



"Local Trout Stream News and Information"

Articles by Guy Woods

Riparian and Fish Habitat Enhancement Fisheries Management Bio-Engineering Stream Reclamation and Restoration Bank Erosion and Sediment Control Water

Magazine Mission Statement



Publisher/Editor:

Over the last 40 years, it has been my misfortune to witness the degradation of a number of area trout streams. During that time, I sadly observed the total collapse of two once fine sport fisheries that historically had been well known by many trout fishers.

In recent years, there has been a trend developing towards the protection of what we have left in flowing trout waters, including the habitat and water quality that freshwater trout depend so much upon!

Not only are fisheries managers and sport fishers involved in this growing movement, but also groups and individuals that recognize the importance of these unique stream environments, the inhabitants and the fresh water that they provide!

I am confident that by educating the general public more about the importance of our trout streams, we can further enhance the cause and gain well needed additional support. This magazine was designed for this purpose!

Included in this publication is information about some of the projects that have been completed in this area to protect and enhance our trout fisheries, and the important environment on which these sport fish depend upon.

It is my hope that you enjoy the stories and news included in this and future volumes!

Guy Woods

This is the second issue of Stream Tender Magazine!

Recent Updates

[September 2011](#)

[November 2011](#)

Past Publications

[Issue One 2011](#)

[Some Thoughts on Environmentalism!](#)



2012 Trout Hatch



Contact Us At: info@streamtender.com

Storm Water Discharge Threatens Small Trout Stream!

As development encroaches on our natural areas and pristine flowing waters, the threats of negative impacts from such growth continue to be identified, and with any luck, dealt with in a responsible manner! You may ask the question; who is responsible? Land and community managers that are employed to look after such matters should be held responsible! After all, we are all paying them good money to do just that!

If a developer is determined to create the most cost effective storm water treatment and discharge plan, under the existing guidelines, these plans should be carefully reviewed by community engineers and planners. Their job is to access any immediate and long term impacts that the development plans may have on existing natural areas and the wildlife that occupies that environment!

Presently, in the Town of Cochrane, a storm drain discharge pipe was installed on the slopes of a small trout stream to create an outflow for storm water from a nearby new development. The erosion problems created in the small creek are threatening to damage the stream's natural existing in-stream habitat and the riparian zone that buffers the creek and helps maintain stream bank stability. To further magnify the problem, there are plans to tie in the storm water discharge from a proposed new second stage to the existing development. This would more than double the volume of discharge out from the same storm drain pipe, into the small creek!

After "catching wind" of this new proposed development, the publisher of Stream Tender Magazine prepared a report on this matter, and submitted it to the Town of Cochrane, Engineering and Development Planning staff. Copies of that report were also submitted to DFO, Alberta Environment, Town of Cochrane newspapers and other interested individuals.

You can review this report by clicking the following link:

[Ranch House Springs Creek Report](#)



Above Photo:

This photo shows the volume of discharge from the existing development, into the small trout stream. The proposed new second stage, Phase Two Sun Ridge Development, to the existing Phase One development, will more than double this volume of flow, if the storm water systems are tied into the same discharge pipe.



Above:

This photo shows how the volume of discharge from the storm drain system is too high for the present stream channel to manage. The end result will be erosion problems, "further down the road!"

Willow Plants From 2009 Planting are Doing Great!

In 2009, 450 willow plants were planted along a short section of the Bighill Creek, on the mud flats of an old beaver dam. The project was a partnership between Branches and Banks, Bow Valley Habitat Development and the Millennium Creek Fly Fishers. The completed project would help to stabilize the stream banks and provide good overhead cover for the resident trout population in the creek.

This winter, on February 1st., 2012, I visited the site to take a few photos of how well the plants are doing at this point in time. My inspection of the planting site shows that the willows are well on their way to reaching maturity in a few years time!



Above: This is what the site looked like one month after the planting day. You can see that the small willows have developed green foliage on the cuttings. (Zoom in)



Above: This is a photo of the willows showing thru the snow this past month. You can see that they are well on their way towards maturity and in a few more years they should be six to eight feet in height!

Millennium Creek Restoration Update!

The channel work and enhancement structures completed on Millennium Creek during the restoration program are doing great, and the new stream channel looks as natural as it was intended to, based on the project objectives of the original plans. I often visit the stream to check things out and take a few photos to record the recovery.

[Read More](#)

2012 Trout Hatch on Millennium Creek

Once again, small brook trout are emerging from the spawning gravel beds of the spawning channel that was constructed on Millennium Creek in 2010! The spawning site was being monitored every second day for the past two weeks, and today, on February 27th, the first juvenile brook trout fry were observed directly downstream of the spawning habitat! In total, 4 newly emerged juvenile brook trout were identified!

[Read More](#)

Bighill Creek Project--Still Forging Ahead!

Once again this year, Branches and Banks, Glenbow Elementary School and Bow Valley Habitat Development, will be continuing the riparian enhancement program on Bighill Creek, in the Town of Cochrane!

Plans to plant native willow and tree stock along the stream banks of the creek have already been made! It is hoped that the number of plants to be planted will be in the thousands, to insure a positive and noticeable result for this years growing season.

[Read More](#)

Last Year's Willow and Tree Crop doing Very Well!

Last year's willow and tree plants starting to show growth for 2012!

[Read More](#)



Stream Tender Magazine

March 2012

Ranch House Spring Creek
Town of Cochrane (Tributary to the Bighill Creek SE 10.264.W5)
Report Prepared by : Guy Woods January 2012
Impacts of Storm Drain Discharge on the Trout Fishery and Riparian Zone

Introduction

Ranch House Spring Creek is a small trout bearing stream located in the Town of Cochrane. It is a tributary to the Bighill Creek. From its source springs, located just northwest of Highway 22, the stream flows southeast under the highway and along the Ranch House Road. Further down the drainage, it passes through the Town of Cochrane Ranch House Building and office complex parking lot, and then it enters the Bighill Creek, just south of the town office building. Although the stream is small, it is an important annual nursery habitat for juvenile trout that have hatched from eggs laid down in the Bighill Creek every fall of the year. When trout fry are strong enough swimmers, they will travel up the waters of Ranch House Spring Creek, to spend the first months of their lives in the safety of the in-stream habitats that are present in the creek. This was confirmed during a 2009 comprehensive fisheries study that was conducted on the lower portion of Bighill Creek and its tributaries.



Above: This small brook trout was one of many juvenile trout that were captured in Ranch House Spring Creek, during the 2009 fisheries study that was conducted on the stream.

These juvenile trout are dependant on clean, clear and cold spring water to survive in this small spring fed stream. They are also dependant on both the in-stream habitat, and the riparian habitat that make the tributary an attractive place for them to survive. A major factor in their survival is the invertebrate populations in this small spring creek that the trout depend on for food.

When the first phase of storm water infrastructure for the Sun Ridge Development was put in place, a storm water discharge outflow was placed on the slopes of Ranch House Spring Creek, on the southeast side of the town office parking lot. Presently, Ranch House Spring Creek must accept all of the surface water collected on the development. The natural channel dimensions and the bank-full width of the small spring creek are too small to be able to cope with this added flow to the drainage. The result of this added volume of flow to the creeks channel will eventually destroy the existing stream channel and its immediate riparian habitat.



Above: Normal flows in the creek channel

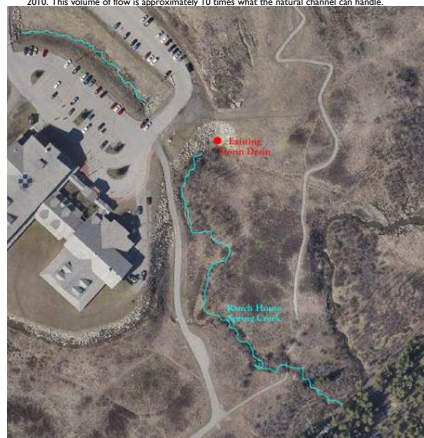


Above: Flows with added storm drain run-off



Above: This photo shows the volume of flow added by the storm drain from Sun Ridge in August of 2010. This volume of flow is approximately 10 times what the natural channel can handle.

Right Photo:
This close up of the stream channel during the high volume discharge, from the storm drain, shows how the turbulence from the steep gradient and large volumes of water, can scour the existing stream channel during such events.
Most of the erosion occurs below the surface of the water, where undermining of the stream banks is taking place. Over time, when the stream bank is undercut enough so that the root systems cannot hold the banks together any longer, the stream bank will collapse and the stream channel will widen over time.
This entire process takes place over a period of years on the stream.



Above: This is a map of the Ranch House Spring Creek and the storm drain outflow



Above: This January 2012 photo shows the collapsed stream bank that occurred in 2011 on Ranch House Spring Creek, approximately 60 metres downstream of the storm drain outflow.

Over time, the existing storm water discharge into the Ranch House Spring Creek will eventually destroy the sensitive riparian habitat along its narrow banks. The invertebrate populations that are present in the creek will be disturbed and this will result in a less productive food supply for juvenile trout that depend on them for a rapid growth.
During the spring of 2011, the first signs of major bank erosion were noted along the streams lower channel, and this erosion is expected to continue and be increased over time. The erosion that occurs in the spring creek will have negative impacts to the reproductive process for spawning trout in the main stem of the Bighill Creek. Silt loading from erosion on Ranch House Spring Creek will be transferred downstream and onto one of the known key spawning habitats, located just below the confluence.

If the proposed Stage Two Sun Ridge Development storm water system is tied into the existing outflow on Ranch House Spring Creek, the process of erosion and eventual destruction of the stream's natural habitat will be accelerated, and the trout fishery will be destined for failure. Other options for the discharge of surface water run-off for the entire Sun Ridge Development should be explored.

I have prepared a draft design of a remediation plan to divert flows in the storm drain into a nearby wetland that will be enhanced by the additional volumes of water that it presently is sustained by. This wetland option would also allow for a stage two pre-treatment of the stream channel and the sensitive riparian habitat into the Bighill Creek system.

[To See Map of Remediation Plan](#)
[And the latest Updates](#)
[Click Here](#)

[Back to Home Page](#)



Stream Tender Magazine

March 2012



Above: This is a draft plan for a remediation project to divert flows from the storm water drainage. The plan would involve the extension of the existing outflow location.

The Red Line shows an extension that could be added to the existing discharge outflow. The extension would divert flow into a wetland area that is approximately 100 metres away from the present outflow pipe.

The wetland is outlined in green!

[Back to previous page](#)

Ranch House Spring Creek Update!
February 2012

Both AEP Water Resources and DFO seem to be in agreement with the premise of the report addressing the matter of the Storm Drain Outflow on Ranch House Spring Creek! After reviewing the report, representatives of these provincial and federal government agencies met with the consultants of the developer of Sun Ridge to discuss this issue.

DFO has met with the developer and encouraged them to work with the Town of Cochrane to develop a strategy to resolve any negative impacts on Ranch House Spring Creek and the Bighill Creek. They have recognized the existing impacts of the high volumes of flow into the stream and its potential to destroy fish habitat in this small stream system.

Alberta Environment's Water Resources department has also directed the consultants for the developer to work with the Town of Cochrane to resolve the issues relating to the storm drain system. AEP can also see the potential damages created by the storm drain outflow, and its threat to the existing fishery in the stream!

The author of the report is very pleased that these government agencies have taken measures to insure that the future health of the Ranch House Spring Creek's habitat, and its fishery, will be looked after! However, "the proof is in the pudding", so I anxiously await the opportunity to review any revisions to the storm water discharge plans, and hope that they will be what I expect and this matter can be laid to rest with a clear conscious!

- Guy Woods

Who is an Environmentalist?

How do we define an environmentalist? It seems to be a label or title that can be received with considerable disdain by some people! For many individuals the word environmentalist is used to describe a person whom is considered a "tree hugger" or "genie", that has no regard for the more practical side of the necessities of our survival on this planet. Often, the name can be used in a derogatory manner to describe someone that is endowed with a minimal blessing of common sense! What ever the case, we are all environmentalists in one way or another!

If you care about the setting or environment in which you live your life, you are definitely an environmentalist! It may be as simple as having a concern about the cleanliness of your house or yard, in this respect, you are an environmentalist! By being particular about the purity of the water that you drink or the quality of the food that you eat, you will also earn the title! Even if you are not really sensitive to any of the above, yet you would "hit the ceiling" if your neighbour dumped his or her garbage over the fence in your backyard, you would be guilty of caring about your environment, and possibly be accused of being an environmentalist! These are environmental issues that can all be fixed, and it is nice to have this option. However, if we are dealing with the environment of our earth, many issues or challenges may be irreversible!

Besides those individuals that are concerned only about their own environment, there are those of us that also think of other individuals that will share our environment! Other individuals yet to come, such as the future generations that will be soon faced with the inevitable reality of living in the same environment in which we now live. There is definitely a responsibility to make sure that we leave them an environment equal or even better than that which we all now live in! It is the right thing to do, and with selflessness it can be done!

I have been called an environmentalist, because of my work relating to the protection and enhancement of our trout stream environments. I don't mind the title at all, but I do wish that some people would open up their minds a bit, and understand more clearly my motivations! Without defining my efforts as a waste of time or being impractical!

Millennium Creek Update!

Below are two photos of a section of the Millennium Creek channel, one taken before the project started, and the other photo of the same section and perspective was taken on February 14th, 2012. It has been almost 7 years since a new channel was cut thru this section of the creek. On this section, the stream channel wetted perimeter was averaging 4 metres in width, before the restoration project was started. After the new channel was cut or created, the channel width is now averaging 45 cm in width (mean average). And now there are trout living in the creek!

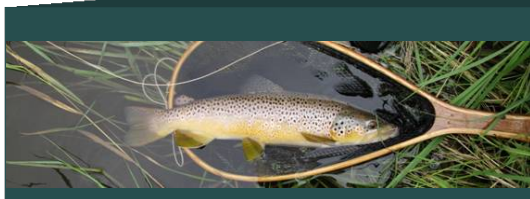


Above: This is a 2004 photo of a section of the lower creek, near the mouth of the Bighill Creek. The wetted perimeter of this reach averaged approximately 4 metres in width. Shallow flowing water moved downstream thru aquatic sedge and grasses with no defined stream channel. Years of silt loading had caused this problem!



Above: This February 2012 photo shows the new stream channel that was cut thru this section of the stream in 2005. Now there is a defined narrow channel that supports a resident trout population. Over time, the willows that were planted along the channel downstream, will hide much of this reach of stream channel, but the plants will help maintain stability in the stream banks!

[Back to Home Page](#)



Stream Tender Magazine

March 2012

February 2012 Trout Hatch on Millennium Creek Spawning Channel

Today, on February 27th, 2012, I was very pleased to spot the first four juvenile brook trout directly below the constructed spawning channel on Millennium Creek. The small trout were approximately 20 mm in length and a few still had traces of egg yolk sacks on their bellies. The new brook trout were holding in the woody debris that was placed directly below the spawning channel, just after it was constructed.

This early hatch can most likely be attributed to the warm winter that we have experienced in this area, this year. Last year, the main hatch started in the first two weeks of March, with the majority of new trout emerging during the second week of that month. I expect, from what I observed today, that we should be witnessing a great trout hatch for this year!

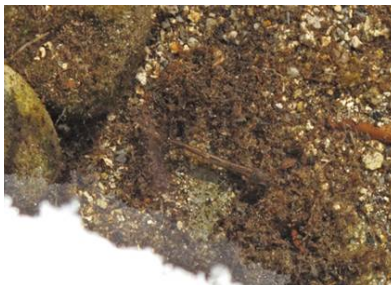
These new recruits into the Millennium Creek will eventually end up in the Bighill Creek downstream, and they will help maintain the trout fishery in that creek. Some of the trout will stay in Millennium Creek as resident fish, but the number of these fish that do are dependant on what food is available, to maintain their presence. The small tributary will only support a relatively small population of trout, so competition for the existing food in the stream will eventually force many of the fish downstream into the Bighill Creek, and its larger habitats.

This is the second year that the new spawning channel has been utilized by spawning brook trout from Millennium Creek, the Bow River, and the Bighill Creek. So at this point in time, the success of the man-made spawning habitat looks pretty promising!

The spawning channel was constructed by Bow Valley Habitat Development in 2010, with funding support provided by our partner, Inter Pipeline Fund! With the newly constructed spawning channel producing new generations of trout into the stream system, we can look forward to a long term benefit to the area's trout fishery, while maintaining the natural biodiversity of the stream's habitat, including other wildlife that depend on wild trout for sustenance!

With the stream being located within the Town of Cochrane boundaries, this project has received a considerable amount of exposure. Presently, the location of the spawning channel is being kept secret to protect its ongoing importance and purpose, of providing trout with a reproductive habitat, without the harassment of public traffic!

Bow Valley Habitat Development will continue to monitor the site and report on any future developments on the entire stream system!



Above: This small brook trout was holding on the bottom of a shallow area of the Millennium Creek, close to the overhead cover of shore ice. Notice how well that the small trout blend into the surrounding habitat of the stream.



Above: This close up of a small 20 mm brook trout shows how their color will change to help make them blend into whatever the color of the stream bottom may be. The photo was taken on February 27th, 2012, on a section of the stream, directly below the constructed spawning habitat.



If you would like to review the construction videos for the Millennium Creek Spawning Channel You can click on the selection of video links below to have a look!

[The Spawning Channel Site-Before Construction](#)

[The Spawning Channel During Construction 2010](#)

[The Spawning Channel After Completion 2010](#)

[Back to Home Page](#)



2012 Millennium Creek Spawning Video

Right Photo: This is a photo of the spawning channel, taken from a downstream position looking upstream over the area where brook trout spawn in the fall of every year.

The branches were placed over the channel to provide some overhead cover, until the willows grow tall enough to do the same job. Brook trout spawn all the way up this channel in the fall. They utilize every bit of spawning habitat that was created!

Spawning Channel is Starting to Blend In!

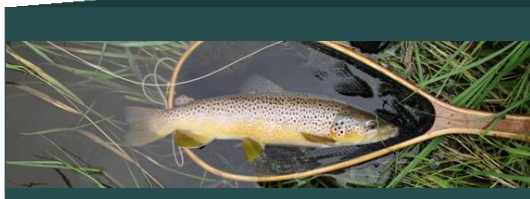
After a few years of weathering, the logs used for the new spawning channel's retaining walls are starting to grey and blend in with the natural environment. The log spawning channel was designed to withstand frost heaving, while keeping the loose gravel bordering the channel stable. It appears that the design has worked well to meet these requirements. There has been no movement in the channel bed from the frost of two winters since it was constructed, and the larger boulders used inside of the channel haven't moved from their original position.

Willow live stakes or cuttings were planted in August of 2010, to create a natural fence to discourage ducks from polluting the area around the channel and these willows are well on their way to fulfilling this purpose. Not all of the willow planted along the channel logs have survived, but enough of them have and they will eventually provide shade and cover over the spawning channel.



Above: Willows were planted in August of 2010 to create a natural fence to keep ducks from the spring pond out of the spawning channel area. The willows in the photo show how well they are growing!





Stream Tender Magazine

March 2012

February 2012 Trout Hatch on Millennium Creek Spawning Channel

Today, on February 27th, 2012, I was very pleased to spot the first four juvenile brook trout directly below the constructed spawning channel on Millennium Creek. The small trout were approximately 20 mm in length and a few still had traces of egg yolk sacks on their bellies. The new brook trout were holding in the woody debris that was placed directly below the spawning channel, just after it was constructed.

This early hatch can most likely be attributed to the warm winter that we have experienced in this area, this year. Last year, the main hatch started in the first two weeks of March, with the majority of new trout emerging during the second week of that month. I expect, from what I observed today, that we should be witnessing a great trout hatch for this year!

These new recruits into the Millennium Creek will eventually end up in the Bighill Creek downstream, and they will help maintain the trout fishery in that creek. Some of the trout will stay in Millennium Creek as resident fish, but the number of these fish that do are dependant on what food is available, to maintain their presence. The small tributary will only support a relatively small population of trout, so competition for the existing food in the stream will eventually force many of the fish downstream into the Bighill Creek, and its larger habitats.

This is the second year that the new spawning channel has been utilized by spawning brook trout from Millennium Creek, the Bow River, and the Bighill Creek. So at this point in time, the success of the man-made spawning habitat looks pretty promising!

The spawning channel was constructed by Bow Valley Habitat Development in 2010, with funding support provided by our partner, Inter Pipeline Fund! With the newly constructed spawning channel producing new generations of trout into the stream system, we can look forward to a long term benefit to the area's trout fishery, while maintaining the natural biodiversity of the stream's habitat, including other wildlife that depend on wild trout for sustenance!

With the stream being located within the Town of Cochrane boundaries, this project has received a considerable amount of exposure. Presently, the location of the spawning channel is being kept secret to protect its ongoing importance and purpose, of providing trout with a reproductive habitat, without the harassment of public traffic!

Bow Valley Habitat Development will continue to monitor the site and report on any future developments on the entire stream system!



Above: This small brook trout was holding on the bottom of a shallow area of the Millennium Creek, close to the overhead cover of shore ice. Notice how well that the small trout blend into the surrounding habitat of the stream.



Above: This close up of a small 20 mm brook trout shows how there color will change to help make them blend into what ever the color of the stream bottom may be. The photo was taken on February 27th, 2012, on a section of the stream, directly below the constructed spawning habitat.



If you would like to review the construction videos for the Millennium Creek Spawning Channel You can click on the selection of video links below to have a look!

[The Spawning Channel Site-Before Construction](#)

[The Spawning Channel During Construction 2010](#)

[The Spawning Channel After Completion 2010](#)

[Back to Home Page](#)



Spawning Channel is Starting to Blend In!

After a few years of weathering, the logs used for the new spawning channel's retaining walls are starting to grey and blend in with the natural environment. The log spawning channel was designed to withstand frost heaving, while keeping the loose gravel bordering the channel stable. It appears that the design has worked well to meet these requirements. There has been no movement in the channel bed from the frost of two winters since it was constructed, and the larger boulders used inside of the channel haven't moved from their original position.

Willow live stakes or cuttings were planted in August of 2010, to create a natural fence to discourage ducks from polluting the area around the channel and these willows are well on their way to fulfilling this purpose. Not all of the willow planted along the channel logs have survived, but enough of them have and they will eventually provide shade and cover over the spawning channel.



Above: Willows were planted in August of 2010 to create a natural fence to keep ducks from the spring pond out of the spawning channel area. The willows in the photo show how well they are growing!



2012 Millennium Creek Spawning Video



Right Photo:

This is a photo of the spawning channel, taken from a downstream position looking upstream over the area where brook trout spawn in the fall of every year.

The branches were placed over the channel to provide some overhead cover, until the willows grow tall enough to do the same job. Brook trout spawn all the way up this channel in the fall. They utilize every bit of spawning habitat that was created!



Stream Tender Magazine

March 2012

Bighill Creek Riparian Recovery Program

The efforts made to plant native willows and trees along the banks of the Bighill Creek are part of a long term riparian recovery program. The goal is to re-establish the natural vegetation buffer zone that existed many years prior to, and during the development of the Town of Cochrane.

The benefits of such a program will be to help maintain stream bank stability, reducing bank erosion problems and helping to maintain a narrow stream channel with enough velocity to flush itself free of silt loading from upstream. Root systems from native willow and tree plants are the best solution to such problems as stream bank erosion!

Stable stream banks are also beneficial to water quality in the creek. Well vegetated riparian zones help to filter surface water run-off before it enters the stream and the over abundant nutrients and pollutants are absorbed by different native plant varieties.

Presently, there are signs of a recovery in the wild trout populations that historically existed in Bighill Creek. By far, this potential is what helps maintain my enthusiasm in this riparian recovery program! A healthy riparian zone along the stream will benefit the resident trout that live in the stream, by providing the needed overhead cover and protection that willow and tree plants provide. The riparian zone will also contribute to the in-stream cover that trout and their food supply depend on for survival!

In recent years, it has been discovered that both brook trout and brown trout are actively spawning in the creek every year! And there has been an adequate hatch of their eggs to help maintain and increase their numbers. By planting willows and trees around known spawning habitats, the long term benefits will be an increase in both the amount of spawning activity and the number of new trout generations recruited into the system!



Above: This is a typical reach of the Bighill Creek that is in need of some riparian enhancement work! The site is one of many, located within the Town of Cochrane.

[See the video of spawning trout on Bighill Creek](#)

[To Watch Brook Trout-Click Here!](#)

[To Watch Brown Trout-Click Here!](#)



Above: Resident brook trout spawning on the Bighill Creek.

The constricted flow of water between stream banks with good riparian habitat, scours and cleans spawning gravel and insures a spawning habitat that will successfully incubate trout eggs, after the trout have laid them in the substrate of clean gravel beds. Water needs to circulate thru the gravel to provide adequate oxygen for the eggs, over the months after they have been deposited in the gravel.

The clean gravel, cobble and boulders on the streambed of swift running streams that have been constricted by narrow stream banks, will also provide excellent invertebrate habitat, which will enhance the food supply for trout.

So, as you can see, the benefits of a healthy riparian zone along the banks of a trout stream serve not only the wildlife above the water level, but also the life that depends on it down below the surface of the stream!



Above: This is one of the existing healthy riparian zones on Bighill Creek. Note how the Red Osier Dogwood has grown right down overtop of the stream channel, providing a great habitat for the resident trout in the stream!



[Back to Home Page](#)

2012 Willow and Tree Planting Program in the Works!

Although it is a little early in the new year to determine the scope of the planting program for Bighill Creek this year, I can say that enough funding has been secured at this point in time, for a planting program! The Glenbow Elementary School and Branches and Banks have committed to their annual student planting again this year. There will also be other planting projects organized for the creek later on this spring. The size of the entire planting program will be announced later on this spring, in an update in this magazine.



Above: Glenbow Elementary School grade 4 students chip in to plant willows and trees along the banks of the Bighill Creek in Cochrane. This photo was taken during the 2010 planting program.

Last Year's Willow and Tree Crop is off to a Good Start!

Last year, Bow Valley Habitat Development planted 441 willow and tree plants on three different sites along Bighill Creek. The project was funded by Inter Pipeline Fund. The planting sites have been closely monitored over the last 10 months to assess the survival rates of the planting.

During the summer months, it is difficult to find the newly planted willows and trees in the tall grass along the creek, and sometimes an inspector can accidentally step on plants unknowingly, while inspecting the crop. The best time to assess survival of a planted willow crop is in the late winter months, when the snow has flattened the riparian grasses and the willow shoots stand out above the matted dead grass.

Due to the mild winter weather this new year, it has created ideal conditions to discover how last year's planting is doing. Recently, I have made a few trips down to the Bighill Creek to inspect the plants from the spring 2011 planting, and they are doing very well. It will take a few more years before the new plants make a noticeable difference along the stream, but they are well on their way!

Photos of the planting sites have been taken, before the planting programs began, so that at some point in time, in the future, a photo comparison can be made to show the impacts of the willow and tree planting programs.

Right Photo:

This photo was taken along the creek on March 19th, 2012. It shows some of last year's willow plants, now growing along the Bighill Creek.

It will take approximately 5 more years before these willows stand out above the high summer grasses along the creek!





Stream Tender Magazine

March 2012

Bighill Creek Riparian Recovery Program

The efforts made to plant native willows and trees along the banks of the Bighill Creek are part of a long term riparian recovery program. The goal is to re-establish the natural vegetation buffer zone that existed many years prior to, and during the development of the Town of Cochrane.

The benefits of such a program will be to help maintain stream bank stability, reducing bank erosion problems and helping to maintain a narrow stream channel with enough velocity to flush itself free of silt loading from upstream.

Root systems from native willow and tree plants are the best solution to such problems as stream bank erosion!

Stable stream banks are also beneficial to water quality in the creek. Well vegetated riparian zones help to filter surface water run-off before it enters the stream and the over abundant nutrients and pollutants are absorbed by different native plant varieties.

Presently, there are signs of a recovery in the wild trout populations that historically existed in Bighill Creek. By far, this potential is what helps maintain my enthusiasm in this riparian recovery program! A healthy riparian zone along the stream will benefit the resident trout that live in the stream, by providing the needed overhead cover and protection that willow and tree plants provide. The riparian zone will also contribute to the in-stream cover that trout and their food supply depend on for survival!

In recent years, it has been discovered that both brook trout and brown trout are actively spawning in the creek every year! And there has been an adequate hatch of their eggs to help maintain and increase their numbers. By planting willows and trees around known spawning habitats, the long term benefits will be an increase in both the amount of spawning activity and the number of new trout generations recruited into the system!



Above: Resident brook trout spawning on the Bighill Creek.

The constricted flow of water between stream banks with good riparian habitat, scours and cleans spawning gravel and insures a spawning habitat that will successfully incubate trout eggs, after the trout have laid them in the substrate of clean gravel beds. Water needs to circulate thru the gravel to provide adequate oxygen for the eggs, over the months after they have been deposited in the gravel.

The clean gravel, cobble and boulders on the streambed of swift running streams that have been constricted by narrow stream banks, will also provide excellent invertebrate habitat, which will enhance the food supply for trout.

So, as you can see, the benefits of a healthy riparian zone along the banks of a trout stream serve not only the wildlife above the water level, but also the life that depends on it down below the surface of the stream!



Above: This is a typical reach of the Bighill Creek that is in need of some riparian enhancement work! The site is one of many, located within the Town of Cochrane.

See the video of spawning trout on Bighill Creek

[To Watch Brook Trout-Click Here!](#)

[To Watch Brown Trout-Click Here!](#)



Above: This is one of the existing healthy riparian zones on Bighill Creek. Note how the Red Osier Dogwood has grown right down overtop of the stream channel, providing a great habitat for the resident trout in the stream!



[Back to Home Page](#)

2012 Willow and Tree Planting Program in the Works!

Although it is a little early in the new year to determine the scope of the planting program for Bighill Creek this year, I can say that enough funding has been secured at this point in time, for a planting program! The Glenbow Elementary School and Branches and Banks have committed to their annual student planting again this year. There will also be other planting projects organized for the creek later on this spring. The size of the entire planting program will be announced later on this spring, in an update in this magazine.



Above: Glenbow Elementary School grade 4 students chip in to plant willows and trees along the banks of the Bighill Creek in Cochrane. This photo was taken during the 2010 planting program.

Last Year's Willow and Tree Crop is off to a Good Start!

Last year, Bow Valley Habitat Development planted 441 willow and tree plants on three different sites along Bighill Creek. The project was funded by Inter Pipeline Fund. The planting sites have been closely monitored over the last 10 months to assess the survival rates of the planting.

During the summer months, it is difficult to find the newly planted willows and trees in the tall grass along the creek, and sometimes an inspector can accidentally step on plants unknowingly, while inspecting the crop. The best time to assess survival of a planted willow crop is in the late winter months, when the snow has flattened the riparian grasses and the willow shoots stand out above the matted dead grass.

Due to the mild winter weather this new year, it has created ideal conditions to discover how last year's planting is doing. Recently, I have made a few trips down to the Bighill Creek to inspect the plants from the spring 2011 planting, and they are doing very well. It will take a few more years before the new plants make a noticeable difference along the stream, but they are well on their way!

Photos of the planting sites have been taken, before the planting programs began, so that at some point in time, in the future, a photo comparison can be made to show the impacts of the willow and tree planting programs.

Right Photo:

This photo was taken along the creek on March 19th, 2012. It shows some of last year's willow plants, now growing along the Bighill Creek.

It will take approximately 5 more years before these willows stand out above the high summer grasses along the creek!

