

UKE-F18-W-2479 Upper Kootenay Small Wetlands at Risk Restoration Project Seed Funding Final Report

Prepared for Fish and Wildlife Compensation Program

Prepared by Jakob Dulisse

Prepared with financial support of the Fish and Wildlife Compensation Program on behalf of its program partners BC Hydro, the Province of BC, Fisheries and Oceans Canada, First Nations and public stakeholders.

March 2017

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY2
2.0 INTRODUCTION2
3.0 METHODS3
4.0 PROJECT OUTCOMES3
5.0 PERSONAL COMMUNICATIONS5
6.0 LITERATURE CITED.....6

1.0 EXECUTIVE SUMMARY

This report outlines how FWCP seed funding was used to design a wetland assessment and restoration project in the UKEEP project area of the East Kootenays. Methods and recommendations from several recent FWCP wetland projects were studied and land managers and professionals were consulted. This process resulted in the formation of a project partnership including Jakob Dulisse Consulting, BC Wetlands Institute, FLNRO and the Ktunaxa Nation. This partnership has submitted a funding application to assess 20-30 threatened wetlands within the UKEEP project area using simple riparian health assessment methods developed Paul Hansen and successfully practiced by the Alberta Cows and Fish Program. These methods are the result of decades of exhaustive field research and synthesis into simple field assessments that can be conducted quickly by minimally trained field crews. After assessment, we will recommend conservation actions for each wetland. The focus will be on easily accomplished actions which may include exclusion fencing and off-site cattle watering.

2.0 INTRODUCTION

Assessing wetland function or health can become very complicated and numerous methods have been proposed and tested with varying success. These methods often focus on the following components: waterfowl, aquatic insects, native riparian/aquatic vegetation, level of erosion etc.

The primary Columbia Action Plan that this proposed project aligns most closely with is the *Upper Kootenay Ecosystem Enhancement Action Plan—Wetland Action Plan*.

The actions addressed by this proposed project are: 2b Conduct a biophysical inventory of the wetland areas (this work has been done by FWCP so can be streamlined for new small wetlands identified through GIS); 3b Assess habitat to ID condition and prioritize wetland restoration opportunities (this project will focus on the simplest method) and; 7b Explore opportunities to work with management partners to maintain the productivity of wetlands.

This project will address the following conservation and enhancement actions: 12a Support work that seeks to resolve access and recreation management issues that affect conservation/ restoration/ enhancement objectives (this action will be key to any wetland restoration in the UKEEP area); 18a Support the development of invasive species monitoring and rapid response plans (this is and will continue to be a part of any wetland assessment/restoration project); 19b Baseline species of interest surveys (western painted turtle etc. occurrence sites have been recorded during amphibian surveys in the area) and; 25 Collect baseline data and/or monitor wetland and riparian habitats to evaluate climate change impacts (many of the small wetlands at risk targeted by this project are likely being impacted by climate change (drying) and the data we collect will help address this issue).

3.0 METHODS

Seed funding was used to plan the project, prepare more detailed methods, contact and collaborate/partner with local stakeholders including range interests, government and NGOs, and apply for funding to implement the project and associated actions.

Several reports have warned that wetlands are at risk within the FWCP UKEEP area (Dulisse and Boulanger 2016; Machmer 2004; Ross et al. 2006; Smyth and Allen 2003; Forest Practices Board 2002). In 2015, 50.0% of sample sites within the UKEEP area showed signs of impacts ranging from slight to severe (Dulisse and Boulanger 2016). Pressures on wetlands include climate change, ATV damage, agricultural water withdrawal and cattle/ungulate impacts—many of these impacts are likely the most severe in the driest areas of the FWCP area, especially in the Kooocanusa region of the UKEEP area.

Many of the wetlands at risk had cattle/ungulate exclusion fencing installed in the past (often by conservation organisations such as Ducks Unlimited) but the lack of maintenance has rendered these fences ineffective. Currently, range use plans in the East Kootenays are prepared by tenure holders and do not address wetland and wildlife habitat concerns within crown tenure areas (John Krebs, FLNRO, pers. comm.).

Climate change models in the Columbia Basin predict warmer summers and wetter winter and in the southern interior of British Columbia are already declining as a result of climate change. For example, Coelho (2008) found a 54-63% decrease in surface water area of wetlands in the Lac du Bois grasslands between 1992 and 2012.

I reviewed other wetlands projects conducted within the FWCP area (Dulisse and Boulanger 2016, Machmer 2004, Ross et al. 2006, Smyth and Allen 2003). It became apparent that because wetland formation, succession and ecological processes are very complex, many projects become delayed or stalled by wetland classification and assessment—this problem can impede wetland conservation projects before they progress to the prescription and action stage, which may often involve simple and effective on-the-ground actions such as exclusion fencing and off-site watering for sites impacted by cattle/ungulate disturbance.

I researched wetlands assessment techniques used in neighbouring jurisdictions and discovered the very successful Alberta Cows and Fish Program and associated *Riparian Health Assessment for Streams and Small Rivers - Field Workbook* (Fitch et al. 2009) and the *Riparian Health Assessment for Lakes, Sloughs, and Wetlands – Field Workbook* (Ambrose et al. 2009). These methods, largely derived from methods developed by Hansen et al. (2000), are the result of decades of exhaustive field research and synthesis into simple field assessments that can be conducted quickly by minimally trained field crews. Derivations of these protocols are used throughout the US by the Bureau of Land Management, US Fish and Wildlife Service, in Alberta (as mentioned above) and in Kamloops BC region (Shauna Jones, FLNRO, pers. comm.)

4.0 PROJECT OUTCOMES

In general, ecological damage caused by cattle is a very controversial subject within government management agencies--this highly charged political climate poses a considerable challenge to addressing the issue on provincially managed crown land.

For this reason, the efforts to address these conservation concerns need to include non-governmental groups such as those involved in this partnership.

East Kootenays meetings conducted 19-21 Oct 2016 with Alana Oestreich (FLNRO habitat biologist) and Ken Walburger (FLNRO Range Officer), Cathy Conroy (Ktunaxa Nation Council Terrestrial Biologist) and Tom Phillips (Lands manager with Tobacco Plains Indian Band) were informative and successful. I received sufficient support to move ahead with a project funding application to FWCP (UKE-F18-W-2479 Upper Kootenay Wetlands at Risk Restoration Project), currently under review. Current project partners include Jakob Dulisse Consulting, BC Wetlands Institute, FLNRO and the Ktunaxa Nation.

The proposed project will begin with a workshop in Cranbrook by Paul Hansen, who developed the riparian assessment methods outlined above. Following this workshop, field crews, including Ktunaxa Guardian Watchmen, will target 20-30 wetlands in the following priority order:

- 1) One restoration wetland identified by BC Wetlands Institute (Neil Fletcher, pers. comm.): Gyppo Logging Site, Finlay Creek. This crown land site has been heavily impacted/compacted by cattle activity and will be restored in 2017 in partnership with FWCP.
- 2) Four wetlands identified by local FLNRO staff (Allana Oestreich and Kenric Walburger, pers. comm.):
 - a) Bar 40/Earl Conservation Property: This property has an existing Ducks Unlimited wetland but is a good candidate for expanding/restoring this wetland into an adjacent hay field. Full restoration will likely require a site visit and plan by wetland restoration specialist Tom Biebighauser (this will be arranged by Irene Manley, FWCP Biologist).
 - b) Edwards Lake: Approximately half of this lake is on crown land and half is within the Tobacco Plains Reserve. The eastern (crown) portion was recently fenced to prevent ongoing cattle encroachment—this site should be assessed to measure success of this restoration and to direct restoration options within the reserve (Tom Phillips, Tobacco Plains Natural Resource Manager, pers. comm.).
 - c) Shotnana Lake (Horseshoe Lake): This lake is within the Tobacco Plains Reserve and is being heavily impacted by horses and cattle (Tom Phillips, pers. comm.). Exclusion fencing and off-site watering measures (e.g. solar-powered pumping system) would likely work at this site (Allana Oestreich, pers. comm.).
 - d) Sheep Lake/Sheep Mountain Wetlands: This high value wetland is located on crown land which will soon become a Ktunaxa Range Tenure. The site should be assessed before the tenure becomes active and protection/off-site watering measures implemented.
- 3) Twelve small wetlands identified as at risk from use in a recent FWCP amphibian monitoring project within the UKEEP area (Dulisse and Boulanger 2016): wetlands 503, 553, 1047, 1168, 1753, 1807, 3000, 3001, 3002, 3003, 3005, and P6.

- 4) A GIS exercise which will identify small, isolated wetlands in the driest ecosystems in the UKEEP area (e.g. Kooocanusa area). These wetlands are likely more threatened by cattle/ungulate disturbance and climate change impacts. They are also likely more critical to local amphibian and wildlife populations.
- 5) This priority list may change somewhat as the project progresses with input from local stakeholders including FLNRO staff, FWCP biologists, first nations and local range tenure holders.

5.0 PERSONAL COMMUNICATIONS

The following is a complete list of people consulted during the preparation of the large project proposal:

- Allana Oestreich, Ecosystems Biologist, FLNRO, Cranbrook
- Cathy Conroy, Terrestrial Biologist, Ktunaxa Nations Council, Cranbrook
- Irene Manley, Wildlife Biologist, FWCP Section, FLNRO, Nelson
- John Krebs, Director, Resource Management, FLNRO, Cranbrook
- Kenric Walburger, Range Officer, FLNRO, Cranbrook
- Marlene Machmer, Wildlife Ecologist, Pandion Ecological Research, Ltd., Nelson
- Neil Fletcher, Wetlands Education Program Manager, BC Wildlife Federation, Surrey
- Pat Wray, Field Operations Supervisor, East Kootenay Invasive Species Council, Cranbrook
- Paul Hansen, Riparian and Wetland Ecologist, Ecological Solutions Group LLC, Stevensville, Montana
- Shauna Jones, Ecosystems Biologist, FLNRO, Kamloops
- Tom Phillips, Lands and Resources Manager, Tobacco Plains Indian Band, Grasmere

6.0 LITERATURE CITED

- Ambrose, N., G. Ehlert, 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 pgs.
- Coelho, A.J.A. 2008. Assessing climate change induced declines in ponds in British Columbia's semi-arid grasslands. MSc Thesis. Thomson Rivers University, Kamloops, B.C.
- Dulisse, J. & J. Boulanger. 2016. Upper Kootenay Amphibian Monitoring Project. Report prepared for Fish & Wildlife Compensation Program, Castlegar, B.C.
- 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 pages.
- Forest Practices Board. 2002. Effect of cattle grazing near streams, lakes and wetlands. A results-based assessment of range practices under the Forest Practices Code in maintaining riparian values. Special Report. Forest Practices Board of British Columbia. Victoria, BC.
- Hansen, P. L., W. H. Thompson, R. C. Ehrhart, D. K. Hinckley, B. Haglan and K. Rice. 2000. Development of methodologies to evaluate the health of riparian and wetland areas. *In*: Proceedings of the Fifth International Symposium of Fish Physiology, Toxicology and Water Quality, November 10-13, 1998, Hong Kong, China. V. Thurston, Editor. EPA/6000/R-00/015. United States Environmental Protection Agency, Office of Research and Development, Washington, DC, USA. 300 p.
- Machmer, M. 2004. Small wetland literature review and mapping. Report prepared for Columbia Basin Fish and Wildlife Compensation Program. Nelson, BC.
- Ross, T., M. Keefer, B. Jamieson. 2006. The Development and Testing of a Reconnaissance Level Wetland Assessment Form on the TaTa/Skookumchuck Range Unit. Report prepared for the Columbia Basin Fish and Wildlife Compensation Program. Nelson, BC.
- Smyth, C.R. and G. Allen. 2003. Riparian Assessment of Selected Lentic Wetlands in the East Kootenay Trench-2001. Report prepared for the BC Ministry of Forests. Invermere Forest District. Invermere, BC.