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So far, there are seven partners committed to supporting the 2015 Bow Valley Riparian Recovery and Enhancement Program. This is a great early start and Bow Valley Habitat Development looks forward to more partners.



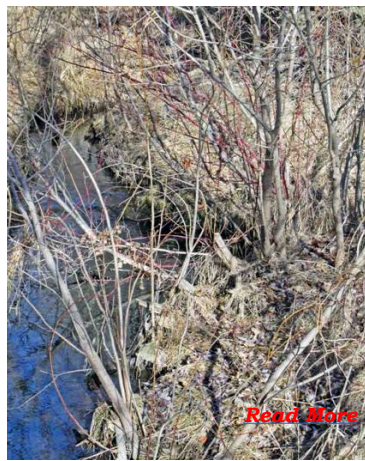
## Fifth Trout Hatch on Millennium Creek Spawning Channel



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Above: A pair of newly hatched trout on Millennium Creek seek the cover of gravel habitat to spend the first days of their lives, just after emerging from the spawning beds in the constructed channel.

## First Crop of Willows on Millennium Creek are Ready to Contribute!



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Above: This 2015 photo shows the first willow crop that was planted on the creek.

It has been eight years since the first plantings of willows were done on the Millennium Creek, here in the Town of Cochrane, Alberta. A total of just over 400 native plants were planted along the water's edge in 2007, as a part of the stream restoration program.

The plants are now mature enough to be harvested for cuttings, which will be used in future plantings along both Millennium Creek and Bighill Creek, for the Bow Valley Riparian Recovery and Enhancement Program.

This harvesting of small diameter cuttings will not harm the mother plants, as a matter of fact this collection of cuttings will enhance the growth of the donor plant. In the future, the mother plants will become more bushy and thick with limb cover for the stream.

The root systems from the eight year old plants has already created a dense mass of root growth, helping to stabilize the stream banks. During the growing season, the cover of branches and leaf growth provides excellent overhead cover for the stream's resident trout population.

The plantings occurred two years after the new stream channel had been excavated on Millennium Creek. The new channel was allowed to rest for a few years, before the planting of willows was completed. The moist environment along the creek was perfect for the growth of the willows. It has been a real pleasure to observe the growth of the plants over the past number of years along the creek.

## 2015 Should be Another Great Year for Volunteer Support!



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Above: Volunteers from the local "Branches and Banks Org." plant willow cuttings on Bighill Creek.

In recent years, the volunteer support for all riparian planting programs has been an important ingredient in the success of the overall program. To date, hundreds of volunteers have contributed some of their valuable time towards getting some willows and trees in the ground.

Volunteers of all ages have enjoyed participating in something that will benefit the environment and all of the fish and wildlife that also gain important habitat from the planting programs.

As of February 2015, Bow Valley Habitat Development has already secured commitments from two different groups, to partake in the 2015 Bow Valley Riparian Planting Program.

## Bighill Creek is Now a Major Spawning Tributary to the Bow!

Once the spawning of both brook trout and brown trout was documented on the Bighill Creek, the first evidence of the stream's importance to the local fishery was established.

Along with the spawning in the main stem of BHC, we now know that three of the creek's main tributaries are also utilized by spawning trout.

This adds a considerable amount of significance to the Bighill Creek's contribution to the fishery, including benefits to the sport fishing on the Bow River. Spawning activity on the Bighill Creek and the three tributaries has now been documented and hopefully these waters and the trout spawning will be protected into the future.



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Above: In this photo a female brook trout attempts to fan an egg nest (Redd) with her tail. The colorful mounds swim close to her, ready to fertilize the eggs when they are deposited in the nest of clean gravel.

## Brown Trout – Now Spawning on Millennium Creek!

I suspected that it was just a matter of time before brown trout would spawn on Millennium Creek. Presently, up until this last fall, only brook trout had been observed spawning on the creek.

However, on two occasions, during the brook trout spawning period, brown trout have been observed holding in the spawning channel inflow. Including this past fall.

So when I saw a very large trout redd in the spawning channel this winter, I knew that only brown trout could have created such a large egg nest or redd.



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Above: Both brown trout that have been seen on the spawning channel were about the same size as the one pictured above. These large powerful trout can create a rather large egg nest.

## Ranch House Spring Creek is Back to Normal!

This past year, a dewatering of the nearby Cochrane Lake resulted in a high volume of unwanted water being pumped into Ranch House Spring Creek. This resulted in the loss of a spawning on the stream.

Fortunately, this issue has been resolved and the pumping into the creek is now over. This means that we can look forward to things getting back to normal on the stream. This normality will include the fall spawn.

In 2013, there was a total of 16 brook trout redds mapped on the creek and this past fall of 2014, there were none. The high volume of dirty water destroyed the typically ideal spawning conditions on the creek.

I will be monitoring the spawning activity this fall and let you know in a future issue of this magazine, how things develop. It is expected that the brook trout will return to spawn when the creek is back to a healthy state.



Inter pipeline



Cochrane Foundation



"Above are the Partners so far for the 2015 Program"



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# Stream Tender Magazine

March 2015 Issue

## More Water Flowing Down Bighill Creek in 2015



Above: This willow plant is already three years old, but it's growth is relatively slow in comparison to some other plants that were planted on the same year. This is typical for many plants on certain areas of the creek.



I will often walk the path system along Bighill Creek in the Town of Cochrane. The stream is just over the edge of the creek valley, only a block from where my home is. Something that I noticed this winter was the higher than normal volumes of flow coming down the stream.

There is so much water, during what would normally be a low water period in the year, that the channel is open and free of ice in many areas of the lower reach. This open water is a result of ground spring inflow that keeps the water warmer than the critical freezing temperature.

With flows this high in mid-winter, I suspect that we should see very high spring and summer flows this season, which is always better for the trout populations. At this point in time, it is hard to guess how much higher the creek can get in coming years. The stream may exceed historical flow levels, at least those levels that have been observed by town residents.

All of this added volume of water will also benefit the stream's aquatic life, by cleaning out much of the silt that has accumulated over the years. Especially when there is a cover of ice on most of the creek's entire reach.

With all of the willow and tree planting that has been accomplished in recent years, along the stream banks of Bighill Creek, it will be interesting to witness any future transformation in the streams environment, both along the banks and under the surface of the water.

I also look forward to checking out the trout fishing from time to time, just to see how it will improve, along with the other natural changes that take place.

## Another Generation of Trout for Millennium Creek!



The Millennium Creek spawning channel was constructed on a feeder spring to the stream in 2010. The project was a partnership endeavour by both Bow Valley Habitat Development and Inter Pipeline.

The project was the final stage in the overall restoration program that was first initiated in 2005 and the majority of work had been completed in 2008.

The creation of spawning habitat was included in the original plan and this phase of the overall objective was carried out in the summer of 2008.

The trout started spawning on the habitats in the fall of that same year, but the success of the incubation of trout eggs was unknown. To insure a better survival rate of trout eggs, the spawning channel project was completed a few years later and since its construction, there have been 5 complete cycles of reproduction on Millennium Creek.

With an annual average of 26 trout redds or nests on the creek every fall, it is estimated that approximately 1,000 trout hatch every year into the creek and supply the main-stem of the Bighill Creek with new generations of trout every year.

This spawning channel can be considered a natural trout hatchery, here in the Town of Cochrane, Alberta.

## Millennium Creek Willows are Ready to Contribute Cuttings!



Above: These willows from the 2007 planting are maturing quickly and they have good limbs for cuttings that will be planted on other areas of the watershed. A few new plantings can also be done further back from the water's edge on the same site. This photo shows three different varieties of willow plants.

## Trout Spawning On Bighill Creek and Three Small Tributaries!

It all started when the water levels in Bighill Creek began to rise, back around the start of the new Millennium. Over many years prior to the increase in flow levels, there may have been some spawning on the lower reach of Bighill Creek, but nothing had been observed or documented.

Then, in 2008 and 2009, a fisheries study was completed by Bow Valley Habitat Development, primarily on the lower part of the Bighill Creek. For the first time, spawning trout were confirmed to be utilizing the lower portion of the creek during their spawning time.

This discovery was made around the same time that trout were also observed to be spawning in the newly restored Millennium Creek. Since that time, spawning has also been observed and documented on Ranch House Spring Creek and the Upper Spring Creek.

The number of trout using the main stem of the BHC and the smaller tributaries is substantial enough to make the entire spawning event on the system very significant. Fortunately, under the existing fishing regulations, these larger spawning trout are protected, but there are still a few small improvements that could be made to the present management regulations that would help in a big way, to protect the trout.

Bow Valley Habitat Development has continued to press ASRD Fish and Wildlife for some regulations best suited

for protecting the spawning run on the BHC, but so far I have not been very lucky with my requests. However, I am not about to give up the cause.

It is too bad that after all of the work that has been done to protect and enhance this

important fishery, getting some support from the regional fisheries biologist is an exercise in frustration.

I expect that some day there will be enough support from some other sources that new regulations will finally get approved for the BHC trout



These books are also available on Google Play, Amazon.ca or at the Stream Tender Store - See the store link on the cover page



Above: This is a photo of a Bow River brown trout as it makes its way up the Bighill Creek to spawn. Prior to using the BH Creek as a spawning tributary, the brown trout spawned in the main channel of the Bow River, which makes it difficult for any hatching brown trout to have a half decent chance of survival in the main stem of the river. It is always beneficial to any fishery to have more than one spawning area for the generations to come.

**New Fishing Book**  
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March 2015 Issue

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Inspecting the Fish and Willows – Tough Job!

Every year, I end up doing a lot of inspection trips to the planting areas that have been completed in recent years. On some occasions I will take my fly rod and conduct some important fisheries research on both the presence of sport fish and the populations in the streams.

This entails casting a few fly patterns in some likely looking fish holding habitats. Fortunately, I will catch a fish every now and then while inspecting the willow and tree plants along the creeks.

Nose Creek is one of my favourite areas to cast a fly. The creek has a sparse population of pike and these sport fish are fun to catch on a fly rod.

The presence of pike in the creek helps to motivate my interest in the riparian recovery work that we do. It is also kind of like a reward for our efforts.



Above: I posed this small Nose Creek pike next to one of our willow plants for a photo before quickly releasing the live fish back into the creek.

Not many people know that there are some nice pike in Nose Creek, but I am sure that eventually the "word will get out" about this. I know that the riparian work that is being done on the stream will enhance the pike fishing in the future and this make me feel good about the work.

Having a popular sport fish like pike in the creek will also help to grow interest in the stream as an important fishery to the City of Airdrie. This will help to gain support to protect both the water quality and the habitat that fish need to thrive in their environment.

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# Stream Tender Magazine

March 2015 Issue

## Update on the "Bow Valley Riparian Recovery and Enhancement Program



Above: These willow plants are from the 2014 planting program and they are just visible above the surface of the ice covering Bighill Creek. The photo was taken on a sunny February day this year. The willows were planted on one of the many unstable steep stream banks located along the lower reach of the creek.

### Millennium Creek Fish Habitat

Starting in 2006, a number of pool habitats and other structures to provide an environment for trout to live in, were constructed on Millennium Creek. By far, the most productive of this fish habitat enhancement phase, are the pool habitats.

Some of the pools were rock v-weir designs and the rest were made using log V-weirs. Each pool was built with cover habitat using woody debris along the outer

perimeter of the pools. Every time I visit the creek, I always see trout holding in these pools, most of which are small in size. Occasionally, I will spot a larger trout, but the vast majority are trout that are either one or two years in age.

The trout almost always dart for the cover of the pools outer edges or under the wings of the log v-weirs. There are lots of places for the fish to hide from view.

Interestingly, the pools have maintained very good depth over the years since they were constructed. Even in a stream channel that has a very low gradient and velocity of flow, this demonstrates the unique and efficient design of the v-weir for pool habitats.

The apex of the v-weir concentrates the flow of the channel into a constricted current that travels deep down to the bottom of the pool.



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**Left Photo:**  
This log v-weir has plenty of cover and shade for the resident trout that live in the creek. The willows that were planted around the pool provide a canopy of cover during the growing season and the root systems help to stabilize the stream banks around the pool.

These pools are just under a metre in depth, which is plenty of depth for such a small stream.

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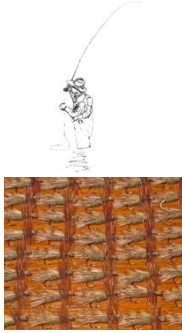
On one of my many tours along the stream banks of Bighill Creek this winter, I was very pleased to see the tops of many of our willow plants sticking up above the creek ice. The ice protects the newly planted willows and trees from predation over the winter months.

This past season was an exceptional one for growing so the willows have fared well and I am expecting a very good survival rate, come spring. The branches on the plants that I observed are limber and alive, so new buds will start to develop soon, for the spring growing season.

Earlier in the winter, I visited the other streams in the planting program and the plants on those sites look good as well. Hopefully, this year will be as good as the last and we can accomplish as much or possibly more plantings than those for 2014.

In 2014, the total plantings exceeded 10,500 and for this year, the number could be as high as 14,000 plants, if all goes as planned. I should know for sure by mid-April if this will be the case.

A riparian recovery program this large will make a huge difference on the three streams that are involved so far. With the ongoing support, the program may be expanded to a larger scale in the future.







## Thanks to 1998 Fishing Regulation Change Cuthroat Trout Numbers are Coming Back!

Recently, I had a discussion with a fellow fly fisherman that has fished our area trout streams for many years. We talked about how the native cuthroat trout populations are on the increase on a number of the area's mountain streams.

We both agreed that this was great for our fly fishing experience and it was also a major boost to the ongoing cuthroat trout recovery program. This program really got underway in the summer of 1997. During that spring and summer a consulting firm hired by the Alberta Fish and Wildlife branch conducted a survey of Alberta sport fishermen and fishermen, to gather some input or suggestions for future fisheries management strategy.

For many of us that were more conservation minded fly fisher's, this was a perfect opportunity to share our thoughts on the matter.

In the survey, approximately 600 anglers were contacted for their ideas on how to best manage our foothills and mountain trout streams. Eight major workshops and two independent surveys were part of the overall information gathering package.

The result of this input from Alberta anglers was the regulation change that was made for our area streams in the 1998 Alberta Fishing Regulations. A large emphasis was placed on the recovery of native cuthroat trout. The Alberta Fisheries Managers coined the phrase the "Heritage" Fisheries Program.

In the 1998 Fishing Regulations, cuthroat trout harvest limits were reduced from a mixed harvest of 5 trout, to zero trout except for brook trout. This gave the native cuthroat trout full protection, on streams such as the Waiporous Creek.

Now that the management plan is in place to protect our native trout, the next important ingredients in protecting the trout's habitat. Both bull trout and cuthroat trout require clean cold water to survive.

Knowing these requirements, management strategies directed towards protecting the quality of water and habitat will be a lot more complex than a simple management regulation change. Presently, there are a few factors that are known to be of significant importance.

Both logging operations and recreational off-road traffic pose the greatest threat to impact fish habitat and water quality. This is a far more difficult challenge that needs to be addressed.



## Brown Trout Spawning in Millennium Creek

The potential of Millennium Creek as a spawning tributary on the watershed, has just grown by leaps and bounds. Now having brown trout also spawning on the small feeder spring creek has raised the level of the bar, in the stream's importance to the fishery.

So when I observed the first brown trout redds on the spawning channel this winter, I was very pleased. The trout had completed dammed off the spawning channel when they created the large redd, but this was alright and it would not impact the existing brook trout redds that had already been made.

Brown trout are known in this area to spawn rather late in the fall, after the brook trout have already laid their eggs in the gravel. These

trout will spawn right up until December, even when there is already ice covering the stream channel.

I normally conduct my spawning survey work until mid November, so I missed observing the brown trout that had spawned in the Millennium Creek. However, next year, in the fall, I will make a few trips down to the creek to see if I can actually catch them in the act of spawning.

Having brown trout reproducing in Millennium Creek will insure a higher level of survival for this member of the trout family. With the insurance of clean water and stable flows, the egg survival will be considerably higher than the trout eggs that are deposited in the main stem of Bighill Creek, in the fall.

Also, the late spawning brown trout will not effect the existing brook trout spawning cycle. Once the brook trout eggs are safely laid in the same spawning habitat, generally further up in the spawning channel, they will incubate in the clean gravel substrate, without the threat of being disturbed by the larger brown trout that spawn further down on the channel.

I look forward to seeing if I notice an improvement in the numbers of brown trout in the Bighill Creek, in the future. A considerable number of the newly hatched brown trout will also end up in the water's of the Bow River, which is only a few metres downstream of the confluence of Millennium Creek and the Bighill Creek.



Above: This photo shows a beautifully typical Westslopes cuthroat trout.

It took a few years after the regulation change for improvements to start to show, but by the next decade the cuthroat trout numbers were noticeably on the increase. This vastly improved the quality of the angling experience on many of the mountain and foothill trout streams that I frequently fly fish on.

Although there are still plenty of brook trout on any of the streams that now support good populations of cuthroat trout, the cuthroat's seem to be holding their own quite well. This goes to show you how good fisheries management tools can help threatened members of our native trout survive into the future.

## Last Issue of 3rd Volume

This March issue is the last release in the third volume of "Stream Tender Magazine. All of the issues that have been published are accessible to the readers and by breaking all of them into volumes, the upload speed of each volume is faster.

Each volume has a "Previous Issue" link on the cover page, so that readers can review all of the prior issues by following these links. I have received many comments on how fast the magazine uploads and I am determined to keep this feature on future publications.

I would like to thank all of the readers for their interest and I will continue to publish, motivated by this ongoing interest!

## If You Enjoy Reading This Magazine – You Can Explore Old Issues of Stream Tender Magazine

You can explore old issues of Stream Tender Magazine by clicking on the first two volume links below. Also, by clicking the previous issues link on each cover page, you can access issues from each volume.

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# Stream Tender Magazine

March 2015 Issue

## A Look Back at the Jumpingpound Creek Trout Trapping Program

In the spring of 1993, a spawning survey of the Jumpingpound Creek rainbow trout spawning migration was conducted near the confluence of the Bow River. The project was initiated by the local "JP Chapter of Trout Unlimited Canada" and a consultant firm was contracted to provide equipment and prepare a scientific final report of the studies findings.

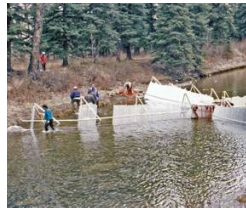
Prior to the study there was only speculation that Bow River rainbow trout on the reach between the Ghost Reservoir and Bearpaw Reservoir, utilized and depended on the JP Creek as a spawning habitat. In fact, the JP Creek is the only known spawning tributary to the Bow River on this reach of the fishery.

The main goal of the local Chapter of TU was to gather the necessary baseline data that would be required to get some important changes in the fishing regulations, to protect this strain of the Bow River rainbow trout. The project was a major success and it led to a vital management strategy that now protects the trout.

During the study, a trout fence and trap were installed on the JP Creek, approximately one kilometre upstream of the mouth on the Bow River. When trout were quickly processed and released, to continue their journey upstream, to spawn.

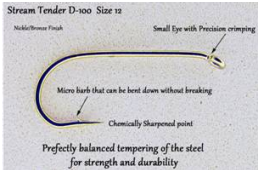
The processing of the trout involved recording weight, length and installing a visual implant tag, directly behind the eye of the trout. Later on, any captured trout by sport anglers, could be identified by the tag and the location of their capture could be reported to fish and wildlife.

In total, 1137 rainbow trout were captured and processed in the trap. This turned out to be a significant number of mature spawning rainbow trout and finally, the documentation of the results confirmed the importance of the Jumpingpound Creek as the key spawning habitat for our local rainbow trout. Future changes in the fishing regulations were made as a result of this important study. We are all grateful for the JP Chapter's work!



Recently, an acquaintance of mine asked me if we should look at completing another follow-up study to determine the status of the present day run. I told him that in my opinion, we could simply monitor the success of the annual run and spawning, by catching small trout on the river. This could be done by means of angling, following the previous year's spawning run.

In other words, if there are a lot of small one year class rainbow trout in the Bow River every year, we know that the spawning event from the previous year has been successful. This is a easy way of keeping track of how the trout are doing from year to year.



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## Brown Trout Spawning in Millennium Creek

The potential of Millennium Creek as a spawning tributary on the watershed, has just grown by leaps and bounds. Now having brown trout also spawning on the small feeder spring creek has raised the level of the bar, in the stream's importance to the fishery.

So when I observed the first brown trout redds on the spawning channel this winter, I was very pleased. The trout had completed dammed off the spawning channel when they created the large redd, but this was alright and it would not impact the existing brook trout redds that had already been made.

Brown trout are known in this area to spawn rather late in the fall, after the brook trout have already laid their eggs in the gravel. These

trout will spawn right up until December, even when there is already ice covering the stream channel.

I normally conduct my spawning survey work until mid November, so I missed observing the brown trout that had spawned in the Millennium Creek. However, next year, in the fall, I will make a few trips down to the creek to see if I can actually catch them in the act of spawning.

Having brown trout reproducing in Millennium Creek will insure a higher level of survival for this member of the trout family. With the insurance of clean water and stable flows, the egg survival will be considerably higher than the trout eggs that are deposited in the main stem of Bighill Creek, in the fall.

Also, the late spawning brown trout will not effect the existing brook trout spawning cycle. Once the brook trout eggs are safely laid in the same spawning habitat, generally further up in the spawning channel, they will incubate in the clean gravel substrate, without the threat of being disturbed by the larger brown trout that spawn further down on the channel.

I look forward to seeing if I notice an improvement in the numbers of brown trout in the Bighill Creek, in the future. A considerable number of the newly hatched brown trout will also end up in the water's of the Bow River, which is only a few metres downstream of the confluence of Millennium Creek and the Bighill Creek.



Above: This photo shows a beautifully typical Westslopes cuthroat trout.

It took a few years after the regulation change for improvements to start to show, but by the next decade the cuthroat trout numbers were noticeably on the increase. This vastly improved the quality of the angling experience on many of the mountain and foothill trout streams that I frequently fly fish on.

Although there are still plenty of brook trout on any of the streams that now support good populations of cuthroat trout, the cuthroat's seem to be holding their own quite well. This goes to show you how good fisheries management tools can help threatened members of our native trout survive into the future.

Now that the management plan is in place to protect our native trout, the next important ingredients in protecting the trout's habitat. Both bull trout and cuthroat trout require clean cold water to survive.

Knowing these requirements, management strategies directed towards protecting the quality of water and habitat will be a lot more complex than a simple management regulation change. Presently, there are a few factors that are known to be of significant importance.

Both logging operations and recreational off-road traffic pose the greatest threat to impact fish habitat and water quality. This is a far more difficult challenge that needs to be addressed.

## Last Issue of 3rd Volume

This March issue is the last release in the third volume of "Stream Tender Magazine. All of the issues that have been published are accessible to the readers and by breaking all of them into volumes, the upload speed of each volume is faster.

Each volume has a "Previous Issue" link on the cover page, so that readers can review all of the prior issues by following these links. I have received many comments on how fast the magazine uploads and I am determined to keep this feature on future publications.

I would like to thank all of the readers for their interest and I will continue to publish, motivated by this ongoing interest!

## If You Enjoy Reading This Magazine – You Can Explore Old Issues of Stream Tender Magazine

You can explore old issues of Stream Tender Magazine by clicking on the first two volume links below. Also, by clicking the previous issues link on each cover page, you can access issues from each volume.

[Volume One](#)

[Volume Two](#)

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# Stream Tender Magazine

March 2015 Issue

## A Look Back at the Jumpingpound Creek Trout Trapping Program

In the spring of 1993, a spawning survey of the Jumpingpound Creek rainbow trout spawning migration was conducted near the confluence of the Bow River. The project was initiated by the local "JP Chapter of Trout Unlimited Canada" and a consultant firm was contracted to provide equipment and prepare a scientific final report of the studies findings.

Prior to the study there was only speculation that Bow River rainbow trout on the reach between the Ghost Reservoir and Bearpaw Reservoir, utilized and depended on the JP Creek as a spawning habitat. In fact, the JP Creek is the only known spawning tributary to the Bow River on this reach of the fishery.

The main goal of the local Chapter of TU was to gather the necessary baseline data that would be required to get some important changes in the fishing regulations, to protect this strain of the Bow River rainbow trout. The project was a major success and it led to a vital management strategy that now protects the trout.

During the study, a trout fence and trap were installed on the JP Creek, approximately one kilometre upstream of the mouth on the Bow River. When trout were quickly processed and released, to continue their journey upstream, to spawn.

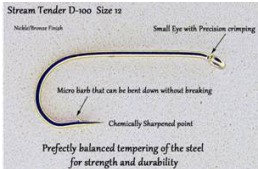
The processing of the trout involved recording weight, length and installing a visual implant tag, directly behind the eye of the trout. Later on, any captured trout by sport anglers, could be identified by the tag and the location of their capture could be reported to fish and wildlife.

In total, 1137 rainbow trout were captured and processed in the trap. This turned out to be a significant number of mature spawning rainbow trout and finally, the documentation of the results confirmed the importance of the Jumpingpound Creek as the key spawning habitat for our local rainbow trout. Future changes in the fishing regulations were made as a result of this important study. We are all grateful for the JP Chapter's work!



Recently, an acquaintance of mine asked me if we should look at completing another follow-up study to determine the status of the present day run. I told him that in my opinion, we could simply monitor the success of the annual run and spawning, by catching small trout on the river. This could be done by means of angling, following the previous year's spawning run.

In other words, if there are a lot of small one year class rainbow trout in the Bow River every year, we know that the spawning event from the previous year has been successful. This is a easy way of keeping track of how the trout are doing from year to year.



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## Stream Tender Tapered Leaders

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## Previous Issue

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- [Bighill Creek Spawning](#) Page 2
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- [Volunteers Chip In](#) Page 3
- [Riparian Habitat](#) Page 3
- [Bow Valley Riparian Program](#) Page 4
- [Inspecting Fish and Plants](#) Page 4
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- [Brown Trout Spawning Update](#) Page 5
- [Cutthroat Trout Recovery](#) Page 5
- [A Look Back—Jumpingpound Creek](#) Page 5

So far, there are seven partners committed to supporting the 2015 Bow Valley Riparian Recovery and Enhancement Program. This is a great early start and Bow Valley Habitat Development looks forward to more partners.



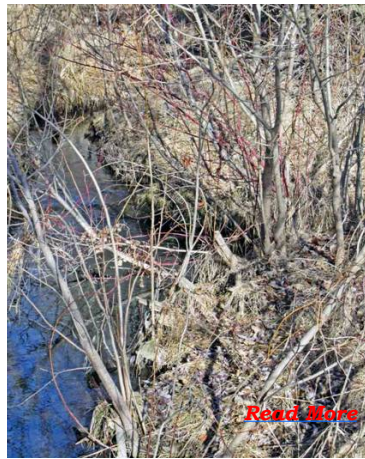
## Fifth Trout Hatch on Millennium Creek Spawning Channel



[Read More](#)

Above: A pair of newly hatched trout on Millennium Creek seek the cover of gravel habitat to spend the first days of their lives, just after emerging from the spawning beds in the constructed channel.

## First Crop of Willows on Millennium Creek are Ready to Contribute!



[Read More](#)

Above: This 2015 photo shows the first willow crop that was planted on the creek.

It has been eight years since the first plantings of willows were done on the Millennium Creek, here in the Town of Cochrane, Alberta. A total of just over 400 native plants were planted along the water's edge in 2007, as a part of the stream restoration program.

The plants are now mature enough to be harvested for cuttings, which will be used in future plantings along both Millennium Creek and Bighill Creek, for the Bow Valley Riparian Recovery and Enhancement Program.

This harvesting of small diameter cuttings will not harm the mother plants, as a matter of fact this collection of cuttings will enhance the growth of the donor plant. In the future, the mother plants will become more bushy and thick with limb cover for the stream.

The root systems from the eight year old plants has already created a dense mass of root growth, helping to stabilize the stream banks. During the growing season, the cover of branches and leaf growth provides excellent overhead cover for the stream's resident trout population.

The plantings occurred two years after the new stream channel had been excavated on Millennium Creek. The new channel was allowed to rest for a few years, before the planting of willows was completed. The moist environment along the creek was perfect for the growth of the willows. It has been a real pleasure to observe the growth of the plants over the past number of years along the creek.

## 2015 Should be Another Great Year for Volunteer Support!



[Read More](#)

Above: Volunteers from the local "Branches and Banks Org." plant willow cuttings on Bighill Creek.

In recent years, the volunteer support for all riparian planting programs has been an important ingredient in the success of the overall program. To date, hundreds of volunteers have contributed some of their valuable time towards getting some willows and trees in the ground.

Volunteers of all ages have enjoyed participating in something that will benefit the environment and all of the fish and wildlife that also gain important habitat from the planting programs.

As of February 2015, Bow Valley Habitat Development has already secured commitments from two different groups, to partake in the 2015 Bow Valley Riparian Planting Program.

## Bighill Creek is Now a Major Spawning Tributary to the Bow!

Once the spawning of both brook trout and brown trout was documented on the Bighill Creek, the first evidence of the stream's importance to the local fishery was established.

Along with the spawning in the main stem of BHC, we now know that three of the creek's main tributaries are also utilized by spawning trout.

This adds a considerable amount of significance to the Bighill Creek's contribution to the fishery, including benefits to the sport fishing on the Bow River. Spawning activity on the Bighill Creek and the three tributaries has now been documented and hopefully these waters and the trout spawning will be protected into the future.



[Read More](#)

Above: In this photo a female brook trout attempts to fan an egg nest (Redd) with her tail. The colorful mounds swim close to her, ready to fertilize the eggs when they are deposited in the nest of clean gravel.

## Brown Trout – Now Spawning on Millennium Creek!

I suspected that it was just a matter of time before brown trout would spawn on Millennium Creek. Presently, up until this last fall, only brook trout had been observed spawning on the creek.

However, on two occasions, during the brook trout spawning period, brown trout have been observed holding in the spawning channel inflow. Including this past fall.

So when I saw a very large trout redd in the spawning channel this winter, I knew that only brown trout could have created such a large egg nest or redd.



[Read More](#)

Above: Both brown trout that have been seen on the spawning channel were about the same size as the one pictured above. These large powerful trout can create a rather large egg nest.

## Ranch House Spring Creek is Back to Normal!

This past year, a dewatering of the nearby Cochrane Lake resulted in a high volume of unwanted water being pumped into Ranch House Spring Creek. This resulted in the loss of a spawning on the stream.

Fortunately, this issue has been resolved and the pumping into the creek is now over. This means that we can look forward to things getting back to normal on the stream. This normality will include the fall spawn.

In 2013, there was a total of 16 brook trout redds mapped on the creek and this past fall of 2014, there were none. The high volume of dirty water destroyed the typically ideal spawning conditions on the creek.

I will be monitoring the spawning activity this fall and let you know in a future issue of this magazine, how things develop. It is expected that the brook trout will return to spawn when the creek is back to a healthy state.



Inter pipeline



Cochrane Foundation



"Above are the Partners so far for the 2015 Program"



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# Stream Tender Magazine

March 2015 Issue

## More Water Flowing Down Bighill Creek in 2015



Above: This willow plant is already three years old, but it's growth is relatively slow in comparison to some other plants that were planted on the same year. This is typical for many plants on certain areas of the creek.



I will often walk the path system along Bighill Creek in the Town of Cochrane. The stream is just over the edge of the creek valley, only a block from where my home is. Something that I noticed this winter was the higher than normal volumes of flow coming down the stream.

There is so much water, during what would normally be a low water period in the year, that the channel is open and free of ice in many areas of the lower reach. This open water is a result of ground spring inflow that keeps the water warmer than the critical freezing temperature.

With flows this high in mid-winter, I suspect that we should see very high spring and summer flows this season, which is always better for the trout populations. At this point in time, it is hard to guess how much higher the creek can get in coming years. The stream may exceed historical flow levels, at least those levels that have been observed by town residents.

All of this added volume of water will also benefit the stream's aquatic life, by cleaning out much of the silt that has accumulated over the years. Especially when there is a cover of ice on most of the creek's entire reach.

With all of the willow and tree planting that has been accomplished in recent years, along the stream banks of Bighill Creek, it will be interesting to witness any future transformation in the streams environment, both along the banks and under the surface of the water.

I also look forward to checking out the trout fishing from time to time, just to see how it will improve, along with the other natural changes that take place.

## Another Generation of Trout for Millennium Creek!



The Millennium Creek spawning channel was constructed on a feeder spring to the stream in 2010. The project was a partnership endeavour by both Bow Valley Habitat Development and Inter Pipeline.

The project was the final stage in the overall restoration program that was first initiated in 2005 and the majority of work had been completed in 2008.

The creation of spawning habitat was included in the original plan and this phase of the overall objective was carried out in the summer of 2008.

The trout started spawning on the habitats in the fall of that same year, but the success of the incubation of trout eggs was unknown. To insure a better survival rate of trout eggs, the spawning channel project was completed a few years later and since its construction, there have been 5 complete cycles of reproduction on Millennium Creek.

With an annual average of 26 trout redds or nests on the creek every fall, it is estimated that approximately 1,000 trout hatch every year into the creek and supply the main-stem of the Bighill Creek with new generations of trout every year.

This spawning channel can be considered a natural trout hatchery, here in the Town of Cochrane, Alberta.

## Millennium Creek Willows are Ready to Contribute Cuttings!



Above: These willows from the 2007 planting are maturing quickly and they have good limbs for cuttings that will be planted on other areas of the watershed. A few new plantings can also be done further back from the water's edge on the same site. This photo shows three different varieties of willow plants.

## Trout Spawning On Bighill Creek and Three Small Tributaries!

It all started when the water levels in Bighill Creek began to rise, back around the start of the new Millennium. Over many years prior to the increase in flow levels, there may have been some spawning on the lower reach of Bighill Creek, but nothing had been observed or documented.

Then, in 2008 and 2009, a fisheries study was completed by Bow Valley Habitat Development, primarily on the lower part of the Bighill Creek. For the first time, spawning trout were confirmed to be utilizing the lower portion of the creek during their spawning time.

This discovery was made around the same time that trout were also observed to be spawning in the newly restored Millennium Creek. Since that time, spawning has also been observed and documented on Ranch House Spring Creek and the Upper Spring Creek.

The number of trout using the main stem of the BHC and the smaller tributaries is substantial enough to make the entire spawning event on the system very significant. Fortunately, under the existing fishing regulations, these larger spawning trout are protected, but there are still a few small improvements that could be made to the present management regulations that would help in a big way, to protect the trout.

Bow Valley Habitat Development has continued to press ASRD Fish and Wildlife for some regulations best suited

for protecting the spawning run on the BHC, but so far I have not been very lucky with my requests. However, I am not about to give up the cause.

It is too bad that after all of the work that has been done to protect and enhance this

important fishery, getting some support from the regional fisheries biologist is an exercise in frustration.

I expect that some day there will be enough support from some other sources that new regulations will finally get approved for the BHC trout.



These books are also available on Google Play, Amazon.ca or at the Stream Tender Store - See the store link on the cover page



Above: This is a photo of a Bow River brown trout as it makes its way up the Bighill Creek to spawn. Prior to using the BH Creek as a spawning tributary, the brown trout spawned in the main channel of the Bow River, which makes it difficult for any hatching brown trout to have a half decent chance of survival in the main stem of the river. It is always beneficial to any fishery to have more than one spawning area for the generations to come.

HOME







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HOME





Inspecting the Fish and Willows – Tough Job!

Every year, I end up doing a lot of inspection trips to the planting areas that have been completed in recent years. On some occasions I will take my fly rod and conduct some important fisheries research on both the presence of sport fish and the populations in the streams.

This entails casting a few fly patterns in some likely looking fish holding habitats. Fortunately, I will catch a fish every now and then while inspecting the willow and tree plants along the creeks.

Nose Creek is one of my favourite areas to cast a fly. The creek has a sparse population of pike and these sport fish are fun to catch on a fly rod.

The presence of pike in the creek helps to motivate my interest in the riparian recovery work that we do. It is also kind of like a reward for our efforts.



Above: I posed this small Nose Creek pike next to one of our willow plants for a photo before quickly releasing the live fish back into the creek.

Not many people know that there are some nice pike in Nose Creek, but I am sure that eventually the "word will get out" about this. I know that the riparian work that is being done on the stream will enhance the pike fishing in the future and this make me feel good about the work.

Having a popular sport fish like pike in the creek will also help to grow interest in the stream as an important fishery to the City of Airdrie. This will help to gain support to protect both the water quality and the habitat that fish need to thrive in their environment.

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# Stream Tender Magazine

March 2015 Issue

## Update on the "Bow Valley Riparian Recovery and Enhancement Program



Above: These willow plants are from the 2014 planting program and they are just visible above the surface of the ice covering Bighill Creek. The photo was taken on a sunny February day this year. The willows were planted on one of the many unstable steep stream banks located along the lower reach of the creek.

### Millennium Creek Fish Habitat

Starting in 2006, a number of pool habitats and other structures to provide an environment for trout to live in, were constructed on Millennium Creek. By far, the most productive of this fish habitat enhancement phase, are the pool habitats.

Some of the pools were rock v-weir designs and the rest were made using log V-weirs. Each pool was built with cover habitat using woody debris along the outer

perimeter of the pools. Every time I visit the creek, I always see trout holding in these pools, most of which are small in size. Occasionally, I will spot a larger trout, but the vast majority are trout that are either one or two years in age.

The trout almost always dart for the cover of the pools outer edges or under the wings of the log v-weirs. There are lots of places for the fish to hide from view.

Interestingly, the pools have maintained very good depth over the years since they were constructed. Even in a stream channel that has a very low gradient and velocity of flow, this demonstrates the unique and efficient design of the v-weir for pool habitats.

The apex of the v-weir concentrates the flow of the channel into a constricted current that travels deep down to the bottom of the pool.



HOME

**Left Photo:**  
This log v-weir has plenty of cover and shade for the resident trout that live in the creek. The willows that were planted around the pool provide a canopy of cover during the growing season and the root systems help to stabilize the stream banks around the pool.

These pools are just under a metre in depth, which is plenty of depth for such a small stream.

On one of my many tours along the stream banks of Bighill Creek this winter, I was very pleased to see the tops of many of our willow plants sticking up above the creek ice. The ice protects the newly planted willows and trees from predation over the winter months.

This past season was an exceptional one for growing so the willows have fared well and I am expecting a very good survival rate, come spring. The branches on the plants that I observed are limber and alive, so new buds will start to develop soon, for the spring growing season.

Earlier in the winter, I visited the other streams in the planting

program and the plants on those sites look good as well. Hopefully, this year will be as good as the last and we can accomplish as much or possibly more plantings than those for 2014.

In 2014, the total plantings exceeded 10,500 and for this year, the number could be as high as 14,000 plants, if all goes as planned. I should know for sure by mid-April if this will be the case.

A riparian recovery program this large will make a huge difference on the three streams that are involved so far. With the ongoing support, the program may be expanded to a larger scale in the future.



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