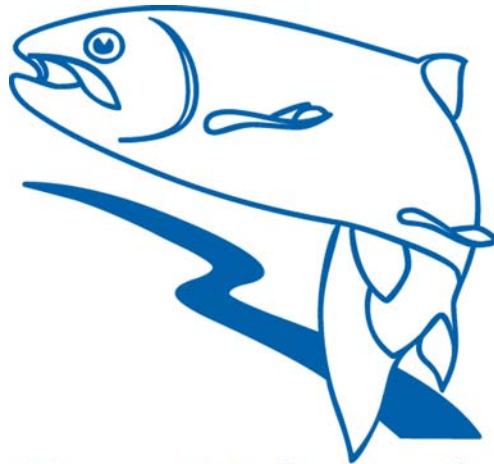


**2007 Cottonwood and Riparian Zone Enhancement Project  
Summary Report**



Trout Unlimited  
Canada

Prepared for  
Trout Unlimited Canada's  
Bow River Chapter

August 13, 2007  
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## **Executive Summary**

Riparian zones are essential to the health of waterways for a number of reasons. They support a great deal of biodiversity, help to protect and purify water resources while also creating a popular recreational area for many outdoor enthusiasts.

Despite the obvious advantages provided by the continued health of these zones, their existence remains threatened for several reasons. The Cottonwood Project has worked to address some of these threats, particularly that of excessive beaver grazing in cottonwood groves found in the Bow River watershed. One other major threat facing this area has been a disruption in the reproductive cycle of cottonwood trees due to ever-changing weather patterns and hydroelectric dam operations. The flooding that occurred in June 2005 has provided a positive benefit to the Bow River's riparian zones by enhancing an environment where the natural reproductive cycle of cottonwood trees can take place.

The Cottonwood Project has continued in its efforts to protect remaining cottonwood groves by wrapping trees with wire mesh along the Bow River as well as individual side channels. Between July 10<sup>th</sup>, 2007 and August 7<sup>th</sup>, 2007, a crew of six students wrapped trees in eight locations. In total, approximately 2,412 trees were wrapped using approximately 11,900 feet of stucco wire mesh, and an additional 650 feet of poultry wire. In addition to tree wrapping, the cottonwood crew also removed several noxious and restricted weed species, and collected garbage.

The Cottonwood Project has a few challenges ahead of it. As each crew's speed picks up at wrapping trees, crew leaders should plan ahead by making weed picking and other activities a staged priority. The second project adaptation in the future will be replacing the stucco wire wrapping and augmenting already wrapped trees to allow for future growth. The crew this year removed some stucco wire that landowners had placed on their own trees which had been subsequently become ineffective due to flooding. Pulling the damaged stucco wire proved to be especially labor intensive, and may be a concern to crews in the future.

## Introduction

*Riparian Habitat*, as defined by Gillilan and Brown (1997), is the area immediately adjacent to flowing and standing water bodies such as rivers, lakes and sloughs. Cottonwood (*Populus spp.*) and willow trees (*Salix spp.*) are the predominant tree species within the riparian river and stream valleys of southern Alberta. These groves support a disproportionate level of biodiversity compared to neighboring uplands (Gillilan and Brown, 1997), providing food and shelter for various species of fauna and flora.

Riparian zones also help protect and purify water resources by providing shade that regulates water temperature and climate (McClusky et al., 1983). The extensive root system of cottonwoods prevents erosion and utilizes excess sediments and nutrients from the water system (Gillilan and Brown, 1997). Trees also control channel stability, stream bank stability and gradient (Platts and Rinne, 1985).

Despite the obvious advantages offered by the existence of healthy riparian zones, these areas remained threatened for several reasons. The Cottonwood and Riparian Zone Project has worked since 2000 to address some of these threats, particularly that of beaver grazing. The removal of many cottonwood groves for urban and agricultural development coupled with a decrease in the number of beaver predators found in the wild has led to a disproportionate concentration of beavers in what groves remain. While beavers are a natural part of the environment, too much beaver grazing can remove valuable forest cover, causing a slow destruction of streambanks, a reduction in water velocity and siltation downstream, and changes in water chemistry upstream of beaver activity (Christensen et al., 1961).

The Cottonwood Project has worked to protect remaining cottonwood groves from this overgrazing by wrapping tree bases in a wire mesh, a method that has proven highly effective in areas wrapped thus far. However, the greatest threat to the continued vitality of riparian zones lies beyond the scope of this project, as it involves the reproductive cycle of the tree itself.

While there are three species of cottonwood trees found in southern Alberta (Western Plains, Narrowleafed and Balsaam) these trees all reproduce in the same manner. Cottonwoods tend to grow almost exclusively on the relatively flat flood plains flanking major rivers and streams. Reproduction depends largely on ice scouring and spring flood conditions. During spring flooding, water flows carry cottonwood seeds downriver where they are then deposited as waters begin to recede. The seeds can be carried for miles downriver, increasing the genetic diversity found in cottonwood groves throughout the zone. Receding flood waters also leave fresh alluvium deposits along flood plains and banks, creating an ideal environment for seed germination. The exposed soil created by ice scouring is also essential, as young cottonwood seedlings do not compete well with overtopping vegetation. As seeds remain viable for only one to two weeks, it is essential that these factors be in place to ensure the continued growth of new saplings (USDA Forest Service, 2005).

In recent years the ability of cottonwood trees to reproduce sexually has been greatly reduced by the drought-like conditions that have been maintained in the Bow River Basin. While these conditions are partially due to the hot, dry weather systems Alberta has experienced through most of the last decade, there has also been an abrupt reduction in the flow of river water due to upstream dam operation. Water regulation has affected the seasonal cycle of cottonwood reproduction by decreasing flood events while also lowering the depth of the water table found in riparian zones (Mahoney, 1995). As a result, cottonwood reproduction in recent years has been asexual, particularly in the forms of suckering and coppicing. While this method of reproduction is capable of *maintaining* the groves found along rivers, in the long term it could lead to diminished genetic diversity amongst new growth. This then reduces the trees' ability to respond to disease or other changes in their environment (Rood and Bradley, 1993).

However, the flooding in 2005 changed these conditions, as flooding along all major rivers and tributaries in southern Alberta reached levels not seen in some time, and was representative of the 20 year flood cycle. Heavier than usual precipitation in the southwestern mountainous regions of the province created dangerously high water levels throughout mid to late June in the Red Deer, South Saskatchewan, the Oldman and Bow River basins. Different storm systems moving through the region between June 1 and June 19 dumped anywhere from 170 to 510 mm of precipitation in some areas, causing the Bow River to peak on three separate occasions (Alberta Government, Precipitation, 2005). At these times, the river flow at Carseland Dam on the Bow River was over 1000 m<sup>3</sup>/s, as compared to average historical flows of only 200 to 300 m<sup>3</sup>/s in the same month (Alberta Government, Bow River, 2005).

However, the benefits of the 2005 flood to the Bow River aquatic and riparian environment are now apparent. The increased river flow rates scoured and removed accumulating instream silt while depositing silt and gravel on flood planes, creating ideal conditions for the germination of new cottonwood seedlings. Silt flushed out of the river also enhanced spawning habitat along the river and its tributaries.

## Methods

### *A. Tree Wrapping*

Cottonwood Trees were wrapped along waterfronts and side channels within a zone of approximately 20 m from the water's edge. While a 20 m distance was used as a benchmark, discretion was used in judging whether a distance greater than 20 m should be wrapped. Factors such as past beaver activity and whether low lying areas were prone to flooding were taken into consideration when determining what distance inland trees should be wrapped.

The wire used to wrap the trees was 48"X 112 ½' Stucco mesh and was significantly heavier and more durable than the poultry mesh used in the past. The last two days of wrapping during the project used the remaining stock poultry wire as well. The stucco wire will provide many benefits to future projects such as increased resiliency to damage caused by flooding and ice flows; and causing no damage to the vascular system of wrapped trees since stapling is not necessary. Flood damage from 2005 illustrated how easily the poultry mesh can be damaged as many areas along the Bow River required rewinding because of wire damage caused by the flood. The crew this year found that the downside to the stucco wire was that trees wrapped prior to the flood with the stucco wire were quite strenuous to pull out.

Trees were wrapped leaving room for approximately 3-5 years growth. A rigid "tube" was created around the tree and wire ends were overlapped and twisted together. Approximately 15-20 cm of extra wire was used in the overlap section so that in future years these pieces can be expanded rather than requiring complete replacement.

Based on past reports, tree wrapping methods have varied particularly as the wire of choice has changed from poultry wire to stucco mesh wire. As new crew leaders come and go, it is to be expected that each leader will implement some new variation to the wrapping methodology as site conditions and crew members change.

In general, the crew this year found it the most efficient to break into two groups where the person cutting the wire chose what tree the wire was going to fit. This way, the people who were wrapping were not waiting as that person cut the wire for them. Sometimes it was just as effective to have just one person cutting if we were in areas that were heavily forested. Carrying the wire was usually the most physically demanding part of the day, this year the crew found it to be much easier to transport the wire if two people carrying the wire on a metal pole.

## ***B. Weed Picking***

Weeds generally originate in, but are not limited to, areas of human activity such as boat launches and areas of natural or unnatural disturbances, such as sloughing or road sides. It has been found that targeting one weed species at a time is the most efficient and effective way to deal with an infestation. Restricted weeds were targeted first, then noxious weeds in order of abundance and locale. Past crews had focused on scentless chamomile, however, this year the Wheatland County Weed Inspector, Ron Barthalow was testing scentless chamomile biologicals. Due to this, chamomile was not picked at any of the public boat launches in Wheatland County, rather, Common Tansy, Leafy Surge, Spotted Knapweed, Sow Thistle, Scotch Thistle, and Black Henbanes were concentrated on. The crew only brought bags onto sites when it was planned ahead to pick chamomile. All of the other weed could be left behind, except for Scotch Thistle, which was so rarely encountered it was carried back to the truck to be bagged and disposed of.

## ***C. Garbage Picking***

Certain locations had been affected from boaters leaving litter behind more than others. The crew did what it could to minimize the effect by cleaning up at these areas. The crew would spread out and proceed in a line, bagging the garbage on site and then removing by truck for disposal.

# **Results and Conclusions**

## ***Week 1 (July 9 – July 13)***

### **July 9**

Crew members signed necessary paper work, were given their work uniforms, and informed of the goals for the project. Took the crew for a drive to Legacy Island and Jay Strath's property.

Met up with Jeffery Strath in the evening for directions down to the river from Jay Strath's, located near Johnson's Island. For the next crew who goes back down to the Strath's property in a few years, it would not be advisable to attempt to find the road alone as it is not used anymore and is quite difficult to see.

## **July 10**

Met Mr. Ron Barthalow (county weed inspector) at 9:00 am at Legacy Island, where he showed the crew his chamomile “biologicals” (chamomile planted with larvae in it to prevent the flower from growing, in the hopes that as the larvae spreads to other chamomile plants it will impede their reproduction.) Ron also handed out weed identification manuals, and walked the crew around Legacy pointing out the weeds he could find, giving information on how to deal with each. The group then proceeded to Johnson’s Island and assisted Ron with picking Spotted Knapweed until lunch. After lunch, the crew began wrapping trees at the Strath’s property. The Strath’s property was by far the most difficult site visited, as it has not been pastured in years and was grown in very thick with tall bushes and grasses, and had many fallen logs. Silt depositing in some areas made pulling off the old wire difficult as well. However, the crew wrapped approximately 67 trees in the afternoon, using four rolls of wire.

## **July 11**

Continued work at the Strath’s. The area moved into was very brushy, which made traveling with the wire difficult. The crew found that working as one big group worked better in this area. Due to unforeseen circumstances, the crew only had four rolls of the standard sized rolls (48” x 112.5’), and 4 rolls of 40” x 50’ rolls of stucco wire. The crew made due with this and wrapped 137 trees in total. One invasive weed (Scotch Thistle) was found on the property, which was bagged and disposed of.

## **July 12**

Continued work at the Strath’s. The hike into the area working in was approximately just under a kilometer, so travel time took up a large part of the day. The group worked exceptionally hard this day despite this, wrapping approximately 87 trees in total with five rolls. Another Scotch Thistle was found and bagged.

## **July 13**

Finished up at the Strath’s property, wrapping trees to the very end of the property where previous crews had not made it to. The hike into the end of the property was approximately a kilometer and a half, taking around half an hour one way. The trees at the end of the property were considerable in size, some of the biggest measuring about four meters wide, with a lot more beaver damage than in the previous areas. The crew wrapped 52 trees with three rolls, and had lunch at the end of the property before heading back.

Spent the afternoon at Legacy Island, where the crew broke up into groups; one wrapping trees and the other picking Common Tansies, garbage, and one Scotch Thistle. 16 trees were wrapped on the island, using half a roll of wire. In total, 68 trees were wrapped using 3.5 rolls.

Bought crew Slurpees at the end of the day.

## ***Week 2 (July 16 – 20)***

### **July 16**

Began wrapping trees at Cottonwood Golf Course on the “island”, the area of most concern to the Maintenance Manager, Jay. The crew hit high averages at this site, as it was a closer drive and a lot easier to travel about than the Strath’s. Began wrapping at the southeast corner of the golf course, wrapping approximately 145 trees with 7.5 rolls. One Black Henbane was cut down.

### **July 17**

Continued working at the same spot at the Cottonwood Golf Course. The crew was working very well, until Brandon came across a baby hawk which was in very poor condition. Kelly used the phone at the golf course, as we had no cell coverage to call the Wildlife Rehabilitation Society of Calgary. She was told that it sounded serious, so the crew finished early to bring the hawk in. Approximately 196 trees were wrapped, using 9.5 rolls of wire.

### **July 18**

Crew started 45 minutes late today, as there was a thunderstorm in the morning and had to wait it out. Finished the southeast side of the golf course where the crew had left off the afternoon before. Met with Jay to show us where on the north side of the course he wanted wrapped. 62 trees were wrapped, using three rolls.

After finishing the golf course, the crew moved to Mrs. Brown’s property at the confluence of the Highwood River. Parked at the old boat launch on the Highwood River and walked along the Highwood to reach the Bow River, as the crew was advised not to go up to the house. On the walk back the crew ran into Mrs. Brown’s daughter who was gardening. She was very impressed with The Cottonwood Project, and gave permission to drive though the property to the river. The crew wrapped 48 trees at Mrs. Brown’s, using 2.5 rolls of wire.

In total, the crew wrapped approximately 110 trees with 5.5 rolls of wire.

### **July 19**

Resumed work at Mrs. Brown’s. Many of the trees that previously were wrapped were still in good condition, so the crew performed visual inspections and moved forward. The crew wrapped approximately 217 trees, using nine rolls of wire. The remainder of the afternoon was spent picking garbage off of the property, as it had a significant amount of litter on it from public users. The garbage included bait containers, clothing, and beverage containers.

## **July 20**

Finished work at the Brown's home quarter, wrapping 57 trees with three rolls. The trees at the end of the property were larger, and more impacted by beavers. The crew then went to the Groenveld's property, as the 2006 report suggested checking it. The fences there looked fine, so the crew went back to Nature's Hideaway on the Highwood River. Trees were wrapped at the owner's yard, where there was a large amount of debris gathered at the bases of the trees. 44 trees were wrapped with 2.5 rolls of wire. In total, the crew wrapped approximately 101 trees, using 5.5 rolls of stucco wire.

## ***Week 3 (July 23 – 27)***

### **July 23**

Met Ed Theissen, owner of Namaka Farms, which is located north of Highway 901 on Range Road 244. He gave the directions to his house, and how to go through the corrals to the creek behind his house. Beavers had destroyed many of the trees in this area. The crew began working heading west, wrapped approximately 213 trees, with 9.5 rolls.

### **July 24**

Continued work at the same area behind Ed Theissen's house. Wrapped approximately 201 trees with nine rolls of stucco wire.

### **July 25**

Worked along the tributary again, wrapping until the crew came to an impassible bank on the north side of the creek. While driving out of the corrals on the way to the proper Bow River, the crew ran into Harold, a Namaka employee. He took the crew to the trail which leads down to the Bow, pointing out the fence that marked the property line. The turn off from the main road was very hard to see, next year if Namaka is revisited, the crew leader should contact the feedlot and set up for someone to show them where it is.

The crew began working southwest to the property line which wasn't far away, and then turned around and worked heading northeast. The river bank at this spot was very low, and a lot of debris had covered the bases of the trees. There also was an enormous amount of beaver damage, and as the crew this year could not finish at Namaka, their land should become a priority for future crews. In total, approximately 193 trees were wrapped with eight rolls of wire.

James did not come in today as he was sick.

### **July 26**

Had a short day, as Brian needed the truck in the afternoon for the Quirk Creek Project. No wrapping occurred, instead, the crew spent the morning picking Common Tansy, Leafy Surge, Sow Thistle, and cleaning up garbage at Legacy Island. Cleaned out the truck before Brian picked it up.

James did not come in today as he was sick.

## **July 27**

Returned to Namaka and continued wrapping on the Bow River. The farther that the crew worked into their property, the more beaver damage became obvious. Approximately 182 trees were wrapped, using eight rolls of wire.

Crew bought Slurpees at the end of the day.

Kelly did not come in today as she had an appointment.

## ***Week 4 (July 30 – Aug 2)***

## **July 30**

Decided that since Namaka could not be finished by the end of the season, that the crew would work as far as possible on this day and then move on to a new site. The crew wrapped past the most damaged part of the area working in, wrapping 178 trees with eight rolls.

James did not come in as he was sick.

## **July 31**

Began and finished up working at the Dewitt's acreage. The Dewitts had wrapped some of their trees with stucco wire prior to the 2005 flooding, which made removing the wire from the ground was very strenuous work. Wrapped 83 trees with 3.5 rolls of stucco wire. This was Brandon's last day, so the crew had a barbeque for lunch. Brought crew to office to hand in time sheets at the end of the day.

James did not come in today as he was sick.

## **Aug 1**

Began and finished up working at the Anderson's acreage. A few of the trees had previously been wrapped with heavier wire than the stucco mesh, which were very difficult to get out of the ground. The Andersons also had quite a bit of beaver damage. The crew wrapped approximately 79 trees, using 4.5 rolls of wire.

The remainder of the afternoon was spent picking Spotted Knapweed at Johnson's Island on the east side, then went to the west side of the park and picked Common Tansy, cut down Black Henbane, and found one Scotch Thistle.

## **Aug 2**

For the last two days of tree wrapping, Trout Unlimited decided to use up the remaining poultry wire from previous years. The chicken wire took a little longer to put up on the trees, but was so much easier to carry that the crew was satisfied with the decision.

The crew began wrapping at the Group Use Area at Wyndham Park. This area also had sustained a lot of beaver damage. The crew wrapped approximately 80 trees with 14 rolls of poultry wire, and spent the rest of the afternoon picking Common Tansy on the west side of Johnson's Island.

James did not come in today as he was sick.

## **Week 5 (Aug 7 – 10)**

### **Aug 7**

This was last day of tree wrapping for the project. The crew continued wrapping at Wyndham Park, wrapping approximately 75 trees with 12 rolls of poultry wire. Wyndham Park would be another good site to return to for the crew next year. The crew then headed to Legacy Island to pick Common Tansy and Leafy Spurge with the remainder of the afternoon.

### **Aug 8**

No tree wrapping occurred. Instead, the crew spent the morning removing Common Tansy, Leafy Spurge, and Scentless Chamomile from McKinnon's Flats. Had lunch and then spent the afternoon picking Common Tansy and Leafy Spurge at Legacy Island. James did not come in today as he was sick.

### **Aug 9**

No tree wrapping occurred. The crew instead spent the day cleaning up garbage on Nose Creek to assist with the Nose Creek Rehabilitation Project.

### **Aug 10**

The crew met up at the office, where everyone filled out time sheets and cleaned out the truck, before Trout Unlimited took the group out for lunch to end the project.

## **Summary**

Between July 9<sup>th</sup> and August 9<sup>th</sup>, this season's Cottonwood Project reached eight locations to wrap trees. Including travel time, the crew spent 889 man-hours of labor working along the Bow River. In total, the crew wrapped approximately 2,412 trees, using approximately 11,900 feet of stucco wire mesh, and 650 feet of poultry wire. On top of tree wrapping, the crew also worked to eliminate noxious and restricted weeds at different sites, as well as doing what it could to clean up garbage accumulations.

As cited below, the overall budget if the project was \$20,197.55. The project this year succeeded the expected amount of trees wrapped, and actually came in under budget for a few reasons. Brandon leaving two weeks earlier (for a family vacation), James missing multiple work days due to illness, spending less money on fuel due to a vehicle with better mileage, and ending the project a week early due to staffing issues at the start of the project were all contributing factors.

In the future, there will be challenges for each year's crew leaders to consider. Unwrapping old wire from uprooted trees, as well as heavier wire such as stucco wire that has been covered with sediment will be some physically demanding challenges. As new sites are added each year, it will be an ongoing challenge for new crew leaders to balance between moving to new sites and properly maintaining old sites. Also, crews in future years may want to consider taking a different approach to the project to expand on the responsibility of the crew. Making week picking and garbage removal a much bigger priority from the start, or restoring the kiosk at McKinnon's Flats are some ways that cut costs down, but still make a very positive impact on the Bow River.

The crew this year also had a few close calls with the stucco wire coming close to different crew members eyes, and it would be advised to wear eye protection in the future while working with the stucco mesh.

## Literature Cited

- Alberta Government, (2005). *Bow river below Carseland dam*. Retrieved Aug. 17, 2005, from Alberta Environment Web site: [http://www3.gov.ab.ca/env/water/ws/data/hydro/figures/\\_RBOWCARS.gif](http://www3.gov.ab.ca/env/water/ws/data/hydro/figures/_RBOWCARS.gif).
- Alberta Government, (2005). *Precipitation maps*. Retrieved Aug. 17, 2005, from Alberta Environment Web site: <http://www3.gov.ab.ca/env/water/ws/data/precipmaps/precipmaps.html>.
- Christenson, L.M. et al. 1961. *Beaver-trout-forest relationships*. Prepared for the Wisconsin Conservation Department, Madison, Wisconsin. 34+pp.
- Gauntlett, K. (2005). Alberta flood damage to top \$400m. *Calgary Herald*. Retrieved Aug 16, 2005, from <http://www.canada.com/calgary/calgaryherald/news/story.html?id=02a3d73b-d089-43ec-bebf-743bb5a0dde0>
- Gillian, David M. and T.C. Brown. 1997. *In stream flow protection: seeking a balance in Western water use*. Island Press, Washington, D.C. 417+ pp.
- Mahoney, John M., Stewart Rood and Melvin Tyree. 1995. *Drought-Induced Mortality of Cottonwoods along Rivers in Alberta, Canada*. Talk given as part of Xylem Physiology Series at University of Lethbridge, Alberta on September 8, 1995.
- McClusky, Cal., J. Brown, D. Bornholdt, D.A. Duff and A.H. Winward. 1983 *Willow planting for riparian habitat improvement*. Technical Note 363. Prepared for the U.S. Department of the Interior Bureau of Land Management. 21 pp.
- Platts, William S. and J.N. Rinne. 1985. *Riparian and stream enhancement management and research in the Rocky Mountains*. North American Journal of Fisheries Management. 5:115-125
- Rood, Stewart B. and C. Bradley. 1993. *Assessment of riparian cottonwoods along the Bow River downstream from Calgary, Alberta*. Prepared for Trout Unlimited Canada by the Department of Biological Sciences, University of Lethbridge, Lethbridge, Alberta 63 pp.
- USDA Forest Service, (2005). *Populus deltoids-botanical and ecological characteristics*. Retrieved Aug. 16, 2005, from Fire Effects Information System Web site: [http://www.fs.fed.us/database/feis/plants/tree/popdel/botanical\\_and\\_ecological\\_characteristics.html](http://www.fs.fed.us/database/feis/plants/tree/popdel/botanical_and_ecological_characteristics.html).

# Appendices

## A. Summary of Project Expenses

Item	Place of Purchase	Date	Cost	Quantity	Subtotal	GST	Total
Salaries- Crew	Trout Unlimited	-	\$11.00	699	-	-	\$7,689.00
Salaries- Crew Leader	Trout Unlimited	-	\$12.00	328.5	-	-	\$3,942.00
48" x 112.5' Stucco Mesh	Home Depot	-	\$69.97	106	\$7,409.40	\$444.56	\$7,853.96
Crew Uniforms	AAA Promotional Products	Jun 29/07	\$50.00	6	\$310.00	\$18.60	\$328.60
Fuel	-	-	-	-	\$307.81	\$19.65	\$327.46
Bug Spray	Home Depot	Jul 11/07	\$6.29	4	\$25.16	\$1.51	\$26.67
Slurpees for crew	Carseland Food Market	Jul 24/07	-	6	\$7.90	\$0.50	\$8.40
BBQ supplies for crew	Safeway	Jul 25/07	\$21.46	-	\$21.46	-	\$21.46
						<b>Total:</b>	<b>\$20,197.55</b>

## B. Sites Visited 2000 – 2007

Map #	Land owner/Manager	Sec.	Tw p.	Range	Tel. #	Tel. # work	Year Visited	Comments
36	Anderson, Graham	33 SE	21	25	803.6222		2007	Acreage beside Windham Park Group Use Area. Completed in 2007.
	Alberta Fish & Game Association	19 a	20	1			2003	
15	Augustina/Albertina Farms	25	21	28	Clint: 830.2231	Joseph Shaughoff (mgnt.) 652.7632 C: 540.7007	2002, 2003, 2004, 2006	Completed in 2006.
	Bertens. J. & A.	27 b	21	26	278.7899		/	No trees.
23	Bow River Resort	28 SE	21	26			2003, 2006	Still needs wrapping; contact western neighbors too.
11	Bowvista Farms	3 NW, SW 34, 35, 36, 30	22, 21	28, 27	936.5978	Harry: 236-4683	2000, 2001	Contacted in 2006 but unable to wrap.
7	BurnCo/Burnswest	8 SE, SW	22	28	888-5972	255-2600 Mark Irwin 640-9217 Dennis (Burnswest [landowner] 301-3987)	2000	Island needs to be wrapped, boat access only.
	Campbell Estate	20 d	20	1			2003	Sheep River
8	Cottonwood Golf Course	8 SW (FH county)	24 2 ave .	96 st.	938-7200	Jay: 938.7206 Tiffany: 938.8185	2001, 2007	Completed in 2007.

2	Deerfoot Extension					City of Calgary	2005	
35	Dewitts, Nola and Doug	33SE	21	25		934 - 5225	2007	Acreage across from Wyndham Park. Completed in 2007.
18	Dugdale, Richard	20 NE, 21 NW	21	27	601.2617	Office: 269.4434 Cell: 461.4239	2006	Eastern Portion still needs to be wrapped and Island near McKinnons as well.
6	Evan, Brian	7 NE	22	28	279.3595		2000, 2001	Developers are now on their river bank, cannot be wrapped.
24	Foster, Doug	28 b	21	26	801.2981		2006	Completed in 2006.
21	Groenveld, G & F & M & E	21, 19 SW, SE 20 SW SE 24 SW SE	21	26; 27	F: 684.3522	G: 684.3800, son Buck and wife Pam: 684.3352	s.23 a, b - 2005, 2006 (F. Groenveld)	Completed in 2005, 2006.
27	Hamilton, T. (owner) Mike Mailey (manager)	27 SW, SE- South side of river	21	26	Mike: 684.3573	C:807.8194	2004	
	Hoy, Carolyn	12, SE, South side of River	22	25	Carolyn: 934.2485			Carolyn Hoy was contacted in 2007 to be visited as a new site, however, could not get a hold of her again when the crew was ready to begin working there. Should be visited in 2008.
34	Johnson's Island						2001,2002, 2003, 2004	Contact SRD (Doug Knight).
32	Keer						2004	No contact info.

10	Kambeitz, Bob	3 SW + isle	22	28	246.9671 , BC: (250) 428.0475		2001, 2002	Wraps own trees. Wrapping on island near property is required as previous wrapping damaged during floods.
	Lammle, Barry	11 a,b	22	29	938.2287			Comments
22	Lance, H., Wheeler, N. <i>Bow River Lodge</i>	24 NW, NE	21	27	936.5459 2 C: 660.7213	Stuart: 936.5639	2004	Did not make it in 2007. Should be visited soon. Island west of property needs wrapping (never wrapped) and can be accessed by foot.
	Lanz, Larry	19	21	26	n/a			Do not contact.
25	Legacy Island						2001,2002, 2003,2004, 2005,2006, 2007	Completed in 2006, rewrapped a few in 2007.
	Limbow Farms	23 SW, SE	21	26				No contact info; only accessible by boat
	Lorensen, L. & N.	20	21	26				
28	Lyster, E. (owner) Mike Mailey (manager)	22 NE	21	26	Mike: 684.3573	C:807.8194	2002, 2003, 2004	
12	Mansion Run							No contact info.
	Mannix							** The Mannix's were suggested as a site to visit in 2008 by Jay at Cottonwood Golf Course. They are neighbors to the golf course to the southeast(?), and have a lot of beaver damage. May have to contact Jay for phone number.

16	Mchugh, M	30	21	27	652.1096		2006	Completed in 2006 but need permission because can only access Dugdale's through his property
19	McKinnon's Flats						2001,2002, 2003, 2004, 2005	Contact SRD. (Doug Knight). Spotty wrap job which could be revisited
29	Morrison, Don & Lois <i>Bow River Conservancy</i>	27 NE, N.5b	21	26	242.4505	C:830.2551	2005	
13	Mrs. Brown's					Bethe Knows how to contact	2001, 2007	Completed in 2007.
38	Nakama Farms, Ed Theissen	1 NW, 12 SE	22	25		Ed: 934.4322	2007	Namaka was first contacted and began wrapping in 2007, however because of their large amount of land could not be completed. Should be revisited in 2008 as there is a considerable amount of beaver damage. Have someone point out how to get to river
14	Nature Hideaway	26 SW	21	28	938.8185		2007	Completed in 2007.
30	Nelson, Dexter	23 NE, 25 SW	21	26	934.2903		2001,2002, 2003, 2004, 2005	
30	Nelson, Mervin	25 SE	21	26			2004	

33	Nodwell, J	30c	21	26	Jack: 282.4812		2004	Gave permission to wrap however did not make it to the site in 2007 as new sites became a bigger priority.
1	Pine Creek						2004	Now within city limits
3	Policeman's Flats						2001,2002, 2003 2004, 2005	Now within city limits
	Rolling Mix Management	30	21	25		Tony: 253.6426		
20	Rumple, Glen	28 SW	21	27	225.3987		2005	Part of property still needs wrapping
4	Shields, J	12 SW	22	29	938.7996		2004	
	Soutzo, A.	12	22	29	279.9074			
9	Spicer, John	4 c, d	22	28	938.7829		2001, 2003	Unable to contact
31	Strath, Jeffrey	25 NE	21	26	934.4122		2004, 2007	Revisited in 2007, previously wrapped in 2004. Pretty difficult to see the trail down to the river, best to get one of the Strath's to point out how to get there.
31	Strath, Jay	25 NE	21	26	934.3491	cell: 680.8584	2004, 2007	(The map shows the property as Jeffrey Strath's; however it is actually his son Jay who lives there.)

