Hardisty Creek Restoration Project

Authors: Connie Bresnahan, West Athabasca Bioregional Society and Heidi Schindler, Foothills Model Forest (December 2004)

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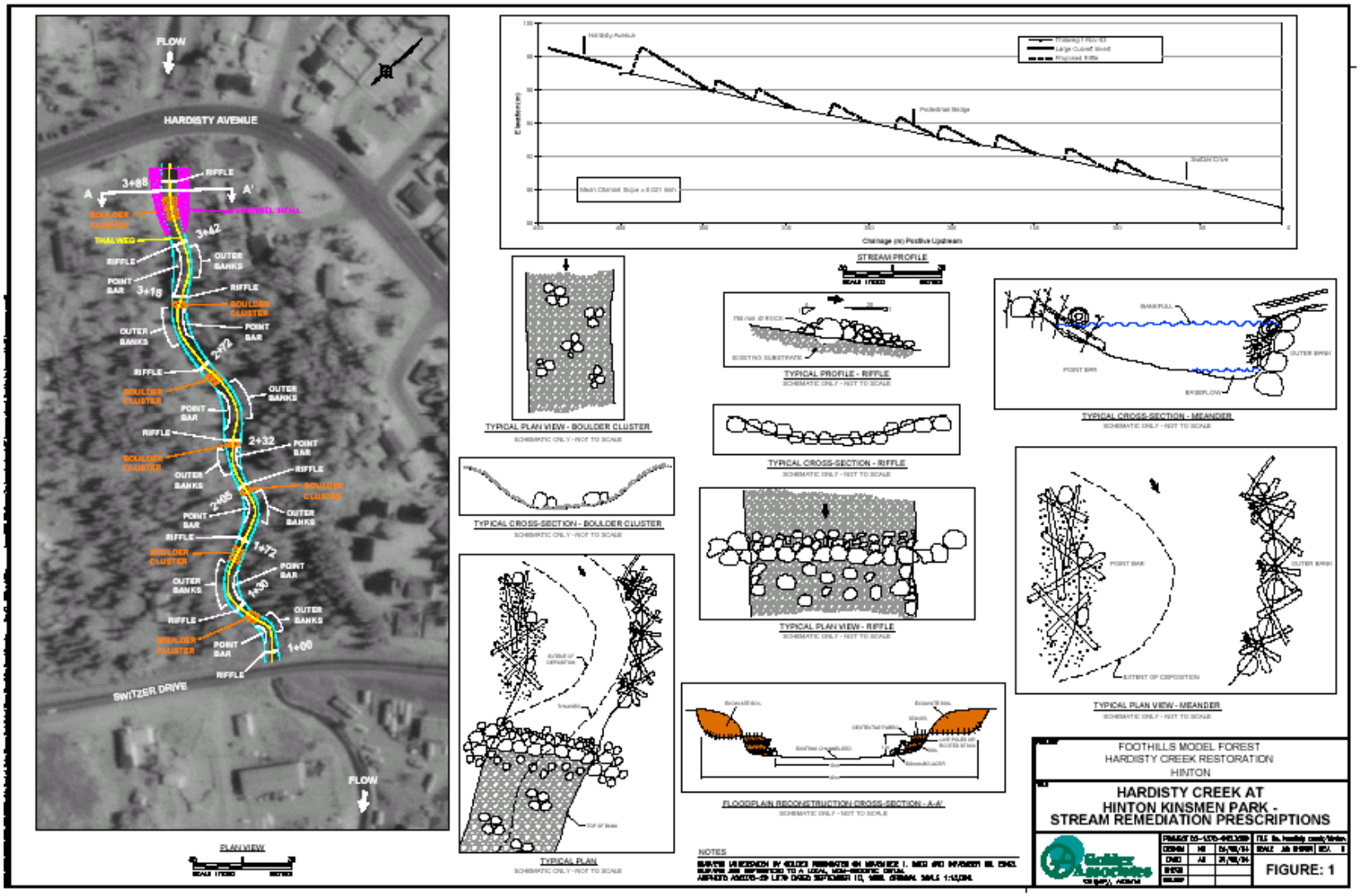
The Hardisty Creek Restoration Project is a community-based endeavour to return a local creek to health and to foster watershed awareness and education. The project was launched in 2003, in recognition of UNESCO's International Year for Fresh Water. The strength of the project is a result of building strong partnerships between the community, stakeholders, industry and government agencies. Together we have been able to accomplish many positive things within the last two years.

Phase I was accomplished in October 2003 when Canadian National Railway restored fish passage through their 1927 culvert. This was a big boost! Phase II was for the most part completed in October 2004, and included the restoration of fish habitat throughout Kinsmen Park and of fish passage through the Hardisty Avenue culvert. The restoration and culvert remediation was accomplished between October 4th to 11th 2004. On October 9th, the project hosted a 'Big Splash Event' for the public, inviting all children, seniors, families, teens, to come together and learn more about restoration and the need for fostering watershed health in western Canada.

The following photo essay illustrates the two mutually beneficial aspects of our project – the biophysical restoration process, and the participation of the community in learning about and helping to restore a much loved community creek.

The Design. Hardisty Creek flows through Kinsmen Park, a well-used urban park. The project steering committee decided that the creek reach through the park would be the best place to create a Demonstration Site for the restoration project as a whole, and thus concentrated efforts to restore this section in Phase II.

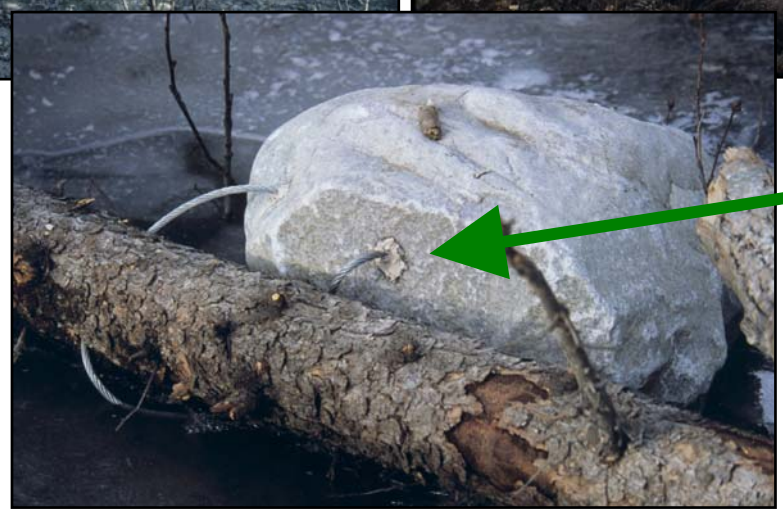


The Transformation

Hardisty Avenue crossing was a barrier to fish passage but with the creation of a large riffle, the culverts have now been backwatered to allow fish to pass. Next summer, we plan on additional work to this large riffle structure to ensure a higher level of water in the backwater pool.

Riffles 5 and 6 within the Kinsmen Park reach show the significant change in fish habitat features through restoration. Riffle structures and deep pools provide better habitat for fish to live and, we hope, to spawn. One week after restoration, we saw a grebe diving for food in one of the pools – a hopeful sign indeed!

Riffle and boulder cluster 7 show the use of tree boles cabled to large boulders as part of the meander constructions. Meanders help to create sinuosity in the creek to slow water during flood events, and to provide hiding places for fish.



Transplanted tree
anchored
to boulder with
aircraft cable

How did we do it?

Behind the scenes. Any project that works in water bodies must have the required authorizations in place before construction. After authorization was granted for this phase of our project, the first thing we did was take care of the fish. **What about the fish?** A fish net upstream of the restoration work site, and a sediment screen downstream kept our finned friends from re-entering the work zone during construction.

Willow wand cutting. We began stockpiling the materials needed for the restoration process. Community volunteers harvested willow wands in a local forest in preparation for planting along the banks of Hardisty Creek. **Restoration preparation.** In Kinsmen Park, an excavator and small bobcat provided the mechanical muscle to place the boulders, gravel and tree boles where they were needed for the fish habitat construction. It was essential to have a qualified habitat specialist supervise this process, and helpful to have an experienced excavator operator construct the habitat features.

What about the fish?

Yes, there are fish in our community creek!

Setting up the sediment screen.

Preparation for the restoration activities in the creek included electrofishing to remove all fish within the work zone and safely moving them to another section of the creek.

Willow wand cutting

Community volunteers helped cut willow wands a week prior to restoration construction.

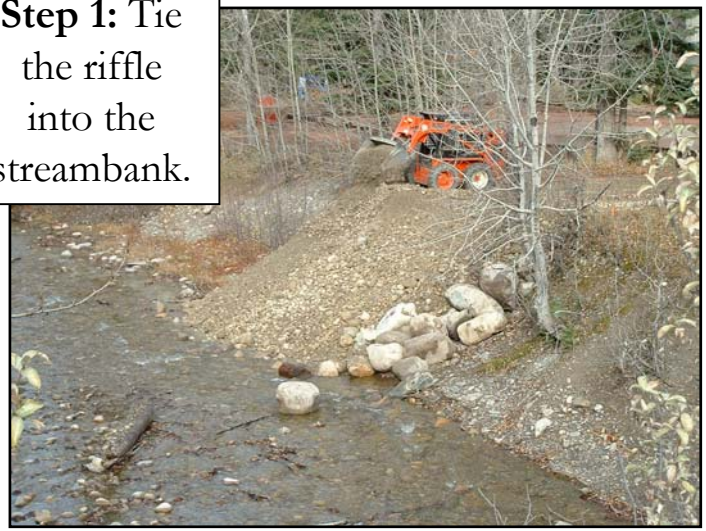
Stockpiling materials for restoration and construction

The two machines required for fish habitat restoration were a bobcat and a large excavator.

Large diameter boulders and piles of clean gravel were stockpiled near the restoration site.

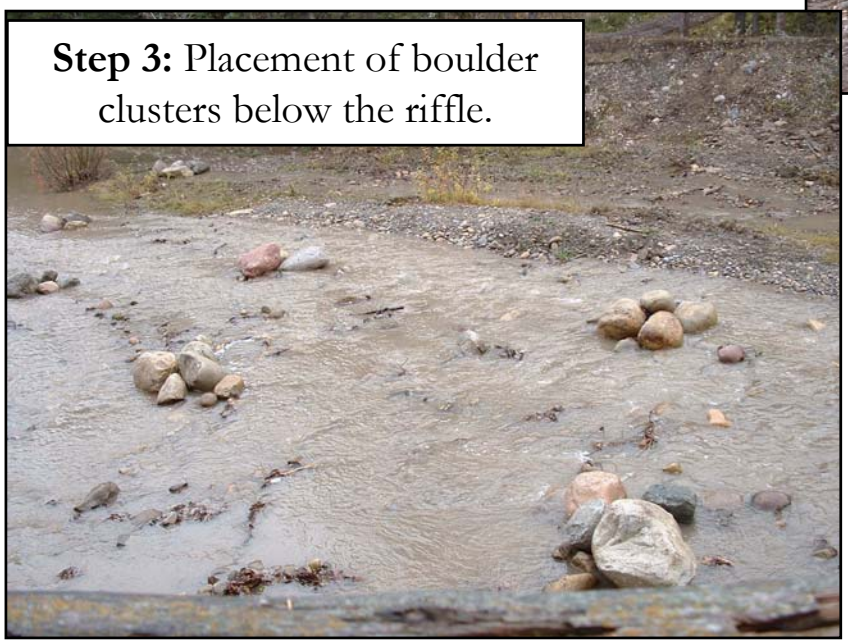
Riffle Construction 101

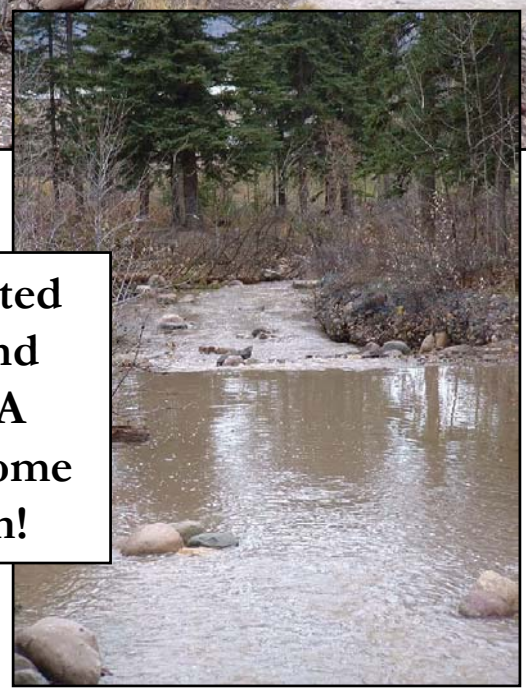
Step 1: Tie the riffle into the streambank.



Step 2: Construct backbone of riffle crest.

Step 3: Placement of boulder clusters below the riffle.





Completed pool and riffle. A better home for fish!

Big Splash Event: Fostering watershed education and stewardship.

22 • The Hinton Parklander - Monday, October 4, 2004

Hardisty Creek work slated for Oct. 9

BY TYLER WAUGH

Back in the 1970s, Jack Wright's boy pulled a two-pound bull trout out of Hardisty Creek.

While still classified as a reasonably healthy waterway, there aren't too many big bull trout swimming around anymore.

That's something Wright and a group of dedicated volunteers are looking to change with the latest phase of the Hardisty Creek Restoration Project taking place Oct. 9.

"(Green) areas have been cleared away and a section of the creek was even straightened during early residential development. Over time, this all added up to loss of fish habitat and free-moving fish populations," said project member Connie Bresnahan. "Several culverts along the creek create partial to full barriers to fish passage."

Phase 1 on the project, remediation of a CN culvert along the stream's path, was completed last fall.

"That was a big step, getting that culvert project done with. To many of us that was going to be the tough part of the project so it was a real boost," Bresnahan said.

Phase 2 goes Oct. 9 and includes a myriad of work along 300 metres of creek between Switzer Drive and Hardisty Avenue. The public is invited to join project members between 11:30 a.m. and 3 p.m. as they plant willow wands and grass seed along the banks in Kinsmen Park.

This phase will also include the creation of fish habitat features such as pools, riffles (little rapids), meanders and boulder clusters.

But the day is as much a celebration of the creek environment and there will be a free barbecue lunch at the Hinton Good Companions Hall.

Young and old came to enjoy the creek and learn about the project.

Thanksgiving Weekend Big Splash Event!

Join us October 9th, 2004 to see instream fish habitat restoration at work.

Kinsmen Park - Hardisty Avenue
11:30 am - 3:00 pm

Free BBQ lunch!
- Learn about the importance of healthy watersheds
- Learn about the process of watershed restoration
- Join us to plant willow wands and grass seed in the riparian area and help Our Community Creek.

Event planned by the West Athabasca Watershed Bioregional Society.

Sponsored by - Alberta Conservation Association, Alberta Ecotrust, Alberta Sustainable Resource Development, Alberta Transportation, Fisheries and Oceans Canada, Foothills Models Forest, Hinton Fish and Game Association, Town of Hinton, Weldwood of Canada Ltd.

Media Coverage of Phase II of the Hardisty Creek Restoration Project: Hinton Parklander, October 14, 2004

Creek restoration draws a crowd

BY TYLER MAUGH

Between 50-60 people converged on Kinsmen Park Oct. 9 to help move along the next phase of the Hardisty Creek Restoration project.

All of the extra hands helped create a better fish environment along a 300 metre stretch of the creek, and also helped solidify the riparian (green) zones along the creek banks.

"We'll succeed as long as we have community buy-in to the process," said Connie Bresnahan, member of the Athabasca Bioregional Society and the restoration project. "From an awareness and education standpoint it's very important and it's just as important to have when we are applying for grants. People want to see that your project is important to the community."

The work bee drew a good cross section of young and old from around Hinton.

Youngsters walked the creek shores spreading grass seed while teens and adults busied themselves pruning willow boughs and building up the creek banks.

Some heavy equipment was also brought in to move boulders and trees into positions that created eight meanders, eight rapids and pools.

"Bringing the heavy equipment in was something we had to carefully consider. We recognize that seeing that machinery in the creek was a hard thing to accept but the work that was done has been proven to work in the long-term," said Richard McCleary, a biologist with the Foothills Model Forest.

The creek was also narrowed in some places and Bresnahan says, combined with work completed last year and the help of Weldwood Canada and DN, the waterway is now a viable fish habitat for close to five kilometres between the Athabasca River and Hwy 16.

McCleary said there is more to do the following year.

"We actually got a lot of work done on Saturday. We only planned to complete six of each so it was a nice surprise," McCleary said. "We just have to go back next year to finish the fish passage at Hardisty Drive."

Bresnahan said volunteers will be needed again in the spring to go back and assess how some of the willow boughs and seed has survived over the winter. Willows planted during last fall's work bee had an 85 per cent survival rate.

"That's pretty good. If we get even near that again we'll be really happy," said Bresnahan.

The day started with a brief tour upstream to raise awareness of restoration work completed last fall. Participants were also treated to barbecued hamburgers and hot dogs as reward for their labours.

Perry Hayward of Brule, left, and Maryanne Pattison of Hinton, prune some willow cuttings near the banks of Hardisty Creek during a restoration project work bee on Oct. 9. About 50 people participated.

Tyler Maugh Photo

What is a watershed… And why should we care about them? Connie Bresnahan, Athabasca Bioregional Society, and Rich McCleary, Foothills Model Forest, explain the why's and how to's of watershed restoration.

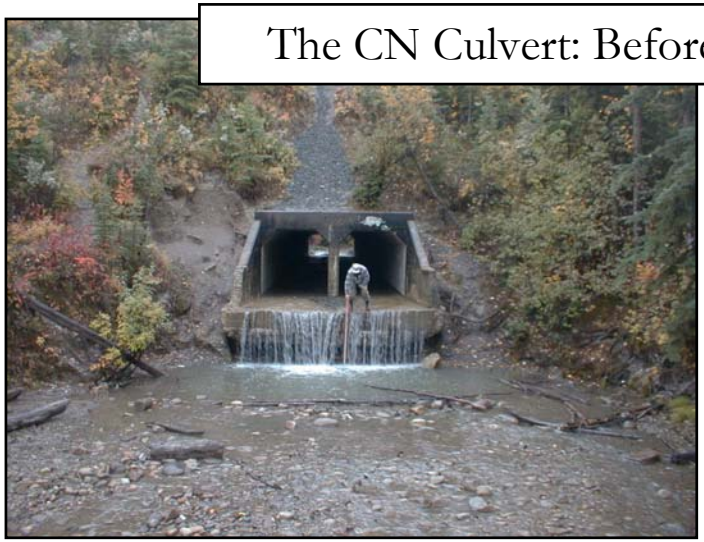
A perfect venue for our event – the Hinton Good Companions Hall beside Hardisty Creek.

Volunteer cooks helped keep participants happy!

Free BBQ Lunch facilitated conversations about the creek.

Interpretive Tour. Rich McCleary, Fisheries Biologist with Foothills Model Forest, guided the interpretive walk and talk. An informative introduction to Phase I of the project brought the group to the CN culvert to show the remediation.

The CN Culvert: Before and after remediation.



Rich McCleary explaining streambank restoration at the CN project site.

The tour group made their way to Kinsmen Park, where they were given an introduction to the restoration process of Phase II. A lot of interest and awareness was generated for watershed stewardship through questions and discussion.

Building community capacity through education, action and fun.

With over 50 people participating and learning during the "Big Splash Event", and willow wands and grass seed planted from one end of Kinsmen Park to the other, we had a successful day on *"Our Community Creek"*.

"Willow Elk"

Community Works:

Education, Awareness,
Responsibility…
Pride

What we learned: Communities <u>can</u> make a difference through…

…building strong partnerships.

…using the best science and technology.

…taking the time to plan properly.

…inspiring the young.

…facilitating public involvement.

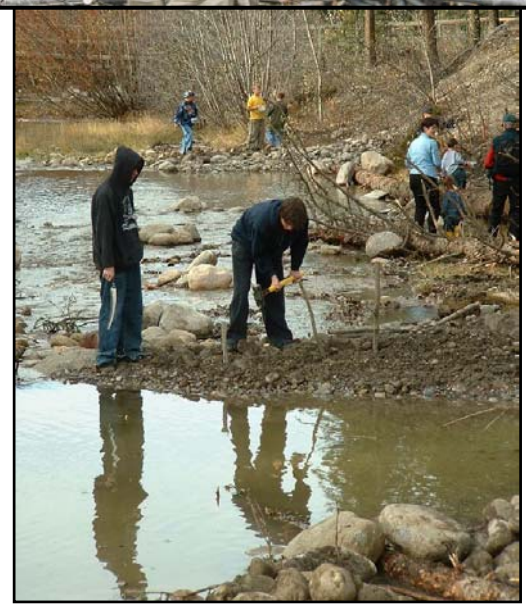
It all adds up to Community Watershed Stewardship!

Watershed stewardship for all ages. Youngsters, elders, families and even teens. Hurrah!

Hinton elder glad to see the creek regain some of it's former character.

Happy grass-seed sprinklers

Learning by doing: teens at work on willow plantings.



Planting the willow wands. Streambank stabilization using geotextile and willow wands cut by local volunteers.

Community volunteers planting and trimming willow wands on a point bar.

Local chainsaw instructor cutting willow wands.

Mass plantings were also done with the help of the excavator.

Planted willows – waiting for the spring to sprout leaves!

Our Community Creek...

…restoring beauty and function.

…creating a better place for the future.

…celebrating partnerships that make things happen.

…building community capacity for healthy watersheds.

The Strength of Partnerships…

Thank you!

A Big Thank You!

The Hardisty Creek Restoration Project wishes to thank the following for their part in making the Kinsmen Park fish habitat restoration and October 9th "Big Splash Event" a resounding success.

"OUR COMMUNITY CREEK" thanks you!

- All the families and individuals who helped with the event and volunteered to plant willows and grass seed along the streambanks
- Jan denDuek, Fish Habitat Restoration Specialist, EMS Solutions, Edmonton
- Rich McCleary, Heidi Schindler, Don Podlubne and staff at the Foothills Model Forest
- Volunteers from the West Athabasca Watershed Bioregional Society, Hinton
- Town of Hinton staff
- Hinton Good Companions
- Border Paving Ltd.
- Oui Print Ltd.
- Queen's Bakery
- Helmig Fire Equipment Inc.
- Hinton Concrete Construction Ltd.
- Kinsmen Club
- Westwind Outdoor Safety Services Ltd.

A special thank you also goes to the Project supporters:

- Alberta Conservation Association
- Alberta Ecotrust
- Alberta Sustainable Resource Development
- Alberta Transportation
- Fishing & Oceans Canada
- Foothills Model Forest
- Hinton Fish & Game Association
- Town of Hinton
- Weldwood of Canada Ltd.
- West Athabasca Watershed Bioregional Society