvest game to meet AEP's harvest goals. This is the 21st year of this successful program that has provided the protein portion for over a half million meals to those in need. This season, over 6,000 pounds of wild game was donated to the program, which will again help those in need via the Edmonton and Calgary Foodbank distribution systems

Deliverables/Results:

- The main result from the project is that the hunting community, including ACA, generously participated in supporting this project with another successful season providing a very valuable food source to help the Food Banks feed Albertans. It is estimated that approximately 6,000 pounds of wild meat was donated this season.
- The information phone line is up and running. The Instagram account is in place. The project was advertised in the Hunting Regulations. Processor information was mailed out. Wild game was donated by hunters. Meat Processors processed the donated game. Packaged meat was delivered to Food Banks for distribution to those in need.

## JFW National Camp 2017, Canadian Home Grown

### *Alberta Junior Forest Wardens Association*

Grant: \$25,000

Project Code: 002-00-90-269

Project Status: New; Completed

Project Website: [www.ajfwa.ca](http://www.ajfwa.ca)

The first Alberta Junior Forest Wardens Association (AJFWA) National Camp was held in 1980 in Kananaskis, Alberta, and has been held in various Alberta and BC locations every three to five years as a highlight of the Junior Forest Warden experience. National Camp is a gathering of wardens and their families camping together and enjoying a week of educational and entertaining sessions for every learning and age level. Professional and volunteer instructors contribute programming in a session format, with hundreds of choices. Families generally eat their meals together, then attend the programs they have individually selected with confidence the children are receiving qualified instruction

in a safe environment. All attendees gather together each evening for different types of entertainment, followed by campfires and fellowship.

The project was completed between July 1 – July 8, 2017 with 674 members and guest instructors participating in 175 different learning sessions, all while camping at Big Stone, Alberta. Over eight days of camp, training sessions ranged from knife making to cheese making and glass blowing. AJFWA opened the camp to the general public for an "open-house" held on July 1 in honour of Canada's 150<sup>th</sup> birthday. The visitors were treated to training sessions and were able to get a true understanding of what AJFW members do throughout the year. A legacy project is completed at each National Camp; this year a children's playground was constructed for the campsite. AJFW members provided labour and expertise to complete the construction of the playground and the smaller wardens provide their expertise and playfulness in testing it after completion. Over 1,000 trees were planted on site for future generations to enjoy.

Deliverables/Results:

- Approximately 674 JFW members (youth and adults) and guest instructors attended the National Camp; the majority of which camped together at the site for the duration of the event.
- Many members of the general public attended the "open house" on July 1 and participated in select instructional sessions that day, although an actual head count was not taken.
- Over 175 different instructor-guided learning sessions were offered over the eight days of camp, many of the sessions were held multiple times due to participant demand.
- A children's playground was built on site and over 1,000 trees were planted.
- A daily camp newsletter was produced and distributed. Photos and videos were taken throughout the duration of the camp to record skill development as well as all activities. Videos and photos are currently being compiled and edited for addition to the provincial AJFWA website and monthly online blog.
- A National Camp 2017 Committee wrap-up conference call took place on September 14, 2017, wherein the Committee Members submitted their reports, and reviewed completed participant surveys.

## Grazing Schools for Women: Promoting habitat and improved grazing stewardship to livestock producers in south and central Alberta

### *Alberta Riparian Habitat Management Society (Cows & Fish)*

Grant: \$3,000

Project Code: 020-00-90-165

Project Status: Funded 2011/12 – 2015/16; Completed

Project Website: [www.grazingschool4women.com](http://www.grazingschool4women.com)

The initial success of the original Grazing School for Women (GSW), in its 15<sup>th</sup> year, spawned the Southern Alberta Grazing School for Women (SABGSW), now in its 14<sup>th</sup> year in 2017. The two school committees developed agendas that resulted in a positive learning experience for the women that attended. GSW was held mid-June in the Vermilion area, while the SABGSW was held in late July north of Drumheller. Using a well-tested and proven approach, the school was delivered to 69 registrants, primarily livestock managers and landowners, to build core skills and knowledge to support these women's ability to manage

most effectively. The schools included presentations and hands-on outdoor activities, including plant identification, health assessments on range and riparian lands, and grazing management strategies. Both schools incorporated talks by ranching/farming women to share practical, real world experiences. The school successfully impacted grazing management, with 85 percent of respondents saying the school will influence their grazing management. The project objectives have been met. The first objective, to deliver content that has direct value to agricultural producers in understanding their grazing landscape and management options in relation to being more sustainable and contributing to a healthier landscape has been met, as seen by the many practices that attendees learned about and plan to incorporate. The second objective, to have at least 75 percent of attendees learn new information or skills and identify practices and management they plan to apply on their farm or ranch, by the end of the school has also been met. 100 percent of respondents listed something new they learned.

#### Deliverables/Results:

- Two schools were held, each over two days and had 69 registrants plus others, including at least 15 committee and ten speakers.
- Main results: very good attendance at both schools (69 registrants) and high impact (85 percent indicate that the schools will influence their grazing management). In addition, the workshop attendees were asked if they had attended in the past, and if they had implemented changes since attending previously and of the 31 that had attended previously, 87 percent had implemented changes! This is very positive—not only do they say they will make changes, but changes have been occurring.
- Additionally, the committees and other speakers learn a lot from the collaborative nature of developing and delivering the schools, and well as attending the sessions themselves. This makes future work, beyond the schools, more effective and valuable as well.
- Summary articles promoting the event or reporting on the event carried by local papers and municipal district/county newsletters. At least two of the counties provided information in their local ratepayer information, and at least five of the committee members shared information about the upcoming schools on social media, to promote the schools.
- Evaluation summary from school, which include preferred and highly ranked topics; list of new information, and skills that have been learned; management practices learned and that attendees plan to go home and implement (and the proportion of attendees that plan to do so).
- In addition to the summary information, some additional valuable information learned from the evaluations included:
  - Practices that registrants hope to incorporate include: rangeland health assessment, range management changes, riparian health assessment, weed management, grazing principles, rotational grazing, long-term monitoring, leave more grass in the pasture, and assessing pasture health to avoid overgrazing.
  - Changes that had been implemented by previous attendees; many were listed but some include: riparian assessment or management, rotational grazing, salt block/ mineral lick placement, exclusion fencing, and off-site watering.

## Implementing Riparian Habitat Management Improvements for Westslope Cutthroat Trout

### *Alberta Riparian Habitat Management Society (Cows & Fish)*

Grant: \$6,150

Project Code: 020-00-90-167

Project Status: Funded 2011/12 – 2015/16; Completed

This project promoted stewardship and supported site-specific enhancements to improve overall riparian habitat and sport-fishery habitat, focused on areas with westslope cutthroat trout (WSCT) populations. In Alberta, WSCT are listed as *Threatened*, and Cows and Fish are working to address impacts to this important sport species which are identified in the Recovery Plan. The Recovery Plan clearly indicates that a combination of impacts has led to habitat degradation and loss and cumulative impacts, including those related to riparian areas disturbance and stream bank structure. Specifically, the WSCT threats that this work aims to reduce are sedimentation and habitat loss and degradation resulting from off-highway vehicles, linear disturbance, and poorly managed grazing in riparian areas. By working with the relevant stakeholders, Cows and Fish help support changes that match Recovery Plan priorities: minimize stream bank erosion and sedimentation; manage grazing timing and use; reduce OHV use of non-designated trails; maintain riparian vegetation; and generally address habitat loss through improved management of human activities and land uses. This included identifying priority areas with expert and stakeholder input and developing site specific plans to address riparian habitat issues and threats. As part of this hands-on volunteer involvement, Stakeholder Workshop, online education, and in-person interactions, the project has helped engender more knowledgeable stakeholders and encourage stewardship efforts. Finally, the objective to implement changes that improve riparian areas and westslope cutthroat trout habitat has been met, under budget, with improvements implemented at five sites.

#### Deliverables/Results:

- Riparian site recommended enhancement and improvement plans: collected revisit riparian health monitoring at two sites (OHV bridge locations) and re-examined restoration efforts from prior years at seven additional sites (restoration and planting locations). Detailed restoration plans have been built at five Dutch Creek sites (which could not be implemented) and completed riparian health reporting and improvement recommendations for a site along each of Gold and Green Creek, as well as worked with partners to develop the volunteer planting plan at South Racehorse Creek, for a total of eight. The restoration enhancement plans for the work on the tributary to North Lost Creek and Silvester Creek were led by others.
- Riparian management changes and habitat improvements: plans for work at five Dutch Creek random camping sites, with extensive bare soil, trampling, vegetation loss, and vehicle impacts were not able to be implemented; however, numerous other habitat improvements were. These included restoration work at three other streams (one large multiple-planting area associated with Silvester Creek, one area along tributary to North Lost Creek, and one area along the banks of South Racehorse Creek) and other types of changes, which included the installation of three signs, along Green and Gold Creeks.
- Stakeholder and partners tour: This small tour of six people was used to examine headwater sites and discuss options with AEP, Spray Lake Sawmills, and Oldman Watershed Council, with Cows and Fish, following the re-opening of the areas after fire closures, and included marking locations on sites, discussing options and approaches.

- Stakeholder workshop: The Westslope Cutthroat Trout Stakeholder Workshop was held March 7, 2018, at the MD of Ranchland Administration Building. It was a very well attended event (58, not including Cows and Fish staff), with presentations related to fisheries management, restoration efforts, updates on recovery planning implementation, and description of regulatory items that stakeholders need to be aware of for work or activities they might be planning on doing. In the afternoon, participants met around discussion round tables, to identify questions and lessons learned about restoration projects and regulatory aspects. In addition, participants provided feedback on Department of Fisheries and Oceans signage.
- Riparian site enhancement and improvement summaries: a presentation has been created profiling the work (presented at the Stakeholder Workshop), as well as spreadsheet summaries and catalogued many photos, of each site worked on.

## Public Engagement, Wildlife Conservation, and Monitoring at Beaverhill Lake

### Beaverhill Bird Observatory

Grant: \$16,500

Project Code: 030-00-90-124

Project Status: Funded since 2006/07; Completed

Project Website: [www.beaverhillbirds.com](http://www.beaverhillbirds.com)

The Beaverhill Bird Observatory (BBO) has been monitoring birds and other wildlife, as well as conservation education in the Beaverhill Natural Area for more than 30 years. This project continued BBO's stewardship of the Beaverhill Natural Area by enhancing its value to wildlife and increasing the public's access and exposure to nature. BBO also continued their long-term monitoring of wildlife and expanded outreach activities to inform the public about threats facing wildlife. In 2017/18, the BBO: expanded public education about conservation and monitoring of migrating and resident birds, bats, and other wildlife in Alberta; enhanced wildlife habitat by searching for and removing internal fencing; promoted bat conservation, specifically of the *Endangered* Little Brown Bat, by supervising a student intern to monitor 40 bat boxes, in addition to monitoring the species that inhabit the natural area by using a bat detector in cooperation with University of Alberta; cleared trails and levelling the road to increase accessibility for hunters and naturalists; monitored mammal populations with trail cameras; enhanced bird populations by maintaining bird boxes in the Beaverhill Lake area, including 100 house wren boxes, 150 tree swallow boxes, ten saw-whet owl boxes, five duck boxes, a purple martin colony, and 150 bluebird boxes with at least eight student interns; hosted two major on-site public events, the Young Ornithologist Workshop, and a minimum of twenty public groups on-site; and gave at least 70 presentation / demonstrations about wildlife and conservation in Alberta to Edmonton area schools and other organizations, accompanied by a live owl (as part of their winter program).

Deliverables/Results:

- Spring migration monitoring was conducted from April 1 to June 9 and staff operated 13 mist nets recording 996 captures of 51 species, achieving an overall capture rate of 49.0 birds per 100 net-hours.
- MAPS program: The BLAB nets recorded 60 birds captured of 11 different species and an effort of 360 net hours, for a capture rate of 16.7 birds per 100 net hours at SOPO 315 birds of 28 species over 343

hours were captured, producing a capture rate of 91.8 birds per 100 net hours; LILA nets caught a total of 240 birds in 340.5 hours for a capture rate of 70.5 birds per 100 net hours.

- Fall migration monitoring was conducted from July 30 to October 20 and staff operated thirteen mist nets recording 1,918 captures of 52 species, resulting in an overall capture rate of 45.6 birds per 100 net-hours.
- Owl monitoring: four mist nets with a saw-whet owl audio lure were utilized from September 5 to November 1, and two mist nets with a Boreal owl audio lure were set from October 9 to November 1. 1,359.1 net hours were accumulated with 365 owls captured, which resulted in a capture rate of 26.9 birds/100 net-hours.
- All three BBO staff and six volunteers removed 400 metres of barbed wire fence from within the Beaverhill Natural Area. To the best of their knowledge, this was the last significant section of internal fence that was hindering the free movement of wildlife in the Natural Area.
- BBO staff walked the entire length of the perimeter fence in spring, summer, and fall. Multiple cattle entry points were discovered in the northeast corner and were promptly repaired. BBO is working with the landowner and AEP to minimize these issues going forward.
- Two student interns monitored bat box use and species presence using a bat detector.
- Publications were produced and are now available on the BBO website
  - [beaverhillbirds.com/media/1723/2017-low-occupancy-monitoring-of-bat-houses-at-beaverhill-bird-observatory-final-report.pdf](http://beaverhillbirds.com/media/1723/2017-low-occupancy-monitoring-of-bat-houses-at-beaverhill-bird-observatory-final-report.pdf)
  - [beaverhillbirds.com/media/1721/2017-gillmore-bat-acoustic-monitoring-final-report.pdf](http://beaverhillbirds.com/media/1721/2017-gillmore-bat-acoustic-monitoring-final-report.pdf)
- Volunteers, interns, and staff ensured the Natural Area was accessible by mowing grass, trimming willows, and moving large fallen trees. Trail maintenance was completed in the spring, summer, and fall, allowing hunters and visitors to freely access the Natural Area.
- Three trail cameras detected two brown-headed cowbirds, four coyotes, 21 moose, seven mule deer, two porcupines, 11 snowshoe hares, and 566 white-tailed deer. The brown-headed cowbirds were again observed riding the backs of deer!
- All of the nest boxes were repaired in the spring and monitored during the breeding season. Six student interns were hired to help with 100 house wren boxes and (recently expanded) 205 tree swallow boxes. Escaped cattle damaged the duck boxes, which required more extensive repair work.
- Over 80 guests attended the Big Birding Breakfasts over two mornings (June 3 and 4). Approximately 100 guests were hosted for Steaks and Saw-whets over two nights (September 29 and 30). Seven high school-aged students camped at BBO for a week in August for the Young Ornithologist Workshop, where they lived the life of a bird biologist. The last major on-site event was a special Bioblitz for Canada 150, which included bat viewing, moth catching and identification, and stargazing for 30 guests. BBO interpreted to over twenty groups on site in 2017, many returning from previous years including: Nature Alberta Nature Kids, Junior Forest Wardens, Scouts groups, wildlife students from Lakeland College, environmental students from NAIT, avian biology students from the University of Alberta's Augustana campus, the University of Alberta outdoors club, the Tofield Outdoors club, the Augustana Wildlife Society, and the Friends of Elk Island Society.

- Over 90 presentations were given in Edmonton, Calgary, and the greater Edmonton area about threats facing birds, the fundamental science of climate change, and conservation in Alberta to over 2,700 participants. Five banding demonstrations were conducted at the following events/locations: Snow Goose Festival, Nature Conservancy event on Lindbrook property, Migratory Bird Day at Big Lake, John Janzen Nature Center, and for a Girl Guides group.
- Compilation of annual Beaverhill Bird Observatory report (February 2018).
- Submitted and shared data (including trail camera findings) with collaborators (by February 2018).

## Legacy Island

### *Bow River Chapter – Trout Unlimited Canada*

Grant: \$2,500

Project Code: 015-00-90-238

Project Status: Funded in 2016/17; Completed

Project Website: [www.bowriver.org/category/our-work/current-habitat-projects](http://www.bowriver.org/category/our-work/current-habitat-projects)

This project continued the restoration of the riparian area on Legacy Island with a tree planting program replacing cottonwoods lost to flood, beaver, and human activity. The goal was to plant 250 new cottonwood saplings in 2017. Substantial portions of the conservation area are overrun with non-native brome grasses, henbane, and tansy, preventing natural reforestation. The Chapter conducted a tree planting project covering two hectares, which included weed clearing prior to transplant, wire wrapping of seedlings to prevent beaver damage, and watering of seedlings after. This will primarily be conducted with volunteer labour.

Deliverables/Results:

- Project activities were carried out over three days. On June 2, 2017, a corporate volunteer group from AltaLink (15 volunteers plus TUC board members and staff for a total of 30 people) planted about 175 cottonwood seedlings. The balance of the seedlings (75) were planted on June 17, 2017 and an assessment survey of the property was done to determine whether future planting was likely to be required. It was noted that native flowering shrubs of the understory (saskatoon, dogwood, wild raspberry) aren't present on the island. A third activity day (July 14) was dedicated to weed pulling and general debris cleanup.
- The Bow River Chapter believes that future planting of cottonwood seedlings is not necessary, as most of the barren areas of the island will gain adequate cover as the recent plantings mature. There was a high survival rate of the 2016 plantings (more than 90 percent). There is still a noxious weed control issue, as henbane, leafy spurge, and tansy are present over much of the property. The natural understory flowering shrubs still have not successfully repopulated the cleared areas, and they will investigate whether there is value in pursuing this activity for 2018.

## Cypress Hills Landbird Monitoring and Educational Programs

### *Calgary Bird Banding Society*

Grant: \$12,000

Project Code: 030-00-90-188

Project Status: Funded since 2011/12 – 2015/16; Did not proceed, funds returned to ACA

Unfortunately, the Calgary Bird Banding Society (CBBS) was not able to get the new organization set up to run the project and as a result, the project did not go ahead this year. CBBS will be re-examining the viability of the project winter 2017. They hope to be able to continue this project next year.

## River Access Education

### *Calgary River Valleys (Calgary River Forum Society)*

Grant: \$15,500

Project Code: 002-00-90-268

Project Status: New; Completed

Project Website: [www.calgary.ca/riveraccess](http://www.calgary.ca/riveraccess)

The main goal and objectives of the project were to provide basic and educational information to the public regarding our precious rivers in Calgary. Up until last year, river users had no source of information on where to access the river, why our rivers are so important to our environment, or how to play on or near the river in a safe way that also respects the environment. The past year has seen great strides in this educational effort. All planned activities for this project have now been completed. A new website has all the information river users need and directs them to the preferred river access and egress sites. For those not on the website, interpretive signage has been installed at major river sites to provide information about safety, estimated float times to exit locations, and ways to protect the river ecosystem, and on-river directional signage to indicate to rafters and paddlers the location of and distance to the next approved river exit has been made and will be installed once the ground thaws. In addition, basic amenities including garbage cans and portable toilets have been installed at each river access site to ensure more appropriate behaviour is possible. In addition to what was originally planned, the project went further than expected as other partners also showed interest in river education. RiverWatch Institute of Alberta used a down time with staff during high-water conditions, and in partnership with The City of Calgary, to implement a pilot project of a River Ambassador program. The pilot was a huge success with education of over 322 citizens in a one-week period in 14 parks near the river. The Calgary Foundation was impressed with the program and has agreed to fully fund it for the 2018 summer season. ACA was the first partner to commit to river education in Calgary. That initial support provided momentum to this project and took it much further than was originally expected. In the next couple of years, the impact of the new initiatives will be monitored. There may be more opportunity for additional interpretive signage, or education programs. With the support of ACA, river users can enjoy our rivers and still promote a positive river environment.

## Deliverables/Results:

- A website now exists with comprehensive information on how to access the river, safety information, how to better protect fish habitat, how to help prevent Whirling Disease, general information on conservation and protection of the river environment, and more.
- Creation and installation of interpretive signage at four kiosks, which was one more than originally planned. Signage provides educational information about the specific area, how to protect our rivers and fish habitat, appropriate behaviour by users, as well as information on Bylaws. Signage was customized to each of the four locations: West Baker Park: Bow River North; Graves Bridge: Bow River South; Sandy Beach: Elbow River; 10 Street Wave: Surfing on the Bow.
- Sites will now be incorporated into the 2018 Parks and Pathways Map.
- Almost 40 directional signs were designed and manufactured. These will be installed as soon as weather allows.
- In addition, sandwich boards were placed at major river access sites including West Baker Park, Shouldice Park, Sunnyside, Graves Bridge, and Sandy Beach. These signs will be put up at new locations in 2018 (likely Inglewood, Ogden, 10 Street Wave).
- The creation of River Ambassador Program two years ahead of schedule was a pleasant surprise. This pilot program saw RiverWatch staff engage with 322 citizens at 14 different park sites close to the river, over a one-week period. The Calgary Foundation has now agreed to fund this program to run from June to August 2018.

## 2017 Camrose Purple Martin Festival

### Camrose Wildlife Stewardship Society

Grant: \$2,450

Project Code: 030-00-90-191

Project Status: Funded 2011/12 – 2015/16; Completed

The Camrose Purple Martin Festival (CPMF) committee held its 8th Annual Festival on June 17, 2017. The festival was a one-day public celebration of nature, birds, and greenspace, with a focus on Purple Martins. The CPMF involves a collaboration of city, nongovernmental, education, and wildlife conservation organizations. The festival's mission is to provide a high profile, community-based nature tourism event to showcase the vision and work of the Camrose Wildlife Stewardship Society (CWSS). The CWSS strives for a greenspace network that enhances community values and quality of life for City of Camrose and area residents. The festival objectives were to: (1) encourage participation in nature activities; (2) raise interest in wildlife conservation; (3) enhance the Purple Martin Nest Box Program; (4) provide conservation research information; (5) showcase recommendations for Purple Martin Landlord work; and (6) highlight the need for habitat protection. The festival included several activities, including demonstrations by Purple Martin landlords, a keynote address by Lois Johnson (bluebird trail manager), a keynote address by Gerald Romanchuk (master wildlife photographer), a research talk by Glen Hvenegaard from the University of Alberta, a bus tour and walking tour to active martin colonies, children's activities highlighting purple martin and wildlife natural history, and information booths. The festival attracted ~130 people who provided very positive feedback. The festival also resulted in recruiting additional landlords, more local publicity, and one more nesting structure in the community.

## Deliverables/Results:

- Approximately 130 people attended the festival on June 17, 2017 (which exceeded expectations).
- A debrief session was held, received evaluations from participants, and wrote an evaluation of the event (e.g., likes, dislikes, future interest, and local economic impacts) at the end of June 2017.
- One new nest box was purchased and erected to support the Purple Martin Nest Box program and maintained the remaining nest boxes in the program (Aug 25, 2017).
- Three articles about the Purple Martin Festival and conservation were published in the local newspapers (last one in August 2017).
- Participation was increased in the volunteer Purple Martin Landlord Program by four people (August 2017).
- List of contacts was updated regarding future wildlife stewardship and educational activities (June 30, 2017).
- The planning manual for future Camrose Purple Martin Festivals was updated (August 18, 2017).

## Kids for Conservation: Celebration 20 year of getting kids outside to experience Alberta's wilderness

### Canadian Parks and Wilderness Society (CPAWS) Southern Alberta Chapter

Grant: \$15,000

Project Code: 002-00-90-253

Project Status: Funded in 2016/17; Completed

Project Website: [cpaws-southernalberta.org/campaigns/education](http://cpaws-southernalberta.org/campaigns/education)

Youth are increasingly spending less time outside and are becoming more disconnected from the natural world. Kids for Conservation is a project designed by the Canadian Parks and Wilderness Society – Southern Alberta Chapter (CPAWS SAB) that aimed to get kids outside, educate them about conservation, and promote stewardship. To achieve these goals, CPAWS SAB undertook the following project activities: provided high quality conservation education programs to schools in Alberta by hiring highly experienced interpretive guides and training them with the latest science, conservation, and curriculum materials; by maintaining and replenishing programming materials; and by ensuring fun and engaging activities. CPAWS SAB operated with the highest safety standards following a robust organizational risk management plan, which was updated during 2017. The hikes were marketed and the benefits of this project to get kids outside and learn about Alberta's wilderness via newsletters, articles, and teacher workshops. Through the CPAWS SAB interpretive hikes in Alberta's wilderness, youth were inspired to engage in stewardship and conservation in Alberta. At the end of the project, participant feedback was used for project improvement. By completing these activities, the objectives for the Kids for Conservation project were exceeded. From April 1, 2017 to March 31, 2018, this project delivered 149 interpretive hikes and snowshoe programs to school groups in Grades 3-12 reaching over 3,800 students who experienced conservation education in an outdoor setting in Alberta. Project evaluations showed that CPAWS hike participants enjoyed getting outside, have increased knowledge about conservation, and indicated that they will engage in some form of positive environmental conservation as a result of their experience. By connecting youth with nature and educating about the importance of conservation and healthy ecosystems, this project has increased conservation awareness and helped to build the next generation of conservationists in Alberta.

Deliverables/Results:

- The CPAWS Southern Alberta Kids for Conservation project engaged 3,890 Alberta youth in conservation during 149 interpretive hikes and snowshoe treks, greatly exceeding their targets of 2,875 students during 115 hikes and snowshoe treks.
- Project evaluations showed that:
  - 95 percent of participants indicated that they have enjoyed the program.
  - 95 percent of participants indicated that they have increased their knowledge about conservation in Alberta.
  - 90 percent of participants indicated that they will engage in some kind of stewardship as a result of the program.

**Car Creek Riparian Conservation**

**Carson Nuttig**

Grant: \$7,000

Project Code: 015-00-90-255

Project Status: New; Not completed, no funds dispersed

This project did not take place.

**Education and Reclamation in the Castle**

**Castle-Crown Wilderness Coalition**

Grant: \$17,500

Project Code: 015-00-90-189

Project Status: Funded since 2008/09 (not funded 2011/12 and 2015/16); Completed

Project Website: [ccwc.ab.ca](http://ccwc.ab.ca)

Castle-Crown Wilderness Coalition's (CCWC's) goal, to protect, restore, and maintain the Castle Wilderness, continued this summer, so it remains a viable wilderness that all can enjoy. This was the first summer for the newly formed Castle Provincial Park and the Castle Wildland Parks; CCWC reclamation staff and volunteers capitalized on the opportunities to work collaboratively with AEP (and other funding organizations) to continue the activities of hand-pulling invasive plant species from targeted areas, removing garbage and disbanding random camping sites, and providing educational opportunities through hikes and group weed pulls. CCWC was able to make a significant impact on enhancing the targeted areas. Approximately 10,000 pounds of invasive plants (seed heads, etc.) were removed from the Parks and another 1,300 pounds of garbage was removed by three staff and numerous volunteers through the summer months. CCWC provided educational opportunities on biodiversity of the area and best practices to enjoy the parks through a number of guided hikes. The summer work and hike season was cut short because of the closure of the Parks due to the Kenow fire in September 2017. The work of CCWC is not complete but this summer brought CCWC and the Park a bit closer to ensuring the Castle area can be enjoyed by all.

Deliverables/Results:

- At the completion of the weed pulling season, staff and volunteers had removed 283 bags of weeds (40 lb./bag) and 1,327.5 pounds of garbage, miscellaneous building material, and metal. The materials removed include tree stands, broken tables, tin can garbage dumps, and outhouses at former random and logging camp sites. The materials were removed manually or using pack horses.

- Two volunteer events were hosted: the 10<sup>th</sup> Annual West Castle Wetland Ecological Reserve weed pull, and the Minimum Security Camp weed pull. The 11<sup>th</sup> Annual Beaver Mines Lake Shoreline clean-up was cancelled due to closure of the Parks because of Kenow fire.
- Seven guided hikes were led by volunteer leaders, these hikes were open to the general public, without charge, to share knowledge of the area. Another hike was led by the Stewardship coordinator – Big Sage Stewardship Hike for the Alberta Native Plant Council.
- Volunteers attended the Waterton Wildflower Festival and set up an educational display booth, pamphlets on the area, information on invasive species including aquatic invasive, maps, and information on species at risk, showcasing the type of work CCWC does and how people can become involved.

**Bennett Pond Access Trail and Dock**

**Central Alberta Fish & Game Association**

Grant: \$6,500

Project Code: 020-00-90-241

Project Status: Funded the aeration system and signage 2011/12; Completed

The project was started in 2011, when water levels were stabilized and the outlet repaired. Bennett pond was aerated to improve water quality by various donors including ACA. A request to stock Bennett pond was submitted to the Area Fisheries Manager and trout were stocked by Cold Lake Hatchery. Central Alberta Fish & Game Association also received a stocking licence and stocked additional trout that were being raised locally. Aeration continued through the winter of 2016/17. In March 2017, a flush of water from upstream cattle yards resulted in a fish kill. This was brought to the attention of the landowner's son who was managing the cattle. A compromise was struck to reduce cattle use in the riparian zone upstream as it was responsible for the fish kill. The main objective was to improve access for fisherman to the water for fishing. The Canada Dock system was acquired, and a pathway was developed through the underbrush along the east side of the pond.

Exhaust gasses from the bottom sediments were not as noticeable for hydrogen sulphide smell as it was the previous year. A lightning strike knocked out the power and a capacitor on the pump in July 2017. This was repaired and the system was expanded to take care of water coming in from upstream that contributed to fish kill. Rainbow trout were stocked by the Government of Alberta in October 2017. The dock system is in operation for the public as of May 2018. Many new members of Innisfail Fish & Game have offered volunteer help to maintain the pond again as they had done ten years ago.

Deliverables/Results:

- Many volunteers helped put the dock system together, prepare anchors, and complete installation (May 2018).
- Eight people were involved in the dock and trail system. The group managed to get a 16-foot dock section with an eight-foot access ramp and a gravel base to the dock completed. The path was shortened due to the budget reduction and the costs of a new dock were much higher than anticipated. Water levels were stable through the summer and fall season.
- A video production is anticipated to be completed with acknowledgement of ACA and other volunteers when the dock system is installed in the pond.



## Cloudy Ridge/Yarrow Creek Off-site Water and Riparian Improvement Project

### Cloudy Ridge Ranch

Grant: \$3,000

Project Code: 015-00-90-253

Project Status: New; Partially Completed

The goal of the project is to improve the management of cattle on top of the ridge and thereby to improve the upland rangeland health, which will simultaneously improve the riparian health of the adjacent of the Yarrow Creek watershed. Activities to complete the project include fencing off 1.6 kilometres of Yarrow Creek and supplying an alternate water source for the livestock up-slope on Cloudy Ridge. As of this point, the fence has been installed, a well was drilled, and a pump system installed to feed a new water trough. Due to the fire in September and the ensuing chaos, the additional waterline has not yet been installed.

Deliverables/Results:

- Cooperation between multiple stakeholder groups: SALTS, NCC, Cows and Fish, ACA, and OWC.
- Wildlife-friendly fence installed: 1.6 km.
- New water well and water trough. The additional water line still has to be installed.
- Over a quarter section of riparian zone excluded from normal grazing pasture to be managed separately.

## 2017 Snow Goose Chase

### Edmonton Nature Club

Grant: \$3,000

Project Code: 015-00-90-184

Project Status: Funded 2012/13 – 2015/16; Completed

Project Website: [www.snowgoosechase.ca](http://www.snowgoosechase.ca)

This year's annual Chase was held a week earlier than usual (April 22–23, 2017) as the community hall had a previous booking for the last weekend in April. The hall is the morning centre of activities with various displays and hands-on action. The displays, exhibits, and hands-on interpretive tables in the community hall drew a lot of attention and it was fun to have John Acorn, the Nature Nut, present to talk to the kids and their parents and guardians. Outdoor locations were very busy despite the chilly and windy conditions. The wetlands behind the Nature Centre, bird and owl banding at Petras Park, and Dr. Glynnis Hood at the Ministik Bird Sanctuary with her popular beaver talk and display all drew many positive comments. Randal Hoscheit was again at the (muddy) soccer field parking lot, scoping the wetlands just east of downtown area. There were three buses for the paying public, as well as the seven sponsored buses for inner-city youth and their families, low-income families, and recent immigrants and refugees new to our community.

The scouting prior to the weekend was a great success and close to 70 bird species were seen over the two-day period. Close to 100 short-eared owls were spotted whilst route planning for the Snow Goose Chase. Many farmers had been unable to get into the fields and the numerous number of windrows meant plenty of food, mice, and voles, for the owl and raptor hunters. Birds seen during the scouting period

included Townsend solitaire, Barrows goldeneye, western meadowlark, hooded merganser, and Ross' goose, not to mention early Swainson's hawks. The three Percy Page buses on the weekend saw an average of 50 to 55 species and many thousands of snow geese and migrating sandhill cranes. Most duck species were observed in very large numbers and a few early shorebirds were spotted on mudflats and in shallow water like avocet, yellowlegs, etc.

Deliverables/Results:

- Over 70 volunteers again assisted in the 19<sup>th</sup> year of the Snow Goose Chase, many returning from participating in previous years.
- Close to 13 different Edmonton area schools, groups, and inner-city organizations packed the seven buses that the Edmonton Nature Club ran this year. More emphasis was placed on offering more seats to recent immigrants and refugees this year and it sure paid off—so thanks to the Mennonite Centre as well as Edmonton Immigration Services Association. It was heart-warming to see so many families participating in this year's event.

## Edmonton Valley Zoo ACA Go Wild Activity Tent

### Edmonton Valley Zoo

Grant: \$2,934.44

Project Code: 002-00-90-270

Project Status: New; Completed

The ACA Go Wild Activity Tent was part of the Edmonton Valley Zoo's (EVZ's) regular daily drop-in activities offered in the spring and summer 2017. It provided EVZ with an outdoor space for interpretive staff to engage with visitors in a variety of fun and educational activities focused on animal and ecosystem conservation topics. Advertised activities took place at this tent throughout the day, every day of the week from May through to September. Activities included: Animal Adaptation Dress Up (based on ACA funded research); Endangered Animals Guessing Game (Report a Poacher); Fishing and the River "Go Fish Game" (Angler Awareness & Sustainable Fish); Scat and Track ID (Report A Poacher); Scent Guessing Game (Report A Poacher); Pond Dipping (Biodiversity in your own backyard); Ungulate Identification (Pronghorn and Report A Poacher); and Alberta Reptile Identification (AVAMP). This project gave us a space in the busiest season of the year for guests to interact in a meaningful way with engaging educational materials and provided them with fascinating and heartfelt moments that will last a lifetime. The tent was located in a highly visible area when visitors first entered the zoo. Interaction with 13,968 public members at the tent were recorded from May through August 2017.

Deliverables/Results:

- Activity outlines that includes topic, audience, theme and objectives, location, zoo topic or connection, ACA Topic or connection, materials and artifacts, craft, activity, or experiment, conservation message, and evaluation techniques.
- Number of tracked participants: 2,855 May 2017; 4,393 June 2017; 4,052 July 2017; 2,668 August 2017. Total (May – August, 2017): 13,968.

## Edwin Parr Composite High School NASP Archery Program

### Edwin Parr Composite High School

Grant: \$12,700

Project Code: 002-00-90-278

Project Status: New; Completed

Edwin Parr Composite High School (EPC) National Archery in Schools Program (NASP) objectives are the following: to encourage students of all genders, ages, and abilities to participate in a safe and enjoyable sport; to develop self-confidence, the desire to improve, self-reflection, and the ability to concentrate on a task; to develop an appreciation and respect for the outdoors and wildlife; and to increase students' skills in archery. Edwin Parr Composite High School NASP is offered to primarily Grade 8-12 students. In the past, even younger students have participated, but more archery programs have developed at the elementary schools this year. With the movement to a new high school at the end of this year, the Program will be expanding with Grade 7 students now moving up to the school. The number of participants usually ranges from 20-30 archers depending on the semester and the year; this year, the Program has 21 archers. This number is expected to increase to 40-50 archers next year with the addition of Grade 7 archers. Funds were received from ACA to purchase new bows, arrows, targets, 3-D life-size animal targets, and materials for an equipment storage shed (to be built by EPC Construction students) to prepare for the following: an increased number of participants, further development of their skill levels and appreciation for wildlife and hosting an invitational NASP archery tournament in 2019 to increase public awareness of archery as a safe, enjoyable outdoor hunting option. With five certified coaches and one currently uncertified coach (awaiting training), evening practices began twice a week in December 2017 and continued until the end of April 2018. So far, archers have competed in the Ardrossan Invitational Tournament (March 3, 2018) and competed at Provincials in Edmonton (March 17, 2018). Other scheduled tournaments include Regionals in Thorhild (April 13, 2018), the Smoky Lake Invitational Tournament (April 7th), and Nationals in Regina, Saskatchewan (April 27, 28, and 29, 2018).

Deliverables/Results:

- The goal was for 30 – 50 educated participants: the program had 21 participants. With the delay in moving to the new school postponed until May/June of 2018, higher participant numbers will not happen until archery registration occurs in the new school in October/November 2018.
- Despite a possible delay in hosting an invitational NASP archery tournament given the 2018 May/June move to a new facility, the EPC school website and other local media will still advertise the NASP archery program here at Edwin Parr along with its objectives and the valued ACA funding contribution. When hosting the planned 2019 EPC Invitational NASP archery tournament, there will be increased publicity during/following the event.
- Student success can be measured by scores and participation in the following competitions: International Competition (bi-annually – 2018 summer in Calgary is the next competition); Ardrossan Invitational Tournament (March 3, 2018); Regionals in Thorhild, Alberta (April 13, 2018); Invitational Tournament in Smoky Lake, Alberta (April 7, 2018); Provincial NASP Archery Competition in Edmonton, Alberta (March 17, 2018); and National NASP Archery Competition in Regina, Saskatchewan (April 27, 28, and 29, 2018).

Due to snowstorm and weather warnings, only a small number of archers competed in the Ardrossan Invitational Tournament. Due to treacherous road conditions, the EPC school bus was cancelled and most of the archers stayed at home. The small number of archers who competed ranked well amongst their competition. Most of the key competitions had not taken place at the time of report submission. It is expected that some of the EPC archers will place at the top of their divisions if not the tournaments.

## Foothills Restoration Forum Outreach and Extension: Range Health Assessment Training and Fall Information Session

### Foothills Restoration Forum

Grant: \$8,400

Project Code: 002-00-90-243

Project Status: Funded in 2015/16; Completed

Project Website: [www.foothillsrestorationforum.ca](http://www.foothillsrestorationforum.ca)

The goals of the Foothills Restoration Forum (FRF) are to promote the restoration of ecological health, function, and operability of native grassland plant communities in Alberta through education, outreach, and research to improve reclamation practice and foster stewardship. The conservation and restoration of healthy, intact native grassland landscapes are critical to maintaining habitat, biodiversity, and ecosystem function. The objectives of FRF's Outreach and Extension Program are to educate and train planners, decision makers, and reclamation practitioners, promote maintenance of intact native grasslands and improve reclamation practice to foster restoration of fragmented and disturbed grasslands. This project carried out training and an information session. The Range Health Assessment Training is field-based training for regulators, ecologists, planners, and practitioners on the application of range inventory and assessment tools as they apply to reclamation practices. An understanding of how to use Alberta's range plant community guides and range health assessment manuals are important for planning reclamation to facilitate restoration of native grassland. The deliverable for this activity is an increase in awareness and skills in the use of range assessment tools important for restoration of native grassland habitats. This course was delivered to 49 participants, including 24 subsidized students, on September 14, 2017. The FRF Annual Fall Information Session is an annual information session which gather a variety of grassland stakeholders for one day to listen to presentations on grassland restoration and exchange current information through "open mike" project updates and mini-presentations. The deliverable for this activity is an increase in awareness and knowledge, transfer of current and emerging restoration efforts, and techniques available for restoration of native grassland habitats. This event was held November 16, 2018 and attended by 126 people, including 24 subsidized registrations.

Deliverables/Results:

- Both these events help support FRF's goals to provide an open and inclusive forum for diverse stakeholders to work together to promote the restoration, stewardship, and conservation of Alberta's rangeland working landscapes.
- A successful range health training event was held for 49 participants on September 14, 2017.
- The FRF Fall Information Session was held with 126 participants on November 16, 2018, including 24 subsidized registrations.

## Beaver, Poplars, and More: Education, stewardship, and conservation for a healthy Fish Creek watershed

### *Friends of Fish Creek Provincial Park Society*

Grant: \$3,000

Project Code: 015-00-90-216

Project Status: Similar projects funded from 2011/12 – 2015/16; Completed

Project Website: [www.friendsoffishcreek.org](http://www.friendsoffishcreek.org)

The Beavers, Poplars, and More project has allowed the Friends of Fish Creek Provincial Park Society (Friends of Fish Creek) to continue their important public engagement work with a combination of new and ongoing programs that focus on education, conservation, and hands-on stewardship activities in Fish Creek Provincial Park. The goal of this project was to contribute positively to the overall health and habitat along Fish Creek while expanding stewardship opportunities, programming, and—ultimately—their reach and impact in the community. The project objectives fell into two categories. The first objective is education, to increase the knowledge/awareness in park users of issues related to watershed conservation and opportunities for stewardship. This was achieved through the development of three new public education tours and the continuation of ongoing education programs that include the Fish Creek Speaker Series, minibus and walking tours, Parks Day & Creekefest event, and public outreach that occurred at different venues throughout the city. The second objective is stewardship and conservation, to continue to engage partner organizations, community groups, and the public in hands-on conservation and stewardship activities that enhance the health and habitat value of the Fish Creek watershed. A very successful season of weed pulls resulted from the tireless efforts of the Weed Whacker volunteers, and two highly efficient days of riparian restoration fieldwork were completed. Experiences from past restoration work allowed the Friends of Fish Creek to easily and efficiently make the leap to large-scale poplar planting, and the efficiencies created from the 2017 project will help the Friends of Fish Creek to implement these projects at a larger scale in the future. ACA funds have helped us to double the size of the restored areas along the banks of Fish Creek.

Deliverables/Results:

- The main results of the Beavers, Poplars, and More Project are as follows:
  - Doubling of the existing area of restored creek bank, from 200 metres to 380 metres.
  - Exceeded their goals for the number of volunteers engaged in watershed stewardship activities.
  - Development, piloting, and execution of two new education tours and the development of a third.
- Education deliverables: Over 44 events and programs, minibus tours (five), walking tours (nine), Speaker Series sessions (eight), Parks Day & Creekefest, Fish Creek Star Night events (two), and public outreach opportunities (12). This year, Friends of Fish Creek directly engaged 4,435 members of the public in opportunities for education and increased awareness. A new public education tour called “Leave It To Beaver” on beaver ecology and activity in Fish Creek Provincial Park was developed and run on two separate occasions, and the restoration-focused tour called “ReWilding Through Restoration” was developed, piloted, and offered to the public once in the fall. A third tour entitled “Alien Invasion” was also developed and will be ready to launch to the public for summer 2018 to teach about invasive plants

in Fish Creek Provincial Park. These programs and events also required 475 hours of volunteer time needed to plan and execute them.

- Stewardship and conservation deliverables:
  - Weed Pulls: Between June and October 2018, 14 weed pulls were held, resulting in the removal of 1,029 kgs (152 bags) of invasive plant material from various areas of the park. These outings have directly engaged 100 volunteers in 396 hours of hands-on stewardship, addressing the following species: yellow clematis, black henbane, scentless chamomile, common tansy, burdock, Dame’s rocket, Canada thistle, and spotted knapweed. Friends of Fish Creek have exceeded the projected number of volunteers engaged, number of volunteer hours, and weight of invasive plant material removed from the park.
  - Riparian restoration/tree planting: Two separate riparian restoration fieldwork days were held in October, resulting in the planting of 100 balsam and narrowleaf poplar trees, 42 dogwood and wild rose shrubs, and the scattering of native plant seeds. This occurred within the 200 metres of previously restored creek bank, as well as resulted in the creation of 180 additional metres of restored area (for a total of 380 metres). All tree bases were covered with biodegradable coir mats and mulch to increase moisture retention, and trunks were “collared” with plastic coverings and surrounded by wire mesh to protect them from potential beaver gnaw. Monitoring and maintenance of all sites contributed additional volunteer hours to this program, resulting in 135 volunteer hours in total for their riparian restoration work.
  - Volunteer appreciation events: The annual volunteer appreciation dinner was held in November for 110 volunteers and the Board of Directors’ Thank You Dinner was held in December for seven Board members. Friends of Fish Creek decided to allocate more funds towards the annual dinner in recognition of their 25<sup>th</sup> anniversary year and outstanding volunteers knowing that they did not have the capacity to hold the planned Winter Open House a month later.
  - Tree painting: The watershed stewardship work allowed Friends of Fish Creek to work closely with the Venturers Society, AEP, and Cows and Fish, and while the partnerships with Scouts Canada and St. Mary’s University didn’t unfold as expected, valuable lessons were learned and future opportunities are possible from contacts made this year.
- Other deliverables:
  - Photo-documentation of field work
  - Scripted interpretive tours
  - 2016/17 Friends of Fish Creek Annual Report
  - Press Releases & Public Service Announcements

## 2017 Vegetation Management at Glenbow Ranch Provincial Park

### *Glenbow Ranch Park Foundation*

Grant: \$18,800

Project Code: 015-00-90-233

Project Status: Funded in 2015/16 and 2016/17; Completed

Project Website: [www.grpf.ca](http://www.grpf.ca)

The efforts of the vegetation management team have resulted in significant reductions of invasive plant species throughout the park. Continued monitoring and chemical/manual treatment will be

necessary for long-term management strategies, but invasive plant populations continue to decrease year-over-year. The combination of manual removal and predation from biocontrol weevils has controlled hound's tongue populations to the point of no longer requiring chemical treatment. Formerly significant patches have been reduced in size and vigor, and manual removal of second-year plants will drastically deplete the seed bank for subsequent years. Creeping thistle spraying was hindered in 2016 due to rainy weather; however, this year it was treated extensively throughout the park, and a significant impact was made on a few large infestations, both killing the vegetative growth and preventing seed set. These locations should be monitored and treated in subsequent years, but considerable reduction in new growth should be expected next year. Common toadflax has been noticeably reduced from last year, thanks in part to the hot and dry weather, but also to previous years' chemical treatments. Several previously-marked patches of toadflax have been completely eliminated, and others have decreased to just a few scattered plants. Because the source of the toadflax (i.e., the CPR right-of-way) is inaccessible and untreatable, it is unlikely that the plant will ever be eliminated from the park, but results from this year show that it can be effectively managed. Tall buttercup, nodding thistle, burdock, and black henbane have all been reduced thanks to repeated manual removal efforts, and can likely be largely eradicated from the park with continued monitoring.

Deliverables/Results:

- Significant reductions of invasive plant species throughout the Park.
- Protection of native grasslands and watersheds.
- Enhanced public awareness of the positive impact on grasslands and riparian habitats through the work of the vegetation management team.
- Season's end report from the vegetation management student employee hired with this grant.

### H. A. Kostash Youth Mentorship Programs

#### H.A. Kostash School

Grant: \$15,900

Project Code: 020-00-90-209

Project Status: Funded in 2014/15, 2016/17, and previously by the R&R fund; Completed

With the H. A. Kostash Youth Mentorship Programs being so popular and many students participating, their equipment is well used and worn out. With the assistance of this grant they were able to replace the necessary equipment to keep the many programs going and to ensure they are affordable to all. This year H. A. Kostash students were able to participate in a very successful mentorship hunt. A team of 100 archers competed in many archery tournaments this year. At the beginning of April 2018, the school hosted 400 student archers for a tournament. They also had fishing days, including a fly-in fishing trip to Namur Lake. This program helps students gain an appreciation for the outdoors, develop leadership skills, and build lifelong friendships. These programs reach out to many ages, starting with Grade 3 (archery) to Grade 12. These are a major accomplishment for a school population of 320 students. The H. A. Kostash School program is the envy of many other schools in Alberta.

Deliverables/Results:

- Opportunity was provided for many students to participate in programs that many have never experienced. An appreciation for the various programs has carried on well after graduation, with many

students returning to assist with programing and mentor younger students. Some students have gone off to post-secondary school for Fish & Wildlife officers and Conservation programs.

- Due to the popular archery program, many students want to take up bow-hunting. This has led to students enrolling in Bowhunter Ed for credit in high school. A full IBEP course is happening this term. More students are looking toward new challenges and have started shooting in 3-D tournaments.
- Students are taking their boaters licence this term.
- Many schools have been in contact with the program lead to help start up their wildlife programs this semester.
- Namur Lake fishing trip had 15 participants.
- 120 archers registered in archery and participated in six tournaments. 100 archers went to Provincials at the Edmonton Boat & Sportsmen's Show.
- International exposure, as a past student received a NASP Outstanding Alumni Award.
- Over 200 students attended the Aspen View fishing day.
- Alford Lake – 12 students completed various outdoor activities.
- Wetland Day – Grade 5 and 8 (approx. 60 students) participated in fish stocking of local lakes.
- Hunter Mentorship has been going for 12 years. Every year between ten and 14 first time hunters have been taken out hunting for antlerless mule deer.
- High percentage of participants are female with many of last ones being female only.
- Use mentors 1:1, mentors have a strong outdoor background (Biologists, Fish & Wildlife Officers, RCMP, and business owners).
- Participants must complete their first-time hunter education course, as well as safety days at the range.
- Have had to postpone the ice fishing trips due to weather conditions. Fishing supplies were purchased. Spring trips will replace the winter trips.

### “Extreme by Nature” Environmental Education for 11 to 15 Year Olds

#### Helen Schuler Nature Centre

Grant: \$2,700

Project Code: 030-00-90-240

Project Status: Funded since 2014/15; Completed

Helen Schuler Nature Centre's (HSNC's) Extreme by Nature (EBN) is an interactive program for youth with the purpose of providing engaging opportunities that connects them to nature and brings them closer to their local natural heritage. The project goal is to encourage youth to find a deeper connection with nature through increased understanding of environmental issues and a commitment to lifelong stewardship and environmental responsibility. This goal is achieved through the provision of monthly programs on a variety of topics that provide outdoor survival skills, traditional knowledge of the land, and a better understanding of what conservation means. In 2017/18, there were 13 EBN programs delivered to 133 youth participants and 13 adult mentors/participants. There was a 12 percent increase in program attendance over last year. This increase is likely attributable to an extra program delivered in

partnership with the YMCA (Shoreline Clean-Up) as part of a service learning opportunity for their day camp. Overall repeat program participation increased slightly. Repeat program participants benefit from a richer mentorship experience as they forge closer connections with EBN program staff and volunteers.

Deliverables/Results:

- 13 programs delivered with 133 program participants; there were 14 more program participants in 2017/18 than in 2016/17 which represents a 12 percent increase.
- Programs delivered in 2017/18 include (# of registrants):
  - Ksisskstaki (Beaver - Blackfoot) (11)
  - Printmaking (eight)
  - Secret Agents / Bio-controls for Invasive Species (six)
  - Urban Farming (six)
  - Solar Scopes (16)
  - Get Lost – Survival Skills (16)
  - Shoreline Clean-Up (18)
  - Pinhole Cameras (Part 1) (seven)
  - Bump in the Night (16)
  - Pinhole Cameras (Part 2) (eight)
  - Aquaponics (eight)
  - Get Lost (Winter Survival) (17)
  - Animal Antics (six)
- There was an average repeat participation of 1.93 in 2017/18 versus 1.77 in 2016/17. Noticeable increase in repeat program participation from teens who participate in class-based nature programming (Natural Leaders Project).
- Main demographic of participants is 11- to 13-year olds. 14- and 15-year-olds continue to be difficult to engage in Extreme by Nature programs due to part-time jobs, sports teams, and extracurricular activities.
- Seven Community Partnerships: Aimmonisiiksi Institute of Blackfoot Learning, Kiley Granberg (local artist), Synergy Permaculture Design & Urban Farming, Lethbridge Astronomy Society, Leann Elias (local artist), YMCA Leadership Camp.
- Partnerships and contact with Nature Centre volunteers, staff, and partners have allowed teen participants to meet mentors in many different fields of interest and prospective careers.
- YMCA leadership camp expressed interest in participating in a conservation project. HSNc leveraged existing EBN program to work on a Shoreline Clean-Up project. One kilometre of river shoreline was cleaned.
- A partnership with Rotary Club of Lethbridge East on the Get to Know art gallery installation, that was promoted to Extreme by Nature participants, has resulted in a new partnership and program support of the Extreme by Nature for a youth gallery installation in September and October 2018.
- Publicity: two telephone call outs, 66 monthly email list subscribers, four EBN program schedule mail-outs, 20 EBN Facebook postings, 12 EBN Tweets, 12 program schedules (produced monthly, circulated via Recreation and Culture Guide, available at Nature Centre).

## Community Engagement in River Valley Conservation

### Helen Schuler Nature Centre

Grant: \$3,000

Project Code: 015-00-90-254

Project Status: New; Completed

The Lethbridge River valley is home to hundreds of species of birds, animals, and flowering plants. Each year garbage and debris get caught in the coulees turning these unique, naturally formed features into unsightly spots that have the potential to injure the wildlife species that call them home. Shoreline litter affects water quality for everyone living downstream. Invasive species also pose a threat to the river valley's biodiversity with the potential to negatively impact local plant communities. Helen Schuler Nature Centre's (HSNC's) conservation projects demonstrate positive action in protecting our natural landscape through education and focusing volunteer efforts on improving the local ecosystem—by removing garbage from the river valley coulees (Coulee Clean-Up), by tracking types of garbage found along shorelines (Shoreline Clean-Up), and through early detection and rapid response in the removal of invasive species (Weed Pulls). On the 10th Anniversary of hosting conservation projects, HSNc was proud to increase community engagement in conservation projects to its highest level to date. With 1,607 volunteer participants donating over 2,630 hours to take part in conservation projects including: Coulee Clean-Up, Shoreline Clean-Up, Invasive Weed Pulls, and a Doggy Doo Doo Clean-Up.

Deliverables/Results:

- Over 584 bags of garbage, 86 bags of invasive plants, and 152 pounds of dog scat were removed from natural areas throughout Lethbridge's river valley.
- Items of trash (6,161) were catalogued and recorded as part of the Shoreline Clean-Up—cigarette butts comprise 54 percent of trash collected along Lethbridge's shores, followed by plastic pieces (9 percent) and food wrappers (6 percent).
- Residents were engaged on the issue of dog scat in natural areas through a targeted media and on-site campaign—placing over 250 flags at spots where scat was removed to raise awareness of the prevalence of the problem.
- A BBQ was hosted for conservation volunteers with 165 people in attendance as a thank you and as a way to build community among local stewards.
- The project exceeded their participation targets:
  - 69 community groups have participated (50+ projected)
  - 1,607 volunteer participants have taken part (750+ projected)
  - Estimated 2,632 volunteer hours contributed (2,000+ projected)
  - 87 Coulee Clean-Up areas cleared of garbage, approximately 75 percent of the coulee land (50 percent projected)
  - 12.4 kilometres of shoreline cleared (6 km projected)
  - 674 bags of garbage and debris removed from the river valley (plan was to remove as much as possible).
- To increase awareness on issues of garbage and human-created waste, and improved strategies to decreasing litter and influencing

human behaviour by understanding what types of garbage are making their way into the ecosystem, the following articles and interviews were published: three *Lethbridge Herald* articles (topic: Coulee Clean-Up, Shoreline, Clean-Up, Doggy Doo Doo); two *Sun Times* articles (topic: Shoreline Clean-Up); two *Global News* interview (topic: Weed Pull, Doggy Doo Doo Crew); two *CJOC News* radio interview (topic: Shoreline Clean-Up, Doggy Doo Doo Crew); one *CTV News* interview (topic: Shoreline Clean-Up); one *CKBD News* radio interview (topic: Shoreline Clean-Up).

## Alberta Bat Education and Habitat Protection: Enhancement of the Cache Park Bat Reserve and the “Save a Barn, Save a Bat Program”

### Highway 2 Conservation

Grant: \$4,700

Project Code: 002-00-90-255

Project Status: Funded in 2016-17; Completed

Project Website: [www.highway2conservation.com/projects](http://www.highway2conservation.com/projects)

Bats are one of the least studied and most misunderstood animals in Alberta. It is in the best interest of all Albertans to change this as they are very beneficial to us economically and to the landscape ecologically. This project had a three-pronged approach addressing the most serious problems facing bats: a negative public perception, a data deficiency of critically important habitat, and the conservation and creation of said habitat. Through this project Highway 2 Conservation (H2C) engaged the rural community to become interested in the welfare of bats while dispelling harmful misinformation. With the “Save a Barn, Save a Bat” Program, extension and outreach workshops, as well as one-on-one consultation, H2C provided quality information on bats in Alberta to dispel falsehoods and myths and promote the ecological goods and services they provide. Through this project H2C accomplished the following: (1) Provided six bat house building workshops that saw 180 participants build 148 bat houses; (2) Engaged with schools and community groups to deliver five educational talks to 147 people; (3) Identified 13 bat roosts and gathered 22 guano samples for genetic analysis while also collecting data on habitat use.

This project also included the enhancement of the newly established Cache Park Bat and Bird Conservancy, the first of its kind in the province. This 20-acre reserve protects and enhances valuable bat foraging and roosting habitat along the Pembina River and can be enjoyed by the public. The park was enhanced by installing 15 signs throughout the park that will convey educational information to visitors, and to make it more accessible for individuals, four benches were placed at strategic bat viewing locations.

Deliverables/Results:

- The main result of this project was that through the community outreach with the bat house building workshops and the educational talks, over 325 people of all ages were able to receive information about bats and their importance in the ecosystem and to us economically. H2C believe that this project has started to change people’s perspective on bats and if the popularity of the bat house building workshops are any indication, bats are beginning to be perceived in a positive manner. Through the “Save a Barn, Save a Bat” program rural landowners were shown the important part they can play in maintaining bat habitat. Most of these landowners now are

actively monitoring their roosts and between that, the habitat data gathered and the guano samples collected; this program is filling in knowledge gaps with regards to bats in Alberta.

- A positive, yet unexpected result from this project is that H2C discovered an uncommon instance of hibernaculum in a building located this far north. The landowner in Westlock had heard of the “Save a Barn, Save a Bat” program and asked H2C to help her remove a bat that had found its way into her house in the summer, which they did for her. She indicated that she thought the bats stayed all year round, which is something encountered often with homeowners who do not realize that bats migrate, and it always turns out to be squirrels or mice instead. This time though there were bats found in her attic in December, so she was passed on to the Alberta Community Bat Program (ACBP) for future monitoring which they are now doing.
- Identification and documentation of summer roosting site locations and surrounding habitat, reported back to the ACBP. Guano samples that are collected throughout the summer submitted to ACBP for genetic analysis: 13 bat roosts were visited, and habitat surveys have been done. 22 guano samples have been collected to be sent into the ACBP for genetic analysis
- Year-end report on the “Save a Barn, Save a Bat Program”: delivered as part of H2C’s year-end programming report to the three member municipalities of H2C. A presentation was delivered to the Barrhead Municipal Council and the program was very well received.
- Delivery of at least four educational talks at schools and for community groups such as the Scouts, Junior Forest Wardens, and 4-H groups: Five speaking engagements delivered for the Fort Assiniboine Elementary School (17 participants), Dunstable and Rich Valley Schools at the Lac La Nonne Pond Day event (50 participants), Pots and Pansies Greenhouse Kid’s Day event (12 participants), the Cache Park Open House event (45 participants), and the Junior Forest Wardens Leader’s Retreat Camp (23 participants).
- Delivery of one night walk at Cache Park where the public can view the bats and listen to their calls with echolocation detectors: The night walk was scheduled for August 6. 35 people attended. Unfortunately, it rained that night at sunset so the bats did not emerge from their condos. The participants got to see the park and the work that has been done there. H2C was very pleased with the attendance despite the weather, and is planning on hosting another night walk in 2018.
- Delivery of three bat house building workshops with additional requests being granted as funding dictates: six bat house workshops delivered (Vimy, Westlock, Barrhead, Athabasca, Lac La Nonne, and Athabasca again due to high demand). 148 bat house kits were built by 180 participants. Information on bats in Alberta and alternative bat house plans were distributed to those who attended.
- Enhancement of Cache park by placing two benches for wildlife viewing and providing information through installation of at least six interpretive signs along the walking trails and at points of interest: four benches were placed and 15 signs are now displayed throughout the park.

## Riparian Education/Restoration Program

### Highway 2 Conservation

Grant: \$5,750

Project Code: 015-00-90-209

Project Status: Funded since 2013/14; Completed

Project Website: [www.highway2conservation.com/projects](http://www.highway2conservation.com/projects)

Through education and conservation activities within the municipalities of Athabasca County, the County of Barrhead, and Westlock County, Highway 2 Conservation (H2C) aimed to educate people as to the function and importance of riparian areas and how their activities affect water quality and interactions of wildlife, fish, and the land. H2C also wanted to take action and make real changes on the landscape to improve riparian habitat. This was accomplished in two ways. First, day long field trips were provided called “Pond Days” for Grade 5 students in the area. Pond Days featured speakers who covered topics such as water quality, aquatic invertebrates, invasive species, terrestrial vertebrates, riparian vegetation, and wilderness safety. Students were inspired to be stewards of the land, as well as created a link in their minds between their actions on the land and how it effects water, wildlife, fish, and ourselves. Secondly, H2C reached agricultural producers and delivered the Riparian Improvement Program. H2C networked with farmers to create and protect riparian areas within the three-member municipalities with identification of target areas through Environmental Farm Plan facilitation and GIS mapping. The goals for the 2017/18 season that were accomplished are: five Riparian education field day events (Pond Days); two Riparian Improvement Sites were completed, and three new sites were added. Over 3,000 trees and shrubs were planted to reclaim or repair damaged riparian areas. One newsletter was published and mailed out to rural landowners highlighting the Riparian Improvement Program and Pond Day successes.

Deliverables/Results:

- A destructive hail storm in the Gardenview area on July 27, 2017 severely damaged the tree seedlings that were planted in their temporary placement area. These trees were to be transplanted to their restoration sites in August to meet the grant deliverable of ten acres of riparian area reclamation. It was decided to postpone all further planting for the season to give the seedlings that survived, but were severely damaged, the chance to rejuvenate without subjecting them to further shock due to transplanting. An estimated 2,900 seedlings remain to be planted next year, if they survive the damage they took.
- Riparian Education Events (Pond Days): Five Pond Days events took place; six schools took part. Over 450 children participated in Pond Days in 2017.
- Minimum of ten acres of riparian area reclaimed with seedling plantings: Two project sites were completed in 2017. Two others were halfway completed. These and a further two sites were expected to be completed by the end of August; however, the hail damage to the seedlings dictated that H2C would not be able to meet this deliverable in 2017.
- A Newsletter published and mailed out to residents of H2C member counties highlighting the Riparian Improvement Program and Pond Day successes: A summer edition of the H2C newsletter was sent out in July 2017.

## Waterfowl Nesting Habitat Enhancement

### Innisfail Fish & Game Association

Grant: \$1,500

Project Code: 030-00-90-282

Project Status: New; Completed

In addition to 28 nest tunnels funded by the Innisfail Fish & Game Association (Innisfail FGA) prior to this specific project, 28 additional nest tunnels and 24 support structures have been fabricated and installed for the 2018 duck nesting season at the completion of this project by April 1, 2017. These 56 nest tunnels will significantly improve local duck nesting success. Youth and adults have participated in the construction, installation, and monitoring of nest tunnels, public awareness has been increased through local media coverage, and observation of nest tunnel use in an urban pond, and landowner awareness has increased through partnership with Red Deer County's Alternative Land Use Program (ALUS) and seven sites on private land.

Deliverables/Results:

- 28 additional nest tunnels and support structures have been completed for 2018 installation. Some of these will be installed in Red Deer County, and the remainder distributed to Alberta Fish & Game Association affiliated clubs.
- Utilization of the previously installed nest tunnels inspected to date this winter are more than 50 percent, which appears to be consistent with ACA's findings.

## Wildlife Education Student Field Trips

### Inside Education

Grant: \$7,491

Project Code: 002-00-90-211

Project Status: Funded in 2016/17; Completed

Project Website: [www.insideeducation.ca](http://www.insideeducation.ca)

Inside Education has fully incorporated wildlife education into their outdoor education programming. The five field sites now offer a program built around the use of wildlife trail cameras; the wetlands education programming makes a stronger connection to wildlife, prominently waterfowl, especially in the Regional Municipality of Wood Buffalo; and wildlife themes (including hunting, angling, and species-at-risk—notably Woodland caribou) have been strengthened in regular programming at the field sites. Students, generally ranging from Grades 4 through 12, have the chance to check on the wildlife cameras throughout the program to see what wildlife are using the site, fostering discussion about habitat needs, human impacts on the forest, research techniques, and related themes. More than 5,000 students across Alberta participated in this project.

Deliverables/Results:

- The Wildlife Program has been extremely well received, with teachers specifically noting that wildlife cameras are a technology that they are unable to access themselves. Using feedback from their pilot program, some of the activities were adapted to better reach teachers' education needs with much success. Students are very engaged; they experience a deeper connection to the wildlife photos once they understand the considerations in placing the camera.

The program encourages students to “think like an animal” and consider how the target species moves through the habitat, their source of food and water, their competition and predators, as well as the implications of the cameras being discovered by animals or humans.

- Over five field sites, Inside Education had more than 5,000 participants in these programs:
  - Jumpingpound Demonstration Forest (Kananaskis) – 820 students, teachers, parents participated in Spring 2017
  - Des Crossley Demonstration Forest (Rocky Mountain House) – 1,400 students, teachers, parents participated Spring/Fall 2017
  - Cooking Lake – Blackfoot Education Program (County of Strathcona) – 1,112 students participated in Spring 2017 (Far exceeded expected number of 750)
  - Huestis Demonstration Forest (Whitecourt) - 559 students, teachers, parents
  - Evergreen Forest Education Program (Grande Prairie) - 805 students, teachers, and parents
  - Fort McMurray Wetlands pilot (Fort McMurray) – 350 students, teachers, parents; program ran Spring 2017
  - Total number of participants (students, teachers, parents) in 2017 = 5,046
- Teachers have been very pleased with the opportunity for a field experience for their Environmental Outdoor Education and their CTS needs. The school bus subsidy has been a major source of relief for teachers and schools. Many teachers have expressed that without the school subsidy, they would not have been able to attend the program.
- Learning has been extended into the classroom by offering a “Species at Risk – Caribou” learning resource to teachers for the 2017/18 school year. Teachers who participate in Inside Education programs are offered this resource at no cost in order to extend the learning back into the classroom. The resource was available at Teachers’ Conventions in February 2018.
- Teacher Feedback:
  - *“This was an amazing experience for my students and I. Our educators were knowledgeable and engaging. My students were very excited talking about their favourite parts on the way home. This experience was definitely worth the 2.5-hour drive! Please keep up the fantastic work!”* ~ Tracy Turre, Christ the King School, Stettler
  - *“It was amazing. The students learned so much more by being able to experience the trees first hand. It was also great that they were able to get out of the city in a natural environment which many do not have the opportunity to do. The staff were very knowledgeable and presented information in a very interesting and engaging way.”* ~ Tina Johns, St. Joseph School, Calgary
  - *“This was a fabulous experience for my class. As their first experience with wetlands, they are now all fired up and excited to learn about the topic!”* ~ Elizabeth Weins, Westglen School, Didsbury

## Outdoor Conservation Education for BBB JFW

### Junior Forest Wardens - Bezonson Brown Bears

Grant: \$1,300

Project Code: 002-00-90-282

Project Status: New; Grant not accepted

This grant was not accepted, as they decided to change their camp plans.

### Fall Wilderness Family Camp

#### Junior Forest Wardens – Glory Hills

Grant: \$2,000

Project Code: 002-00-90-273

Project Status: New; Completed

The Junior Forest Wardens – Glory Hills (JFWGH) Fall Wilderness Family Camp is an annual opportunity for the club families to gather in the fall to participate in a weekend of outdoors activities. Because it happens in the fall, in addition to the goals of learning new outdoor skills, the club also has the goal of introducing new families to the JFW program and to other families in the club. The camp occurred at Long Lake Center on the weekend of September 29 – October 1, 2017. Programming was provided by JFW volunteer leaders as well as paid programming by Wild by Nature Adventures. A total of 19 families, made up of 31 adults and 36 youth (ages five – 18) attended. The under-12-year-old group (and their parents) participated in organized activities such as fly tying, fire lighting challenge, outdoor cooking, wilderness games, nature appreciation and awareness, orienteering, making a temporary log wilderness camp chair, and making bubble nets. The older wardens and some adults had a day long introductory kayak lesson—receiving their flat-water kayak certification. Both groups had free time for fishing or voyageur canoe ride and played outdoor games and a native plant walk for adults. Almost half of the attending families were new to JFW this year (a percentage higher than normal) so they truly learned a lot of new things and came out of the camp energized for the year ahead.

Deliverables/Results:

- Due to scheduling conflicts with some of the returning families, JFWGH had a lower turn out of families than first planned (19 vs 25 in the project goals). The plus side for the club was that they had more new families attend the camp than normal (since registration has just happened, so often they are reluctant to come right away). Having all the new families there truly gave us a chance to show them the fun of JFW and being outdoors.
- Fall Wilderness Family Camp took place September 29 – October 1, 2017 at Long Lake Centre.
- Number of people involved in project: 31 adults and 36 youth were final numbers (lower than the anticipated 45 youth & 45 adults).
- A variety of sessions were provided for youth and parents to participate in based on their skill level. Sessions executed were: fly tying, fire lighting challenge, outdoor cooking, wilderness games, nature appreciation and awareness, orienteering, making a temporary log wilderness camp chair, and making bubble nets. The older wardens and some adults had a day long introductory kayak lesson—receiving their Paddle Canada flat water kayak



certification. Both groups had free time for fishing or voyageur canoe ride and played outdoor games and a native plant walk for adults. Predator and Prey, an ecosystem-wide game was played by all youth participants

- Photos were taken throughout the duration of the camp to verify the skill development that the youth and parents. Photos will be shared with Wild By Nature Adventures, families of the Glory Hills Club at the following club meeting night. Outcomes were also shared with the Yellowhead Regional Council of Junior Forest Wardens on a monthly conference call.

## Archery

### *Junior Forest Wardens – Lobstick Lynx*

Grant: \$5,100

Project Code: 002-00-90-260

Project Status: New; Completed

The project goal is to create a 3-D archery range and beginner safe practice area to encourage the Lobstick Lynx Junior Forest Wardens (JFW) Club, other JFW Clubs, and surrounding community members/families to participate in and learn the fundamentals of archery as a sport and an introduction to bow hunting. Clearing, levelling, and maintaining an outdoor 3-D archery range and beginner practice range in a forested area completed with all equipment and targets ready and available to use by all members of the communities in Carrot Creek, Niton Junction, Fulham, Peers, Hattonford, Mackay, Wildwood, and surrounding areas.

Deliverables/Results:

- A couple of events have been held to allow the community to try out the new equipment and more will be organized once the 3-D range is up and running.
- Photos of the Open House, as well as the bow rack and holders that were made by the members of the club, were taken.
- The club has the leather and has been actively looking for someone trained in leather work to teach their members how to make arm guards.
- The club is fundraising to be able to purchase a trailer to make the equipment more accessible to the community.

## Fall Wilderness Family Camp

### *Junior Forest Wardens – St Albert Sturgeons*

Grant: \$2,000

Project Code: 002-00-90-271

Project Status: New; Completed

The St. Albert Sturgeons Junior Forest Warden (JFW) group hosted their Fall Wilderness Family Camp on September 22 – 24, 2017 at the Long Lake Education Centre. A total of 74 participants attended the camp. 18 participants (youth/parents) received their Paddle Canada Lake Tandem Canoe Certification which was instructed by Wild By Nature Adventures. Some of the skills they covered included: basic lake strokes while maneuvering the canoe in the bow and stern, required safety gear for all canoes, and basic knots that are required for securing canoes on trailers as well as their personal gear in the

canoes. The other participants at the camp developed their skills in shelter building, compass work, plant ID, knife safety, fire lighting, and fishing. These sessions were led by the volunteer leaders of the St. Albert JFW club. It was a great weekend for all participants to build on their hands-on, outdoor skill development in a variety of areas.

Deliverables/Results:

- There were 74 participants that attended the Fall Family Wilderness Camp. 18 participants (youth/parents) were successful in receiving their Paddle Canada Lake Tandem Canoe Certification.
- The remaining participants completed the following activities which were led by volunteer leaders of the club: shelter building, compass skills, plant identification, knife safety, fire building, and fishing.

## Regional Camp 2017 support

### *Junior Forest Wardens – Yellowhead Regional Council*

Grant: \$3,875

Project Code: 002-00-90-262

Project Status: New; Completed

Project Website: [www.yellowheadjfw.ca/wp](http://www.yellowheadjfw.ca/wp)

The Yellowhead Regional Council Junior Forest Warden (YRC – JFW) campout was well attended; 181 people attended the campout, participating in a variety of sessions that increased their knowledge of outdoor skills and conservation. The sessions provided to all participated included: a trapper presentation about ethical trapping; knife, saw and axe safety; carving; outdoor cooking; archery; fire lighting; project wild games; leather project; craft project; slacklining—shooting range; axe throwing; flatwater canoeing; leave no trace awareness. The goal of the project was to remove the mysteries of trapping and provide outdoor training which were met with the activities above. The exposure of the trapper community was very well received and changed a lot of misplaced opinions. The results were inquiries into holding a trapper training course for some of the youth and adults that attended the event. Due to funding partner shortfalls, the AHEIA kits and training were provided as part of this project as outlined in the original proposal.

Deliverables/Results:

- 181 people attended the campout, participating in a variety of sessions that increased their knowledge of outdoor skills and conservation. The sessions provided to all participated included were listed above. The main result was the attending families learned about trapping, respect for nature, how to leave a place better than you found it, and how to utilize tools in nature.
- The demand for trapper certification was unexpected. The number of people that were interested far exceeded the expectations. Another great outcome was that the number of people that deemed trapping as a bad practice dropped to zero after the presentations.
- A photo summary detailing the events of the campout was made.

## Wild Women Training Week

### Junior Forest Wardens – Yellowhead Regional Council

Grant: \$6,000

Project Code: 002-00-90-263

Project Status: New; Completed, but not as planned

The Wild Woman Camp was not well attended but was very well received. The seven women who attended raved about the program and will carry word of mouth back to their groups. The goal of the project was to provide AHEIA and PAL training. The Wild Woman Camp ran into budget issues. The partner funding was not provided as requested. The cost projections for the AHEIA, PAL, and Boat Courses were underestimated by a factor of three. With the lack of partner funding, the price of instructors tripling the cost point for the camp over doubled from estimate. With the current economy, the Junior Forest Wardens – Yellowhead Region was only able to secure seven participants for the camp. The camp was opened to the public, with hopes to get the overflow from the AHEIA women's camp. The Narrow Lake camp did not fill either, so no additional interest was shown in the camp. The camp was shortened from a week to a long weekend.

Deliverables/Results:

- The objective was to provide 80 women (mothers from the Yellowhead region) with outdoor training and certification. Due to budget changes this number was lowered but even with heavy subsidies the camp only attracted seven women. Activities to be available were AHEIA Hunter Ed, Boat Licence, PAL non-restricted and Restricted licence, and outdoor education like fire lighting or shelter building, depending on instructor availability. Only AHEIA Hunter Ed and PAL training were provided over the September 2017 long weekend to seven women.

## Winter Skills Camp

### Junior Forest Wardens – Yellowhead Regional Council

Grant: \$3,500

Project Code: 002-00-90-277

Project Status: New; Completed

The goal of the winter camp was to teach hands-on skills for winter survival. The objectives were to teach skills in an outdoor winter setting teaching the ability to survive in harsh winter conditions. The participants were also provided with a proper knife, flint and steel, survival blanket for shelter, and a whistle to start their survival kits. The results were participants learning how to make fire and shelter with just a knife and other essentials commonly found in survival kits. The participants practiced knife projects, advanced fire lighting with wet material, mastering knot tying, outdoor cooking, building quinzhees, snow lean-tos, and shelter building. The achievements from this event are that the participants now have the fundamental skills and tools to survive in the outdoors. These skills will be on display at the spring survival camp where they are being asked to solo, or small group camp. The camp was moved to Birch Bay Ranch to allow for heated cabins.

Deliverables/Results:

- The camp was attended by 21 people (well below the estimated 64 participants). Two people did not spend the night due to other commitments. The camp used two instructors for three days. Everyone received a knife, flint and steel, whistle, and survival blanket. The group also made shelters for everyone to take home.

## Avian Monitoring and Education Programs at Lesser Slave Lake

### Lesser Slave Lake Bird Observatory

Grant: \$22,500

Project Code: 030-00-90-128

Project Status: Funded since 1999; Completed

Project Website: [www.lslbo.org](http://www.lslbo.org)

Dedicated to bird conservation through research and education, the Lesser Slave Lake Bird Observatory (LSLBO) has been operating a migration monitoring station at Lesser Slave Lake since 1994. The LSLBO is a full member station of the Canadian Migration Monitoring Network. The first goal of this project was to assess the population status of migratory and breeding bird species at Lesser Slave Lake using the following avian monitoring programs. (1) Spring and Fall Migration Monitoring Program used a combination of visual counts, passive mist netting, daily census and incidental observations to determine daily estimated totals for each species during migration. Over 105,000 birds representing 158 species were visually recorded with additional 2,561 birds banded from 67 different species. All migration monitoring data was forwarded to Bird Studies Canada for analysis to detect any significant changes in species population trends. (2) Monitoring Avian Productivity and Survivorship (MAPS) Program determined the reproductive status of breeding birds at four MAPS stations at Lesser Slave Lake. A total of 236 birds from 23 species were banded, and the breeding status was determined for 60 species encountered during the MAPS program. All data has been provided to the Institute of Bird Populations for analysis. (3) Northern Saw-whet Owl Fall Migration Monitoring Program operated during September to October and data was collected for 94 Northern saw-whet. The LSLBO continued work on a collaborative research project with Dr. Natalie Boelman from Columbia University utilizing GPS deployment to study American robin habitat use during spring migration for NASA's Arctic-Boreal Vulnerability Experiment (ABOVE). One academic journal article was also published with LSLBO co-authorship, and another is pending. Final reports were completed for all projects and provided to stakeholders and funders. The second goal of this project was to deliver innovative, hands-on education programs that promote a greater understanding of the importance of the boreal forest for Alberta's wildlife. Through the Boreal Centre for Bird Conservation (BCBC) and project partners, educators delivered over 400 hands-on interactive programs to over 12,000 participants including: LSLBO Banding Lab Tours, school fieldtrips, public outreach programs, Citizen Science projects, special community events, and an online webinar. The goal of the year-round education and research centre is to "nurture stewards of the boreal forest." A wide range of exciting, hands-on programs were provided to visitors of all ages this year on the importance of the boreal forest.

Deliverables/Results:

- Three core avian monitoring programs were successfully delivered:
  - Spring migration monitoring began on April 16, 2017 and operated daily until June 10, 2017 for 56 days of coverage. The start date was earlier than normal because it was possible that migrants would be moving through earlier due to mild spring conditions. However, cold weather and several heavy snowfalls occurred during the second half of April, which slowed the pace of the early migrants. Over 70,000 birds representing 158 species were recorded through the season. A total of 813 birds from 41 species were banded, which is below the spring average of 915 birds from 45 species.

- Fall migration monitoring operated daily from July 12 until September 30, 2017 for 81 days of coverage. Over 35,000 birds from 128 species were observed during the season. Visual migration counts and census were conducted daily. Mist-nets were set on 72 of the days and both the total net hours and average daily net hours were below the season average. Banding was below the seasonal average with 1,382 birds from 60 species banded. The total capture rate was 28.6 birds per 100 net hours, which is well below the fall average of 43.5 birds per 100 net hours. It was a very windy fall season which greatly limited the mist-netting effort and resulted in one of the lowest average net hours observed in the past nine years despite excellent visual coverage.
- Monitoring Avian Productivity and Survivorship (MAPS) program monitors bird populations and their vital rates during the breeding season. The LSLBO operates four MAPS stations and each site was visited six times between June 11 and August 4, 2017. A total of 236 birds representing 23 species were banded during MAPS banding which is slightly above the average of 225 birds banded. In addition to banding, the breeding status will be determined for all species encountered during visits at each MAPS station.
- Northern Saw-whet Owl Fall Migration Monitoring was conducted over 40 nights from September 1 to October 26, 2017. A total of 87 northern saw-whet owls were banded, which is below the average. Boreal owl target banding occurred for its second year on the same nights as the saw-whet owl banding. No boreal owls were captured, but an additional seven northern saw-whet owls were captured in the boreal owl net array. A special family owl night program was held this fall to highlight the conservation programs, and this event continues to be one of the most popular community outreach programs at the LSLBO.
- From April 1, 2017– March 15, 2018, the educators at the BCBC provide over 400 outdoor education programs to over 12,000 participants. In addition, LSLBO educators also delivered outdoor education programs for their education partner, the Lesser Slave Forest Education Society to an additional 3,900 participants.
- Community Outreach programs: During this project, LSLBO educators provided 150 outreach programs and special events that reached over 6,500 people. In addition, Alberta Parks and LSLBO staff provided summer interpretive programming for almost 2,500 campers in Slave Lake District Campgrounds, an increase from previous years.
- From April 1, 2017 – March 15, 2018, over 5,700 visitors enjoyed the BCBC programs, trails, and exhibits. Winter visitation continues to grow due to winter fieldtrip programs and free access to ski and snowshoe equipment that encourages our local residents to get outdoors in the Park year-round.
- 26 public banding lab tours provided to over 500 participants of all ages.
- The LSLBO continues to support conservation plan initiatives and research work on the Canada warbler.
- For the second year, the LSLBO collaborated with Dr. Natalie Boelman from Columbia University on the ABoVe Robin study in April 2017. Nicole Krikun was hired as the bander for this project and 28 American robins were deployed with GPS units during spring 2017 migration. The LSLBO provided field expertise, operational support, office/lab space, and field staff accommodation for this project. This project will be undertaking its third year of GPS deployment at the BCBC in April 2018.
- In collaboration with the Dr. Flockhart, University of Guelph, LSLBO field staff collected data for a project focused on urban effects of birds highlighting the impacts of cats. Point counts were conducted within the town limits of Slave Lake.
- This summer, new vegetation surveys were conducted at the LSLBO site to document the vegetation changes at each netlane to determine how vegetation change may be affecting the birds captured during migration monitoring (abundance and species diversity). Data from the new Aerial nets will be used to compare historic net lane data versus upper canopy capture data. Initial data analysis of this new data was initiated this winter and the CMMN Science Committee will be contacted for feedback on next steps.
- Reports and publications:
  - LSLBO Annual Report 2017
  - Peer Reviewed Articles coauthored by the LSLBO:
    - Haché S, Bayne EM, Villard M-A, et al. Phylogeography of a migratory songbird across its Canadian breeding range: Implications for conservation units. *Ecol Evol.* 2017;7:6078–6088. <https://doi.org/10.1002/ece3.3170>
    - The following papers will be provided to ACA when approved for publication:
      - LSLBO Data Contribution to international peer-reviewed paper currently nearing completion: Phenology of the avian spring migratory passage in Europe and North America: asymmetric advancement in time and increase in duration. Under internal review by contributors.
      - LSLBO Canada Warbler Habitat Description paper resubmitted to *Forestry Chronicle* for publication this month. Will be provided to ACA upon publication.

## 7th Annual LFGA/ACA Youth Fishing Recruitment Day

### Lethbridge Fish & Game Association

Grant: \$12,000

Project Code: 020-00-90-207

Project Status: Funded since 2014/15; Completed

On June 3, 2017 the Lethbridge Fish & Game Association (LFGA) embarked on the seventh annual youth fishing day at Payne Lake. Overall the weather was great, and so was the turnout, with 413 youth in attendance this year all accompanied by at least one parent or guardian. Every youth in attendance was provided with the equipment they needed to leave the lake and continue their fishing career. Volunteers were on site to help with the successful catch and release of all fish caught, help with tackle set up and answer a variety of questions. Not only did this event fill the shore of the lake, but the campground was also booked up several days in advance. Great feedback was received from all youth in attendance. All youth were given an ACA embellished barbless spoon, bag, and catch-and-release pail.

Deliverables/Results:

- Attendance was high with 413 youth in attendance each with a minimum of one parent/guardian. All youth received a barbless hook and catch-and-release pail with ACA logo and take-home bag. All youth who caught fish were taught hands-on how to catch and release their fish correctly.

- Fish and Wildlife officers had a huge presence this year, and said the event was a great success and they were proud to be a supporting partner.
- The LFCA Facebook page received 202 additional likes after the event, and many showed interests in attending again.
- A second event tent was donated to the project.

## Hooked On Fishing Program by ACA and AFGA

### *Lethbridge Fish & Game Association*

Grant: \$18,328

Project Code: 020-00-90-257

Project Status: New; Completed

The Hooked On Fishing Program is designed to teach youth from all knowledge and outdoor levels all the aspects of the outdoors in a fun and hands-on learning program. An interactive and hands-on approach is used to enlighten children about the outdoors and the world around them. The course includes real taxidermized animal heads, pelts, fish, antlers, and everything else outdoors! Overall the program exceeded expectations and so did the attendance. The program has reached over 400 youth in multiple levels. Large family groups joined the program for multiple levels so the program has proven to be sustainable and cost effective for Alberta's growing families. Youth are all given the activities done that day, a pamphlet, a learning book, games played that day, and a badge after the three courses are complete. Overall kids loved the program.

Deliverables/Results:

- The program had 420-425 youth participants, and most in multiple levels. Courses from April 2017 to the end of February 2018 on a consistent weeknight basis.
- The most unexpected result was how many youth and families that have never had an interest or experience in the outdoors enjoyed the program and came to multiple classes. The program really made a difference in the youths' lives, especially the ones that came in very new and shy to the unknown. Several youth brought their parents and grandparents into the class to show the directly what they were working on. The involvement and enthusiasm was great!
- Two elementary schools have requested the program to be taught in the September 2018 school year, as a result of the success of this program.

## Lac La Biche Shoreline Management Guidelines

### *Living Lakes Canada c/o Wildsight*

Grant: \$10,000

Project Code: 015-00-90-259

Project Status: New; Completed

Lac La Biche is the seventh largest lake in Alberta, and is important to the local community ecologically, socially, economically, and culturally. In 2009, Lac La Biche County adopted the Lac La Biche Watershed Management Plan. One of the recommendations of the plan is that a comprehensive inventory of critical fish and wildlife habitats be completed, and that these habitats then be designated as conservation. The Lac La Biche Sensitive Habitat Inventory Mapping (SHIM) project used federal scientific protocols to identify and assess

fish and wildlife habitat values along the shoreline of the lake. The Lac La Biche Shoreline Management Guidelines used data collected during SHIM to produce science-based recommendations for land-use planning, development, and conservation opportunities. Lac La Biche County is working to ensure the areas of highest ecological value are designated for conservation and protected in the long-term through community engagement and outreach, and implementation into local planning mechanisms. Land use, riparian habitat, natural versus disturbed shoreline changes, anthropogenic alterations, and fish, wildlife, and terrestrial habitat values were identified and characterized through the collection and review of scientific data. Critical, sensitive, and important habitats were then identified that should be protected if the current fish and wildlife resources are to be sustained. Identification of habitats is the first step in conservation which Living Lakes Canada hopes will be followed by education and stewardship. Balancing shoreline development activities is paramount for the ongoing protection and restoration of Lac La Biche's ecological health. The SHIM project was implemented to address concerns over the impacts of human activity on the lake's ecological integrity, and to offer ways to incorporate environmental considerations and guide future development decisions. The SHIM serves as a tool for landowners and regulators to make environmentally sound land-use decisions along the Lac La Biche shoreline and offers a systematic, streamlined, and science-based process for integrating information on ecological condition into shoreline development planning on Lac La Biche. The project supported Lac La Biche County in their commitment to act on the recommendations of the 2009 Watershed Management Plan. The Shoreline Management Guidelines are a scientifically sound tool with the ability to drive on-the-ground action that addresses key short- and long-term recommendations associated with the fisheries, waterfowl, and wildlife component of the Lac La Biche Watershed Management Plan.

Deliverables/Results:

- The project results included:
  - Identifying shoreline habitats of highest ecological value for fish and wildlife.
  - Engaging area residents to develop a stewardship ethic that supports long-term protection for the lake.
  - Developing and implementing shoreline management guidelines for fish and wildlife.
- In addition to these results, the project contracted a local consultant to draft the Shoreline Management Guidelines Document and complete the GIS mapping work in order to build local skills and expertise that are now supporting further projects elsewhere in Alberta such as Lesser Slave Lake, which is a partnership project with Lesser Slave Lake Watershed Council planned for 2018.
- The following deliverables have been completed or are scheduled to be completed:
  - Length of shoreline mapped (172 km)
  - Number of segments identified (60 segments)
  - Number of fish and wildlife sample sites assessed (15 sites)
  - Number of outreach events (three outreach events)
  - Number of Living by Water information packages distributed (50)
  - Completion of the Shoreline Management Guidelines (complete)
  - Planned adoption of Shoreline Management Guidelines into local bylaws (complete)

## Riparian & Ecological Enhancement Program

### Mountain View County

Grant: \$20,000

Project Code: 015-00-90-102

Project Status: Funded since 2005/06; Completed

Project Website: [www.mountainviewcounty.com/agriculture-environment/agricultural-funding-programs](http://www.mountainviewcounty.com/agriculture-environment/agricultural-funding-programs)

Mountain View County (MVC) has been in partnership with ACA since 2000 and has received an ACA grant since 2005 towards the delivery of a Riparian and Ecological Enhancement Program (REEP). Funding is offered to producers who want to protect, restore, and maintain the health of their riparian and sensitive areas, encouraging biodiversity and maintaining fish and wildlife habitat using the following means: permanent riparian and sensitive area wildlife-friendly fencing; native grass, tree, and shrub protection and establishment; off-site watering system installation; and approved creek crossings. A riparian or rangeland health assessment is performed on each project in the year of completion and again in five years once contract commitments are completed. The contract with the County also allows the site to be used for demonstration purposes and a road-side sign describing the project, to be posted. This program encourages Beneficial Management Practices including controlled/rotational grazing, an accessible off-site water supply, nutrient management, noxious & prohibited noxious weed control, chemical application setbacks, habitat protection, and enhancement. The health of the watersheds within the County are improved through this program and there is an increased awareness regarding the importance of riparian and sensitive areas for biodiversity, native plant life, wildlife habitat, fish distribution, and productivity. This past year there were 28 projects that were funded through REEP. This results in fifteen more producers who are aware of the importance of beneficial management practices and sustainable agriculture. Of these projects, nine producers also signed conservation agreements with Alternative Land Use Services (ALUS) for projects focused on wetland enhancement.

Deliverables/Results:

- Project profile sheets are completed for each of the 28 projects (available upon request). REEP included: 13 fencing projects, 11 off-site watering systems, two creek crossings, and two planting projects. The total area surrounding waterbodies that has been fenced off this year is 82.8 hectares with the total length of newly installed wildlife-friendly riparian fence being 7.6 km. This results in 15 more producers who are aware of the importance of beneficial management practices and sustainable agriculture. In summary, MVC estimates that 75+ one-on-one conversations were held with landowners around beneficial management practices, and an additional 4,860 acres of land is managed with increased sustainability and 7.6 km of fencing has been installed.
- Nine of the REEP producers also signed conservation agreements with ALUS for projects focused on wetland enhancement.
- Riparian Health Assessments on 2017/18 projects are complete and available.
- Five-year follow-up Riparian Health Assessments on 2012 projects are completed; landowners are encouraged by the measured improvements seen as a result of their projects and this has

sparked renewed interest in building on this success and share it with others.

- Multiple events were hosted throughout the year with an average of 50 attendees monthly at workshops. Examples of completed projects are highlighted at workshops and in presentations to encourage more participation. Highlights of events include:
  - Booths at a Living in the Natural Environment Event in February 2018, and at the Action for Agriculture AGM & Land Use Forum in March 2018.
  - Advanced Fencing for Precision Grazing workshop with GWFA hosted at ALUS producer site in Bearberry area May 10, 2017.
  - Carbon & Forages Field Day with Foothills Forage and Grazing Association in July 2017; REEP program was highlighted.
  - Water Quality workshops hosted with Legacy Land trust in four communities to promote conservation projects in August.
  - Environmental Farm Plan Workshop was hosted November 14, 2017.
- Presentations delivered:
  - Land & Water Resources Program on MVC Agricultural Services Programs including REEP March 22, 2017.
  - MVC Environmental programs to a Land use planning class at Olds College in November 22, 2017.
  - The Alberta ALUS Hub Manager delivered a presentation at the Ducks Unlimited wetland course at Olds College in November 24, 2017.
- Projects will be available for tours and road-signs may be posted; projects were highlighted in July when MVC hosted a Provincial Ag Service Board Tour and another tour was planned for September 2017 in collaboration with Alberta Agriculture's Phosphorus Watershed project in the Acme Creek Watershed, but unfortunately did not go ahead due to low registration numbers; this will possibly be rescheduled in 2018.

## Expanding Family Nature Nights across Alberta

### Nature Alberta

Grant: \$32,470

Project Code: 002-00-90-264

Project Status: Nature Kids funded since 2014/15 and previously by R&R; Completed

Project Website: [www.naturealberta.ca/nature-kids](http://www.naturealberta.ca/nature-kids)

The Family Nature Night (FNN) events hosted by the Nature Kids program has proven over the course of six years to be a successful and sustainable project in Edmonton. The average attendance has been 50+ people/event/year in each of the six years FNNs has run (2002 – 2017). FNNs reached a new level of popularity in the last couple years, averaging 77 people/event in 2016 and an average of 72 people/event in the summer of 2017 and an average of 25 people/event during the winter FNNs. The FNN series was expanded to include one summer and one winter event in each of the non-Edmonton Chapters where many participants brave the cold to enjoy some winter activity. These events aim to get families outside and learn about nature that exists

just outside their front door. Every year, Nature Alberta hosts events with varying themes at different parks across the City of Edmonton and now across the province in all of the Chapters. FNNs are grand in scale, free to the public, attract large audiences, and feature local experts; therefore, they address the problem that children have today of not having enough access to nature-based activities. This year, since the FNNs were expanded to all Chapters, 929 people participated in the FNN events throughout the summer and winter. Themes such as butterflies, urban critters, birds, trees, rocks and fossils, fungi and lichen, moose and deer, wildlife winter adaptations, Arctic wildlife adaptations, and pollinators were presented to the families of this province. A tree planting event was held in Morinville where municipal government officials joined the event and Nature Alberta also collaborated with the Town of Morinville to help beautify their brand-new disc golf course. Bee hotels kits were brought to the families of Red Deer, Grande Prairie, and St Paul to help spread the word about pollinators and to increase the habitat available for the solitary bees in their backyards. This project continues to be a huge success every year and Nature Alberta is happy to continue to offer it the families of Alberta.

#### Deliverables/Results:

- Overall this project was extremely successful, Nature Alberta managed to get an extensive number of families outside learning about nature and being active: a total of 17 Family Nature Night events were held throughout Alberta with 929 people attending during 2017/18. 131 volunteers helped out with the FNN series across the province.
- Six summer FNNs were held in Edmonton with a total of 729 participants and 87 volunteers participating throughout the summer. A Pollinator Family Nature Night was hosted with Peace Parkland Naturalists in Grande Prairie where three bee hotels were built. Nature Alberta participated in an International Migratory Bird Day event in Calgary at Inglewood Bird Sanctuary with a bird craft and talk (at least 20 families). A Summer Tree Planting Family Nature Night was hosted in Morinville where with 33 participants, three volunteers, and two municipal government officials attended where a total of 61 trees were planted. A Summer Family Nature Night was held in Red Deer where five people came with two volunteers and two experts. The Lakeland Chapter hosted a Summer Family Nature Night with the Beaver River Watershed Alliance and bee hotels were built. Nature Alberta had 52 people and eight bird experts in attendance at the Christmas Bird Count for kids at Inglewood Bird Sanctuary; 11 people, two experts, and two volunteers attended the Red Deer Winter event; ten people and one expert were at the Lakeland Winter Family Nature Night; 12 people, one expert, and two volunteers attended the Morinville Winter Family Nature Night; 17 people, three experts, and eight volunteers came to the Edmonton Winter Family Nature Night; 25 people, one expert and one volunteer came to the Grande Prairie Pollinator event.
- Successfully piloted these events to the Nature Kids Chapters which meant more families were reached across Alberta by bringing free public events to parks in their local area. Nature Alberta was not able to offer these events to the City of Cold Lake and was unsuccessful in starting a Chapter there.

## Living by Water

### Nature Alberta

Grant: \$40,000

Project Code: 015-00-90-129

Project Status: Funded since 2003/04 (not funded 2008/09 & 2012/13); Completed

Project Website: [www.naturealberta.ca/programs/living-by-water](http://www.naturealberta.ca/programs/living-by-water)

Since 2002, Nature Alberta has delivered Living by Water (LBW) to inform and educate Albertans about the importance of maintaining the integrity of the natural ecosystem associated with their lake property, while supporting suitable recreational use, preserving property values, and ensuring use for future generations. In 2017, LBW focused on delivering a complementary delivery model, the Love Your Lake (LYL) Assessment Initiative, in addition to providing a shoreline naturalization cost-sharing incentive program, targeting individual property owners who had participated in the LYL assessment and who had accessed their personalized report. The intent of the shoreline naturalization incentive program was to test the interest and update of property site assessments, interest in the development of individualized shoreline naturalization plans and resources (human and financial), to assist with the implementation of the proposed naturalization plans, and to assist with improving overall lake and local watershed health.

Core objectives included: increasing the awareness and understanding of the value of natural riparian features on the landscape and the role they play in water quality and shoreline health; increasing shoreline resident's participation within their local stewardship group and encourage residents to become actively engaged in conservation and stewardship; increasing the understanding of the laws and regulations surrounding the use of riparian spaces and foster lawful participation in recreational activities and property use; encouraging and facilitating shoreline and property naturalization projects; and to support initiatives of LBW partner organizations within the same sub-watershed. Over the course of 2017/18, Nature Alberta completed approximately 300 LYL assessments at Wabamun lake including the summer villages of Betula Beach, Lakeview, Seba Beach, Kapasiwin, and Point Alison. In addition, approximately 300 LYL assessments were completed at Lake Isle in partnership with Parkland and Lac Ste. Anne counties. Over the course of the summer and fall, 34 individual site visits were completed resulting in the development of 29 completed shoreline naturalization plans. Of these 29 plans, ten were implemented prior to freeze-up (approximately 445 m<sup>2</sup> in total size) with an additional 13 (~580 m<sup>2</sup>) scheduled for the spring of 2018. All completed sites were documented with before and after photography and appropriate signage. A key element of the LBW program is extension and outreach. In an effort to support this priority, LBW staff attending 12 partner or Nature Alberta sponsored events promoting the LBW/LYL program and sound stewardship or local watersheds. LBW staff followed up with a survey of 12 property consultation participants to gauge level of uptake and interest in continuing to advance the key initiatives of the LBW program.

#### Deliverables/Results:

- Completed Love Your Lake assessments for Lake Wabamun summer villages of Betula Beach, Lakeview, Seba Beach, Kapasiwin, and Point Alison: ~300 Love Your Lake assessments were completed for these summer villages. The data was reviewed for quality control and entered into the Love Your Lake database for processing. Property owners were notified they could download personalized reports in March 2018.

- Began Love Your Lake assessment of Lake Isle, in partnership with Parkland County: ~300 Love Your Lake assessments were completed at Lake Isle with ~ 100 remaining to be completed this summer.
- Completed 35 site visits to create plans for shoreline naturalization projects: 34 site visits were completed at Wabamun Lake during the summer and fall of 2017. An additional ten sites were completed during March 2018.
- Complete 35 shoreline naturalization projects on landowners and municipal property: 29 naturalization plans were created, and 10 naturalization projects were completed in 2017. 13 naturalization projects are planned for spring 2018.
- Before and after photos of naturalization projects, referenced on a map: digital photography has been completed and require linking in a GIS environment.
- Participation and presentation at more than 12 Nature Alberta and partner sponsored events.
- Follow-up surveys to previous LBW participants (May – October 2016): follow-up surveys of 12 property consultation participants to gauge level of uptake and interest in continuing to advance the key initiatives of the LBW program.

### Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed – Habitat Restoration Planning

#### *Northern Lights Fly Fishers/TUC Edmonton*

Grant: \$27,910

Project Code: 020-00-90-197

Project Status: Funded since 2012/13; Completed

Project Website: [www.nlff.org/graying/grayling-history](http://www.nlff.org/graying/grayling-history)

In 2017, NLFF/TUC continued to collect data in support of a multi-year initiative (2011 – 2017) to study Arctic grayling populations and habitat conditions in the Upper Pembina River watershed. The data collected will be used to identify habitat concerns and conservation opportunities to help re-establish Arctic grayling populations and angling opportunities for future generations. Specific activities in 2017 included: (1) Installation of stationary PIT tag arrays to document movements of fish tagged in previous years; (2) Installation of temperature data loggers to record water temperatures at 20 locations in the Upper Pembina Watershed; and (3) Inventory of habitat conditions at key locations using a camera-equipped drone. NLFF/TUC's findings confirm that Arctic grayling numbers in the watershed have declined drastically. Many stream populations appear to be extirpated, but there are remnant populations in Dismal Creek, Rat Creek, and Nelson Creek. Many streams that formerly supported grayling are no longer suitable due to habitat concerns, including high-water temperatures. However, Dismal Creek in particular, still provides suitable water temperatures and habitat for Arctic grayling. This project is supportive of the Recovery Rest Period implemented by AEP and hope to work with AEP in a stewardship role regarding opportunities for habitat restoration or other activities to help conserve and restore Arctic grayling populations in the Upper Pembina watershed.

#### Deliverables/Results:

- The number of fish recorded at the PIT arrays was lower than hoped. It is likely that many of the adult fish that tagged in previous years had exceeded their life expectancy, and were no longer in the system. The recommendation arising is to suspend PIT tag array monitoring until the angling closure is lifted, and a more substantial number of fish are tagged.
- Water temperature data was recorded and provided to AEP to further assess year-to-year variability (and suitability) in the Upper Pembina River watershed.
- Video data captured with the quadcopter at 10 sites, particularly referencing OHV damage to banks/streambed at and near stream crossings, and human-caused bank erosion. Sample video can be viewed on YouTube.
- A PowerPoint presentation was delivered to the NLFF club in April, 2018.

### Engaging Recreationists in the Oldman Headwaters through Restoration and Education Project

#### *Oldman Watershed Council*

Grant: \$35,750

Project Code: 015-00-90-240

Project Status: Funded in 2016/17; Extended until October 31, 2018

Project Website: [www.oldmanwatershed.ca/recreation-overview](http://www.oldmanwatershed.ca/recreation-overview)

The Engaging Recreationists project is a collaborative, on-the-ground, multi-year project designed to improve the watershed's health and natural resilience to flooding and drought. Since 2016, the Oldman Watershed Council (OWC) has conducted over 200 backcountry surveys; increased engagement through in-person conversations, outreach and stewardship events, and social media; and piloted community-based social marketing and behavior change strategies such as building bridges, and using visual prompts and written pledges to encourage motorized recreationists to keep wheels out of water and thereby protect our headwaters, water quality, and critical habitat for endangered species. Holistic strategies are used, like restoration events, not only to enhance critical habitat for threatened fish species, but also to provide meaningful experiences that build community capacity for collective action, reinforce personal and social values and identities, foster social norms, and transform the systems (both natural and social) that exist in the backcountry. The goal of this project is to engage Off-Highway Vehicle (OHV) users in restoring places where they recreate, changing behaviour to reduce their impacts, and becoming environmental stewards. The plan is to establish a template to develop effective educational and stewardship strategies, which might be applied on a broader (provincial) scale. As a project that aligns with the Alberta Government's South Saskatchewan Regional Plan (SSRP), OWC is developing effective educational and stewardship strategies that might be applied on a broader (provincial) scale. As the government works to develop management plans for the headwaters, including Porcupine Hills and Livingstone Range, OWC is sharing its successes and lessons learned, providing a template of tested strategies to ensure successful management and community engagement.

## Deliverables/Results:

- OWC had to make some changes due to the OHV ban and forestry closure. The ban reduced the sample size of testing efficacy of signs stream crossings, as people were not out riding their OHVs in the latter part of the summer. Nevertheless, they did manage to get enough observations before the ban to increase the sample from eight to 23 sampling periods, and from 78 to 312 crossings.
- The limited access meant that the riparian health assessments and the big restoration event in Dutch Creek have been postponed to 2018. Navigating and responding to some of these challenges, as well as attending extra meetings and communicating back and forth with partners in order to review and adjust the on-the-ground work required a lot of extra time and resources, meant that some other aspects of the project (e.g., development of new education programming materials) have been delayed, but are scheduled to be completed by summer 2018.
- Four summer staff were hired as Outreach Assistants.
- Engaged over 400 OHV users (target: 400) throughout the headwaters and completed 200 surveys (target: 100).
- Educated 1,460 people (target: 1,500) at outreach events 2017/18. A few of the outreach events that were attended last year (Play Clean Go, TransCanada BBQ) did not happen this year, but OWC still managed to reach close to the target number of people engaged at education/outreach events.
- Outreach Assistants added 900 photos to digital archive (Flickr), produced six educational videos and infographics, and made regular updates via Twitter and Facebook 2017/18.
- Made 437 entries (observations and outreach) in Epicollect app (target: 300).
- Increased sign-testing to 312 crossings observed over 23 sampling periods (summer 2017), but not as high as anticipated due to OHV ban.
- Published 12 blogs related to *Engaging Recreationists* project (target: ten).
- Coordinated a “Backcountry Restoration” event - postponed to October 2018. A revised, smaller restoration event along South Racehorse Creek was held with Cows and Fish on October. 12 and 14, 2017 once the forestry closure was lifted, but no ACA dollars were used for this event.
- Involved volunteers from at least five different stakeholder groups – postponed to October 2018.
- Hosted one local tour to thank a donor.
- Conducted three to six Riparian Health Assessments (in partnership with Cows and Fish) – postponed until 2018 due to closures, lack of access.
- Supported 15 stewardship events, including 11 weed pulls on conservation easements with SALTS.
- Supported social media campaigns during long weekends.
- Hosted two educational workshops – partially completed “Fish Sticks” puppet workshop about native fish was held March 25, 2018. A Lethbridge College student volunteered to give classroom presentations in winter 2018, but no teachers booked any.

## 1st Annual OFGA Ladies League Outdoor Education Camp

### *Onoway & District Fish & Game Association*

Grant: \$2,500

Project Code: 002-00-90-274

Project Status: New; Completed

Onoway and District Fish & Game (OFGA) had 16 women take part in their First Annual OFGA Ladies League Outdoor Education Camp. Everyone who attended was able to learn or hone valuable skills related to survival in the outdoors, including hunting and fishing techniques. Friday evening saw five ladies set up camp and get things ready. Saturday was an action-packed day. In the morning, Nicole Kimmel from Alberta Agriculture and Forestry gave an informative talk about invasive aquatic and plant species. She led the group around Imrie Park and a few small patches were discovered and have been reported. They will be checking again once the snow has melted for invasive plants. Then the ladies had an opportunity to learn about the art of fly fishing, including dry casting. The afternoon was spent down at the OFGA Gun Range property where the ladies handled a variety of guns, as well as trying archery and hatchet throwing, learning some fly-fishing techniques, and were educated about trapping (including an opportunity to skin a squirrel). Back at camp, the ladies took part in a scavenger hunt before enjoying hotdogs and hamburgers around the fire and sharing stories and much laughter. Sleeping quarters included campers and tents, as well as a lean-to and a hammock tent. This gave the ladies a chance to see and try out a variety of outdoor shelter options. Nine ladies spent the night, and on Sunday, Ingrid wrapped up the very successful weekend by assisting the ladies to skin squirrels while being educated about the importance and value of trapping with regards to wildlife conservation. A post-weekend discussion and short questionnaire to the ladies who attended showed the weekend was a success and would take part again, but that the next time it should be a full two days of activities, to allow for further learning opportunities.

#### Deliverables/Results:

- Provide an opportunity for 20 to 40 women to take part in a low-cost weekend course dedicated to learning outdoor skills, including hunting/fishing/trapping and the importance of conservation of the natural habitat: 16 ladies in total joined for the weekend and were able to learn some valuable outdoor skills and go away with some great memories. They built campfires and set up a variety of shelters. Time was spent on the gun range and trying archery and hatchet throwing. Dry casting for fly fishing was practiced. A walkabout around Imrie Park provided a lesson in invasive plant species. The group also needs to follow up with the Alberta Government regarding the status of the invasive species found so that a report can be provided once the snow has melted and the ground has thawed.

## Bluebird / Bat House Project

### *Onoway & District Fish & Game Association*

Grant: \$800

Project Code: 030-00-90-102

Project Status: Funded bluebird boxes 2006/07 - 2009/10, 2013/14, 2016/17; Completed

Project Website: [www.ofga.ca](http://www.ofga.ca)



Annually OFGA provides members the opportunity to build safe housing for bats and birds. OFGA also works to provide education and conservation awareness to their members and the public at large. As members work with youth to build these houses, the youth also learn some valuable woodworking skills along the way. Unfortunately, OFGA did not meet their projected goal of 350-400 birdhouses this year (approximately 280 were built and years prior to 2015 numbers were closer to 160-200). OFGA does believe this was a successful (and popular) project and plans to continue this project on an annual basis as long as it is able to.

Deliverables/Results:

- Completed and distributed over 280 bird / bat houses this year. Four workshops were in 2017, two in April and two in September, where over 110 houses were assembled by and distributed to the children taking part in the workshops. The local Scouts group and the OFGA Youth participated in building their own houses as well. As well, this year approximately 60 houses were built and provided to the Public Library for distribution to the general public, 25 were provided to the County for a workshop, and 15 were provided to Onoway area special-needs students.
- Many members, including youth, volunteered more than 180 hours of time on this project this year.
- OFGA will be building bird/bat houses again in 2018, with a “cutting bee” scheduled for March 18, 2018.

## Partners in Habitat Development

### *Partners in Habitat Development*

Grant: \$15,000

Project Code: 015-00-90-103

Project Status: Funded since 2005/06; Completed

The Partners in Habitat Development (PHD) program is an initiative developed to mitigate the loss of wildlife habitat in the agricultural areas of southern Alberta due to irrigation infrastructure improvements, agricultural intensification, and industrial activities. The PHD program works with landowners to create and, when possible, preserve wildlife habitat. The program's focus is on the creation of shelterbelts and block plantings to provide critical winter habitat to upland game birds. In 2017, 12,734 trees and shrubs were planted in the Eastern Irrigation District on ten new habitat sites and 11 existing habitat sites. The PHD program also assists with fencing livestock out from existing and newly created habitat sites. In 2017, two kilometres of fence material was distributed to fence out two new habitat sites.

Deliverables/Results:

- 9,990 trees and shrubs were planted by the PHD program on ten project sites in the spring of 2017. A fabric mulch was applied around the trees and shrubs to aid in weed control and moisture retention. Maintenance activities occurred on 2016/17 PHD projects. 2,744 replacement trees and shrubs were planted on 11 project sites from 2016 where they failed to survive the winter. Planning is underway for 2018 PHD sites.

- In the spring of 2017, two kilometres of fencing material was purchased by the PHD and is to be installed by the landowners on two PHD projects.
- Sharp-tailed lek surveys were completed in April 2017. Poor weather in late April and a lack of PHD staff time in May resulted in only two ring-necked pheasant crowing counts being completed and late summer upland bird brood surveys were completed in August/September 2017 (12 of 14 transects were surveyed). Winter ring-necked pheasant sex ratios surveys are in progress.
- Unfortunately, PHD seasonal staff time did not permit the completion of more drive-by inspections of older PHD sites in 2017. This is planned to resume in 2018 and did not permit the creation of up-to-date promotional materials for the PHD program this winter. It is hoped the 2018/19 winter will have more time to work on the creation of these materials as well as for additional fundraising activities.
- PHD staff met with landowners interested in new, or additional, PHD projects and inspected the potential sites.
- Discussions with Irrigation District engineering staff will be ongoing to identify potential projects for the coming years.

## Wildlife and Native Habitat Enhancement in Red Deer County via ALUS

### *Red Deer County*

Grant: \$40,000

Project Code: 015-00-90-128

Project Status: Funded similar projects since 2006-07; Completed

Project Website: [www.rdcountry.ca/207/conservation](http://www.rdcountry.ca/207/conservation)

The project goal is to work with interested farmers and ranchers who wish to implement actions on their land, which conserve or improve riparian and native range habitat in Red Deer County (RDC). The project objectives are to: support RDC landowners in enhancing and stewarding riparian and native range habitat on their land by providing financial and technical resources for their on-the-ground projects; enhance riparian and native range habitat through fencing, off-stream watering, establishing buffer zones, and other riparian and native range management projects, completed by participating landowners; assist landowners in developing an informal “Management Plan” for each of the completed projects. The project activities are: (1) “Call for Participants”: promote the Alternative Land Use Services (ALUS) initiative, asking interested landowners to contact the County's Conservation Coordinator. Project Plans developed for each project. (2) County reviews project plans; funding allocated to projects; landowners do projects with technical support as required from the County and others. (3) “Monitoring/Evaluation”: County (or Cows and Fish) does Riparian or Range Health Assessments, and establishes formal Photo Monitoring Points, at the beginning of each applicable on-the-ground project, with follow-up assessments four to five years later. County works with the landowners, to develop and implement the landowners' informal project management plans over time. This resulted in 315 ALUS projects initiated by 26 landowners, throughout RDC. The impacts

of these 315 projects: 954 acres of riparian and native range habitat, ~13 kilometres of river and stream, and 311 acres of waterbody will be conserved or enhanced through sustainable management. Approximately 2,060 animal units will be impacted in the new livestock management regimes provided by the 315 projects.

Deliverables/Results:

- It's important to point out that RDC is now seeing landowners in the County who are carrying their stewardship ethic forward to new lands that they are acquiring for their farms and ranches, almost "automatically". For example, two of the producers who did new on-the-ground best management practice (BMP) projects (alternative livestock watering systems) with ACA funding support in 2017, did so on land that they had recently started renting for their operation. These same two producers had in previous years, done on-the-ground BMP projects on (some) of their owned land. Similarly, another producer who was supported with ACA funding in 2017, did a BMP (an alternative waterer) on land that they had just purchased for their farm. That producer had in previous years, done other BMPs on other quarters on their farm. This "stewardship expansion" is what we want producers to do. When they acquire new land, one of the first questions RDC want them to ask themselves is: "What can I do to steward this land?"
- New riparian or native range habitat enhancement projects (315) in RDC.
- Nine articles in the *County News* mentioned or were about the ALUS Program (in 2017 project managers again chose not to do advertisements in the *County News*, as demand for the program remained strong, even without advertisements).
- Information about the project was communicated "live" at seven workshops/tours/field days (total attendance about 370). One of the events was a joint Alberta Agriculture / ALUS Tour of the Tindastoll watershed / Alberta Ag's Phosphorus Watershed Project / two ALUS Farms. About 20 people attended (mainly agency staff).
- In December 2017, RDC co-hosted a "Digital Storytelling Workshop"—four RDC ALUS farmers participated and developed digital stories. These digital stories will be showcased at a public event in April 2018 and made public on the Internet after that event.

## Red Deer SCI Wild Game Processing Events

### *Safari Club International Red Deer Chapter*

Grant: \$2,500

Project Code: 030-00-90-283

Project Status: New; Completed

Project Website: [www.scireddeer.com/projects.html](http://www.scireddeer.com/projects.html)

The overall goal of these two wild meat processing events was to engage local outdoorsman through a hands-on type of event that would transfer information and knowledge on how to properly process wild game and make sausage. The events targeted all levels of experience with the hopes of individuals walking away with an

improved comfort level when dealing with their own wild game processing. The meat cutting seminar took place on December 2, 2017 with 36 eager participants from across the province. Attendees learned the importance of proper field dressing and care, as well as various techniques used by professionals to process their harvest and turn it into fine table fare! The facilitator carefully explained the most efficient way of breaking down the whole animal into workable sections. Each portion of the animal was deboned and trimmed, identifying all the various cuts and how to best utilize them along the way. The sausage making seminar took place on January 20, 2018 with over 35 attendees in attendance. The facilitator walked participants through the art of sausage making. Demonstrations of proper grinding, seasoning, and sausage stuffing techniques were explained in detail, while those wishing to get a more hands-on feel for the process were encouraged to dig in. A hot griddle allowed attendees to taste the various seasoning blends. This was a very informal event that allowed for lots of open discussion and questions along the way. In the end over 150 lbs of sausage, pepperoni, and salami were processed. Overall these two events were viewed by the club as extremely successful and with the demand for these type events, the club will continue to deliver them to the community.

Deliverables/Results:

- Safari Club International (SCI) Red Deer Chapter provided a relaxed learning environment to transfer knowledge to over 60 individuals (some overlap of attendees) with messaging in relation to harvest to table tips and techniques.
- An unexpected result would have to be the demand, both the number of participants and the distance that people would travel to attend.
- Moving forward, because of demand, the club will need to look at utilizing different facilities or hosting additional days to accommodate. A unique opportunity with Bass Pro Shop allowed the club to purchase some of the equipment used for the event at a very good discount and, as a club, they chose to spend a little more money on the equipment this year. Moving forward hosting these events will become cheaper because basic equipment is now secured and in inventory.

## Red Deer, Kids Can Fish Event (mentored youth fishing day)

### *Safari Club International Red Deer Chapter*

Grant: \$2,000

Project Code: 020-00-90-234

Project Status: Funded in 2016/17; Project did not proceed, funds returned to ACA

Unfortunately, SCI Red Deer Chapter was unable to host the Kids Can Catch event in 2017. Initially due to schedule conflicts with the facility (Mitchell Pond) in June and then with the rescheduled event (March) due to delayed event licence application process with the City of Red Deer. Moving forward the club is still onboard with hosting a Kids Can Catch event.

## Importance and Protection of Native Pollinators for Sustainable Crop Production in Peace Region of Alberta

### SARDA Ag Research

Grant: \$7,600

Project Code: 002-00-90-261

Project Status: Similar project funded in 2016/17; Completed

Project Website: [www.sarda.ca/previiously-posted-articles/307-summer-field-school-call-for-enrollment](http://www.sarda.ca/previiously-posted-articles/307-summer-field-school-call-for-enrollment)

SARDA is a non-profit organization, based out of Falher, Alberta, which has been involved in environmental, agricultural, and demonstration projects for 30 years. SARDA organized a summer school this year and one of the sessions addressed the importance and protection of native pollinators in the Peace Region. Dr. Ralph Cartar, Associate Professor at the University of Calgary, was the speaker at the session. The event was attended by a variety of participants from AAF, AAFC, producers, and industry professionals from MDs of Smoky River and Greenview, Northern Sunrise County, Big Lakes County, and the County of Grande Prairie. SARDA's summer school provided a platform to inform the producers on benefits of protecting native pollinator's habitats within croplands. Information on the economic benefits of native pollinator's habitats was clearly communicated by the speaker in his presentation. Current literature about native pollinator's habitats was provided to producers and industry representatives. Each participant received a proceedings booklet that included presentation slides, web-links, contact information, and the latest fact sheets on agriculture and environment. An exclusive agenda of the event was provided through a variety of means to potential participants

Deliverables/Results:

- The summer school session on pollinators by Dr. Ralph Cartar was attended by a variety of participants from AAF, AAFC, producers, and industry professionals from MDs of Smoky River and Greenview, Northern Sunrise County, Big Lakes County, and the County of Grande Prairie.
- Other deliverables included:
  - Prairie-wide press release in newspapers, and mail notifications.
  - Advertisement on three local radio stations.
  - Advertised on web pages and social media.
  - Billboard set up at the event.
  - Distributed written information via the Proceedings Booklet.
  - Participant evaluation form was filled out by the participants.

## Archery Days

### Shoot 'im Up Archery

Grant: \$2,500

Project Code: 002-00-90-275

Project Status: New; Completed

Archery Days was held on June 24, 2017 in Forestburg at the Small Gym. The club advertised on the ACA website and locally in the village

newsletter as well as through word of mouth and posters. Several volunteers from the Shoot 'im Up Archery Club came to help set up and cook lunch for the participants. The Archery Day began at 10 am with a warm up to prevent injuries, rules were reviewed, and each participant got a bow to use. They began the day shooting at five yards. After several rounds they shot at some balloons and moved some of the buttresses to ten yards. Form and anchor points were discussed. The participants were pleased with their success. The participants ate lunch and played some different games to encourage good stance. A couple of 3-D targets had been borrowed and it was very different to shoot at them. Everyone had a great day and they all stayed to help put all the equipment away.

Deliverables/Results:

- Archery Days event was held on June 24, 2017. In total 15 people participated and with a population of less than 900 people, this is a fantastic turn out.
- The main result of the project was to have the general public come and try archery for the first time. The unexpected result from this project was that several people who tried archery for the first time came several more times to the Shoot 'im Up Archery Club to do archery again. Hopefully they'll continue their interest in archery this fall.

## Youth Archery Equipment

### Slave Lake Rod and Gun Club

Grant: \$3,000

Project Code: 002-00-90-267

Project Status: New; Completed

Archery equipment has been purchased to educate and provide opportunities for the youth in the community. The Annual Kids Can Catch event was expanded this year to also include archery as a direct result of the grant. Information on archery was offered as a hunting discipline and to introduce the sport to the youth. Youth enjoyed small group instruction, target practice, and ACA handouts as provided by ACA. Opportunities for youth to become engaged in learning how to safely use the archery equipment, conservation, and responsible and ethical hunting, as well as sportsmanship. 3-D archery shoots were held in the summer with archery equipment for youth to borrow. The youth were excited and enthusiastic to participate in and learn about archery as a hunting discipline and a healthy target sport. The youth were extremely attentive to receiving the instruction and were successful in their first attempts at target shooting.

Deliverables/Results:

- Annual Kids Can Catch Event was held June 16, 2017 with 60+ youth attending. An archery range was set up at the event, where youth could receive instruction on conservation, safety, ethics, fundamentals, and skills in small groups.
- A family 3-D shoot was held at Riverboat Days on July 9, 2017 with 12 youth participating.
- A 3-D archery shoot was held July 29, 2017 with five youth participating.

## Beware the Wetland Invaders

### *Society of Grassland Naturalists*

Grant: \$6,525

Project Code: 002-00-90-280

Project Status: New; Completed

Project Website: [www.natureline.info/gn](http://www.natureline.info/gn)

Medicine Hat is located in the southeastern portion of Albertan where conditions are dry and wetlands and other water-related habitats are vital. They provide living space for numerous wildlife species and improve quality of life for humans as well. However, these areas are also at risk for a variety of reasons including permanent loss and degradation from invasive species. The goal of the project was to increase awareness about the importance of water and wetland habitats in the Medicine Hat area and the problems impacting them. As part of this, the Society of Grassland Naturalists (SGN) would promote ACA's mandate of improving habitat and maintaining healthy wildlife populations. A three-pronged approach was used. The first was to host or be part of public events where large numbers of people could be reached. The second was to conduct school programs focusing on wetlands and invasive species. The third was to produce videos available online to provide information to the public. The project was successful in all three phases. SGN plan continued efforts on this subject into the future. The Interpretive Program's mandate calls for more public events and school programs. The videos produced will be available long-term. Some new materials were also developed to be used along with existing materials to aid in getting the message out. Finally, new detailed information was gathered about the amount and types of invasive plants currently impacting water places in Medicine Hat.

Deliverables/Results:

- Reaching numerous members of the public regarding the importance of wetlands and water places in the Medicine Hat area and what impacts them. Gathering existing materials and creating new ones to disseminate these messages into the future. Interpretive Program staff became more familiar with impacts affecting wetlands. Up-to-date information was provided to the public about the boat inspection program, which was also relatively new to the SGN. New contacts were made with local Community Peace Officers monitoring invasive species within the Medicine Hat City limits. A number of water places were surveyed in Medicine Hat for invasive species.
- Six Public Events: Wetland Dock Launch (May 21, eight participants), Streamside Walk (June 18, seven participants), Canada Day (July 1, 470 participants), Hidden Wetland (July 9, seven participants), Plants of Police Point (July 16, ten participants), and Medicine Hat Stampede (July 26-29, 1,173 participants). Total of 1,675 contacts.
- Fifteen School and Community Group Programs from May 23 through September 28, 2017 relating to wetlands, invasive species, and wildlife habitat. Total of 305 contacts.
- Four Episodes of "Prairie Adventures" on YouTube – here are the subjects, links, and current views:
  - Prairie Wetlands (45 views) – July 2017  
Local wetlands and their importance  
<https://www.youtube.com/watch?v=Q-CDx8PMmEc>
  - Aquatic Invasive Species (114 views) – August 2017  
Flowering Rush, Boat Inspection Station east of Medicine Hat, and "Don't Let it Loose" Goldfish  
[https://www.youtube.com/watch?v=i\\_R6NvfOEvU](https://www.youtube.com/watch?v=i_R6NvfOEvU)

- Invasive Plants and Weeds (30 views) – October 2017

Leafy spurge, Backyard and garden invasive plants, and Interview with Community Peace Officer – weed control

<https://www.youtube.com/watch?v=-Az3vY5Lhd4>

- Invasive Species (28 views) – November 2017

Interview with Kate Wilson (formerly Aquatic Invasive Species Specialist, Alberta Environment and Parks) regarding Boat Inspections and "Don't Let it Loose"; How ACA funding has helped us spread the word about invasive species, what the ACA does.

<https://www.youtube.com/watch?v=5f3WfIK6lB0>

- Ten Water Places in the Medicine Hat area were surveyed for type and amount of invasive plants. This information was passed on to the public and City.

## Outdoor Safety Expo

### *Spruce Point Park Association*

Grant: \$1,495

Project Code: 002-00-90-283

Project Status: New; Completed

A one-day free Outdoor Safety Expo community event was held at Spruce Point Park, which is 13.5 km from the hamlet of Kinuso. The event included the Kids Can Catch Program, the Kids Cops and Canadian Tire program, Parent Link from High Prairie, Big Lakes County, Spruce Point Park, Boreal Centre for Birds, and other local organizations. The objective of the event was to give youth the opportunity to learn how to fish safely, and provide some water and camping safety tips. It was hoped that by having children and their families interacting with the local Fish and Wildlife Officers, RCMP, and other organizations, it would create lasting positive future relationships. It was also hoped that an outcome for the youth would be increased self-esteem, a respect for the outdoors, and a love for fishing and outdoor activities.

The following organizations participated:

Children Resource Council – provided face painting, pamphlets, gave out swag, had toys available, and did crafts with the children;

Kinuso Volunteer Fire Fighters – had a truck and cooked the hot dogs at the event;

Slave Lake Forestry Area Alberta Agriculture & Forestry – Brought Burt the Beaver mascot, an information trailer, huge snakes and ladders interactive game for the youth, camp fire, and wildfire safety, (how to put out a campfire properly). Wildfire firefighters made smores and handed out collapsible water buckets;

Lesser Slave Water Council – Kaylyn Jackson talked about and showed critters living along the lakeshore, and did water quality testing with the public;

Lakeshore Regional Police Service & RCMP – handed out swag from the Kids Cops & Canadian Tire program, and swag regarding bike safety, and handed out Lakeshore Police service swag;

Fisheries Biologist, Slave Lake – handed out the Kids Can Catch promotional material, volunteered to help teach children how to fish safely and responsibly, and gave out 20 fishing rods that were donated by Cabela's;

Lesser Slave Lake Bird Observatory and the Lesser Slave Forest Education Society – had some fish pond activities that taught people about diversity of fish in Lesser Slave Lake;

Dave Booth Taxidermy – had some wildlife on display for people to look at;

Kinuso Fish & Game Association – offered memberships, provided hunting and membership information.

## Deliverables/Results:

- The main result of the outdoor expo was organizations that had not worked together before, came together and held a fun-filled day with activities for the youth and lots of learning publications and promotional material. Many local families within the hamlet and rural area of Kinuso and campers that were staying at Spruce Point Park came to the event.
- Approximately 200 people attended the event. Watermelon, hot dogs, s'mores, coffee, juice, and bottled water were served. Two draws were held with 120 people entering the draw.
- The event was advertised with the High Prairie FM Radio, *South Peace News*, *Voice of Kinuso* newsletters. Posters were hung throughout Kinuso and Faust, and an insert was given to the students that attend Kinuso School. A poster was posted on the Big Lakes County and Spruce Point Park websites as well as on the following Facebook pages: Kinuso Community Recreation, Spruce Point Park, Big Lakes County, Lesser Slave Lake Water Council, Kinuso Museum, Kinuso Ag Society. The event was on the Kids Cop's and Canadian Tire website under "Events."
- The High Prairie newspaper came to the Expo and reported it in the *South Peace News*, which can be found in the archive section on their website.

## Girardi Creek Bioengineering Project

### Trout Unlimited Canada

Grant: \$3,000

Project Code: 015-00-90-252

Project Status: New; Extended until September 30, 2018

Trout Unlimited Canada (TUC) is working with partners to stabilize a slumping bank along Girardi Creek (tributary of the Crownsnest River) in Spring 2018. The project will improve fish habitat by reducing erosion and sedimentation and provide in-stream cover for fish. The project will also engage and educate the community through volunteer workdays, project signage, and communications. The project will involve the installation of tree revetments and brush layers using locally-sourced plant material. Final design work has been completed and the project has been submitted for *Water Act* approval and a Temporary Field Authorization. It is also being reviewed by Fisheries and Oceans Canada. A willow harvest workday was held March 24, 2018 at the Fryan Conservation Property, co-managed by ACA and Nature Conservancy of Canada. Willows will be held in cold storage until planting/installation. Construction is planned for the next in-stream work window (April/May 2018), pending approvals. If approvals are not acquired by this time, construction will take place in the summer in-stream work window (July 16 – August 30, 2018).

## Quigley Creek Fish Passage Project

### Trout Unlimited Canada

Grant: \$17,925

Project Code: 020-00-90-239

Project Status: New; Completed

Project Website: [www.tucanada.org/reconnecting-quigley-creek](http://www.tucanada.org/reconnecting-quigley-creek)

TUC launched the Quigley Creek Fish Passage Project in partnership with West Fraser Mills to remove a problem culvert along Quigley Creek. Quigley Creek is a tributary to the McLeod River near Hinton, Alberta, and home to Athabasca rainbow trout, brook trout, and

Burbot. In June 2015, the crossing was assessed by the Foothills Stream Crossing Partnership (FSCP) identified as a barrier to fish passage; it was recommended by the FSCP that the culvert be replaced. This presented an opportunity to remove the existing undersized, hanging culvert and rather than replace it with a similar structure, replace it with an innovative, fish-friendly crossing such as an open bottom arch structure to restore the natural stream bed and allow for sustainable, long-term fish passage. The first objective was to remove the undersized, hanging culvert fragmenting Quigley Creek. The existing culvert on Quigley Creek was removed in early July 2017 and replaced with a Geotextile Reinforced Soil (GRS) arch. This restored fish passage through the crossing and allows for sediment transport and natural channel processes to occur. A volunteer workday was held in partnership with the Junior Forest Rangers to transplant native trees and shrubs from on either side of the crossing, along the new road shoulders and embankments associated with the GRS structure. The second objective is to demonstrate the effectiveness of working with multiple partners including NGOs, industry, government, and volunteers to improve recreational fish habitat. A *News Stream* article published to TUC news room, distributed in *News Stream* celebrating the project successes/ highlight project partnership: [www.tucanada.org/reconnecting-quigley-creek](http://www.tucanada.org/reconnecting-quigley-creek). The third objective is to demonstrate cost advantages/ environmental benefits of using innovative stream crossing technology through installation of a (GRS) arch that could be used at numerous other remote field sites throughout northern Alberta and elsewhere to improve fish habitat and fish passage. Project signage was installed in spring 2018. A group picnic area and educational site being constructed in summer 2018 and will be used for tours and educational visits to this and other projects in the Hinton region for groups such as West Fraser Mills, Junior Forest Rangers, and others.

## Deliverables/Results:

- The primary results of the Quigley Creek Fish Passage Project were:
  - The reconnection of approximately 25 km of stream habitat for fish living in Quigley Creek that was previously unavailable due to the existing hanging culvert. This will benefit resident fish species in Quigley creek and will also ensure that natural channel functions such as sediment transport can occur unimpeded.
  - The successful completion of a habitat improvement project which demonstrates the value of partnerships between industry, non-governmental organizations, and government.
  - Communication of project results through project signage and social media/newsletter formats to increase awareness on the value of innovative solutions such as GRS arches for solving the widespread and chronic issue of fish passage obstruction due to degraded or improperly installed stream crossings.
- Annotated photos of the site before, during, and after construction – have been submitted with the final report
- Final sign design drafted and printed, installed in spring 2018.

## Water Edu-kits

### Trout Unlimited Canada

Grant: \$20,000

Project Code: 002-00-90-265

Project Status: New; Completed

Project Website: [www.tucanada.org/water-edu-kits](http://www.tucanada.org/water-edu-kits)

TUC expanded their environmental education programming in Alberta by providing a new water education program for 2017/18. The program, Water Edu-Kit, provided an invaluable resource towards the exploration

of the chemistry and science of the water in our province and how to address challenges concerning them. The kit was available for youth in Grades 7–9 and included: a Teacher's Guide, Student Worksheets, and hands-on tools and equipment to test for water quality, learn about the local watershed, and how to protect it. The Water Edu-Kit was promoted to all Alberta schools and community groups. It was available and free locally in Calgary if physically picked up and available for a nominal shipping fee of \$25.00 (plus GST) outside of Calgary or for those unable to pick up the kit locally. TUC created 145 engaging and comprehensive kits packed full of fun, hands-on, and interactive tools and activities for both in the classroom and in the field. Over 3,600 youth (145 classes of 25 students) were targeted to use the kits in the field to test water quality in their local waterbodies and assess the impact of human activities on the long-term health of these waters. They were then given a list of Alberta conservation-related contacts and recommended opportunities to pursue stewardship actions intended to remedy or mitigate negative impacts to their waters.

#### Deliverables/Results:

- Provided over 3,600 youth in Grades 7-9 and their educators across the province with 145 Water Edu-kits.
- Each Water Edu-Kit came with the following which was valued at over \$100.00/kit: Comprehensive Teacher's Guide, Student Field and Safety Sheets, Macroinvertebrate Analysis Guide, Biological Aquatic Analysis Gear, Riparian Assessment Guide, and LaMotte' Aquatic Chemical Analysis Kit.
- TUC reached out to 34 different towns and cities throughout Alberta with the Water Edu-Kit. Here is a breakdown of how many kits went to different user groups: 76 to public, separate and private schools, 51 to community groups (Guides and Scouts), five to Alberta Watershed Alliance organizations, five directly to cities or towns, and eight to environmental organizations
- A survey was conducted where it was found that 88 percent of respondents were new to TUC and had never participated in a TUC program before. Overall 75 percent of respondents found the program manual and instructions useful, which was an indication that it improved on their understanding of water and freshwater ecosystems and gave youth opportunities for critical thinking. 100 percent of respondents indicated that they would recommend the program to their peers. A few comments from educators included: "These kits provide a wonderful way to get kids outside and make a connection to water."; "We really appreciate having the authentic materials to take with us on pond studies. These kits bring a sense of professionalism to our school studies."; and "I sincerely appreciate your support and efforts to enhance science learning in classrooms."

## Yellow Fish Road

### *Trout Unlimited Canada*

Grant: \$25,000

Project Code: 020-00-90-211

Project Status: Funded since 2014/15; Completed

Project Website: [www.tucanada.org/yellow-fish-road](http://www.tucanada.org/yellow-fish-road)

Since 1991, TUC's award-winning Yellow Fish Road™ program has been Canada's premier water education program specifically targeted to reduce water pollution. In response to increasing demand on this popular education program, TUC is moving towards a more sustainable format. This year's funding was to create, deliver, and manage a new self-delivery model that will accommodate this growing need while advancing the program with the newest technological standards. The

success of the Yellow Fish Road program is in linking environmental learning to stewardship action. TUC launched this new program model to Alberta schools and community groups in the spring of 2018. The new model will meet the demands and provide specific tools and technology to four different user groups including partners, schools, community groups, and individuals as well as opportunity to purchase additional supplies to the packages as needed. All the components for the new program model have been completed: a new easier to use Program Guide with added resources and curriculum links was written, two short informative infographic videos (an Introductory and How to Paint Video) were created, an interactive activity useable for youth from Kindergarten to Grade 9 was designed, new YFR badges and pencils for participants were produced. TUC has a long waiting list of those interested in the packages and officially launched the program on March 22, 2018.

#### Deliverables/Results:

- TUC saw over 95 groups take action and paint 3,245 storm drains and distribute 12,355 door hangers throughout the province. TUC provided 241 presentations to 6,587 youth and adults in schools, community groups, and summer camps. TUC participated in 26 events across the province, with over 21,205 participants. TUC have also secured a new partnership with the City of Grande Prairie.
- Program feedback provides TUC with a measure of what learning was taken away from the program, for example "This is a great program that all schools should be doing. It was a fantastic experience for our students, I can't say enough good things about it, we loved it!" - Meadowlark Christian School and "What an amazing learning experience that both the Cubs and Scouts had with this invaluable service project." - Edmonton Goldbar Scouts.
- This year TUC saw: higher rates of participation as shown through statistics from presentations; an increased interest and understanding of water and conservation; and larger numbers of storm drain painting groups or stewardship action projects.

## Outdoor Education

### *University of Lethbridge*

Grant: \$5,000

Project Code: 002-00-90-284

Project Status: New; Completed

Rural schools have a large demand for teachers who are fully certified to teach Outdoor Education in Alberta Schools. The Conservation and Hunter Education and Fishing Education programs are offered in Alberta schools through the Alberta Education curriculum, within the Careers and Technologies Studies option, Natural Resources (NAT) Program. The University of Lethbridge (U of L) offered an Education Elective course that certified 20 teachers to offer outdoor education classes to Alberta youth. This course provided Instructor Certification in: Alberta Conservation and Hunter Education Program Instructor, Alberta Fishing Education Program Instructor, International Bowhunter Education Program Instructor, and National Archery in the Schools Program Instructor. Classes were held at the U of L campus plus five days and four nights of the course took place at the AHEIA Camp in Alford Lake. The U of L classes included completion of the Hunter Education course and the Canadian Non-Restricted Firearms Safety Course.

#### Deliverables/Results:

- All 20 teachers were fully trained and certified.

## American Kestrel Nest Box Program in Alberta

### *Warne in the Wild*

Grant: \$2,000

Project Code: 020-00-90-240

Project Status: New; Completed

Project Website: [www.warneinthewild.com/american-kestrel-nest-box-program](http://www.warneinthewild.com/american-kestrel-nest-box-program)

The goal of the program is to implement a province-wide American kestrel nest box program with at least 120 nest boxes to provide safe nesting sites for the kestrels and then monitor the nest boxes. With some discounts, donations, and funding not quite as high, Warne in the Wild decided to make more nest boxes and cut other expenses down. This resulted in being able to make 203 nest boxes to be installed, 65 of which have been installed. Due to illness with a family member, Warne in the Wild wasn't able to finish installing the boxes in October as planned but has scheduled to install the remaining boxes throughout April. Installation will happen prior to the kestrels return. Once the nest boxes are installed, the program will shift over to focusing on volunteer recruitment to monitor the nest boxes that have been installed where the landowners do not want to monitor the boxes themselves. In the northern areas a larger percentage of the boxes will be on Crown land. So far, the majority of landowners and ranchers have liked the idea of the program or are excited about the program. The results won't be well known until the summer/fall of 2018 when the boxes have been checked for use in the 2018 breeding season. Once this has occurred it will be possible to see how successful the first summer has been.

Deliverables/Results:

- Build 120 nest boxes - built 203 nest boxes, numbered them, and prepped them for installation.
- Install 120 nest boxes – by April 2018, all 203 nest boxes will be installed.
- Provide updates – Results are expected in summer/fall of 2018 when the kestrels can use the nest boxes for breeding.

## Weaselhead Invasive Plant Program

### *Weaselhead/Glenmore Park Preservation Society*

Grant: \$3,000

Project Code: 015-00-90-127

Project Status: Funded since 2009/10; Completed

Project Website: [www.theweaselhead.com/invasive-plant-program](http://www.theweaselhead.com/invasive-plant-program)

The long-term goal of this program is to restore healthy native vegetation throughout the Weaselhead Natural Environment Park. This was achieved by reducing the abundance of non-native species—especially those that are known to reduce biodiversity or alter ecosystem function—and preventing the establishment of new species of invasive plants. This year the Weaselhead/Glenmore Park Preservation Society (the Society) organized 37 weeding workshops that involved 300 volunteers and resulted in 2,036 invasive trees and shrubs and 69 kg of invasive seeds/flowers being removed. As a result, the last major stands of targeted invasive shrubs (cotoneasters and bush honeysuckles) have been removed and 38 percent of the Park is completely free of these species. Other species such as yellow clematis and creeping bellflower had seeds and flowers removed to prevent them spreading to new areas. Eight kilometres of the river/reservoir shore were searched and cleared of spotted knapweed—a new invasive

species that appeared in the park in 2015, and which the Society is trying to eliminate. Monitoring continued to assess how well native vegetation recovers after weeding, and in another study, to establish whether the abundance of creeping thistle is increasing (and should be a target for control in the future). In an ongoing attempt to restore an area of native grassland, control and treatment plots were set up to test the effectiveness of re-seeding the area with fescue. The Society continued to promote understanding of invasive species and the impact they have through their education programs (~3,500 students and 500 adults participated), by making public presentations and by sharing results of research and monitoring. The Society erected a "PlayCleanGo" boot-brush station at the entrance of the park to encourage people to clean their shoes and avoid spreading invasive seeds (this branded messaging is supported by the Alberta Invasive Species Council).

Deliverables/Results:

- 38 percent of the Park is now confirmed free of invasive plants targeted by the project and their abundance in other areas has been greatly reduced. As a result, Cows & Fish gave the Park its top rating for riparian health in 2017 and noted a "wonderful diversity of native riparian plant species" when carrying out its inventories.
- Preventing new invasive species establishing: All spotted knapweed was removed from the Park before seeding; other non-native species found during this activity identified and dealt with as appropriate; reports of unusual or suspected non-native plants from the public followed-up in a timely fashion. 35 kilograms of spotted knapweed removed along with ~20 scentless chamomile plants and ~ ten oxeye daisy; locations and details recorded on GIS.
- Native vegetation recovery: data collected to monitor the recovery of native vegetation after cotoneaster is removed and used to inform planning for 2018; data from five sample plots was collected (second year of four-year study).
- Habitat restoration: Health of remnant rough fescue grassland increases. Data comparing control with treatment plots was collected and compared with 2016.

## Going to Bat for Bats: Citizen Science in Alberta

### *Wildlife Conservation Society Canada*

Grant: \$28,715

Project Code: 030-00-90-284

Project Status: New; Completed

Project Website: [www.albertabats.ca](http://www.albertabats.ca) and [www.batcaver.org](http://www.batcaver.org)

Wildlife Conservation Society Canada (WCS Canada) had significant accomplishments during the grant period for their citizen science outreach program in Alberta. This program has two parts: (1) The Alberta Community Bat Program (ACBP), which works with landowners and general public to locate, manage, and monitor bat colonies, and to enhance bat habitat. (2) BatCaver, which networks with cavers to locate and monitor bats in winter, identifying hibernacula, and describing roosts to understand the threat that white-nose syndrome (WNS) presents to bats in Alberta during winter, the season during which high mortalities occur. Through WNS surveillance activities of both ACBP and BatCaver, WNS has not yet been detected in Alberta, providing further time to prepare for its arrival, including establishing critical baseline information for mitigation and recovery strategies. The ACBP has been highly successful in extending its public outreach and building relationships across a broad range of organizations. The program has delivered approximately 40 events so far. Demand for information, such as public events, and to provide bat conservation resources, continues

to climb. Relationships with the general public and conservation organizations remain critical to achieving civic engagement through citizen science projects and grassroots input into developing effective bat management strategies. Preliminary results for the citizen science program are being presented at the 2018 Alberta Chapter of the Wildlife Society Conference in Lethbridge. The ACBP released a highly popular guide on bat houses in February, which has been downloaded nearly 1,000 times in its first month since its release. Another guide developed by ACBP focusses on conservation and enhancement of bat habitat (beyond just bat houses). It is in review and will be released Spring 2018. BatCaver has been actively monitoring known hibernacula for the presence of WNS and establishing baseline of information on bats. BatCaver has deployed data loggers at nine suspected bat hibernation sites, in addition to monitoring known hibernacula. Data loggers include acoustic loggers to establish whether bats are overwintering; temperature and humidity loggers to assess the microclimates that bats select, thus determining their likely susceptibility to the disease; and documenting normal baseline levels of activity. This is a non-intrusive method of WNS surveillance to inform developing mitigation options and future recovery strategies for when WNS arrives.

#### Deliverables/Results:

- The main result of this project centres on improving public awareness of bat conservation issues and improved management of bat habitat. This was achieved through these results:
  - Engagement and education of thousands of kids and adults through a diverse range of public events, including hands-on outdoor events such as bat walks.
  - Engagement and education of thousands of social media users about issues related to bat conservation, with over 500 unique users reached each day.
  - Building a substantial network of citizen scientists, to both report bat roosts and discover new caves and building hibernacula.
  - Expansion of the citizen science program to include a partnership with Neighbourhood Bat Watch.
- This project is networking with several organizations, companies, and individual to enhance and improve management of bat habitats.
- Under WCS Canada's instruction, cavers installed bat detectors and temperature and humidity loggers in more than nine sites and they monitored two significant hibernation sites to establish baseline numbers of bats before the arrival of WNS, and logging baseline activity of bats and microclimate data at one of the sites.
- ACBP Deliverables:
  - Facebook, Twitter, blogs posting on topics related to bat awareness, conservation, stewardship, and promoting program events in Alberta: As of March 7, 2018, the Facebook site had 897 Likes (926 Follows) and the Twitter site had 1,852 Followers. There were 386 Facebook posts (cross-posted to Twitter), with a cumulative reach of over 200,000 (the number of times content was delivered a user). On average, social media content reached 511 unique users each day on Facebook alone. This result far exceeded the intended social media goals.
  - Website updates: Webpage tracking statistics indicate the webpage traffic grew 33 percent to approximately 8,768 unique users (2016 had 6,604 unique users, most of which were from Alberta). Lower than expected visit rates likely reflects greater participation on the Social Media sites rather than the program webpage.
  - Written Guides, brochures released during the grant period include:
    - Building Homes for Bats: Alberta Bat House Guidelines Alberta (released February 14, 2017)
    - Got Bats? Alberta Guide for Managing Bats in Buildings (released December 2016, updated October 2017)
    - Citizen Science Project – Downloadable Poster (released October 2017)
    - Habitats of Alberta Bats – Downloadable Poster (updated version released October 2017)
    - Alberta Community Bat Program – Downloadable Poster (updated version released October 2017)
    - Building Bat Friendly Communities: Alberta Program Guide (draft completed, in review; to be released Spring, 2018).
  - The FAQs were incorporated into existing guides rather than separately released. The Brochure for Pest Control companies will be released in Spring/Summer 2018. The certification program for bat friendly communities was delayed to allow time to prepare a comprehensive program guide (now in review), and will be re-evaluated pending ongoing funding.
  - A bat condo was built and is pending installation in Fish Creek Provincial Park. The original installation date (in Fall 2017) was postponed until Spring 2018 because of long delays in the permit approval process. A permit was granted March 2018 to proceed with the project.
  - Events: Over 40 events were held during the grant period, this included 18 bat walks/talks, PowerPoint presentations (> four events), Display Tables and Information Booths (13), bat house building workshops (two), and School Talks (> four events). Some of these locations include: Elk Island National Park (July 21, August 25, September 3), Miquelon Lake Provincial Park (July 28, August 11, September 2,5), Beauvais Lake Provincial Park (August 26), Fish Creek Provincial Park (October 14), Community Biodiversity Fair at Weaselhead Preservation Society in Calgary (June 24), Jasper Dark Skys Festival (October 20–21), Edmonton Valley Zoo 'Boo at the Zoo' (October 22), Bow Habitat Station What's up Wednesday (October 4) and Fishtival (February 17), Telus World of Science (December 7).

## Willingdon Fish Pond and Park

### Willingdon and District Fish & Game Association

Grant: \$1,600

Project Code: 020-00-90-221

Project Status: Funded since 2015/16; Completed

The project goal was to keep the pond stocked with trout for people to enjoy the outdoors and to get more visitors to the park. The pond had more visitors than last year. A few trees were planted to replace trees that did not make it through the winter.

#### Deliverables/Results:

- The pond was stocked with 300 rainbow and brown trout this year. The club did not get as many fish as they ordered due to a fish shortage and higher fish prices. More visitors came to the pond this year, estimated at over 300.

## Narrow Lake Conservation Centre

### Zone 4&5 Alberta Fish & Game

Grant: \$15,000

Project Code: 002-00-90-285

Project Status: Funded in 2016/17; Project did not report on activities, no funds dispersed

No project reports were received.



## ACA Research Grants

### Taking the Strain: Assessing the sensitivity of rainbow trout strains to hypoxia and ammonia associated with agricultural run-off

**Athabasca University (Dr. Glover)**

Grant: \$16,800

Project Code: 020-00-90-238

Project Status: New; Extended until March 31, 2019

Agricultural run-off is associated with degraded water chemistry, which can subsequently impact the health of fish such as rainbow trout. This species is found naturally in Alberta's waterways, but it is also stocked in lakes to provide increased fishing opportunities to Albertans and to relieve fishing pressure from native fish populations. Seven different strains of rainbow trout are stocked in 290 lakes throughout Alberta, but there is currently very little knowledge of how their resilience to environmental stressors differs. The objective of the proposed study is to identify those trout strains that cope best with agricultural run off-associated stressors, such as reduced dissolved oxygen (hypoxia) and elevated water ammonia, both factors known to impact fish health. The influence of water temperature will also be investigated to account for effects related to season, and geographic variability of stocked waters across Alberta. Tolerance of different rainbow trout strains will be determined by examining sub-lethal responses to stressors at physiological (e.g., identification of limits of oxyregulation), biochemical (e.g., blood and tissue metabolites and enzyme activities), and molecular (e.g., changes in gene expression of tolerance indicators) levels, in fish of stocking size, provided to us by collaborators at provincial fish hatcheries (Raven, Cold Lake, and Sam Livingston). This project will allow hatchery managers to identify the most robust strains of rainbow trout to stock, depending on known water characteristics such as susceptibility to agricultural run-off and temperature, and thus will contribute significantly to the sustainability of rainbow trout populations in the waterways of Alberta.

Deliverables/Results:

- This project was granted an extension. On May 12, 2017, the fish facility at the University of Alberta, the location at which the project studies needed to be conducted, had a major failure resulting in the death of all rainbow trout in the system. As of mid-July 2017, the issue with the University of Alberta system has not been rectified. This delay now represents close to one-third of the allotted project time, and more importantly the delay has meant that the researchers are now unable to obtain fish of the sufficient size (stocking size 15-20 cm) due to hatchery fish growth and the allocation of fish designated for this work to release programs.
- The anticipated deliverables are a publication of results in *Canadian Journal of Fisheries and Aquatic Sciences* or comparable journal, presentation of results at Canadian Society of Zoologists Conference, and public presentation of results to local angling organizations (i.e., Northern Lights Fly Tiers and Provincial Fisheries Round Table meeting) will be delayed by a year.

### Efficacy of Detecting Sharp-tailed Grouse Leks in Fall Surveys

**Avocet Environmental Inc. (Dr. Scobie)**

Grant: \$9,600

Project Code: 030-00-90-279

Project Status: New; Completed

In August 2017, 40 Autonomous Recording Units (ARUs) were set up at leks that had grouse displaying in the spring. Ten ARUs were set-up in provincial grazing reserves (PGR) north and west of Edmonton (Connor Creek PGR and Jack Pine PGR). Another 30 ARUs were set-up at sharp-tailed grouse leks in Southern Alberta. The ARUs were programmed to record sound for five minutes every 30 minutes from one hour before sunrise to three hours after sunrise (same timing as the Government of Alberta Sensitive Species Inventory Guidelines) and half an hour before sunset to one hour after sunset each day. Two of these ARUs were set-up in synchronization with trail cameras that were programmed to turn on and take pictures or record video when the ARUs were recording. All ARUs were retrieved during the first week of October 2017. A recognizer in Song Scope (Wildlife Acoustics) was developed, which was used to go through all of the acoustic data and identify sharp-tailed grouse "gobble" lekking sounds. The process of verifying the detections by manually listening to randomly selected detections has started. The confirmed detections will then be examined in relation to date, time, temperature, precipitation, and wind. The results of this analysis will then be used to determine if there is a time and set of environmental conditions in which there is a high probability in detecting grouse on leks in the fall.

Preliminary analysis of sharp-tailed grouse detections from the ARU recordings indicates that sharp-tailed grouse attendance on leks during September occurs within one hour of sunrise. Also, attendance on leks may be increasing through the month of September indicating peak attendance during the fall may occur after the end of September. Based on the results to date, the researchers are considering more frequent recordings around sunrise and perhaps leaving the ARUs deployed for the month of October. Data analysis will continue and the ARU recording schedule and the timing of ARU deployment and retrieval will be adjusted next year if needed. One more year of data collection will help ensure a robust sample size for the analysis and give the researchers an opportunity to fine tune data collection next fall. Also, biologists at Canadian Forces Base Wainwright have been contacted and it may be possible to set-up a number of ARUs within the base next fall which would help fill in the latitudinal gradient.

Deliverables/Results:

- All sharp-tailed grouse leks surveyed (active and inactive) and any other grouse observed while working on this project have been submitted to the Fisheries and Wildlife Management Information System (FWMIS).
- When this proposal was submitted in November 2016, the researchers' ability to borrow Autonomous Recording Units (ARUs) was uncertain. Thus, the methods and deliverables were based on assuming the data would be collected by individuals visiting around 40 active leks twice in September. This would have resulted in 80 data points to analyze. Instead, 40 ARUs were utilized which recorded sound for five minutes every 30 minutes from one hour before sunrise to three hours after sunrise and half an hour before sunset to one hour after sunset each day. Therefore, each ARU recorded sound for five minutes, 19 times each day in September. This resulted in over 27,000 audio files (~1.3 TB) that needed to be analysed. The large volume of data and additional steps needed to extract the data needed for analysis resulted in a delay in reporting results; however, processing the data collected has begun and preliminary results were reported in the ACA final report.

## Use of Native Hay and Construction Matting to Improve Restoration Outcomes in Dry Mixed-grass Habitats

### *Foothills Restoration Forum (Ms. Desserud)*

Grant: \$7,430

Project Code: 015-00-90-251

Project Status: New; Did not proceed

Construction matting and other barriers have been used extensively in the construction of major transmission lines recently as way to extend and improve operability on native grasslands without stripping soils, thus retaining the root mass and seedbank. The objective of the proposed monitoring study was to assess the effectiveness of using construction matting to conserve native grassland plant communities in the Dry Mixedgrass. Native hay can be used to source a diversity of locally adapted graminoid and forb seed for restoring topsoil disturbances in native grasslands. The objective of this monitoring study is to assess the effectiveness of using native hay to restore native grassland plant communities in the Dry Mixedgrass. These studies compare plant community composition and range health of affected and adjacent unaffected plant communities

Deliverables/Results:

- The researcher was unable to proceed with either of the above studies. The company which used matting did not respond to their request to access sites to monitor the effectiveness of matting and the company which used native hay denied the researchers access, after initially giving permission, citing additional industrial disturbance on the site. All grant funds were returned to ACA.

## Highway 3 and Bighorn Sheep

### *Hillcrest Fish and Game Preservation Association (Mr. Paton)*

Grant: \$14,630

Project Code: 030-00-90-275

Project Status: New; Completed

For decades, Crowsnest Pass residents and Alberta wildlife managers have expressed concern regarding safety hazards to motorists from bighorn sheep on Highway 3 and bighorn population losses from vehicle collisions. Sheep mortalities peaked in 2013/14 at 14+ sheep lost from the population of less than 100. Many are ewes; an essential age class needed to maintain current populations. Wildlife connectivity studies have confirmed the high value of this monitoring project for human safety and wildlife. Alberta Transportation (AT) installed a wildlife fence in 2017 at a high wildlife/vehicle collision area along Crowsnest Lakes to restrict bighorn sheep use. This post construction study used remote cameras to document sheep use of jump outs along the fence and the team have started collaring sheep to monitor sheep response to the fence and Highway 3. The collaring project results will identify areas where improvement to the fence maybe required to enhance its ability to keep sheep off Highway 3, as well as identify critical highway crossings sheep use to access seasonal ranges found north and south of the highway.

Deliverables/Results:

- As this is a three-year project, it is too early to note the main results. Permitting changes caused delays in early 2017. In 2018, permits were in place; captures were started in February 2018 and continued into March. Three collars have been deployed on three female bighorn sheep and more were captured in March. Project changes include the method of captures from helicopter to darting the animals (immobilization) by Peter Neuhaus, University of Calgary. This change was suggested by AEP and it worked out well due to the constraints of capturing animals near a highway. Currently the collar data represents only a few weeks, but it has helped identify an unexpected result which is that sheep from the Crowsnest herd during the winter time periods the team has monitored. The sheep are congregating along the railroad track to forage on spilled grain from railroad cars. This is of a concern to the Hillcrest Fish and Game Preservation Association (Hillcrest FGPA) and other supporters, due to the risk of bighorn sheep mortality along the railroad tracks. Data from their remote cameras along the fence indicates bighorn sheep were able to adjust to the fence and use jump out areas within a few months. Fatalities along Highway 3 along the section of highway fencing was zero compared to previous highs of 12 in a year. Outside the fenced sections there has been two fatalities, which the lowest number of sheep killed in a year since monitoring started. Monitoring project will continue for another two years.
- About 14 people from Hillcrest FGPA and supporting organizations helped with collaring.
- Two presentations: a school group presentation at Livingstone School in Lundbreck and a presentation for the third year Environmental Science students at Lethbridge College.
- 11 cameras set up to monitor sheep movements nearby fence. Collars to be put on five sheep in January 2018.
- AEP has purchased land adjacent to the highway to conserve winter range habitat for bighorns and other species. AEP biologist are working closely with Hillcrest FGPA to achieve the project's goals.
- Wild Sheep Foundation of Alberta is supporting this project with dollars and volunteer support.
- Tonsil samples are being collected for AEP to monitor bighorn sheep health in SW Alberta, which is part of a North American wide initiative to conserve sheep.
- Collecting blood and DNA samples for University of Calgary.

## Grizztracker: Testing the efficacy of public participation in grizzly bear science

### *Miistakis Institute (Ms. Lee)*

Grant: \$10,420

Project Code: 030-00-90-280

Project Status: New; Completed

Project Website: [www.grizztracker.ca](http://www.grizztracker.ca)

The GrizzTracker program is a participatory science project developed to significantly improve the integration of people's knowledge and local experiences into land management planning and application while simultaneously improving the efficiency of grizzly population monitoring. GrizzTracker consists of a smartphone application, a

website, and educational outreach material. The program provides a standardized and systematic smartphone app platform where industry, agriculture and AEP staff, and other interested persons can directly submit grizzly bear sightings in real time. The app will measure observer search effort across the study area, allowing researchers to map grizzly bear distribution in areas of human use—a powerful and innovative addition to the utility of participatory science. This will provide Peace Region Resource Management staff scientifically rigorous and credible information on the distribution of bear sightings across BMA1, information that has been historically lacking. Industrial personnel have been reporting their grizzly bear sightings to AEP staff for some time, but the observations were not standardized and observer effort did not account for limiting the use of the sightings reports. The objective is that data collected by non-scientists through GrizzTracker smartphone application contributes meaningfully to grizzly bear monitoring and management in Alberta. The program was successfully launched and over 20 participants contributed 62 grizzly bear observations during 419 trips in the study area. The data will be assessed in relation to other datasets collected on grizzly bear (hair sampling) to determine distribution and occupancy in Lower Peace Region.

#### Deliverables/Results:

- There are 291 participants who have downloaded the app, 62 grizzly bear observations reported via the app and mapping tool, 21 participants (industrial workers) used the smartphone app in the 2017 season. In addition, 419 trips were recorded to date (where participants have recorded a driving route).
- Mapping tool – real-time data display (delayed by two days) of grizzly bear reports and safety alert function by November 2017 – this has been implemented.
- Active updates on website blog, including media and magazine articles profiling the project – In total the program contributed to 23 BearsMart presentations where GrizzTracker was promoted and four training sessions for industrial workers, five blogs posted to GrizzTracker website.
- Dataset of grizzly bear observations (with photo verification) in Lower Peace shared with AEP – a dataset where 42 of the grizzly bear observations were reported as confident (ten had photo verification).
- Analysis of dataset to help identify grizzly bear distribution and use of human-dominated landscape. This will be used in combination with AEP DNA data (research project 2017/18) – Not yet completed.
- Future utility for contribution to grizzly recovery and standard design that can be adapted for other species at risk in Alberta – Not yet completed.
- Published research notes and journal articles (advancing the field of practice citizen science) – Citizen Science Association (CSA) conference presentation, Minnesota May 2017, and in press book chapter, "How collaboration and citizen science is advancing Grizzly Bear conservation across Northwest Alberta in Community Service-Learning (CSL) and Community Engagement (CE) in Canada: Exemplars in Research, Curriculum Delivery, and Partnership Models." Two up-coming presentations include, a presentation at the Pathways to Europe: Human Dimensions of Wildlife Conference in Germany in May 2018, and a presentation at the Alberta Citizen Science Practitioners Workshop in September 2018.

## Canada Warbler Rapid Assessment Protocol - Phase 1

### STRIX Ecological Consulting (Ms. Priestley)

Grant: \$5,725

Project Code: 030-00-90-276

Project Status: New; Completed

The Canada warbler was designated on February 23 of 2010 as *Threatened* by COSEWIC and was classified *Threatened* under the *Species At Risk Act*. The Canada warbler was listed as *At Risk* in Alberta in 2016. More data is needed on this species particularly at the northern and western limits of the range. The project uses a combination of mist netting, call playback, and area surveys, and collects information on the density of breeding Canada warblers, nesting success, and habitat associations. The researchers conducted point count surveys at four sites and followed up with trapping and banding males. Four males were captured. The density of Canada warblers is very low, and all males that were captured were second-year birds. Three Automated Recorder Units were also set in territories and determined that because of the length of time Canada warbler were detected throughout the day and through the season suggests that they may not all have bred successfully. Males should become quiet when they find a mate and settle on nests; however, they continuously called into early July. The researchers plan to follow up at sites in 2018 to determine return rates and will trap at additional sites.

#### Deliverables/Results:

- Four areas were mist netted for Canada warblers and four males were captured; all were second year birds. Within suitable habitat the calling male density range from 0.08 to 0.16 calling males/ha. Follow-up survey was conducted in mid-July, and only one Canada warbler was confirmed still showing evidence of possible breeding in the areas worked in. Density of Canada warblers across forest management area ranged from 0.0019 to 0.0095 birds/ha (COSEWIC status report shows Alberta average is 0.11). No evidence of fledglings was found in the sites worked in. All four Canada warbler trapping sites were deciduous or deciduous-dominated (B or C density, 30 metres tall), with a green alder understory. Shrubs were three to four metres in height and were very dense (50-80 percent). Hazelnut, honeysuckle, and ferns were only at one site. No water was present at any of the sites; however, they were moist areas. Sites had between five and 14 song perches (important habitat characteristic for Canada warblers). All sites had gentle or no slope. Three Wildlife Acoustics SM2 Automated Recorder Units were deployed. Canada warblers were detected on all three units. Canada warblers sang through the season, peaking at the beginning, shortly after the bird's arrival (May 30, 2018), before gradually declining in calling rate until early July. Number of song events was highest in the morning, dropping off after 11:00 or as late as 14:00 on one recorder. The length of time Canada warbler were detected throughout the day and through the season suggests that they may not all have bred successfully.
- Paper published in refereed journal: need to wait for follow up in 2018 summer, so anticipated for winter 2018.
- Presentation of results at Alberta Chapter of the Wildlife Society conference in March 2019.
- A Canada warbler habitat association guide for use by forest industry is complete. This will be provided to forest managers/ harvesting operators for help with retention and to guide them in timing their harvesting outside suitable breeding Canada warbler habitat and range.
- A regionally-specific Canada warbler model will be developed after year two of this project.

## Implication of Anthropization for Host Partitioning and Epidemiology of Emerging Zoonotic Parasites in Wild Canids

### The King's University (Dr. Visscher)

Grant: \$24,250

Project Code: 030-00-90-269

Project Status: New; Completed

Project Website: [www.wolvesofbeaverhills.wordpress.com](http://www.wolvesofbeaverhills.wordpress.com)

The project goals were to assess the prevalence and distribution of zoonotic parasites of emerging concern, *Echinococcus canadensis* (*Ec*) and *E. multilocularis* (*Em*), amongst wild canids (wolves and coyotes) in the multiuse and urbanizing Beaverhills region. This region, and the human activities within it, may serve as an interface between the typically sylvatic lifecycle of these parasites and the potential transmission into the synanthropic lifecycle where human health may be endangered. To this end, the researchers collected approximately 600 wild canid faecal samples and selected the freshest 135 samples with equal representation across the four seasons. The canid origin (coyote or wolf) of the faecal samples were first identified using known genetic markers. This analysis identified 32 wolf and 103 coyote samples. Further, using qPCR, regions of mitochondrial DNA specific to *Em* and *Ec* were located and amplified for fast detection of the *Echinococcus* parasite in DNA extracted from faecal samples. Specifically, regions corresponding to the *nad2* and *cox1* genes of *Em* and *Ec* respectively were targeted. It was determined that, for the wolf samples, 15.6 percent (five samples) were positive for *Em* and 9.3 percent (three samples) were positive for *Ec*. Within the coyote samples 12.6 percent (13 samples) were positive for *Em* and 7.7 percent (eight samples) were positive for *Ec*. A single case of coinfection (one percent) was found amongst the coyote samples. These prevalence rates observed in this region are similar to, or slightly lower to, other studies in North America and in Alberta, in particular. The researchers are currently genotyping the strain and haplotype of *Em-Ec* present in each infection via deep sequencing to compare to published distribution maps and determine if haplotype plays a role in *Ec-Em* virulence.

A difference was anticipated in infection rates between wolves and coyotes based on diet preferences of those canids and given that rodents are the intermediate host for *Em* while ungulates are the intermediate host for *Ec*. The failure to observe host partitioning maybe due to low wolf numbers as they are recolonizing resulting in an increased reliance on a rodent prey base. The insights gained from this study have prompted us to further build on this study to investigate the role and risk factors associated with recreational dog-walking in promoting transmission of *Ec-Em* into the synanthropic cycle and subsequently expose humans to the risk of infection. The knowledge gained within this project will likely help informing possible preventative actions to reduce infections in people.

#### Deliverables/Results:

- Scat was collected through the winter. This work was done by a number of undergraduate research students and volunteers (~12). These scats and the data collected for Aim 2 resulted in a total of seven undergraduate research projects.
- The epidemiology of *Echinococcus* in the Beaver Hills region: analysis shows a prevalence rate of ~13 percent for *E. multilocularis* and ~8 percent for *E. canadensis* across all canid samples. This work and analysis is being compiled into manuscripts for submission. Additionally, the work of the project was presented as a poster and oral talk at the Alberta Chapter of the Wildlife Society conference in 2018.

## Discovering Didymo Distribution (D3)

### Trout Unlimited Canada (Ms. Peterson)

Grant: \$13,210

Project Code: 020-00-90-229

Project Status: Funded in 2016/17; Completed

Project Website: [www.tucanada.org/discovering-didymo-distribution](http://www.tucanada.org/discovering-didymo-distribution)

The goal of the 2017/18 Discovering Didymo was to build on the success of the 2016 Discovering Didymo Distribution (D3) project by TUC and the University of Calgary (U of C) to expand the number of samples collected and expand the sampling area to regions of the province where sampling for *Didymosphenia geminata* had not previously occurred. Throughout the 2017/18 season of the D3 project, TUC again worked closely with Dr. Leland Jackson's lab (U of C) to further refine sampling kits for anglers to collect samples from their local streams. Volunteer training was streamlined to improve efficiency; a how-to instructional video was produced to show interested members of the public how to use their kit and return their samples. The process for recording, managing, and reporting data was improved through the use of the project specific app ([www.five.epicollect.net/project/discovering-didymo-distribution](http://www.five.epicollect.net/project/discovering-didymo-distribution)) hosted on the Epicollect5 citizen science platform. Samples collected by volunteers were sent to Dr. Leland Jackson's lab at the U of C for identification. The results obtained from this effort were made known to project participants and anyone interested in the project results through the TUC website and *News Stream* article.

Two hundred and fifty-three kits were distributed to volunteer anglers as citizen scientists to contribute to Didymo monitoring in Alberta rivers and streams; the awareness and knowledge base for Didymo presence and absence in Alberta including the locations where blooms have and have not been observed was expanded to new areas of the province never before sampled. An online map was created to display sampling locations and results to communicate to the public and share data with other scientists and managers. Of the 253 kits distributed, 102 kits were successfully returned and analyzed, with Didymo being detected in 49 of the 102 samples. Of these 49 detections, 25 of the samples contained cells but had no blooms reported by samplers, and 24 both contained cells and had blooms reported. The 2017/18 project was part of a continuing long-term effort to develop a data collaboration platform for resource managers and scientists to access Didymo distribution in North America. As aquatic ecosystems experience changing conditions, this project will help us understand changes in Didymo distribution and bloom formation over time.

#### Deliverables/Results:

- Instructional video available online to show interested volunteers how to install and use the *iNaturalist* app, collect their samples, as well as tips for minimizing the risk of spreading aquatic invasive species during their activities. Completed as planned.
- 100 sampling kits will be assembled and distributed through TUC staff and Alberta chapters to 40 volunteer anglers. Completed as planned – 253 sampling kits distributed to volunteer anglers, WPACS, and Olds College.
- A report was produced (*Discovering Didymo Distribution (D3) 2017-18 Project Summary*) summarizing the results of the project including: number of volunteers engaged, reach of online video (views, shares, etc.), number of kits distributed, and number of kits returned, summary of Didymo observations, photographs, and maps of sampling sites and positive/negative Didymo observations uploaded to online map, and recommendations for future efforts. A copy is available.

## Automating Identification of Wildlife in Audio Recordings

### University of Alberta (Dr. Bayne)

Grant: \$16,800

Project Code: 030-00-90-273

Project Status: New; Completed

Project Website: [www.bioacoustic.abmi.ca](http://www.bioacoustic.abmi.ca)

In the past five years, wildlife monitoring has changed fundamentally in Alberta with new technologies. Automated recording units (ARUs) are one such tool. ARUs record sounds in the environment and are being used by a wide variety of groups to monitor species like bats, songbirds, amphibians, owls, waterfowl, ungulates, and canids. They estimate that Alberta has the largest set of audio recording data in the world. To make the most effective use of this vast network of recording devices, a more integrated approach to collecting, storing, and visualizing such data is needed. This project has three aims: (1) to further develop a coordinated hub for the collation of audio data to ensure it is used most effectively; (2) to automate species identification from audio recordings in order to: (a) improve human-based processing and (b) further develop fully automated identification processes; and (3) to complete our understanding of Alberta's soundscapes in an effort to fully realize the potential of this technology to improve wildlife monitoring in the province. The overall goal of this project is to build on the decision by many agencies in Alberta to use ARUs for wildlife monitoring to ensure that we can make effective conservation decisions about as many species as possible.

The project team has completed the new web-based tool WildTrax. This is an online platform for processing and storing audio data and sharing results. It will go live early this summer for use with incoming ARU data from agencies across the province. For the second objective, a Convolutional Neural Network (CNN) has been trained to automatically identify 100 species but taking into account different songs (two to three per songbird species). The initial experiments had as an objective to classify 24 different species. For this experiment, the classification accuracy was of 95–97 percent. The accuracy classification accuracy declined to 88–90 percent with the increase of species to identify, which was expected with the increase in the complexity of the problem that requires more example recordings. The system is being used to get the computer to find even more clips that will then feed back into the CNN to improve the model further. Three papers on recognizers were created in this project. The researchers also began work on integrating the network into WildTrax and are testing how best to detect a bird call in a long audio recording and then identifying the species of that call.

#### Deliverables/Results:

- Audio recordings were obtained for 200+ species. They identified which Alberta species still do not have enough high-quality data to run the CNN. When identifying the 50 species, a CNN trained with the current process is capable of obtaining 88–90 percent accuracy, while this accuracy is lower than the 95–97 percent obtained when identifying 24 species, it is not unexpected due to the increase in the space complexity and there are further parameter configurations that can be explored to improve the accuracy.
- Papers that relate to this research include:
  - Shonfield et al. 2018. Utility of Automated Species Recognition For Acoustic Monitoring of Owls. *Journal of Raptor Research*.
  - Knight et al. In final prep. Pre-processing spectrogram parameters improve the accuracy of acoustic bird species classification using convolutional neural networks.

- Knight et al. In revision. The final frontier in automated signal recognition: using the relationship between score and relative sound level to automate validation of bioacoustic recognizer output. *Methods in Ecology and Evolution*.

## Evaluating Alternative Elk Harvest Strategies in SW Alberta

### University of Alberta (Dr. Boyce)

Grant: \$7,650

Project Code: 030-00-90-277

Project Status: New; Completed

The first step of this project was to create a combined summary of regulation and harvest history of elk in Alberta. The result is that for the first time on the provincial scale, a cumulative history of harvest regulation spanning from 1970 to 2016 for the entire province of Alberta has been digitized (previously only found in hard copy format) and compiled. In accordance with this, a history of elk harvest and hunter success (for general seasons only) per WMU (Wildlife Management Unit) from 1995 to 2016 has also been collected and categorized into their respective units and years, creating a one of a kind, up-to-date databank that is easy to navigate. Also resulting from this combination is the ability to delineate between general and special harvest numbers. While the harvest data only permits the differentiation between bulls, cows, and juveniles, it is providing great insight into resulting harvest totals with each regulation type (such as 3-point vs 6-point) and the consequential success that follows. Another step being taken is the ability to divide zonal success. Across Alberta, WMUs are divided into five regions: Prairie, Parkland, Foothills, Mountain, and Northern Boreal WMUs. This separation has allowed for a very coarse look at how hunter success fluctuates across Alberta in topographical and spatial terms. Finally, the steps taken to compile total harvest in this objective resulted in the ability to parameterize the reconstruction models in the following objective. The second step, where the project currently lies, is obtaining two years' worth of elk ground classification data across seven WMUs near Pincher Creek in southwestern Alberta. The objective is to attain population-level, herd classification ratios that will serve as parameters in both population reconstruction and population dynamics models. The use of a reconstruction model will result in a real-world example of how managers are in fact able to follow their herd numbers between years without aerial surveys, resulting in a slightly lessened dependence on expensive aerial surveys altogether.

#### Deliverables/Results:

- One of the main results of this project is the detailed history of elk harvest regulations across Alberta from 1970 to 2016, combined with harvest and hunter success. The ability to easily compare results of differing harvest types can help provide direction for managers looking to achieve their respective goals. One unexpected result that came about was the ability to bring hunter success into the mix. While it may not be able to attribute much on its own, it can be linked to regulation type in the form of total harvest and also linked with certain WMUs themselves (such as Prairie Zone vs Mountain Zone WMUs).
- The second main result is the use of elk ground classification data to showcase the ability of reconstruction models to accompany aerial surveys. While this step is still in the works, the product will have the ability to lessen a manager's dependence on the aerial surveys by providing an indicator of where their elk populations potentially are. An unforeseen result from this step could potentially give reason to increase accuracy in collected harvest data. Harvest data is collected by means of online surveys filled out by hunters. Since not all hunters

respond to these surveys, the success and harvest is inferred to the remaining hunter population once the surveys are either complete or not returned. The peer-reviewed reconstruction models to be used depend on knowing the actual harvest along with current herd demographic ratios. If the models result in unrealistic indications of herd composition (as compared to previous aerial surveys), this might suggest a harvester response rate that is not representative of the actual harvest. Thus, demonstrating a potential need to increase harvester response to attain more precise harvest counts.

- There are currently no published reports available because the project is in the process of completing its final objective. When the project is complete, a detailed timeline and report of easily comparable regulation to harvest history will be available, to be used as a point of reference for future managers across the province who wish to attain certain age structures of elk within their herds or even certain harvest quotas in their WMU. Also included in the report will be a method of reconstruction performed on the seven WMU's found near Pincher Creek, Alberta.

## Chronic Wasting Disease in Deer: Modelling transmission from contact rates

*University of Alberta (Dr. Merrill)*

Grant: \$27,600

Project Code: 030-00-90-228

Project Status: Similar CWD project funded in 2014/15; Completed

Project Website: [wp.biology.ualberta.ca/abchronicwasting](http://wp.biology.ualberta.ca/abchronicwasting)

Chronic Wasting Disease (CWD) is the most significant issue in wild cervid management in North America. Recent studies from Wyoming and Colorado now demonstrate population-level declines in deer related to CWD. Alberta is one of two provinces in Canada with CWD in wild cervids, with over 600 detected cases (~85 percent in mule deer) in eastern Alberta. Field studies were initiated at Canadian Forces Base Wainwright (CFBW) in winter 2016/17 and expanded these efforts to Cresthill Grazing Reserve (CGR) in winter 2017/18 to identify seasonal grouping, local density, and landscape features influencing sex-specific contact rates of mule deer based on GPS-contact collars. Results will be input in published models for predicting changes in CWD prevalence rates in the environs of CFBW and CGR as well as other areas of Alberta to improve targeted surveillance and control. Thus, the second capture-year of data collection has been initiated, and movement data from collars in the first year are only now available (March 2018) for preliminary analysis in the next four months. Updated environmental data has been compiled to include in these spatial analyses, aerial survey data on deer grouping patterns relative to density and landscape patterns, and spatial patterns in CWD in hunter-harvested and collared deer. The study will continue to accumulate field data over the next additional three years (2018-2020).

Deliverables/Results:

- The project is at the end of the first capture-year and results are very preliminary and only for the CFBW at this point. To date, contact analyses have been conducted because data are not yet available. Here the later winter movements of deer on the CFBW only are summarized.
  - The time deer spend on and off CFBW depended on their capture site. Females captured on CFBW spent 82-100 percent and there was overlap in the winter (March – April) and spring (May – June). No movements that represented a seasonal migration off CFBW were noted.
  - Male mule deer spent on average 43 percent of their time on CFBW, with greater numbers of locations being recorded east and further into the base in the spring compared to in the winter when they were located farther west and off CFBW.
  - Female areas of use were smaller (11.2 + 1.23 km<sup>2</sup>) than male mule deer areas (33.7+ 5.5 km<sup>2</sup>, mean, SE); based on minimum convex polygon analysis of GPS locations. Similarly, mean distance travelled in a two-hour period by female deer was 0.31+0.39 km in winter and 0.21+0.28 km in spring, whereas mean distance travelled by male deer was 0.22+0.37 km in winter and 0.22+0.35 km in spring. The maximum distance travelled by a female in two hours was 3.04 km and was not representative of migration but shifts in use within a range. The greatest two-hour distance travelled within by a male deer was 7.45 km, which was from the periphery of CFBW (winter) to the center of the CFBW (July). Analysis of movement behaviors during the rut and during hunting season are in progress.
  - Male mule deer tended to use agricultural areas more in both spring and winter and grasslands in spring than females, whereas females used woody cover in the upland shrublands and broadleaf forests more than males in both seasons.
- These results are not unexpected, given what is known of the ecology of mule deer in this region; however, these very preliminary results indicate that (1) a large portion of the deer population using the CFBW may not be migratory, (2) male deer range more broadly and do not spend as much time on CFBW as females, and (3) there is more overlap in the habitats used by male and females in the winter than in the summer but this varies with availability of woody cover .
- The following deliverables have been completed:
  - a project website: [wp.biology.ualberta.ca/abchronicwasting](http://wp.biology.ualberta.ca/abchronicwasting)
  - a short video on capture and testing for CWD in mule deer.
  - updated and secured Governmental and Animal Care and Research permits.
  - blood samples, genetic, and CWD-test samples were collected and sent to labs for respective analyses.
  - applied for (ACA, MSL) and secured additional funding (Boone & Crocket Club, Safari Club – Northern Alberta Chapter, Alberta Prion Research Institute).
  - a capture summary report (2018) that was sent to landowners, CFBW, Grazing Associations, and government personnel. Results are briefly summarized above.
  - one preliminary data analysis report in August 2017 for CFBW and Alberta Fish and Wildlife. Results are briefly summarized above.
  - no modelling deliverables are available at the time because results are too preliminary.
  - presented the study approaches in this project in several presentations:
    - University of Melbourne, Australia seminar series – July 19, 2018
    - Oxford University, UK seminar series – February 19, 2018
    - Alberta Prion Institute Annual Meeting, Lethbridge, AB – February 28, 2018
    - University of Zvolen, Zvolen Slovakia – March 6, 2018
  - Dr. Merrill is Chair and has organized a symposium (accepted submission) with five other scientists on modelling disease transmission in populations using contact data at the INTERNATIONAL DEER BIOLOGY CONGRESS ([www.deerbiologycongress.org](http://www.deerbiologycongress.org)).

## Evaluating Camera Trap Surveys as an Effective Means of Monitoring Remote Ungulate Populations

*University of British Columbia (Dr. Burton)*

Grant: \$31,700

Project Code: 030-00-90-278

Project Status: New; Completed (extended until April 30, 2018)

This multi-year project will determine the feasibility of using camera trap surveys and hierarchical Bayesian spatial models to develop a standardized inventory tool for estimating ungulate densities in remote regions of north-eastern Alberta. This project capitalizes on concurrent Alberta Environment and Parks (AEP) aerial ungulate (2018) and caribou DNA capture-recapture (2019) surveys to validate ungulate population estimates obtained through camera trap surveys in the Lower Athabasca Region. In November 2017, field work was initiated for this project, deploying the first 30 cameras in the focal Richardson caribou range area. In April 2018, a trip was taken to service the cameras, refresh batteries, and download the first set of data. Initial processing and summary statistics of this first round of data has been completed. Of the 30 cameras deployed, two had equipment malfunctions partway through the deployment and four had their field of view partially obscured by snow for between one–20 days. In total, 4,231 camera trap days of data were retrieved, yielding 257 detections of 11 mammal species. The most frequently detected species was snowshoe hare (*Lepus americanus*, 153 detections), followed by caribou (*Rangifer tarandus*, 29 detections) in groups ranging from one to eight individuals. The cameras detected  $\geq$  one collared caribou at three sites off seismic lines and one on-line site. There were eight moose (*Alces alces*) detections, of either one or two individuals, and one detection of one individual white-tailed deer (*Odocoileus virginianus*). An additional 30 cameras will be deployed in November 2018, surveying for a minimum of two full years (November 2017–2019). The objectives are to use field and simulated data to determine standards for ungulate camera trap surveys (e.g., effects of camera spacing and placement, and definitions of sampling site, occasion, and season on detectability). This project will also use advanced Bayesian methods (spatial count and mark-resight models) to estimate population densities for moose, caribou, and deer, if appropriate, contributing to our broader regional assessment of mammal community responses. An equally important objective is to validate winter density and demographic estimates against concurrent provincial survey methods by comparing estimates obtained from camera trap surveys with moose population estimates from the concurrent aerial ungulate distance sampling survey, and caribou population estimates from the concurrent DNA capture-recapture survey. Finally, this project will compare population estimate precision and resource and personnel costs between camera trap and provincial surveys.

Deliverables/Results:

- There were slight changes to the project deliverables. The researchers initially proposed to deploy 60 cameras in November and not service them until the following November (2018) but unexpected delays in receiving in-kind camera equipment from partner organization meant they were only able to deploy 30 cameras. Based on recent experiences with camera malfunctions in a related project, the researchers are now proposing field visits twice a year to balance field costs with the potential for loss of data due to the possibility of camera malfunction in this remote and harsh environment (e.g.,

extreme temperatures). Therefore, some of the ACA funding from the November field trip was used towards a second field trip, to service the existing 30 cameras. With the extension and additional field trip, the research team were able to provide a preliminary assessment of the mammal detection data from the first 150 days of the survey. This information will feed into their simulations and preliminary analyses. AEP's Environmental Monitoring and Science Division has committed to providing the remaining cameras for the array as in-kind support. A November 2018 field trip is being planned to deploy the final 30 cameras and service the existing cameras.

- Project deliverables include annual reports to ACA and AEP and manuscripts to be published in international journals.

## Wild Pollinator Conservation and Restoration in Southern Alberta Croplands III: Experimental tests of crop yield

*University of Calgary (Dr. Galpern)*

Grant: \$17,820

Project Code: 015-00-90-225

Project Status: Funded in 2015/16 & 2016/17; Completed

Project Website: [www.ecologics.ucalgary.ca/lab/science/pollinator-conservation](http://www.ecologics.ucalgary.ca/lab/science/pollinator-conservation)

This study continued the research into the role of landscape in shaping native pollinator communities in Southern Alberta. This year's study focused on the role of wetlands as critical habitat for native bees in Prairie agroecosystems, and in turn the potential ecosystem services that may be provided by native pollinators to canola, a crop that may benefit from insect visitation. The researchers also continued the third year of data collection for their long-term monitoring sites, selected to represent different land cover types across the Alberta agroecosystems. Additional funding secured through Ducks Unlimited Canada allowed them to add an additional field assistant project to the study and facilitated conducting floral assessments at each site over the course of the season, as well as processing 7,200 canola pods to assess differences in canola yield across treatments. During the summer of 2017, approximately 31,000 native bees were sampled from in-field sample sites. This brings the total number of bees identified and databased from the three years of this project to just over 90,000, representing the largest systematic sampling of native pollinators in western Canada (and likely the entire country). In addition, 360 canola plants were processed for characteristics of yield, including pod characteristics for a subset of 20 pods per plant (7,200 pods in total). Visitation data was recorded at each sample distance in each wetland (25 m, 75 m, and 200 m) in each of five fields at four time points across the season to assess the frequency of visitors to canola flowers. Lastly, floral abundance and diversity at the wetland sites across the season were quantified, representing 123 species and 463,000 inflorescences. The second paper from this project examining the role of wetlands as critical habitat for native pollinators is written and will be sent out for review in the next month to the peer-reviewed journal *Conservation Biology*. Currently there are several other manuscripts in preparation by two PhD students and a Master's student that examine: (1) how the phenological differences of pollinators and mass flowering crops affects bee abundance; (2) how semi-natural landscape abundance and configuration influences bee community structure and, (3) how landscape configuration influences the composition of bee functional traits within communities.

## Deliverables/Results:

- This dataset now includes more than 90,000 bees representing 245 species, all found in prairie agroecosystems in Alberta. This includes data on how semi-natural habitat such as: (1) how wetlands contribute important pollinator habitat; (2) how landcover percent and configuration at different spatial scales influences bee community composition, and (3) allows the researchers to track temporal changes in native bee community structure which can be correlated with changed weather or landscape conditions. This robust database allows for important discoveries with regards to pollinator conservation in Alberta. Research from this past season has shown that native bees use in-field wetlands as nesting habitat, and that the abundance and diversity of bees decrease further away from wetland margins. This decline was only seen in crop fields, bee abundance and diversity did not decrease further away from wetland margins in native grassland where suitable nesting habitat is likely available throughout the landscape (Vickruck et al., manuscript to be submitted). In addition, previous research from this project demonstrated that mass flowering crops such as canola can have demographic consequences for bumble bees (Galpern et al., 2017. *Ecology and Evolution*. doi: 10.1002/ece3.2856).
- The sampling for this project has been informed by several research objectives and was intentionally structured to enable both applied and fundamental ecological inquiry. As noted, five manuscripts are now in progress addressing the main objectives of the project. The following research is currently being conducted by the team: (1) mapping of pollination ecosystem services; (2) the distance decay in bee abundance from semi-natural features including both wetlands and pivot corners in irrigation districts; (3) influence of the match between mass-flowering crop phenology and flight season on bee abundance; (4) landscape composition and configuration effects on bee community structure; and, (5) multi-scalar landscape influences on functional morphology, such as bumble bee tongue length. The researchers believe they have sufficient data to complete statistically-robust analyses in each of these research areas, as well as in several others. A project post-doctoral fellow will provide longer-term assistance in this regard.
- These data have so far been written up in one published manuscript (Galpern et al., 2017), one that will be submitted for review to the journal *Conservation Biology* in the next month, as well as four other manuscripts in preparation. This research has been presented at several ecological and entomological conferences including two last summer/fall (the Canadian Society for Ecology and Evolution and the Entomological Society of Canada). This summer three more oral presentations will be given relating to this research, including two accepted abstracts at the North American Congress for Conservation Biology and an invited talk in the Pollinator and Pollination Symposium at the meeting of the Canadian Society for Ecology and Evolution. The invitation to speak at this symposium is significant, as it demonstrates that this research program is becoming recognized across Canada.
- This project has involved 13 grower-cooperators, one postdoctoral project manager, five student research assistants, and one undergraduate thesis student. (Completed)
- Completed datasets: Canola yield dataset: plant level data for 360 canola plants and 7,200 pods. Insect visitation surveys: 30-minute surveys conducted at each distance at each time point throughout

the season. Targeted netting surveys: 30 minutes netting insects that landed on canola flowers. Floral abundance and diversity: Complete datasets of all flowers observed from each 25-metre transect at each wetland margin across the season. Bee abundance and diversity databased by March 16, 2018. (Completed)

- Data analysis has begun on the canola yield dataset and will begin shortly on the bee abundance and diversity dataset. These results will be written up and submitted to a peer reviewed academic journal for publication. (Spring/ Summer 2018). A second publication from this project has been written and should be submitted to a peer-reviewed academic journal in the next month (the first was Galpern et al 2017 *Ecology and Evolution*).
- A report made to the Prairie Biodiversity Working Group summarizing the findings regarding yield and pollination services provided by wetlands (target: Fall 2018)

### Development and Application of Molecular Epidemiology Tools to Define Bighorn Sheep Parasite Communities and Guide Management

#### University of Calgary (Dr. Kutz)

Grant: \$35,200

Project Code: 030-00-90-271

Project Status: New; Extended until January 2019

The goal of this project was to develop a new non-invasive diagnostic tool for monitoring gastrointestinal and pulmonary nematodes in bighorn sheep. Specific objectives consisted in (1) developing a quantitative molecular assay to characterize parasite communities non-invasively from faeces, (2) describing bighorn sheep parasite diversity across Alberta, and (3) studying determinants of parasite egg and larvae abundance and community structure. The main activities consisted in (1) assembling and validating a DNA barcode database for bighorn sheep parasites, (2) obtaining faecal samples from across the province and known individuals from Sheep River Provincial Park, (3) developing and validating the DNA barcoding assay, and (4) describing population and individual variation in parasite egg and larvae shedding and diversity and their determinants. Sample collection was highly successful: for Objective 1 more than 150 adult nematodes were isolated and identified from six necropsied bighorn sheep, with several hundreds more preserved for future identification; for Objective 2 >150 samples were obtained from 20 groups of sheep from 13 locations from across Alberta; and for Objective 3 > 120 samples were collected from known individuals in spring, summer, and autumn 2017. Classical coprological analyses revealed a high prevalence of *Nematodirus* sp. and *Marshallagia marshalli*, and a high variability in the abundance of strongyle eggs in different populations. These variations were not correlated with climatic conditions, presence of domestic herds, or introduction histories. *Protostrongylus* spp. was the dominant genus of the family Protostrongylidae in all populations, while a species characterised by dorsal-spined larvae was only found in two populations. Progress on some of the objectives was delayed due to unforeseen challenges with DNA extraction and amplification. Specifically, over the last months of the project DNA extraction protocols have been optimized to allow efficiently dealing with low parasite abundance, PCR inhibitors present in sheep faeces, and highly resistant *Nematodirus* spp. eggs. While a method to extract PCR-amplifiable DNA from most parasite groups (strongyles, *Marshallagia*, and lungworms



spp.) has been identified, *Nematodirus* spp. are still problematic. Once an optimal DNA extraction has been identified, collected samples will be processed and project objectives completed. Overall, the researchers were very successful in achieving the sampling objectives, and once finalized the assay will provide a highly valuable tool for characterizing parasitic infection in Alberta bighorn sheep.

Deliverables/Results:

- This was the first near province-wide parasitological survey of bighorn sheep. Classical coprological analyses revealed a high prevalence of *Nematodirus* sp. and *Marshallagia marshalli*, and a high variability in the abundance of strongyle eggs in different populations. These variations were not correlated with climatic conditions, presence of domestic herds, or introduction histories. *Protostrongylus* spp. was the dominant genus of the family Protostrongylidae in all populations, while dorsal-spined larvae was only found in two populations.
- Deliverables for this project consists of peer-reviewed scientific articles to be published following completion of the project. Genetic sequences associated with these publications will also be made public.

### Effects of Anthropogenic Noise Associated with Oil and Gas Development on Survival and Reproductive Performance of Grassland Songbirds in Alberta's Mixed-grass Prairie

University of Manitoba (Dr. Koper)

Grant: \$18,300

Project Code: 030-00-90-274

Project Status: New; Completed

Grassland birds, including two sensitive species in Alberta, the chestnut-collared longspur and the Baird's sparrow, have faced steep declines of up to 75 percent across the Northern Great Plains. Despite the severity of these declines, reasons for the declines are poorly understood. Empirical studies have demonstrated that anthropogenic habitat fragmentation influences success of grassland species. Far fewer studies have investigated mechanisms driving those impacts; one of those mechanisms might be noise. Energy development and the associated infrastructure have altered grassland habitat through fragmentation and the creation of novel soundscapes, and this may influence grassland songbird behavior and, in some cases, contribute to population declines. However, its impacts on adult and fledgling survival are not known. Fledglings are thought to experience significantly higher mortality rates than adults; however, post-fledging mortality rates are understudied, especially in grassland songbirds. Oil extraction in mixed-grass prairies provides an ideal system in which to explore effects of fragmentation and noise on avian communities. The objectives of this research were to (1) determine the effects of noise and oil wells on adult and fledgling survival in Baird's sparrows and chestnut-collared longspurs, and (2) inform integrated population models being developed by collaborators to determine the relative influence of breeding and wintering ground survival on population change. To better understand grassland bird population declines, data collected will also be incorporated into large-scale, full-annual cycle integrated population models that incorporate information on fecundity, recruitment, and age- and sex-specific seasonal survival to assess the relative influence of breeding and

wintering range demographics on population change. To study the effects of oil infrastructure and noise on chestnut-collared longspur fledgling survival, an experimental playback infrastructure and radio-telemetry were used. Radio-tags were fitted to 123 fledglings and 51 adults. The researchers relocated marked individuals each day until the individual died or the radio-tag stopped transmitting. This resulted in the collection of 369 locations for adult Baird's sparrows, 828 locations for fledgling chestnut-collared longspurs, and 1,447 locations for adult chestnut-collared longspurs. No effect of oil wells or their noise was found on fledgling survival. A significant positive correlation was found between survival and seasonal, peak fledgling abundance. They also found that fledgling survival increases with age. This research suggests that mitigating impacts of wells on birds at other life stages (such as minimizing depredation of nests, which is higher near some oil wells), may have a greater conservation impact than focusing on management that might alter fledgling or adult survival.

Deliverables/Results:

- Data on 130 chestnut-collared longspur nests were collected.
- Radio-tagged and collected location and survival data on 38 adult chestnut-collared longspurs and 13 adult Baird's sparrows.
- Radio-tagged and collected location and survival data on 123 chestnut-collared longspur fledglings.
- Developed a statistical model to explain effects of oil wells, noise, and temporal conditions on adult and fledgling survival.

### Bull Elk Recruitment, Survival, and Harvest in a Partially Migratory Elk Herd in the Ya Ha Tinda

University of Montana (Dr. Hebblewhite)

Grant: \$30,060

Project Code: 030-00-90-281

Project Status: New; Completed

Project Website: [www.umt.edu/yahatinda](http://www.umt.edu/yahatinda)

The Ya Ha Tinda elk herd has declined over the past 20 years from a count of ~2,200 individuals in the early 1990s. This long-term research suggests that predation by large carnivores, wolves and grizzly bears, was the leading cause of these declines. As the population declined, the number of elk remaining on the winter areas year-round increased and the number of elk migrating westward to Banff National Park decreased. However, recently, since about 2012, the population has shown signs of stabilizing near 400–500 individuals. Additionally, a new migration pattern developed in the late 2000s where increasing numbers of elk migrate eastward to take advantage of high forage quality caused by timber harvest and the Dogrib fire that burned 10,200 ha in 2001. From 2011–2014, 27 percent of marked elk have followed this eastern migration route. These eastern migrants may ultimately increase elk population size. Despite the contributions of this long-term research to understanding elk ecology and management, to date, bull elk ecology and management has not been studied directly. Thus, the research team have four main objectives of this multi-year project: (1) continue the long-term population monitoring of the YHT elk herd by monitoring pregnancy, mortality, and migratory behavior of individually marked females; (2) determine migratory movements of bull elk in the Ya Ha Tinda herd; (3) determine cause-specific mortality, survival, age

structure, and trophy potential of bull elk in the Ya Ha Tinda elk herd; (4) develop an integrated population model based on the long-term female data that includes bull elk population dynamics and migration.

In terms of progress towards these objectives, elk surveys were conducted on February 19, 2018, recording 416 elk (359 cows and calves and 57 bulls), indicating continued population stability or a slight increase. The researchers also monitored 76 radio-collared female elk in the last year (ending March 15, 2018) and deployed an additional 39 female elk in March 2018. A total of nine collared individuals died during this reporting period with eight being killed by predators (two wolves, one bear, five human hunting/poaching, one unknown), similar to long-term trends. But in terms of the new, bull-specific research objectives, the research team successfully aerial darted and radio-collared 32 bull elk in January 2018 in the first year of their bull elk study. There have been no bull elk mortalities since collaring and the first year of migratory data will be collected in 2018.

Deliverables/Results:

- Counts of elk based on an aerial survey in 2018 compared to past years indicate elk at Ya Ha Tinda may be leveling off in their decline.
- Adult elk pregnancy rates are high (2014/15: 94 percent and 2015/16: 96 percent, 2017/18: 94 percent) indicating summer nutrition of elk has been adequate in this area.
- The researchers continue to successfully collar elk in winter (n=39 in 2018) to maintain an adequate sample of elk to monitor distribution, movements, habitat use, adult survival, and reproduction of the Ya Ha Tinda population. As of March 15, 2018, a total of 67 elk were collared (44 GPS, 23 VHF) or ~ 26–28 percent of total adult female population.
- The researchers successfully collared 32 adult male elk in January 2018. The average SCI antler score of captured bulls was 218 inches with the largest scoring 276 inches.
- Presentations on the Ya Ha Tinda Study in the reporting period:
  - 15th Annual Western States Deer and Elk Workshop, Sun Valley Idaho, USA. May 4, 2017. Changing migration routes over time at the Ya Ha Tinda presented by E. Merrill.
  - 15th Annual Western States Deer and Elk Workshop, Sun Valley Idaho, USA. May 4, 2017. Elk calving trade-offs in the montane environments of Alberta, presented by J. Berg.
  - 15th Annual Western States Deer and Elk Workshop, Sun Valley Idaho, USA. May 3, 2017. Linking populations and habitats in ungulate ecology and management, presented by M. Hebblewhite (Plenary Speaker).
  - Ya Ha Tinda 100th Year Parks Canada Celebration, Ya Ha Tinda Ranch, July 15, 2017. The history of elk research and ecology at the Ya Ha Tinda, presented by H. Martin.
  - 102nd Annual Meeting of the Ecological Society of America Conference, Portland, OR USA, August 6–11, 2017. Long-term research reveals unexpected flexibility in migratory behavior, its drivers, and population consequences in a large herbivore, presented by M. Hebblewhite.
- Scientific publications in the last year:
  - Hebblewhite, M., Eacker, D.R., Eggeman, S., Bohm, H. & Merrill, E.H. (2018) Density-Independent Predation Affects Migrants and Residents Equally in a Declining Partially Migratory Elk Population. *Oikos*, EarlyView, DOI: 10.1111/oik.05304

## Assessing the Risk of CWD: A microbiological-behavioural metric to quantify the risk of prion transmission between deer

*University of Winnipeg (Dr. Lingle)*

Grant: \$16,800

Project Code: 030-00-90-270

Project Status: New; Extended until October 31, 2018

Chronic Wasting Disease (CWD) is a fatal and transmissible prion disease that threatens wild populations of cervids. The behavioural mechanisms underlying the transmission of infectious prions between deer in wild populations remain elusive, making it difficult to rigorously assess methods to reduce this transmission. Prion diseases occur after infectious prions contact normal prion protein, causing the normal protein to misfold and become infectious. Levels of normal prion protein in a tissue are usually correlated with the potential for conversion of normal prion protein in different tissues into infectious prions, the first and primary objective was to quantify levels of normal prion protein in external tissues, fluids, and secretions, focusing on body sites that commonly contact other deer and the environment. Following extensive training and practice sessions sampling carcasses in Manitoba (September through November 2017), the researchers collected tissue samples from fresh carcasses (20 mule deer, 20 white-tailed deer. Ten male and ten female/species) brought to a hunter check station at Wainwright, Alberta (December 2017). This was possible due to the cooperation of staff from AEP and hunters who permitted the researchers to sample the animals they harvested. A set of samples was collected which is being used for western blot assays to quantify the total amount of normal prion protein with a tissue. A separate set of samples was collected which is being used to quantify the location of prion proteins with these tissues. Once the lab assays are completed, these new microbiological data will be integrated with recent behavioural results (K. Saboraki, MSc thesis) to develop a novel microbiological-behavioural metric that quantifies the risk of prion transmission (or acquisition) associated with specific activities and social interactions.

Deliverables/Results:

- The fieldwork was successful, thanks to generous assistance by many in Manitoba and in Edmonton. This includes the Assiniboine Park Zoo veterinarians, Manitoba Sustainable Development, and City of Winnipeg staff that enabled staff to develop techniques to collect samples from glandular tissues. This includes staff from AEP based at the Wainwright check-station and hunters who gave access to the animals they harvested. Warm weather also meant that the researchers were able to collect samples from fresh carcasses. The researchers were able to sample 40 deer; twice as many as initially planned, making the sample size more robust.
- Delays were encountered in running lab assays at a lab in Winnipeg. The lab where it was planned to analyse samples lost staff due to unexpected health issues. Another lab did not complete permits needed to bring cervid samples into the province. Therefore, alternative plans were made to analyse samples at Dr. Gilch's lab at the University of Calgary this spring and summer. This is a minor delay which adds two to three months to the project.

- A poster was presented at the joint AGM of the Canadian Section of The Wildlife Society and the Manitoba Chapter of The Wildlife Society in March 2017 (Winnipeg, Manitoba). This poster gave the opportunity for considerable discussion with wildlife professionals attending the meeting.
- Results are expected by fall 2018 to prepare for publication in scientific journals and to discuss with resource managers.

### Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions

#### Wildlife Conservation Society Canada (Dr. Lausen)

Grant: \$25,995

Project Code: 030-00-90-272

Project Status: New; Completed

White-nose syndrome (WNS)—caused by the fungus *Pseudogymnoascus destructans* (*Pd*)—is an invasive disease that has spread rapidly across eastern North America and killed millions of hibernating bats since 2007. Opportunities remain in western North America, including Alberta, for proactive interventions that may mitigate impacts when WNS arrives. Their efficacy requires understanding the vulnerability of western bat populations. Bioenergetic models that predict WNS survival based on energy consumption, hibernaculum conditions, and *Pd* growth rates forecast disease impacts. However, these models currently rely on parameters from eastern bat populations. Bats living elsewhere are likely adapted to different conditions. Little is known about the ecology and physiology of bats hibernating in western North America, particularly those in the North (ca. 50° and above). This study is filling these knowledge gaps in Alberta by collecting bioenergetics data at Cadomin, Alberta's largest bat hibernaculum. This year, bats have been sampled just prior to and during winter to measure body weights, metabolic rates of pre-hibernating bats, and natural arousal rates of hibernating bats. Dataloggers were also installed in the hibernaculum to document temperature and humidity conditions experienced by bats during winter hibernation. Factors such as metabolic rates, natural frequency of regular arousal out of hibernation, length of hibernation period, stored body fat, and roosting microclimates all help predict the susceptibility of bats to mortality from WNS. At the writing of the final report, bats are still hibernating and may be in the cave roost as late as mid-May after which time the data will be retrieved and downloaded from microclimate and temperature-sensitive radiotelemetry dataloggers and used to create WNS survivorship models specific to northern bat populations. Understanding the potential for bats to survive, recover, and re-populate WNS-affected areas after *Pd* invasion is critical to bat conservation. If some bats possess inherited physiological traits that favour survival, then priorities for management should be those that support reproduction by these survivors. This project represents the Alberta component of a larger-scale effort to model WNS survival of bats across western North America and is critical for understanding survival potential and prioritizing management actions.

#### Deliverables/Results:

- So far this project has:
  - measured torpid metabolic rates of 25 bats.
  - measured weights of 64 bats as an indicator of winter fat stores.
  - banded 57 bats to contribute to the mark-recapture fidelity and survivorship goal of AEP.
  - applied temperature-sensitive radio transmitters to 25 little brown myotis in January 2018.
  - installed seven microclimate dataloggers at Cadomin Cave.
  - deployed two acoustic roost loggers inside Cadomin Cave to establish normal activity levels and delineate the start and finish hibernation.
  - engaged 17 volunteers who helped monitor bats, and who snowshoed 468 pounds of sealed batteries into the field to ensure continuous power to two telemetry receiver dataloggers.
- Unexpected results include:
  - Fall bat captures were skewed to young-of-year because they arrived later to the hibernaculum than adults.
  - Bats with transmitters moved around the cave chambers more than expected (based on one equipment check and download done in February), so it is possible that additional discontinuous data on arousal rates is being collected. This will be confirmed when the equipment is removed from the cave in May 2018.
  - The fieldwork associated with this project was difficult due to weather, accessibility, and was very labour intensive, due to deep snow and the substantial weight of equipment that had to be hiked into the site. This project relied upon and is grateful to their stoic volunteers.
- The main deliverables from this project are models and manuscripts published in peer-reviewed journals. Manuscripts will be forthcoming as planned (a manuscript is anticipated to be submitted for publication by the end of summer 2019. No publication is expected until data is collected from the second year of the project. Manuscripts will include intraspecific latitudinal differences in metabolic rates, differential metabolic rates of adults versus juveniles, and models of WNS survivorship for little brown myotis in western North America.
- Preliminary findings were included in the Columbia Mountains Institute of Applied Ecology Conference "Interdisciplinary Approaches to Managing Health of Fish and Wildlife" in May 2018. Data collected in this project is essential to larger efforts to predict species—and population—specific patterns in WNS susceptibility and proactively inform conservation efforts across western North America. They anticipate that Alberta data from this project will be presented by their partners at WNS-related symposia in upcoming international conferences such as the North American Society for Bat Research, and US Fish and Wildlife WNS Workshop. ACA will be acknowledged in all reporting of these data and models that include these data.

# APPENDIX:

## Projects in Relation to Grants Funding Priorities 2017/18

### CCEG Funding Priorities

#### FUNDING PRIORITY #1: 11 CCEG PROJECTS

*Habitat enhancement activities specifically listed on provincial recovery plans for Alberta's endangered species (to be done in cooperation with recovery teams).*

**Alberta Fish & Game Association;** Increasing Habitat for Species at Risk in Alberta's Grassland Region through Adaptive Management, Habitat Enhancement, and Outreach (Operation Grassland Community); \$37,400

**Alberta Riparian Habitat Management Society (Cows & Fish);** Implementing Riparian Habitat Management Improvements for Westslope Cutthroat Trout; \$6,150

**Camrose Wildlife Stewardship Society;** 2017 Camrose Purple Martin Festival; \$2,450

**Cloudy Ridge Ranch;** Cloudy Ridge/Yarrow Creek Off-site Water and Riparian Improvement Project; \$18,000

**Foothills Restoration Forum;** Foothills Restoration Forum Outreach and Extension: Range health assessment training and fall information session; \$8,400

**Highway 2 Conservation;** Alberta Bat Education and Habitat Protection: Enhancement of the Cache Park Bat Reserve and the "Save a Barn, Save a Bat Program"; \$4,700

**Lesser Slave Lake Bird Observatory;** Avian Monitoring and Education Programs at Lesser Slave Lake; \$22,500

**Northern Lights Fly Fishers/TUC Edmonton;** Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed – Habitat Restoration Planning; \$27,910

**Oldman Watershed Council;** Engaging Recreationists in the Oldman Headwaters through Restoration and Education Project; \$35,750

**Trout Unlimited Canada;** Quigley Creek Fish Passage Project; \$17,925

**Wildlife Conservation Society Canada;** Going to Bat for Bats: Citizen science in Alberta; \$28,715

#### FUNDING PRIORITY #2: 38 CCEG PROJECTS

*Site specific enhancements of habitat, structures and facilities aimed at increasing recreational angling or hunting opportunities, improving habitat or increasing wildlife/fish productivity on the site (i.e. planting/seeding vegetation, development of new fisheries access sites, nest box initiatives, food plot trials and cover plot trials, spawning bed enhancement, etc.).*

*Stewardship Initiatives (e.g. on-going maintenance of conservation sites or fisheries access sites; adopt a fence; property inspections for invasive weeds; manual weed control; grass mowing).*

**Alberta Fish & Game Association;** Increasing Habitat for Species at Risk in Alberta's Grassland Region through Adaptive Management, Habitat Enhancement, and Outreach (Operation Grassland Community); \$37,400

**Alberta Fish & Game Association;** Nevis Property Wildlife Friendly Fencing; \$4,500

**Alberta Fish & Game Association;** North Raven Riparian Conservation Project; \$40,000

**Alberta Fish & Game Association;** Pronghorn Antelope Migration Corridor Enhancement; \$36,288

**Agroforestry and Woodlot Extension Society;** Enhancing Woodlots for Wildlife; \$13,000

**Alberta Riparian Habitat Management Society (Cows & Fish);** Implementing Riparian Habitat Management Improvements for Westslope Cutthroat Trout; \$6,150

**Alberta Riparian Habitat Management Society (Cows & Fish);** Grazing Schools for Women: Promoting habitat and improved grazing stewardship to livestock producers in south and central Alberta; \$3,000

**Beaverhill Bird Observatory;** Public Engagement, Wildlife Conservation and Monitoring at Beaverhill Lake; \$16,500

**Bow River Chapter – Trout Unlimited Canada;** Legacy Island; \$2,500

**Calgary Bird Banding Society;** Cypress Hills Landbird Monitoring and Educational Programs; \$12,000 – DID NOT PROCEED

**Castle-Crown Wilderness Coalition;** Education and Reclamation in the Castle; \$17,500

**Central Alberta Fish & Game Association;** Bennett Pond Access Trail and Dock; \$6,500

**Cloudy Ridge Ranch;** Cloudy Ridge/Yarrow Creek Off-site Water and Riparian Improvement Project; \$18,000

**Friends of Fish Creek Provincial Park Society;** Beaver, Poplars, and More: Education, stewardship, and conservation for a healthy Fish Creek watershed; \$3,000

**Glenbow Ranch Park Foundation;** 2017 Vegetation Management at Glenbow Ranch Provincial Park; \$18,800

**Helen Schuler Nature Centre;** Community Engagement in River Valley Conservation; \$3,000

**Highway 2 Conservation;** Alberta Bat Education and Habitat Protection: Enhancement of the Cache Park Bat Reserve and the "Save a Barn, Save a Bat Program"; \$4,700

**Highway 2 Conservation;** Riparian Education/Restoration Program; \$5,750

**Innisfail Fish & Game Association;** Waterfowl Nesting Habitat Enhancement; \$1,500

**Living Lakes Canada c/o Wildsight;** Lac La Biche Shoreline Management Guidelines; \$10,000

**Mountain View County;** Riparian & Ecological Enhancement Program; \$20,000

**Nature Alberta;** Expanding Family Nature Nights Across Alberta; \$32,470

**Nature Alberta;** Living by Water; \$40,000

**Northern Lights Fly Fishers/TUC Edmonton;** Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed Habitat Restoration Planning; \$27,910

**Nuttig, Carson;** Car Creek Riparian Conservation; \$7,000 – DID NOT PROCEED

**Oldman Watershed Council;** Engaging Recreationists in the Oldman Headwaters through Restoration and Education Project; \$35,750

**Onoway & District Fish & Game Association;** 1st Annual OFGA Ladies League Outdoor Education Camp; \$2,500

**Partners in Habitat Development;** Partners in Habitat Development; \$15,000

**Red Deer County;** Wildlife and Native Habitat Enhancement in Red Deer County via ALUS; \$40,000

**Trout Unlimited Canada;** Girardi Creek Bioengineering Project; \$3,000

**Trout Unlimited Canada;** Quigley Creek Fish Passage Project; \$17,925

**Trout Unlimited Canada;** Water Edu-kits; \$20,000

**Trout Unlimited Canada;** Yellow Fish Road; \$25,000

**Warne in the Wild;** American Kestrel Nest Box Program in Alberta; \$2,000

**Weaselhead/Glenmore Park Preservation Society;** Weaselhead Invasive Plant Program; \$3,000

**Wildlife Conservation Society Canada;** Going to Bat for Bats: Citizen science in Alberta; \$28,715

**Willingdon and District Fish & Game Association;** Willingdon Fish Pond and Park; \$1,600

**Zone 4&5 Alberta Fish & Game;** Narrow Lake Conservation Centre; \$15,000 – FUNDS NOT DISPERSED

**FUNDING PRIORITY #3: 2 CCEG PROJECTS**

*Urban fisheries development, including: initial evaluation of water quality aspects of existing ponds to determine their suitability for fish stocking; purchase of equipment required to ensure suitable water quality for fish stocking (e.g., aeration equipment); fish stocking in public ponds; promotion of an urban fishery (including natural water bodies).*

**Society of Grassland Naturalists;** Beware the Wetland Invaders; \$6,525

**Willingdon and District Fish & Game Association;** Willingdon Fish Pond and Park; \$1,600

**FUNDING PRIORITY #4: 13 CCEG PROJECTS**

*Impacts of non-native species on persistence of native species.*

**Agroforestry and Woodlot Extension Society;** Enhancing Woodlots for Wildlife; \$13,000

**Camrose Wildlife Stewardship Society;** 2017 Camrose Purple Martin Festival; \$2,450

**Foothills Restoration Forum;** Foothills Restoration Forum Outreach and Extension: Range health assessment training and fall information session; \$8,400

**Friends of Fish Creek Provincial Park Society;** Beaver, Poplars, and More: Education, stewardship, and conservation for a healthy Fish Creek watershed; \$3,000

**Glenbow Ranch Park Foundation;** 2017 Vegetation Management at Glenbow Ranch Provincial Park; \$18,800

**Helen Schuler Nature Centre;** Community Engagement in River Valley Conservation; \$3,000

**Lesser Slave Lake Bird Observatory;** Avian Monitoring and Education Programs at Lesser Slave Lake; \$22,500

**Nature Alberta;** Expanding Family Nature Nights across Alberta; \$32,470

**Nature Alberta;** Living by Water; \$40,000

**Onoway and District Fish & Game Association;** 1st Annual OFGA Ladies League Outdoor Education Camp; \$2,500

**Society of Grassland Naturalists;** Beware the Wetland Invaders; \$6,525

**Weaselhead/Glenmore Park Preservation Society;** Weaselhead Invasive Plant Program; \$3,000

**Wildlife Conservation Society Canada;** Going to Bat for Bats: Citizen science in Alberta; \$28,715

**FUNDING PRIORITY #5: 1 CCEG PROJECT**

*Improvements and innovation in matching sportsmen with landowners (e.g. facilitating hunter access to depredating waterfowl, elk and deer).*

**Agroforestry and Woodlot Extension Society;** Enhancing Woodlots for Wildlife; \$13,000

**FUNDING PRIORITY #6: 40 CCEG PROJECTS**

*Projects related to the retention, recruitment and education of hunters, anglers or trappers (including attracting new mentors, training mentors and providing mentors for new hunters/anglers/trappers; sharing information in schools and with the general public about the link between conservation and hunters/anglers/trappers; this category also includes educating new hunters/anglers/trappers). Generate awareness of the hunting/angling/trapping opportunities available to the public.*

**Alberta Fish & Game Association;** Nevis Property Wildlife Friendly Fencing; \$4,500

**Alberta Hunter Education Instructors' Association;** 14th Annual OWL Day – "Outdoor Wildlife Learning"; \$3,000

**Alberta Hunter Education Instructors' Association;** 24th Annual Outdoor Women's Program; \$24,000

**Alberta Hunter Education Instructors' Association;** AHEIA Teachers' Workshop; \$3,000

**Alberta Hunter Education Instructors' Association;** Alberta Fishing Education Program – Electronic Course; \$25,000

**Alberta Hunter Education Instructors' Association;** Educational Development of the Conservation Education Wildlife Museum; \$3,000

**Alberta Hunter Education Instructors' Association;** HTML5 Course Conversion; \$10,000

**Alberta Hunter Education Instructors' Association;** Lethbridge College Conservation Enforcement Student Workshop; \$2,000

**Alberta Hunter Education Instructors' Association;** Outdoor Bound Mentorship Program; \$3,000

**Alberta Hunter Education Instructors' Association;** Outdoor Youth Seminar; \$3,000

**Alberta Hunter Education Instructors' Association;** Provincial Hunting Day Initiatives; \$20,000

**Alberta Hunter Education Instructors' Association;** Youth Hunter Education Camp (Weeks 1,2,3,4); \$44,000

**Alberta Hunters Sharing the Harvest;** Wild Game for Food Bank Project; \$8,000

**Alberta Junior Forest Wardens Association;** JFW National Camp 2017, Canadian Home Grown; \$25,000

**Calgary River Valleys (Calgary River Forum Society);** River Access Education; \$15,500

**Edmonton Valley Zoo;** Edmonton Valley Zoo ACA Go Wild Activity Tent; \$2,934.44

**Edwin Parr Composite High School;** Edwin Parr Composite High School NASP Archery Program; \$12,700

**H.A. Kostash School;** H. A. Kostash Youth Mentorship Programs; \$15,900

**Highway Two Conservation;** Riparian Education/Restoration Program; \$5,750

**Inside Education;** Wildlife Education Student Field Trips; \$7,491

**Junior Forest Wardens– Bezonson Brown Bears;** Outdoor Conservation Education for BBB JFW; \$1,300 – GRANT NOT ACCEPTED

**Junior Forest Wardens - Glory Hills;** Fall Wilderness Family Camp; \$2,000

**Junior Forest Wardens – Lobstick Lynx;** Archery; \$5,100

**Junior Forest Wardens – St Albert Sturgeons;** Fall Wilderness Family Camp; \$2,000

**Junior Forest Wardens – Yellowhead Regional Council;** Winter Skills Camp; \$3,500

**Junior Forest Wardens – Yellowhead Regional Council;** Regional Camp 2017 Support; \$3,875

**Junior Forest Wardens – Yellowhead Regional Council;** Wild Women Training Week; \$6,000

**Lesser Slave Lake Bird Observatory;** Avian Monitoring and Education Programs at Lesser Slave Lake; \$22,500

**Lethbridge Fish & Game Association;** 7th Annual LFGA/ACA Youth Fishing Recruitment Day; \$12,000

**Lethbridge Fish & Game Association;** Hooked on Fishing Program by ACA & AFGA; \$18,328

**Nature Alberta;** Expanding Family Nature Nights across Alberta; \$32,470

**Onoway and District Fish & Game Association;** 1st Annual OFGA Ladies League Outdoor Education Camp; \$2,500

**Safari Club International Red Deer Chapter;** Red Deer, Kids Can Fish Event (mentored youth fishing day); \$2,000 – DID NOT PROCEED

**Shoot ‘im Up Archery;** Archery Days; \$2,500

**Slave Lake Rod and Gun Club;** Youth Archery Equipment; \$3,000

**Trout Unlimited Canada;** Water Edu-kits; \$20,000

**Trout Unlimited Canada;** Yellow Fish Road; \$25,000

**University of Lethbridge;** Outdoor Education; \$5,000

**Weaselhead/Glenmore Park Preservation Society;** Weaselhead Invasive Plant Program; \$3,000

**Zone 4&5 Alberta Fish & Game;** Narrow Lake Conservation Centre; \$15,000 – FUNDS NOT DISPERSED

## FUNDING PRIORITY #7: 40 CCEG PROJECTS

*Projects related to outdoor conservation education.*

**Alberta Fish & Game Association;** Nevis Property Wildlife Friendly Fencing; \$4,500

**Alberta Fish & Game Association;** North Raven Riparian Conservation Project; \$40,000

**Agroforestry and Woodlot Extension Society;** Enhancing Woodlots for Wildlife; \$13,000

**Alberta Council for Environmental Education;** Get Outside and Play Week – Promoting Outdoor Nature Play in the Early Years, May 27 - June 3; \$6,000

**Alberta Fish & Game Association;** Increasing Habitat for Species at Risk in Alberta's Grassland Region through Adaptive Management, Habitat Enhancement, and Outreach (Operation Grassland Community); \$37,400

**Alberta Riparian Habitat Management Society (Cows & Fish);** Grazing Schools for Women: Promoting habitat and improved grazing stewardship to livestock producers in south and central Alberta; \$3,000

**Beaverhill Bird Observatory;** Public Engagement, Wildlife Conservation, and Monitoring at Beaverhill Lake; \$16,500

**Calgary Bird Banding Society;** Cypress Hills Landbird Monitoring and Educational Programs; \$12,000 – DID NOT PROCEED

**Camrose Wildlife Stewardship Society;** 2017 Camrose Purple Martin Festival; \$2,450

**Canadian Parks and Wilderness Society (CPAWS) Southern Alberta Chapter;** Kids for Conservation: Celebration 20 year of getting kids outside to experience Alberta's wilderness; \$15,000

**Castle-Crown Wilderness Coalition;** Education and Reclamation in the Castle; \$17,500

**Cloudy Ridge Ranch;** Cloudy Ridge/Yarrow Creek Off-site Water and Riparian Improvement Project; \$18,000

**Edmonton Nature Club;** 2017 Snow Goose Chase; \$3,000

**Foothills Restoration Forum;** Foothills Restoration Forum Outreach and Extension: Range health assessment training and fall information session; \$8,400

**Friends of Fish Creek Provincial Park Society;** Beaver, Poplars, and More: Education, stewardship, and conservation for a healthy Fish Creek watershed; \$3,000

**Helen Schuler Nature Centre;** "Extreme by Nature" Environmental Education for 11 to 15 Year Olds; \$2,700

**Helen Schuler Nature Centre;** Community Engagement in River Valley Conservation; \$3,000

**Highway 2 Conservation;** Alberta Bat Education and Habitat Protection: Enhancement of the Cache Park Bat Reserve and the "Save a Barn, Save a Bat" Program; \$4,700

**Highway Two Conservation;** Riparian Education/Restoration Program; \$5,750

**Junior Forest Wardens – Yellowhead Regional Council;** Winter Skills Camp; \$3,500

**Junior Forest Wardens Bezonson Brown Bears;** Outdoor Conservation Education for BBB JFW; \$1,300 – GRANT NOT ACCEPTED

**Lesser Slave Lake Bird Observatory;** Avian Monitoring and Education Programs at Lesser Slave Lake; \$22,500

**Nature Alberta;** Expanding Family Nature Nights across Alberta; \$32,470

**Nature Alberta;** Living by Water; \$40,000

**Northern Lights Fly Fishers/TUC Edmonton;** Conserving and Restoring Arctic Grayling in the Upper Pembina River Watershed – Habitat Restoration Planning; \$27,910

**Nuttig, Carson;** Car Creek Riparian Conservation; \$7,000 – DID NOT PROCEED

**Oldman Watershed Council;** Engaging Recreationists in the Oldman Headwaters through Restoration and Education Project; \$35,750

**Oneway & District Fish & Game Association;** 1st Annual OFGA Ladies League Outdoor Education Camp; \$2,500

**Oneway and District Fish & Game Association;** Bluebird / Bat House Project; \$800

**Safari Club International Red Deer Chapter;** Red Deer SCI Wild Game Processing Events; \$2,500

**SARDA Ag Research;** Importance and Protection of Native Pollinators for Sustainable Crop Production in Peace Region of Alberta; \$7,600

**Society of Grassland Naturalists;** Beware the Wetland Invaders; \$6,525

**Spruce Point Park Association;** Outdoor Safety Expo; \$1,495

**Trout Unlimited Canada;** Girardi Creek Bioengineering Project; \$3,000

**Trout Unlimited Canada;** Quigley Creek Fish Passage Project; \$17,925

**Trout Unlimited Canada;** Water Edu-kits; \$20,000

**Trout Unlimited Canada;** Yellow Fish Road; \$25,000

**Weaselhead/Glenmore Park Preservation Society;** Weaselhead Invasive Plant Program; \$3,000

**Wildlife Conservation Society Canada;** Going to Bat for Bats: Citizen science in Alberta; \$28,715

**Zone 4 & 5 Alberta Fish & Game;** Narrow Lake Conservation Centre; \$15,000 – FUNDS NOT DISPERSED

## ACA RG Funding Priorities

### FUNDING PRIORITY #1: 4 RESEARCH PROJECTS

*Research activities specifically listed on provincial recovery plans for Alberta's endangered species (to be done in cooperation with recovery teams).*

**Mistakis Institute (Lee);** Grizztracker: Testing the efficacy of public participation in grizzly bear science; \$10,420

**STRIX Ecological Consulting (Priestley);** Canada Warbler Rapid Assessment Protocol – Phase 1; \$5,725

**University of Manitoba (Koper);** Effects of Anthropogenic Noise Associated with Oil and Gas Development on Survival and Reproductive Performance of Grassland Songbirds in Alberta's Mixed-grass Prairie; \$18,300

**Wildlife Conservation Society Canada (Lausen);** Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions; \$25,995

### FUNDING PRIORITY #2: 4 RESEARCH PROJECTS

*Impacts of non-native species on persistence of native species.*

**Trout Unlimited Canada (Peterson);** Discovering Didymo Distribution (D3); \$13,210

**University of Calgary (Kutz);** Development and Application of Molecular Epidemiology Tools to Define Bighorn Sheep Parasite Communities and Guide Management; \$35,200

**University of Manitoba (Koper);** Effects of Anthropogenic Noise Associated with Oil and Gas Development on Survival and Reproductive Performance of Grassland Songbirds in Alberta's Mixed-grass Prairie; \$18,300

**Wildlife Conservation Society Canada (Lausen);** Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions; \$25,995

### FUNDING PRIORITY #3: 3 RESEARCH PROJECTS

*Develop and validate inventory tools to determine the relative density and range of ungulate species using innovative techniques such as trail cameras or passive DNA/eDNA samples.*

**Hillcrest Fish and Game Preservation Assoc. (Paton);** Highway 3 and Bighorn Sheep; \$14,630

**University of Alberta (Bayne);** Automating Identification of Wildlife in Audio Recordings; \$16,800

**University of British Columbia (Burton);** Evaluating Camera Trap Surveys as an Effective Means of Monitoring Remote Ungulate Populations; \$31,700

### FUNDING PRIORITY #4: 0 RESEARCH PROJECTS

*Evaluate the effect of pesticides or herbicides on wildlife species' food availability and/or quality in agricultural landscapes.*

### FUNDING PRIORITY #5: 2 RESEARCH PROJECTS

*Evaluate the effect of recreational access (mode, timing, duration) on wildlife & fish populations and habitat.*

**University of Montana (Hebblewhite);** Bull Elk Recruitment, Survival, and Harvest in a Partially Migratory Elk Herd in the Ya Ha Tinda; \$30,060

**Wildlife Conservation Society Canada (Lausen);** Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions; \$25,995

### FUNDING PRIORITY #6: 5 RESEARCH PROJECTS

*Investigation of methods for reducing the spread and/or impact of wildlife or fish related diseases.*

**Trout Unlimited Canada (Peterson);** Discovering Didymo Distribution (D3); \$13,210

**University of Alberta (Merrill);** Chronic Wasting Disease in Deer: Modelling transmission from contact rates; \$27,600

**University of Calgary (Kutz);** Development and Application of Molecular Epidemiology Tools to Define Bighorn Sheep Parasite Communities and Guide Management; \$35,200

**University of Winnipeg (Lingle);** Assessing the Risk of CWD: A microbiological-behavioural metric to quantify the risk of prion transmission between deer; \$16,800

**Wildlife Conservation Society Canada (Lausen);** Baseline Population Monitoring and Bioenergetics of Alberta Bat Populations: Predicting rise of White-Nose Syndrome to guide conservation actions; \$25,995

**FUNDING PRIORITY #7: 4 RESEARCH PROJECTS**

*Evaluate the impact of various harvest management regimes on fish or wildlife populations (e.g. fish size limits, three-point or larger elk requirements, etc.).*

**Mistakis Institute (Lee);** Grizztracker: Testing the efficacy of public participation in grizzly bear science; \$10,420

**University of Alberta (Boyce);** Evaluating Alternative Elk Harvest Strategies in SW Alberta; \$7,650

**University of Alberta (Merrill);** Chronic Wasting Disease in Deer: Modelling transmission from contact rates; \$27,600

**University of Montana (Hebblewhite);** Bull Elk Recruitment, Survival, and Harvest in a Partially Migratory Elk Herd in the Ya Ha Tinda; \$30,060

**FUNDING PRIORITY #8: 0 RESEARCH PROJECTS**

*Evaluate the social demographics of hunting and angling to determine the factors influencing the decision to become involved in hunting or angling and the reasons why people opt out in a particular year.*

**FUNDING PRIORITY #9: 0 RESEARCH PROJECTS**

*Evaluate the effect of biological solutions of carbon sequestration on grasslands and treed lands.*

**FUNDING PRIORITY #10: 1 RESEARCH PROJECT**

*Effects of agricultural run-off on fisheries.*

**Athabasca University (Glover);** Taking the Strain: Assessing the sensitivity of rainbow trout strains to hypoxia and ammonia associated with agricultural run-off; \$16,800

**FUNDING PRIORITY # 11: 1 RESEARCH PROJECT**

*Evaluate approaches for improving the abundance of pollinators in agricultural landscapes.*

**University of Calgary (Galpern);** Wild Pollinator Conservation and Restoration in Southern Alberta Croplands III: Experimental test of crop yields; \$17,820

**FUNDING PRIORITY #12: 6 RESEARCH PROJECTS**

*Work towards clarifying status of current data deficient species.*

**STRIX Ecological Consulting (Priestley);** Canada Warbler Rapid Assessment Protocol – Phase 1; \$5,725

**The King’s University (Visscher);** Implication of Anthropization for Host Partitioning and Epidemiology of Emerging Zoonotic Parasites in Wild Canids; \$24,250

**Trout Unlimited Canada (Peterson);** Discovering Didymo Distribution (D3); \$13,210

**University of Alberta (Bayne);** Automating Identification of Wildlife in Audio Recordings; \$16,800

**University of Alberta (Boyce);** Evaluating Alternative Elk Harvest Strategies in SW Alberta; \$7,650

**University of Calgary (Kutz);** Development and Application of Molecular Epidemiology Tools to Define Bighorn Sheep Parasite Communities and Guide Management; \$35,200

**NONE OF THE FUNDING PRIORITIES:  
2 PROJECTS (0 CCEG; 2 RESEARCH)**

**Avocet Environmental Inc. (Scobie);** Efficacy of Detecting Sharp-tailed Grouse Leks in Fall Surveys; \$9,600

**Foothills Restoration Forum (Dr. Desserud);** Use of Native Hay and Construction Matting to Improve Restoration Outcomes in Dry Mixed-grass Habitats; \$7,430 – DID NOT PROCEED

**BACKGROUND DOCUMENT BY  
DRS BOYCE AND POESCH: 5 RESEARCH PROJECTS**

*Boyce, M and M. Poesch, Research needs for fisheries and wildlife in Alberta. University of Alberta. 35pp.*

**Athabasca University (Glover);** Taking the Strain: Assessing the sensitivity of rainbow trout strains to hypoxia and ammonia associated with agricultural run-off; \$16,800

**Foothills Restoration Forum (Dr. Desserud);** Use of Native Hay and Construction Matting to Improve Restoration Outcomes in Dry Mixed-grass Habitats; \$7,430 – DID NOT PROCEED

**The King’s University (Visscher);** Implication of Anthropization for Host Partitioning and Epidemiology of Emerging Zoonotic Parasites in Wild Canids; \$24,250

**University of Manitoba (Koper);** Effects of Anthropogenic Noise Associated with Oil and Gas Development on Survival and Reproductive Performance of Grassland Songbirds in Alberta’s Mixed-grass Prairie; \$18,300

**University of Winnipeg (Lingle);** Assessing the Risk of CWD: A microbiological-behavioural metric to quantify the risk of prion transmission between deer; \$16,800

*Note: Projects can relate to multiple funding priorities.*







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