

**Alberta Conservation Association
2007/08 Project Summary Report**

Project Name: *Bearberry Creek Riparian Conservation*

Project Leader: Marco Fontana

Primary ACA staff in project: Marco Fontana and Chad Judd

Partnerships:

Alberta Sustainable Resource Development
Cows and Fish
Fisheries and Oceans Canada
Mountain View County
Prairie Farm Rehabilitation Administration
Red Deer River Watershed Alliance
Trout Unlimited

Key Findings

- The Bearberry Creek Conservation Working Group, a multi-agency project steering committee, was formed and a draft of the group's Terms of Reference (ToR) was developed.
- The East Slopes Riparian Conservation Guidelines were created.
- Three riparian protection and enhancement demonstration-sites were developed, including a riparian pasture, a solar powered off-channel watering system, and a bank stabilization project using bioengineering treatments.

Introduction

Bearberry Creek is a tributary to the Red Deer River west of Sundre, Alberta that historically supported sport fish, including bull trout, and was once a popular location for anglers (Miller and Paetz 1953). Sport fish populations have since declined drastically, along with changes in habitat within the drainage (Fitzsimmons 2005). Land-use practices, such as intensive livestock grazing, have degraded riparian and aquatic habitat (Rees 1988) and the construction of a weir in the town of Sundre led to the loss of spawning migrations from the Red Deer River. Stream banks that were once densely covered by willows (Miller and Paetz 1953) are now sparsely vegetated, dominated by tame grasses, or completely bare (Rees 1988) and current fish populations consist mainly of non-game fish species throughout the drainage (Fitzsimmons 2005). Recently, Bearberry Creek was reconnected to the Red Deer River through the construction of a fish bypass channel around the weir. However, the re-establishment of sport fish populations may be limited by the current degraded state of

riparian and aquatic habitats. The long-term goal of this conservation project is to improve watershed health and to assist with the re-establishment of a recreational fishery in Bearberry Creek.

Our specific objectives for the 2007/2008 fiscal year were to 1) form a multi-agency steering committee, 2) create guidelines for the implementation of riparian protection/enhancement tools, and 3) develop riparian conservation demonstration-sites.

Methods

To form the Bearberry Creek Conservation Working Group, we invited representatives from Mountain View County, Trout Unlimited, Cows and Fish, Alberta Sustainable Resource Development, Fisheries and Oceans Canada, Red Deer River Watershed Alliance, and Prairie Farm Rehabilitation Administration to a meeting we hosted in June. To stimulate interest in the project we presented the group with project goals, objectives, and information on our past activities, which included baseline fisheries inventories, and an aerial videography survey. We participated in a round table discussion and received feedback on future direction and next steps.

To create guidelines for the consistent and defensible implementation of riparian protection and enhancement tools, we conducted a literature review of the best available science on riparian buffer widths and other beneficial management practices (see Fontana and Judd 2007). Our draft document included proposed guidelines for implementing tools to meet conservation goals, an incentive based formula for funding cost-shared projects, and standard contract terms and conditions to protect project investments.

We established three demonstration projects, including 1) riparian pasture, 2) off-site watering, and 3) bank stabilization using bioengineering, that showcased different riparian conservation tools to participating landowners and interest groups. We worked with Mountain View County's Sustainable Agriculture Specialist (MVCSAS) to coordinate landowners interested in demonstration-sites and partnered with Cows and Fish to design projects. We derived specific riparian pasture recommendations by consulting with Cows and Fish and the MVCSAS. For the off-site watering project, Alberta Conservation Association's (ACA) portable, solar-powered off-channel watering system (Figure 1) was demonstrated by a landowner who applied for ACA funding to purchase a similar system. With the assistance of many representatives from the Working Group, and other interested parties, we constructed a bank stabilization project using bioengineering techniques (Figure 2). This approach used live plant materials, such as willow cuttings, to perform an engineering function and mimic natural vegetative succession (Polster 2002). We chose a site in a high profile location, which was thought to have a good potential for planting success.



Figure 1. ACA's portable, solar-powered off-channel watering system in use on Bearberry Creek. (Photo: Chad Judd)



Figure 2. Representatives from the Bearberry Creek Conservation Working Group constructing a bank stabilization project, using bioengineering techniques. (Photo: Chad Judd)

Results

During discussions at the initial Working Group meeting, consensus indicated landowner cooperation would be better achieved through tours of demonstration-sites rather than other outreach events such as town hall meetings. The production of a ToR document to formalize the Working Group and outline agency roles and responsibilities is in progress. In January, we completed a draft of the East Slopes Riparian Conservation Program Guidelines for review by the ACA Fisheries Program.

Throughout the summer we negotiated the design and management recommendations of a riparian pasture enclosing approximately 35 acres. Based on the plant community and state of the riparian area, we proposed three years of complete rest from grazing followed by late season fall grazing at an ecologically sustainable stocking rate of 0.4 AUMS. The landowner was amenable to these terms and will be expected to sign a funding contract for the next fiscal year. We also drafted a funding agreement for the purchase of a portable, solar-powered, off-channel watering system to be used, in conjunction with rotational grazing where cattle are excluded from the riparian area by streambank fencing. ACA will fund 50% of the purchase price of the system, to a maximum of \$5000.00, once invoiced and the system can be inspected.

We constructed approximately 50 m of wattle fencing, 35 modified brush layers, and live staking to stabilize a highly erosion prone streambank on Bearberry Creek (Figure 2). In addition, we installed approximately 45 m of streambank fencing to protect the bioengineering structures from being trampled by cattle and installed a V-gate to facilitate future demonstration tours.

Conclusion

In 2007, we built on project work initiated in 2005 and 2006. We continued to engage stakeholder agencies, whose capacities will make this project a long-term success. We developed project guidelines to enable the effective delivery of project tools. We also generated landowner stewardship interest by developing demonstration sites. We were encouraged by the high priority local landowners put on the importance of riparian habitat of Bearberry Creek (Parkland Community Planning Services and BPS Consulting Ltd. 2007).

Communications

- Hosted a meeting with stakeholder agencies to discuss the project.
- Provided project information and photos for the Red Deer River Watershed Alliance newsletter.
- Set up an information booth at the Ranching Opportunities Conference at Olds College.
- Delivered a presentation detailing project information at a Trout Unlimited Edmonton Chapter meeting.
- Applied to the Fisheries and Oceans Canada Stewardship-in-Action grant for 2008/2009 funding.
- Met with Trout Unlimited, head office in Calgary, to discuss funding opportunities and a potential partnership arrangement.

Literature Cited

- Fitzsimmons, K. 2005. A review of fish and fish habitat information from the Bearberry Creek drainage. Alberta Conservation Association. Rocky Mountain House, AB. 20 pp + App.
- Fontana, M., and C. Judd. 2007. East Slopes riparian conservation program guidelines, 2007 – Draft. Alberta Conservation Association. Rocky Mountain House, AB. 31pp + App.
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- Parkland Community Planning Services and BPS Consulting Ltd. 2007. Bearberry area visioning session report and draft planning vision statement. Prepared for Mountain View County. 25 pp.
- Polster, D. F. 2002. Soil bioengineering techniques for riparian restoration. Pages 230 - 239. In: Proceedings of the 26th Annual British Columbia Mine Reclamation Symposium. Dawson Creek, B.C.
- Rees, K. 1988. A phase 2 survey of the Bearberry Creek watershed (5-3-33-5-W5). Department of Forestry, Lands and Wildlife, Fish and Wildlife Division, Calgary Alberta.