Alberta Conservation Association

2019/20 Project Summary Report

Project Name: Connectivity Project

Wildlife Program Manager: Doug Manzer

Project Leader: Layne Seward

Primary ACA staff on project: Kelsey Cartwright, Colten Gurr, Daniel Knop, Doug Manzer, Layne Seward, Mike Uchikura and Samuel Vriend

Partnerships

Alberta Environment and Parks
Alberta Fish and Game Association (Zone 1)
Lethbridge Fish and Game Association
Canadian Agricultural Partnership
Pheasants Forever - Chinook Chapter
Southern Alberta Bowhunters Association
St. Mary River Irrigation District
Taber Irrigation District

Key Findings

- The first phase with St. Mary River Irrigation District (SMRID) will be to develop a comprehensive habitat conservation strategy, using field data, that will improve wildlife habitat and water quality at 18 reservoirs with 10,000 acres of adjacent grasslands. Fourteen reservoirs remain to be assessed after the first field season in 2019.

- Thirty-one lotic riparian health assessments, 72 lentic riparian health assessments, 75 range health assessments, 31 tame pasture health assessments, and 20 visual range

assessments were completed for four reservoirs: Cross Coulee, Raymond Reservoir, Murray Lake, and Stafford Lake. 647 incidental wildlife observations were made across the four reservoirs, of which 22% were species at risk.

• We completed a detailed habitat plan for enhancing 156 acres of habitat for upland gamebirds on the south side of Sauder Reservoir (SMRID).

• We helped design and cost-shared the materials for 2.5 km of fence to defer grazing from a sensitive riparian zone on Horsefly Lake within Taber Irrigation District (TID).

• CPR Lake Fencing project: We assisted SMRID in planning a fencing project at CPR Lake, and also facilitated a new lease agreement between SMRID and Lethbridge Fish and Game Association (LFGA).

Abstract

The Connectivity Project addresses habitat fragmentation in southern Alberta by working collaboratively with irrigation districts, municipalities, conservation groups, recreationists, and agricultural producers to improve water quality and re-establish or enhance existing wildlife habitat. Doing so will benefit agriculture, hunters, anglers, and other outdoor enthusiasts. 2019 was the second year of the project and the first year of extensive data collection around four SMRID reservoirs: Cross Coulee, Raymond Reservoir, Murray Lake and Stafford Lake. Thirty-one lotic riparian health assessments, 71 lentic riparian health assessments, 75 range health assessments, 31 tame pasture health assessments, and 20 visual range assessments were completed for use in the first Habitat Conservation Strategy for SMRID. Six hundred and forty-seven incidental wildlife observations were made across the four reservoirs, of which 22% were species at risk. This data provides a baseline assessment of the plant communities around each reservoir and the wildlife species using them. It also identifies priority sites where habitat enhancements and/or grazing management recommendations will improve ecosystem service provision (carbon sequestration, water filtration and nutrient retention, wildlife habitat, and biodiversity). The recommendations put forward in the report are developed to improve water

quality and habitat but will also increase the resilience of irrigation district operations and grassland ecosystems.

Introduction

Loss of habitat and habitat fragmentation is one of the greatest underlying threats to many of our wildlife species in southern Alberta. To mitigate the effects of habitat loss and fragmentation, a broad range of stakeholders are needed to re-establish functional habitat connectivity across a large land base. Establishing strong relationships with partner groups including municipalities, town councils, chambers of commerce, irrigation districts, and other conservation groups is essential in aiding with the development of these large-scale projects. The connectivity project aims at capitalizing on the relationships that Alberta Conservation Association (ACA) has built with these various groups through other projects like MULTISAR, the Taber Pheasant Festival, and the Milk River Ridge Water Quality Stewardship Initiative. Working collaboratively with other program areas within ACA, we offer landowners, grazing reserves, and irrigation districts a multitude of options to meet their operational needs as well as benefit wildlife and re-establish connectivity across the southern landscape.

Methods

We meet with municipalities, irrigations districts, and grazing reserves to better understand their operations and discuss habitat needs of various wildlife. Using our range (Adams et al. 2005) and riparian (Ambrose et al. 2009; Fitch et al. 2009) assessment data, we work with stakeholders to identify priority habitat enhancements and grazing management recommendations that can be dovetailed into their operations to benefit not only wildlife but also improve other parameters such as water quality, vegetative stands for grazing, water availability for grazing, social licensing, and recreational access. After initial plans have been developed with the landholder, we approach other conservation groups for assistance in terms of letters of support, funding, and staffing needs. Once finalized plans have been developed, we will begin implementing the multi-year habitat enhancement plan on the landscape.

We engage the public in a variety of ways to profile the projects and partners. Public engagement activities include presentations at workshops, stakeholder meetings, signage, public presentations, distribution of information booklets, site tours, and social media.

As part of our long-term adaptive plan, we evaluate the long-term impacts of enhancement actions on upland game birds (e.g., pheasants, grey partridge, and in some areas, sharp-tailed grouse) as well as other wildlife species that may also be affected. We monitor shrub growth and mortality to determine the shrub species and planting techniques that are most beneficial for developing habitat for these target species. We also use a photo-point protocol to document changes in habitat over time resulting from these habitat enhancements.

Results

We entered a Memorandum of Understanding with SMRID last year, with the overarching goal of improving water quality and the habitat important for wildlife within their system. The first phase includes the development of comprehensive habitat conservation strategies that assess the health of the vegetation communities around 18 reservoirs over the next three years. This will include range, riparian, and wildlife assessments on 10,000 acres of land that together spans more than 360 km of shoreline habitat. Baseline water quality sampling will be undertaken by SMRID. These assessments will be compiled into habitat conservation strategy reports for each year of field work, which will guide the implementation of enhancements and grazing practices to improve both water quality and wildlife habitat. 2019 field season findings are listed below.

- Cross Coulee: The average riparian health score is 78% between three lotic sites and nine lentic sites. The average range health score is 76% between five range health and seven tame health assessments. Thirty-seven unique wildlife species and seven species at risk were observed.

- Raymond Reservoir: The average riparian health score is 58% between nine lotic sites and 15 lentic sites. The average range health score is 72% between 16 range health and 21 tame health assessments. Sixty-one unique wildlife species and 14 species at risk were observed.

- Murray Lake: The average riparian health score is 62% between six lotic sites and 29 lentic sites. The average range health score is 57% between 15 range health, one tame pasture and 14 visual assessments. Seventy-three unique wildlife species and 22 species at risk were observed.

- Stafford Reservoir: The average riparian health score is 59% between 13 lotic sites and 18 lentic sites. The average range health score is 62% between 39 range health, two tame pasture and six visual assessments. Thirty-nine unique wildlife species and nine species at risk were observed.

Working with SMRID we are in the process of developing a habitat enhancement plan for a 156-acre parcel of land on the south shore of Sauder Reservoir. The land is owned by SMRID, and they have agreed to help improve the habitat on this parcel for upland gamebirds with implementation expected to commence in spring 2020.

As follow up to the riparian health assessments completed on three major reservoirs within the Taber Irrigation District in 2018, three solar watering units and one watering trough were purchased, and approximately 8 km of shoreline has been fenced. These actions will improve wildlife habitat and water quality by limiting cattle impacts on riparian zones, therefore reducing sedimentation and nutrient loading into the waterbodies.

Conclusions

Habitat connectivity is crucial for ensuring the longevity for wildlife. Pathways that connect habitat across the landscape greatly reduce the risk of small populations winking out. Grey partridge and pheasants can thrive in southern Alberta's farmed landscape, but they are vulnerable to periodic weather events that can decimate local numbers. More robust vegetation provides security and thermal cover for gamebirds and other wildlife, while also benefitting water quality and carbon sequestration. We have made considerable headway developing partnerships with key members of the agricultural community and landholders over the past years. Our new partnerships with the irrigation districts is a large step towards restoring connectivity. We will continue to develop partnerships in southern Alberta.

Communications

• Attended numerous meetings to discuss habitat enhancements and partnership opportunities.

• Received letters of support for the project from Lethbridge Fish & Game Association, Magrath Rod and Gun club, Pheasants Forever – Calgary Chapter, Pheasants Forever – Chinook Chapter, Backcountry Hunters and Anglers, Medicine Hat Fish & Game Association, and Southern Alberta Bowhunters Association.
• Presented at the 2019 SMRID Annual General Meeting to explain the project and preliminary findings.
• Had a booth at the 2020 Alberta Irrigation District Association Conference in Lethbridge to showcase the project rationale and methods as well as information on various ACA programs.

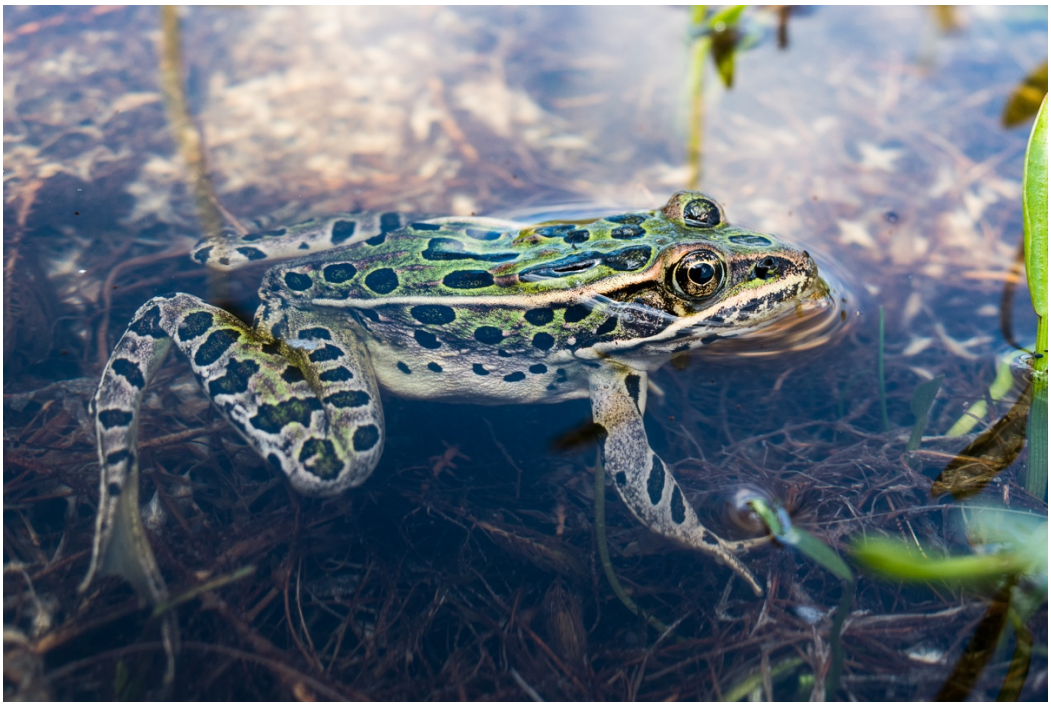
Literature Cited

Adams, B.W., G. Ehlert, C. Stone, M. Alexander, D. Lawerence, M. Willoughby, D. Moisey, C. Hincz, and A. Burkinshaw. 2005. Range Health Assessment for Grassland, Forest, and Tame Pasture. Public Lands and Forest Division, Alberta Sustainable Resource Development. Pub. No. T/044.

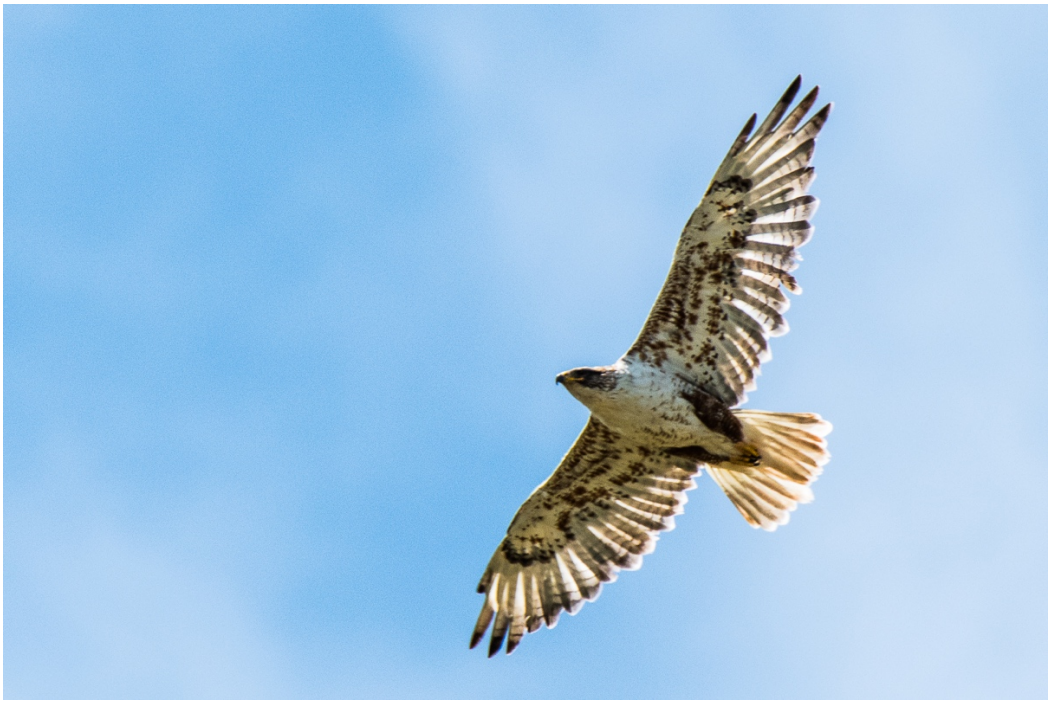
Ambrose, N., G. Ehlert, and K. Spicer-Rawe. 2009. Riparian Health Assessment for Lakes, Sloughs, and Wetlands – Field Workbook Second Edition. Modified from Fitch, L., B.W. Adams, and G. Hale, 2001. Riparian Health Assessment for Streams and Small Rivers – Field Workbook. Lethbridge, Alberta. Cows and Fish program. 96 pp.

Fitch, L., B.W. Adams, and G. Hale, 2009. Riparian Health Assessment for Streams and Small Rivers – Field Workbook Second Edition. Lethbridge, Alberta. Cows and Fish program. 94 pp.

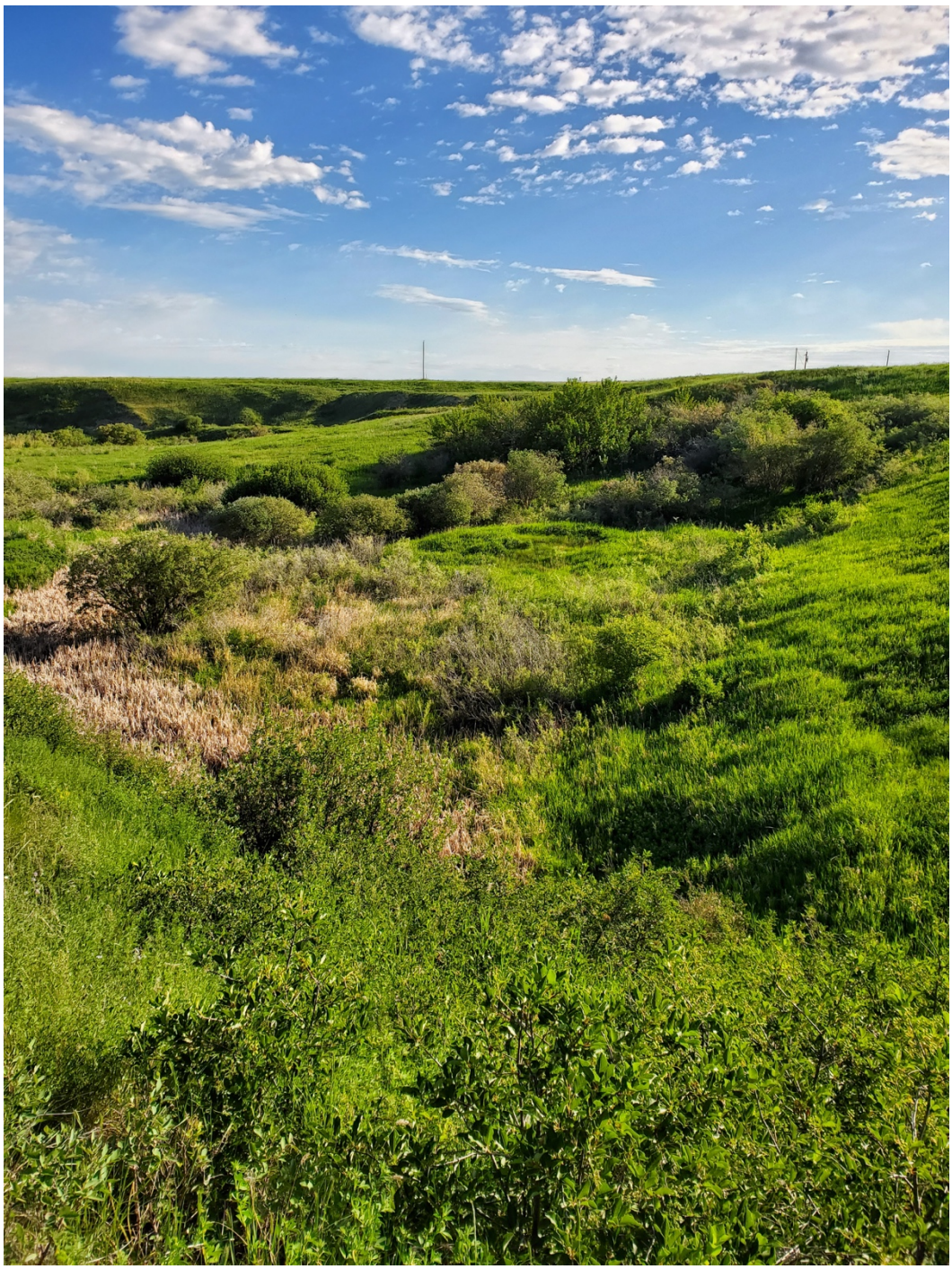
Photos



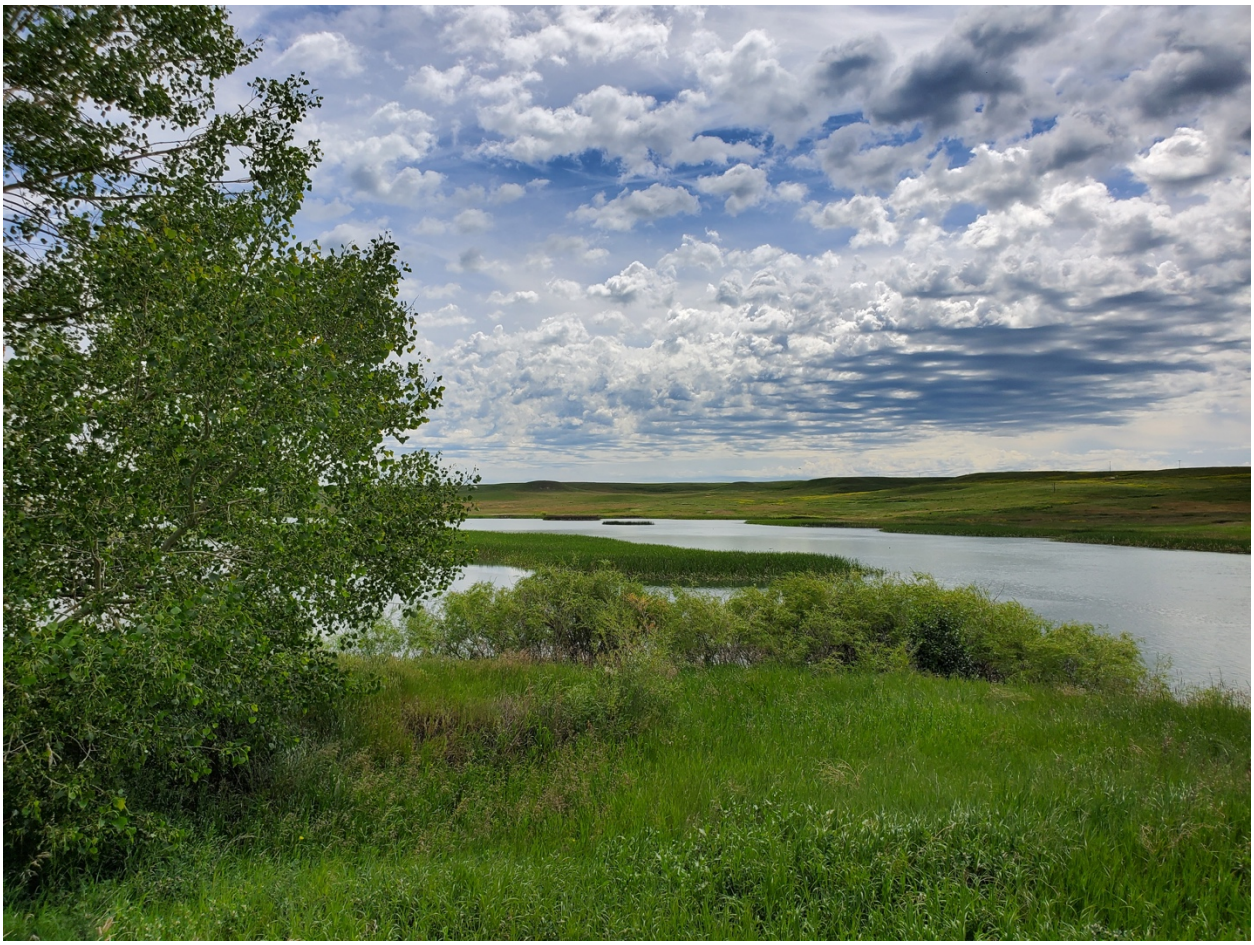
A northern leopard frog at Murray Lake. Photo: Samuel Vriend



A Ferruginous hawk seen at Raymond Reservoir. Photo: Samuel Vriend



A riparian site at Cross Coulee that offers habitat for moose and various bird species. Photo: Kelsey Cartwright.



Riparian communities were diverse across the reservoirs, including some tree and shrub communities as pictured above at Raymond Reservoir. Photo: Kelsey Cartwright.