

Two small  
bow  
river  
trout  
are  
being  
held  
by  
a  
person's  
hand.

# Stream Tender Magazine

September Issue 2013

Magazine Mission Statement

"Local Trout Stream Project News and Information"

Publisher/Editor Information

**Previous Issue**



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## Program Partners

**Cochrane Community Grant Program**

**Cochrane Foundation**



**DIAGEO**

Bow Valley Habitat Development and Stream Tender Magazine is pleased to announce a new partner into the Nose Creek planting program for 2013.

DIAGEO / Evergreen will be completing a fall planting on Nose Creek this year!

Advertise for Willow and Tree Program

Contact: [info@streamtender.com](mailto:info@streamtender.com)

## New Generations of Trout for the Bow River!

Despite the Bow River flood event of 2013, the fishery holds promise for future years to come! The phenomenal trout hatch on the Jumpingpound Creek in the summer of 2012 became quite apparent, as the water levels in the Bow receded, after the flood this summer.

This 2012 trout hatch has resulted in very high numbers of juvenile trout being recruited into the Bow River system this year.

The number of juvenile brown trout in the river has also increased significantly! This means that recruitment from the Bighill Creek is increasing!!



**Above:** This small rainbow trout was caught on a dry fly, soon after the water levels in the Bow River, near Cochrane, started to drop, just after the flood.

[Read More](#)

"More Trout in the Bow River"



## The 2013 – Nose Creek Riparian Recovery and Enhancement Program is "Off To A Great Start" This Year!

With plenty of partners involved, the Nose Creek Riparian Recovery and Enhancement Program got off to a great start this year! This year's program concentrated on the section of Nose Creek that flows thru the City of Airdrie, but we look forward to expanding the program further upstream and downstream in future years.

In total, 3,249 willow and tree plants were planted along the stream banks of Nose Creek in Airdrie, Alberta. The total volunteer person hours for this program was 160 hours.

The plantings in their entirety, covered a distance of 1.8 kilometres of stream bank. This can be considered a significant riparian recovery and enhancement effort for this small Alberta stream.

The partners in this year's program were:

**Canadian Pacific**  
**Honda Canada Foundation**  
**Microsoft / Evergreen**  
**Walmart / Evergreen**  
**Bow Valley Habitat Development**  
**The City of Airdrie**

**Stantec**



## Herbicide Spraying Destroys Riparian Habitat!



**Above:** Thistle spraying killed this willow plant along the water's edge, of a local trout stream. This photo was taken just days after the spraying program. Willows such as these are considered vital fish habitat, along our flowing streams, so why are we spraying them with herbicide?

Many willow and tree plants will not reach maturity with this type of aggressive herbicide weed control spraying activity. Should there be a wider spray free zone along our flowing streams?



[Read More](#)

## The 2013 – Bighill Creek Riparian Recovery and Enhancement Program has another Successful Year!

The Bighill Creek Riparian Recovery and Enhancement Program is part of the Bighill Creek Project, which is now in its ninth year of operations.

Over the past nine years, the Millennium Creek Project was completed on a small tributary to the Bighill Creek. With the completion of that major enhancement program, the following study and enhancement projects have been completed:

- The Bighill Creek Fisheries Study, 2008, 2009.
- The 2011/2012 Riparian Recovery and Enhancement Program.
- This year's 2013 Riparian Recovery and Enhancement Program.

Over the spring and summer months this year, a total of 2,946 willow and tree plants were planted along the Bighill Creek.

The partners in this year's program were:

**Shell Canada**  
**Inter Pipeline**  
**Cochrane Community Grant Program**  
**The Cochrane Foundation**  
**ATCO Pipelines**  
**The Buy a Willow or Tree Program.**

A total of 109 volunteer person hours were contributed towards the successful completion of this program.



"The second year poplar plant on Bighill Creek, in the town of Cochrane"

## Lots of Juvenile Brook Trout in Millennium Creek Pool Habitats This Year!



**Above:** Check out the video link above to see how abundant the juvenile brook trout are in Millennium Creek this year. These small trout are from this year's hatch and emergence on the spawning channel, which was constructed in 2010. The small trout will spend the first part of their lives in the creek, until they are large enough to migrate downstream into the big water!

## Canmore Creek Log Wall and Plants, 15 Years After Completion



[Read More](#)

**Above:** This 2013 photo shows the log wall and willow/tree plants on Canmore Creek, 15 years after it was constructed. The willow and poplar trees are getting very tall now, and the lower limbs help to hide the logs used in the log wall construction. The substrate in the creek channel below the log wall is now clean and free from mine tailings. The creek looks really good this year!

In the late 1990's, and as part of the Canmore Creek Fish Habitat Enhancement Program, a major bank stabilization project was completed on the lower reach of Canmore Creek. The objective of the project was to help stabilize a slope that was loading mine tailing into the stream channel.

The steep slope above the creek consisted of tailings from the Canmore Mines #1 and #2 mine shafts, located just upstream of the stabilization site. The historic mine site was never reclaimed after it ceased operating in the early 1900's.

It was determined that the best way to deal with the site was to create a bench at the base of the slope, to prevent toe erosion and any further slippage of tailings.

To do this, a rather long log wall would be constructed at the base of the slope. Then a riparian crop of native plants would be established on the bench. Over time, the riparian growth would cover the log wall and a stable root mass could creep up the slope and re-vegetate the area.

The long term benefits would become apparent in the streambed substrate, which would clean itself of mine tailings below the log wall and downstream of the site, over time. The overhead cover created by the re-vegetated bench, would provide fish habitat for the resident trout in the stream.

I have really enjoyed watching the slow transformation of this project site, over the years!



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## The 2013—Post Flood Fisheries Report, for the Bow River in the Town of Cochrane, Alberta

Soon after the water levels receded on the Bow River in the Town of Cochrane, I grabbed my fly rod and headed down to the shoreline to do some fishing. I was anxious to check out the trout populations after such a historic flood event on the river.

I had been telling people that the flood would not wipe-out the trout fishery, and I was hoping to prove my claim, by hooking a few trout. Sure enough, I did catch some rainbow trout on that first outing and on a few following trips to the river.

As a matter of fact, I noticed immediately that there was an incredible abundance of juvenile rainbow trout, from the 2012 hatch on the Jumpingpound Creek. These small trout varied in size from 10 to 16 cm in length, which confirms that they were second year class fish.

It was great to see so many small trout in the river! These small trout will provide great recreational angling for many years to come.

Having fished this reach of the Bow River for more than 40 years, I can say with confidence that I have not seen so many small trout in the river, since the 1960s!



**Above:** This photo shows the flow elevations on the Bow River in the Town of Cochrane, during the peak of the 2013 flood event. The photo was taken just upstream of the highway 22 bridge. The last major flood event that occurred on the Bow River, was in 2005. That previous flood did not impact the fishery in a negative way!

Also of importance, there is a growing number of juvenile brown trout in this stretch of the Bow River, in Cochrane. I have never seen so many of them. Especially in the area near where the Bighill Creek enters the Bow River.

It is my suspicion that these small brown trout are from previous years of successful spawning activity on the Bighill Creek. This growing population of brown trout will definitely be of importance to anglers in future years. Brown trout have a habit of coping with habitat that is less attractive to rainbow trout, so they may enhance our sport fishery in this section of the Bow River, especially during low flow periods of the season.

Besides the small brown trout and rainbow trout, I did manage to hook into some larger trout this summer. So this indicates that a variety of year classes are still present in the Cochrane area, on the river. Nothing very large was caught, but the larger rainbow and brown trout that I did hook into, were respectable trout.

I am presently waiting on the water levels to drop a little lower, before I continue my angling survey.



**Above:** This is the average size of the larger rainbow trout that you will catch on this reach of the Bow River, near the Town of Cochrane.



**Above:** This nice size brown trout fell victim to one of my dry fly patterns. Brown trout of a much larger size can be caught on this reach of the Bow River.

## Water Table is Up – Which Means More Water For Trout!

People that I know will often ask me: how is the area fishery doing? I am pretty sure that they ask me this question for two reasons. The first reason is that they know that I am an avid fisherman, and secondly, they know that I am involved in fish habitat enhancement work and I like to keep informed on the state of the fishery.

These days I am always happy to report that the local fishery is doing very well. Not because of what I do in my fish habitat enhancement work, but rather it all is related to natural habitat conditions. The greater volumes of flow that we are seeing in our area streams, due to more precipitation in recent years, and an increase in the height of our ground water table, is the reason.

Since the start of the new millennium, I have observed a substantial increase in the volume of flow in all of the area's small streams. Including the very small spring fed tributaries that feed the main stem of our larger streams. This is very good for the fishery in these streams.

When the flow increases in the smaller spring fed tributaries, juvenile trout will move into these small feeders and utilize

them during the first part of their lives, as a habitat. Especially "young of the year" trout that have hatched in the main stems.

On the main stem streams that are used as spawning tributaries, the higher flows help keep the streambed substrate clean and free of silt, including the spawning gravels on key spawning habitats. Even clean beds of cobble and boulders will benefit the stream's fishery, because these areas produce good invertebrate habitats, which ultimately provide more food for the resident trout in the stream.

The flood events on years of high precipitation do a lot of good for trout streams. Flooding will create new habitats in the stream, such as pools, woody debris that is washed down and into the stream channel and the scouring of undercut stream banks. All of this will benefit the trout populations.

The cool water of ground springs can help keep the water temperature in the streams optimal for trout, during the hot summer days. Trout need cold clean water to survive and the more of it, the better for the fishery.

I don't know how long this series of wet years will cycle, but I know that when there is lots of water, there is lots of trout!



**Above:** This nice sized pike was posed next to one of our willow plants that were planted on Nose Creek this year. The willow is located just above the fly rod handle in this photo. After the pike's photo was taken, the fish was safely released back into the creek. All of the fish that I catch are returned to the water. Some are captured by my camera.

## "Pike Fishing in Nose Creek"



**Above:** The pike that I caught in Nose Creek this year were larger than those that I hooked into last year! The one in the photo above was the average size for this year!

On some of my trips to Airdrie this summer, to inspect the willow crops that were planted, I like to take my fly rod along for a little fishing. I first fished for pike on Nose Creek in 2012, when I first discovered for myself that there was a decent pike fishery, if you fished the right locations on the creek.

This year, when the water levels and clarity were just right, I managed to catch 5 pike in just over an hour's time. Which, in my experience, is pretty good pike fishing! All of the pike that I hooked into were of good size and noticeably a little larger than those that I caught last summer.

For those of us that just like to fish, the pike is a great sport fish to angle for. The fish are very aggressive and they will take a lure or streamer fly without hesitation, if the color and size of your offering is just right.

I like to use a fly rod for my pike fishing and over the past two years, this method of catching pike on Nose Creek has worked very well for me. Last year I used a 7 weight fly rod and this year I used my 9 weight, which seemed to cast the large streamer patterns with a little more ease.

Presently, areas of the Nose Creek are very wide and shallow, with dense weed growth in the summer months. Once a healthy riparian zone is established, some of the mature willows and trees will help to constrict the flow over future years. This will deepen the channel in certain areas and provide better habitat for the pike.

Pike are an important sport fish species that prove great angling opportunities for recreational anglers. On the many prairie streams that they occupy, they are often overlooked as a respectable resident of those flowing waters. The fish deserves the same respect that our trout species get and they are also an important part of the bio-diversity of our prairie streams!

I personally look forward to many good angling seasons, while fishing for pike on Nose Creek. It will also be interesting to see how our riparian enhancement work will benefit this fishery!



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ATCO Pipelines Volunteers Enjoy Chipping In to Help-out a Trout Stream!



Bighill Creek Willow and Tree Planting Program 2013  
ATCO Pipelines Volunteer Planting Team

If you are lucky enough to have a sunny warm day for your planned willow and tree planting project event, everything else just seems to fall in place. Including the smiling faces!

Such was the case on the morning of June 7th, this past spring. A volunteer team of willow and tree planters from ATCO Pipelines office, in nearby Calgary, showed up to plant willows and trees along Bighill Creek, in the Town of Cochrane.

The ATCO team had a chance to enjoy a beautiful day along the banks of a trout stream, doing a little hands on riparian enhancement work. At the same time, the group had the opportunity to learn a little bit about the Bighill Creek, its fishery and the long term objectives of the Bighill Creek Project.

After a few hours of hard work that morning, the ATCO volunteers had planted just over 200 Stage Two willow and tree plants. This was on top of another 150 Stage One plants that had been planted earlier in the spring, on the opposite side of the stream channel.

As you can tell by the photo to the left of this column, everyone on the team had a smile on their faces by the end of the day's project. I am happy to report that the survival rate of both the Stage One and Stage Two willow and tree plants was very high for this year's program!

I look forward to reporting on the future growth of these and all of the other plants from this year's riparian recovery work program. It is hoped that ATCO Pipelines will participate in another planting program this next season, on the Bighill Creek.



#### Right Photo:

*This photo of one of the ATCO Pipelines Stage Two plants was taken on August 22nd of this summer. You can see that the plant is doing very well and by the end of next year's growing season, it should be noticeable above the tall grass of August.*



Above: This photo shows a few of the willow plants from the 2012 BHC Riparian Recovery and Enhancement Program. During last year's planting, a total of 1,550 plants were planted. The partners in last year's program were: Cochrane Community Grant Program, The Cochrane Foundation, Inter Pipeline and Bow Valley Habitat Development.



The 2013 Stage Two Willow and Tree Plants are doing Very Well, on Bighill Creek!

Bow Valley Habitat Development has been closely monitoring the 2013 crop of willow and tree plants, over the summer months. I am pleased to report that all of the plants are doing very well.

The majority of plants that were planted during the 2013 season were Stage One plants. The Stage One are early development cuttings with roots and tops, when they go into the ground earlier in the spring. Some plantings are done right after the frost leaves the ground.

One of the main advantages of the Stage One plants is that they spend less time in the nursery and therefore they are less expensive. Also, the Stage One plants can be put into the ground earlier in the spring. Some plantings are done right after the frost leaves the ground.

By the time the abundant shoreline sedges and grasses are starting to show signs of first growth for the season, the root systems on the Stage One plants are already established and this gives them a bit of a head start.

On Bighill Creek, a total of 2,732 Stage One plants were planted along the stream banks of BHC. These plants, when they are mature, will provide great overhead cover for the resident fish population, as well as shade to help keep the water cool. Other benefits include the constriction of flow in the channel, which will help keep the streambed clean and less congested with silt and weeds.

The primary long term goal is too enhance existing spawning habitats for both brook trout and brown trout in the creek. Presently, the Bighill Creek is in relatively poor condition, due to high quantities of silt movement in the stream every year. So it is only suitable for fall spawning varieties of trout.

Possibly, at some point in time in the distant future, and long after I am gone, the stream may recover and support spawning opportunities for rainbow trout and even cutthroat trout. However, this is only speculation on my part. I like to try and stay as optimistic as possible, in this field of work!

The partners involved in the 2013 Bighill Creek Riparian Recovery and Enhancement Program and their contribution is listed as follows:

Partner	Number of Plants
Inter Pipeline	1,010
Cochrane Foundation	500
Cochrane Community	
Grant Program	500
Shell Canada	500
ATCO Pipelines	350
Buy a Willow	
Or Tree Program	72

On behalf of the fish, wildlife and residents of the Town of Cochrane, Bow Valley Habitat Development would like to thank the partners of this year's Riparian Recovery and Enhancement Program!!

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Photo by Adrian Feregatto



2013 Microsoft Volunteer Planting Team, on Nose Creek in the City of Airdrie, Alberta

## "Nose Creek Willow and Tree Crop is Doing Very Well!"

Despite the flood conditions on the Nose Creek this year, the plants are doing fine. A large number of new plants were submerged to some time during the high flows, but they seem to manage ok, once the water levels receded.

Some willows and tree did not make it, but this is too to be expected over a prolonged period of submergence time. Each year presents different challenges to a willow crop, and high water levels during a flood was this year's issue.

When the plants go into the ground, in the early spring, it is hard to know if the planting should be carried out close to the water's edge, or further back on higher ground. It is a gamble either way! My preferred approach is to do both!

This year, the plants that were planted further back from the water's edge were in far better shape well into the growing season. I will continue to use this strategy of planting in close and further back from water's edge for future plantings. It is best not to take a risk on the elements, be it flood or drought!

As I have mentioned to all of the volunteers involved in these planting projects, they can expect to see the first noticeable results after approximately 4 to 5 years. During the first few years, the young plants are mostly hidden in the tall grasses and sedges along the stream banks.

By the fourth year, the planted crop will really stand out along the stream banks. I look forward to taking a few photos then!



**Above:** When the water levels from the flood receded, a white powder was left on the new willows and shoreline grasses and sedges. This could be from the high PH levels in the creek's water or possibly salinity from farm fields upstream. On many young willow plants, the powder coated their leaves.

See the Video



Canadian Pacific, Stantec, volunteer team at the Willows / Evergreen Planting Site

The partners in the 2013 Nose Creek Riparian Recovery and Enhancement Program are listed below, along with their Contribution:

Partner	Number of Plants
Canadian Pacific	400
Honda Canada	375
Microsoft / Evergreen	536
Walmart / Evergreen	1,700
Bow Valley Habitat Development	238

Additional volunteer support was received from the City of Airdrie and Stantec Environmental Ltd.

Planting in the Rain is great for the plants, but it is not so great for the volunteers! Photographer and Microsoft employee – Adrian Feregatto, managed to catch a few smiles, in-between the showers and down pours. Everyone had a great time, despite the rainy weather!



**Above:** Despite the heavy rain, volunteers from the Microsoft Office in the City of Calgary, plant just over 400 willow and tree plants on Nose Creek, in Sierra Springs, Airdrie, Alberta.

Photo by : Adrian Feregatto



**Above:** This is a photo of some of the Stage One plants along the water's edge on Nose Creek. The photo was taken in mid-August of this year. By now, the root systems are well established with plenty of moisture available from the water table, next to the surface of the creek.



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**Above:** Canadian Pacific volunteer Valerie Stables and her son Declan Wilke, plant Stage Two willow plants along Nose Creek in the City of Airdrie.



**"We'll be watching as these plants grow!"**



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Mine Tailings on Canmore Creek Were Sliding into the Stream Channel Prior to 1998!



#### Left Photo:

As you can see from the photo on the left, mine tailings were sliding down the slope and entering the stream channel on Canmore Creek. These tailings were smothering the natural cobble and gravel that had once existed as the stream's substrate.

By constructing an elevated log wall at the base of this slope, the toe erosion would be eliminated and the slope could stabilize over time. The stream channel would be moved out from the base of the slope, when a bench was created along the water's edge.

The huge beaverdam shown in this photo, could then be removed and the channel both upstream of the dam and downstream would be allowed to clean itself out, flushing the mine tailings downstream.

All of the work would be done by hand labour, to avoid the necessity of bring heavy equipment into the valley floor. The site is located in a historic mine site, so this hands on construction was necessary as part of the permitting clearance for the project.

In 1998, BVHD Constructed a Log Wall at the Base of the Slope



**Above:** This 1998 photo was taken from the top of the valley, looking down on the newly constructed log wall, at the base of the slope. There are anchor cables above and below the geo-textile liner, to insure the long term stability of the log wall. This photo was taken just before the back-filling on the bench.



**Below:** The photo below was taken from the same position as the one above, but the one below is a shot from this year, which is 15 years after the log wall was constructed!



#### Left Photo:

This photo was taken in 2000, two years after the log wall project was completed. The photo was taken from an upstream position, looking downstream along the log wall.

Most of the log wall is barely visible in this shot, but you can see that the streambed substrate has already started to clean-up. This would prove to be a valuable benefit to the stream's fishery in the next few years!

Also during the 1998 log wall project, new spawning habitat was created on the lower end of Canmore Creek. The findings of a spawning survey conducted over the following two years, showed that the spawning activity by both brown trout and brook trout, was increased by over 90%. The log wall project helped to keep the spawning gravel on the lower end of the creek into future years.



**Above:** This 2013 photo was taken from the top of the valley, looking down the slope to the log wall. You can see that the willows and poplar trees have grown considerably, and the slope is now covered with native grasses. Also noted: the willows and trees are starting to sucker up the slope and I expect that in the next ten years or so, the slope will have willows and tree cover to further stabilize it.



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**Above:** In this photo, BVHD team members spread the back-fill over the geo-textile and create an earthen bench that is level with the top of the log wall. The next phase was to plant native willows, trees and grasses on the bench.

#### Right Photo:

Fish Habitat Tech. Duncan McCall, along with fisheries biologist (background), Eric Ladizable, finished the log wall by planting native willows, trees and grasses on top of the bench. The team worked very hard to complete this project, but having the opportunity to re-visit the site years later, makes all of the hard work worth it!





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## Why are we Spraying Herbicide so Close to the Water's Edge?

The Canadian Department of Fisheries and Oceans or DFO, is responsible for the protection, enhancement and regulation of fish habitat in this country.

If you visit the DFO website and go to the fisheries/habitat link, you will find plenty of information that promotes the protection, the importance and the enhancement of both in-stream fish habitat and the riparian zone that buffers our flowing waters.

Riparian habitat, which includes willows and deciduous trees that grow along the water's edge and including the branches or trunks

that enter the stream, are considered fish habitat.

Furthermore, under the federal fisheries act of Canada, which DFO enforces, it is unlawful to harmfully alter the habitat of a fish-bearing stream or add deleterious substances to its waters!

So I pose the question; why does this same government department allow the spraying of herbicides that kill willows and trees, right along the water's edge of our flowing waters? Especially on streams that have resident fish populations?

Presently, in the province of Alberta, Municipalities, Towns and Cities, are allowed to spray herbicide right up to 1 metre from the water's edge.

This means that if there is a mature willow tree that has a width of 3 metres and it is growing right along the water's edge, a spraying contractor can legally spray 3/4's of the plant with herbicide, without fear of retribution.

If DFO is spending so much of its budget on promoting the protection and enhancement of in-stream fish habitat and healthy

riparian zones along our streams, why don't they modify the regulations regarding herbicide spraying?

By allowing spraying activity to occur so close to the water, huge amounts of the chemicals are being introduced into the streams, and we can only speculate what the long term effects of this pollution will be.

Natural recruitment of new willows and tree plants will not occur, if broad leaf herbicides are sprayed every year or even every three years.

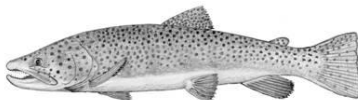
Hopefully this issue will be addressed by the province or DFO!

## A Few Stage One Willow Plants Fell Victim To Thistle Spraying Program!



**Above:** This Stage One Willow Plant was one of approximately 12 plants that fell victim to thistle spray this year. Although the number of lost plants was low, in comparison to the number of plants that went into the ground, it is still a "hard pill to swallow", knowing that you have lost a few plants this way! Bow Valley Habitat Development has talked to contacts in the thistle spraying program, and hopefully this won't happen again.

I have since found out that my earlier request for a 5 metre spray free zone was somehow miss communicated between the right people involved in the thistle spraying program. Fortunately the losses were quite low!



## Some Plants from a Previous Planting Program Were Also Sprayed with Herbicide!



**Above:** This Red Osier Dogwood, which was planted by volunteers on a previous planting program. It also fell victim to herbicide! You can see one dead thistle, right next to the willow. So was it worth killing one willow plant for one thistle?



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## Left Photo:

The willow tree in this photo was sprayed with thistle herbicide, during a spraying program along this trout stream. You can see the dead leaves on the plant. Also, you will notice that the plant is located right over and in the water of the creek, so it is a puzzle to me why anyone would spray this plant with herbicide.

I monitored the slow death of this plant, from when the leaves started to wilt, just a day after the spraying program, until I took this photo, about 8 days later.

**Zoom in for a closer look!**



**Above:** In this photo, you can tell where the herbicide was sprayed, the grass color has turned reddish in color. The top of the red osier dogwood that is shown in the bottom left side of this photo, was lucky that it did not get sprayed. Other willow plants that have been planted were not so lucky! You can also see how close to the creek that the broadcast spraying of herbicide was done.

" Hopefully the issue of how close to the water's edge that herbicides can be sprayed will be addressed by the Province or the Department of Fisheries and Oceans! There are a lot of groups and organizations that plant thousands of native willow and tree plants along our flowing streams each year, and it is a shame to know that some of those plants will be lost to chemical sprays. Also, how are we expected to complete riparian recovery programs when both natural recruitment of plants and those that are planted by humans – are Killed! "



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## "Two Major Bow River Boulder Enhancement Projects From the Past"



**Above:** In 1987, a series of very large boulder rock placements were completed on the Bow River in the Town of Cochrane. The objective was to create low flow habitat for trout and mountain whitefish.



**Above:** In 1996, a much larger boulder fish habitat enhancement project was completed at five different sites on the Bow River in the Town of Cochrane, Alberta. In total, a 133 class 4 and 5 boulders were placed in the riverbed at sites.

The two boulder fish habitat enhancement projects were partnership programs, completed by Bow Valley Habitat Development.

The 1987 project was funded by the Alberta Buck for Wildlife Program, and additional support was received from the Town of Cochrane.

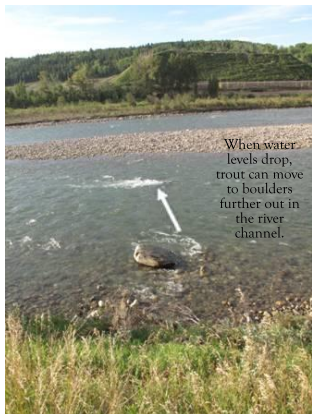
The large 1996 enhancement project was completed by BVHD, with funding support from TransAlta Corporation, Nova Gas Pipelines (ATCO Pipelines), The Alberta Conservation Association, The Town of Cochrane and The Jumpingpound Chapter of Trout Unlimited Canada.

The objective of both enhancement projects was to create low water fish habitat for the resident trout and mountain whitefish in this reach of the Bow River.

All of the work was completed during a low flow period in the early morning hours, when flow levels were very low.

During non-peak electricity demand hours, at the Ghost Dam power facility, water is held back to re-fill the reservoir with water. This creates a low flow period on the Bow River in Cochrane. TransAlta modified its flow program, to accommodate the work being completed in the river, during both boulder projects.

## How Trout and Mountain Whitefish Utilize Boulder Habitats – Under High and Low Flow Conditions, on the Bow River in the Town of Cochrane!

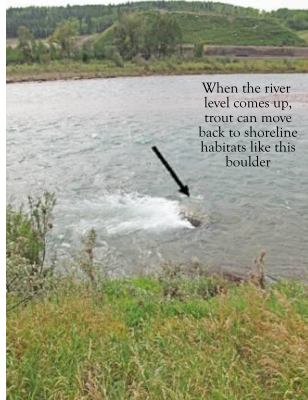


When water levels drop, trout can move further out in the river channel.

**Above:**

This photo shows an exposed boulder in the stream channel, near the shoreline. This photo was taken under lower flow levels than the photo on the top right.

Further out in the river channel, you can see a submerged boulder that is disrupting the flow in the channel. Trout and whitefish like to hold just downstream of these boulders, where the current has been slowed down. See the video links to the right. They will show how trout and whitefish



When the river level comes up, trout can move back to shoreline habitats like this boulder

**Above:**

Only a few hours later, and standing in the same general position as when I took the photo on the top left, you can see how the river looks with higher flows. Now the boulder near the shoreline is submerged and it will provide good holding habitat for trout and whitefish that move into the shore, from the mid-channel habitat.

The boulder in the mid-channel area is now submerged. This is evident by the lack surface

## "The Boulder Projects – 2013 Post Flood Report"



**Above:** This is what one of the triple rock placements looked like in 1996, just after the project for that year was completed. Note the pocket pool area just below the three rocks. This provides great low water fish habitat!

Large flood events benefit the fishery in a river or stream by creating new habitats for the fish that reside in their waters. The scouring effects of a flood also enhance invertebrate habitats for the long term!

The high water's of a flood will move large amounts of woody debris down into the system, from stream banks upstream. This woody debris is utilized by both trout and invertebrates as habitat. Scouring of river and stream banks will also expose new boulders into the stream channel, especially on rivers such as the Bow River.

I have walked on the river banks on the Bow River in Cochrane, since the flood waters receded, and there are plenty of new boulder habitats in the river. Also, on some sections of the river, large amounts of trees and root systems line the shore of the river.



**Above:** This is the exact same triple rock placement as shown in the photo to the left. This photo was taken on the morning of August 29th of this year. Note that this is a side view photo.

When the swift current from the flood scoured the base of some high river banks on the Bow this year, large rocks were exposed and some fell down into the river channel, along the river bank. In other instances, large boulders that were already buried beneath cobble and gravel, are now exposed above the substrate!

This is great for the trout and mountain whitefish in the Bow! During normal high water flows, the fish will have that much more habitat in the water along the shoreline of the river. These boulders create eddies and pocket habitats in the faster flowing riffles on the river.

An article on the new generations of trout being present in the Bow is mentioned in this magazine issue. These new trout will have a lot more habitat to grow in, over the next few years. All as a result of the flood event this year!



*Two Underwater Video Assessments of the Bow River Boulder Project Were Completed in 1998 and 2000!*

*You can Witness for Yourself, How Effective These Habitats Are, By Clicking on The Video Links Below:*

[1998 Bow River Boulder Site Video Assessment](#)

[2000 Bow River Boulder Site Video Assessment](#)

**HOME**



**Above:** This is a photo of a nice rainbow trout that I caught at one of the boulder habitats in Cochrane.

Since the Bow River Boulder Projects were completed, I have spent many hours fishing the structures at low water conditions. These sites have become some of my favourite areas to fish on this reach of the Bow River, near Cochrane. I have been fortunate enough to have caught many a nice rainbow trout, like the one pictured above, and many nice Rocky Mountain whitefish as well!