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September 2016 Issue

Stream Tender Magazine

Magazine Mission Statement

Publisher/Editor Information

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Articles by :
Guy Woods

Program Partners



Interpipeline



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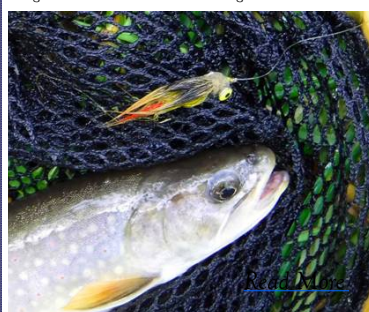
"Airdrie Ventures Chip in on Planting"



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Above: This photo shows the willows planted by the Airdrie Ventures this past June. The group raised the funds for the plantings.

"Bighill Creek Trout are — Holding Their Own"



Above: This small Bighill Creek brook trout found my Streaming Wet Fly (Hockey Player) to colourful to resist. I had a great morning fish in the first week of August this year. The water levels had risen after the late season rains and the trout were eager to take a trout fly.

Stream Bank Stabilization Sites

There are a number of stream bank stabilization sites along the three streams in the riparian planting program. These planting sites are of huge importance in helping to improve the water quality in the stream channels.

Prior to planting on these sites, some of the banks were eroding and loading tonnes of silt into the stream channel every year. By planting at the base of the eroding banks, toe erosion is stopped. Over time the banks will stabilize.

In the photo to the right, you can see willows that were planted in 2014, growing along the water's edge. This photo was taken, looking straight down over an elevated stream bank that is presently an erosion site. The stream bank is approximately 6 feet in height.

The crumbling clay bank will eventually stabilize at a 45 degree angle and riparian growth will follow. The site is located on Bighill Creek and it is one of 58 sites that have been planted for stabilization.

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"More Brown Trout in the Bow River, Near Cochrane"



Above: This 12 inch brown trout was one of many that were hooked on the Bow River near the Town of Cochrane. Recruitment of brown trout from the Bighill Creek spawning every fall is most likely the reason for this increase in the population on the Bow River.

"BVRRE Program Sets a New Record for Plantings"

A new record of 16,400 plants were planted during the 2016—"Bow Valley Riparian Recovery and Enhancement Program". Last year the total was 14,800, so exceeding this is great news for the riparian recovery program.

Details of this year's program will be published in Stream Tender Magazine, in the December issue for 2016. Starting in the fall of this year, BVHD will start working on putting together another program for the 2017 season. So wish us luck for next year's season.



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You can check out an inspection video of some of last year's crop of plants [At this Youtube Link](#). The video is only a few minutes in length and it was taken on West Nose Creek, in Calgary.

"Last Year's 2015 Willow and Tree Crop"



Above: The high flows in July flooded over the stream bank on West Nose Creek, exposing last year's willow plants shown above. The survival rate on this section of West Nose Creek was very encouraging.



Willow plants from the 2015 planting are now growing in this area.

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The Rare Loch Leven (Scottish) Brown Trout Still Found Residing in Local Waters



Richt Photo: by Guy Woods

This photo shows a rare Loch Leven or Scottish brown trout that was caught by Eric Schumann on the Ghost reservoir this August. These trout were stocked in some local waters as far back as the 1920's.

They can still be found today on Barrier and Ghost Reservoirs. They have black spots, but no red spots on their sides, which distinguishes them from the more common German brown trout.

The Scottish brown trout is a true lake strain of brown trout, making area reservoirs a perfect habitat.





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"Airdrie Ventures Group Plants Willows on Nose Creek"

In the late winter of 2016, Andrew Melissen of the Airdrie Ventures Group contacted me about doing a native willow and tree planting on Nose Creek in the City of Airdrie.

I agreed to organize an event and I gave the group a task of raising funds to cover half the cost of the plants. Well, the group succeeded in this endeavour and managed to find funds

from some local businesses to cover the cost of the plants.

Airdrie businesses; McKee Homes, Flander and Marr Professional Services and Peak Housing Solutions provided the money and the group was ready to get the job done. On June 4th, they did just that. In a few hours of hard work, a total of 400 native willow and tree plants were in the ground.

It was especially good to see a group of young people succeed in meeting the objectives set forth and doing all on their own. Their completed project allowed Bow Valley Habitat Development to plant additional native willows and trees on Nose Creek during the 2016 program. Congratulations are in order for this group of young individuals.



Above: The planting was started at 9:00 AM and was completed by 11:00. Below: The group poses for a photo after the job was done.



Above: The planting site was just downstream of the Willowbrook Drive Bridge in Airdrie.

"Gold Fish Now Populate Mitford Trout Ponds"

I first saw a Gold Fish in the lower Mitford Trout Pond some years ago. It was large in size, probably 7 inches in length. Since that first spotting, another Gold Fish has taken residence in the Upper Pond.

These aquarium fish were illegally stocked into the Mitford Trout Ponds by some former fish owner that doesn't realize the implications of releasing their pet fish into a nearby water body. This type of illegal stocking has become a problem on a number of area trout ponds.

These exotic aquarium fish may be carrying some type of disease or parasite that could cause a collapse of the our native sport fish populations or upset the natural balance of an ecosystem.

Although pet owners intentions are considerate of their store bought fish, they are totally unaware of any possible repercussions on doing an illegal stocking. Hopefully, any Gold Fish in Mitford Trout Ponds will be removed, before they cause any problems.



Above: The body shape of a large gold fish is distorted by the water's surface of Upper Mitford Trout Pond.



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"Mitford Trout Ponds-Kids Can Catch Event-A Success"



With sunny skies and a whole bunch of hungry trout in the Mitford Trout Ponds, it was a perfect day for the "Kids Can Catch" event on June 18th.

This year's program was the first organized by the Town of Cochrane, The Alberta Conservation Association and a small group of volunteers. Cochrane's Canadian Tire Store provided a bonus contribution of 100 fishing rods for the program as well.

Earlier in the spring, both the Town of Cochrane and the ACA had stocked the two ponds full of small brown trout and rainbow trout to insure a successful catch for the young anglers.

Both kids and parents were showing up well in to the late morning to provide their kids with an opportunity to try and catch a trout. Throughout the early part of the day, there were plenty of trout being captured and released by excited young anglers.

I arrived at the ponds late in the morning and after taking a few photos, I was put to work at the tackle station, setting up rods for the newly arrived participants. It was non-stop, setting up rods for kids and fixing tangled lines, but I really enjoyed it.

The volunteers for the tackle station had been going steady since the event had started that morning. These guys deserve a lot of credit.

Fortunately, their was time to witness a few young anglers catch their first trout and this was especially rewarding.

The Mitford Trout Ponds were first stocked with trout in the 1990's. Since then, the ponds have provided the perfect "local fishing hole" for parents to take their children to, in hopes of catching their first trout. Having a well stock trout pond close by makes that first fishing trip for kids a lot easier, when it comes to making the best choice of fishing destinations for first timers.

After the event on June 18th, this year, kids will have all summer to enjoy the ponds, catch trout and hope that they hook the big one.



"Hey-These Things are Slippery" Above: A young angler tries to get a grip on things, when a slippery trout provides a juggling act.

Right Photo: Young angler Katelyn Kelly holds up a brown trout that she just hooked. After showing the trout to her mom, the fish was safely released back into the pond.



Left Photo:

The volunteers at the tackle station were kept really busy, equipping the new arrivals with rods and tackle, set up to catch trout. Fortunately the line up was not too long for the fisher's that were tying lines and dealing with tangles.





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"Fourth Year of Planting for ATCO Team Sets a New Record"

This marks the fourth year that ATCO volunteers have chipped in to plant native willows and trees along the stream banks of area creeks. Their first year helping out was in 2013, on Bighill Creek, in the Town of Cochrane, Alberta.

The following year of 2014, ATCO completed another planting on Bighill Creek. Over the last two years, the stream of choice for the team event has been West Nose Creek, in the City of Calgary. A location that is closer to their main office in the city.

After four years of planting experience, the ATCO group is getting pretty good at the job. On June 8th of this year, the 13 person team set a record of planting 400 plants in 2 hours of hard work. This is very efficient planting for the methods used, but after all they are an experienced crew.

The process involved requires that a hole be punched into the ground, then the plant is inserted at the proper depth, followed by a watering and tamping of the soil. The key is to make sure that the plant is close to the water's edge. So no more watering is required.

It may seem like a simple technique to plant a native willow or tree, but like anything, it requires practice to become a good planter. This is where the ATCO team of volunteers is becoming very proficient at the job.

Most importantly, everyone has a good time while completing the task. I know that I enjoy working with the group ever since our first planting.

The ATCO planting falls on their "Environmental week" annual event. So planting native willows and trees as part of the riparian restoration program fits in nicely with this title.

I returned to visit the planting site one month later and all of the plants are doing very well. Fortunately, the ground was very moist during the planting day, so this always helps out with the survival rates. An overcast day that was not too hot or cold also made the work a little more comfortable.

Hopefully, we can look forward to another year of planting in 2017. Bow Valley Habitat Development's plan is to return to plant in the same area in 2017, so that volunteers can inspect their efforts from the 2016 planting. It is always nice to witness the results.

Right Photo:

The 13 member team from ATCO pose for a group photo after the planting project was completed.

The planting crew planted 400 native willows and trees along the stream banks of West Nose Creek.



Above: Nicole Jordan (front) and Jacqueline Cvitarske (back) load up with native willow and tree plants from the prepared bundles. The cart is used to move the plants over rough terrain during the planting event. There are 100 plants in each bundle.



Above: A hole is punched into the soft ground along the stream and then the Stage Two plant is placed into the hole. A good watering and tamping of the soil completes the job. Working in teams of three allows for a high degree of efficiency. Plant spacing is approximately 1 metre.



West Nose Creek is a perfect venue for riparian restoration work. The stream enters the City of Calgary from the northwest and flows approximately 20 kilometres downstream to where it enters the main stem of Nose Creek, next to the intersection of Deerfoot Trail and Beddington Boulevard.

The creek meanders through an environmental reserve, parks and a golf course, with great access to the public by a city path system. The riparian growth created by the plantings will enhance both fish and wildlife habitat.

Presently, there is a small resident population of brown trout in the lower reaches of the creek. Spawning brown trout were discovered in the fall of 2015. This major find will add a considerable significance to the West Nose Creek over time. With the potential of creating a spring creek sport fishery in the future.

The addition of both native willows and trees will greatly enhance the biodiversity of the streams entire valley bottom and provide an excellent natural environment for everyone.



Right Photo:

ATCO employee Alonna Kromrey holds the tip of one of last year's willow plants. Alonna has been involved in all 4 of the ATCO planting events that Bow Valley Habitat Development has organized on both Bighill Creek, in Cochrane and West Nose Creek in the City of Calgary.



HOME



"ATCO Planting Update"

I visited the ATCO Planting Site in the first week of July to inspect survival rates and how the plants were growing. The crop that had been planted one month earlier was doing just great, with the majority of plants showing healthy growth.

Even a few plants that had suffered from a prolonged dry spell this past June, were on the rebound. These plants had lost much of their original foliage, but they were showing new shoots developing on the main stems and the new branches.

Fortunately, the soil PH at this particular site is ideal for willow growth, so I am expecting great survival after the first winter. The planting area was also close enough to the water in the creek that there was good moisture in the soil on planting day and during the few good rains that we experienced in June.

I estimate the survival at this planting site to be in the 70 % range. Hopefully, we can do another ATCO planting in the same area, next year, to show off the results..





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"More Poplar and Aspen Planting in the Plan"

Over the past few years, a number of Balsam Poplar and Aspen Tree planting has been carried out, along area streams. The big problem with these two varieties of riparian trees is that they are often targeted by resident beavers and muskrats.

A small number of them do survive and they are presently growing along the creeks. Once there is a good crop of willow plants to distract beavers and muskrats, the survival and growth of poplar and aspen should improve.

Despite being cropped down by beavers, some poplar and aspen trees do survive and continue to grow. Hopefully, these survivors will establish permanent stands on the stream banks that spread over time.

The key to establishing a stand is having a few poplar or aspen survive the first five or six years, until their root systems have spread out and start to suckle. I have observed trees that have been cropped down and continue to grow, after a few years in the ground.



Above: This poplar, just to the right of a willow, was planted in 2013, yet it is still surviving. The poplar was grazed upon by a beaver, but still survived.

"Area Creeks Finally Get a Flush"

It has been a few years since we have had a good spring run-off event on area streams like Bighill Creek and West Nose Creek. After this dry spring, it looked like we could add another year to the story line.

Fortunately, starting in mid July of this year, a prolonged rainy period changed this dry spell. Large amounts of rain brought the stream levels up high enough to start cleaning out the system. It turned out to be a good "flush" over a one week period.

This large volume of flow will clean a lot of silt out of the streambed and improve fish habitat. The velocity of flow will also clean the gravel substrate on

all of the riffle areas where the gradient is steeper and the streambed is covered in gravel and cobble beds.

This flushing of the system is a normal and important part of maintaining a healthy trout stream. It usually occurs in the spring thaw or when spring rains are supposed to come.

By the early part of July, the water levels in areas streams was getting pretty low and there was the threat of water temperatures getting too warm for the resident trout, but this has changed now. The result of all of the precipitation will be better flows for some time into the late summer months.

This will be good for the resident trout populations. The cleaner riffle areas will provide more food by increased invertebrate populations and the increase in deep pool and run habitats will expand the areas for trout to inhabit.

Personally, I haven't fished area streams that much this spring and summer, because of the lower water levels. Now I can look forward to casting a line on those same streams, into late summer and fall.

With the present "El Nino" ending, we should expect more precipitation in next few years. At least this is my prediction. We will see if I'm right or lucky.

Left Photo:

This photo shows the high turbid flows on Bighill Creek on July 17th this summer. The water levels and velocity provided all that is needed to clean out the creeks streambed.

Below:

This is a photo of West Nose Creek, taken on the same July day.

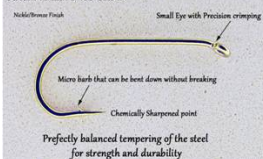


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"Streams need a good flush of high flows to clean them out and scour pool and riffle habitats. Large volumes of silt are moved downstream as part of the natural process."



HOME

One of the Stream Bank Stabilizations Sites on Bighill Creek

It is really nice to witness the recovery of some of the stream bank stabilization sites on all three streams in the riparian recovery program. It takes a while, but after a few years, you notice the difference.

The photos below show how planting native willows on an unstable stream bank has transformed the site into a natural stable stream bank. The project was completed just by planting willows over a three year period.

The site received its first planting treatment in 2012. The willow growth is slow at this site, but the results are quite evident. This stabilization project has greatly reduce silt loading into the stream channel.



Above: This 2010 photo shows the eroding stream bank on Bighill Creek, before planting.



Above: This is a photo of the same eroding stream bank taken four years later, in 2016.

Below: This photo gives you a closer look at the willow plants, from the top of the bank.





"July Freshet Brings More Rainbows"

This July, during a prolonged bout of rainy weather, the JP Creek finally received a much needed flush. The result, for local fly fishers was the appearance of more small and juvenile rainbow trout in the Bow River, near Cochrane.

The rainbows ranged in size from approximately 6 inches to 10 inches in length and they trout had spent the first part of their lives in the Jumpingpound Creek.

The run-off during the brief high water event in the JP Creek, flushed the population of small rainbow trout down into the big water of the Bow River. This is an annual event in our neck of the woods.

Prior to the rains, the number of rainbow in the nearby Bow River was down considerably. This injection of new trout will help sustain the limited sport fishery on this reach of the Bow River.



Willows Around Pool Habitats On Millennium Creek

In 2007, a year after pool habitats were constructed on Millennium Creek, willows were planted around the pools to provide future shade and cover for the resident trout. This addition to the overall pool creation was important, because over the years the willows would help the new habitats blend into the natural environment.

It has been interesting for me to watch how the plants have transformed the appearance of the constructed pools in the last 8 years of growth. Now, the pools are well hidden beneath a canopy of branches and leaves. The root systems of the willows have also insured stability of the stream banks surrounding the pools.

I have often seen small trout darting for cover in the pools as I approached from downstream. The fish will retreat to the woody debris cover that was added to the pools or shoot under the undercut banks, at the base of the willows. Trout seem to feel quite safe in these pool habitats and this is what the original intention or objective of constructing them was based on.

Most of the trout that utilize the pool habitats are juvenile fish from previous hatchings on the spawning habitats on the creek. The spawning habitats were also built as part of the overall stream restoration project on Millennium Creek. It is nice to see that everything has worked out as planned for this small tributary to the Bighill Creek.

The only thing left to do, is too maintain the creek into the future, insuring that it continues to be as important as it has been over the past 8 years. This includes garbage removal and making sure that the trout have free passage both upstream and down.

The Millennium Creek Restoration Program was started in 2005 and completed in 2010. Since it's completion, successful spawning and trout egg hatches have occurred every year on the small spring creek.



Above and Below: These two pool habitats were constructed in 2006 and willows were planted the following year. Now, they are both quite natural in appearance and it would be difficult to tell if they were constructed by local residents of the Town of Cochrane.



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"The Jumpingpound Creek Strain of Rainbow Trout - Needs More Attention"

There has been a dramatic decline in the numbers of rainbow trout in the Bow River, between the Ghost Dam and Bearsaw, in recent years. The main problem is the spawning numbers on Jumpingpound Creek over the past 10 years.

The JP Creek is the only spawning tributary for the rainbow trout on this stretch of the river, so if conditions are poor for reproduction on the creek, the result is notice by local anglers that fish the Bow, near Cochrane, Alberta.

I think that it is time that a little more attention be paid to this important rainbow trout stream, in the form of some action that will improve conditions for reproduction.

The most important task at hand would be to insure that the spawning rainbow trout have clear passage, during their spring spawning run up the JP Creek.

The removal of man-made rock dams and the opening up of beaver dams on the lower reach of the JP Creek in the spring, is a good start.



A trout fry that hatched on Millennium Creek

The Pale Morning Dun - AKA - PMD Dry Fly

One of the more important dry fly's to have a good stock of, is the PMD. It is a small but very effective pattern when the hatch is happening.

The Pale Morning Dun hatch of May flies is common on many of our area's streams and the Bow River.

I have caught some very large trout on a size 18 dry fly imitation of the PMD, over the years. The patterns in my fly box are tied in both a size 18 and a size 16 short.

One of my favourite spots on the Bow River to fish this pattern is on the upper reach of the Bow River.

There are a few smaller side channels where the hatch happens every summer on the upper Bow, near Canmore, Alberta.

A simple Comparsa Dun imitation will work, but my other preference is a small light color parachute, tied short on a size 16 dry fly hook.



Evergreen/HSBC Planting Event

The August 25th, Evergreen-HSBC planting event was the last of the season for 2016. The ground along the West Nose Creek in Calgary was still moist from a few previous flood events, so planting conditions were ideal. It just happened to be raining on the day of the planting, so the extra moisture was welcome, from a planting perspective.

Despite the inclement weather, all of the volunteers that showed up for the planting, had a great time and managed to get 300 native willow plants into the ground in a short period of time. We all then had a little time to learn a few things about the "Bow Valley Riparian Recovery and Enhancement Program" as well as other interesting stuff.

Plant specialist Kallie Pigott was on hand to teach everyone about some of the local native flowers and invasive weeds along the creek, which all of us found quite interesting.

The Creek Side area of West Nose Creek will be a show case site for future plantings that will demonstrate the riparian recovery along the stream, especially over the next 5 or 6 years. Presently, this reach of the creek is almost void of native willows.



Before Planting



"Garter Snakes Make Good Fisher's"



Garter Snakes are great fisher's, hunting the shoreline of area streams and ponds for small minnows that hide in the shoreline shallows. I have observed them with small fish in their mouths on one occasion. I am sure that they also eat aquatic invertebrates that live under the cover of rocks as well.



Above: This Garter Snake was hunting the shallows of the lower Maford Trout Pond, among the rocky shoreline, where small minnows take cover in the boulders.



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The Larger Sized Cuttings



Above: This is one of the large diameter cuttings that was planted.



Above: This photo shows what the large diameter plants look like, just after they have been planted. Because of the stream bank elevation, the deep planting of approximately 4 feet would help get the roots down to a moister soil, close to the stream's water level.

Standard willow cuttings that are only planted around 19 inches in depth would have been too shallow for a good chance at survival.

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"Planting Large Diameter Willow Cuttings"

This June, Bow Valley Habitat Development planted 25 large diameter willow cuttings on the top of an eroding stream bank on the Jumpingpound Creek. The objective was to prevent future erosion occurring on a stream bank that is located next to a ranch corral.

The planting site is located on the Wineglass Ranch, just upstream of the Town of Cochrane. Large diameter cuttings were collected from a site on the ranch and then they were grown until both root and top development had taken place.

The cuttings were approximately 1.5 to 2 inches in diameter and they were approximately 4.5 feet in length. A gas powered earth augur was used to create a hole in the ground, which made the planting process very simple in nature. The holes were augured just under 4 feet into the earth, at the top of the stream bank.

Soil was added once the plants were placed into the holes, followed by a good watering. The plants were spaced just over a metre apart. The deep root planting will hopefully allow good survival in the hard ground where they were planted.

The primary goal is to prevent future erosion from happening to the livestock corral, by stabilizing the ground with a network of willow roots. It was determined that large diameter cuttings would be the best choice for this particular planting venue.

It had been a very dry spring, but more rain that occurred in late June and into July will help in the plants survival. The site is a tough one for planting anything, but large diameter willow cuttings planted deep into the earth may produce the desired results.

I will update you on the results of this planting in the future. Hopefully, by next year, we will see some good growth.

"The Planting Equipment for this Project"



Above: This gas powered earth augur was the best choice of equipment for the task at hand. Although the ground was very dry and hard, a power augur worked best for creating a hole down to the proper depth. Hand tools would have made the job very difficult for this part of the planting.

"The Planting Site on JP Creek"



Above: This photo was taken from stream level and it shows the erosion occurring on the stream bank. You can see the corals in the background that are under threat of being damaged in the long term, by continued stream bank erosion at the site.



Above: This photo was taken on the top of the eroding stream bank, looking downstream on the Jumpingpound Creek. You can see how close the corals are located to the eroding stream bank. A few major floods would definitely undermine the fence and corals on the south side, along the creek.

The large diameter cuttings were chosen as the best option for this particular stream bank. The cuttings are planted deep into the ground to insure moist soil will maintain the root systems on the plants. Small diameter cuttings would die off, when planted so off from the stream channel and at an elevated planting site.

Agroforestry and Woodlot Extension Society

A week prior to the BVHD planting on the Jumpingpound Creek, the Agroforestry and Woodlot Extension Society completed a rather large planting of Balsam poplar and Sandbar willow on the creek.

In total, 2,970 plants were planted on a few sites running parallel to the stream banks of the JP on the Wineglass Ranch. The Society has completed a number of plantings in the Cochrane area in recent years.

I recall some plantings that they did on the Simpson Ranch a few years ago, along the Grand Valley Creek. Hopefully, this large crop of native plants will take on the JP Creek and help to provide some well needed cover along the stream.

The seedlings that were planted were well spaced over a large planting area. It may take a number of plantings over the years for a good result, but it is all for a great cause.



Above: This Balsam poplar was showing good growth a few days after the planting. Hopefully, despite the dry spring weather, we will see a good survival rate on this crop of plants.

The planting was carried out on a wide section of stream bank, which extended well back from the top of the stream bank on the creek. I will update you on how these plants grow over the next few years.

"Another Large Diameter Willow Planting"

This year, another large diameter willow cuttings planting occurred on the JP Creek's lower end. The Jumpingpound Creek Watershed Partnership Program" planted a number of large diameter cuttings near the mouth of the JP Creek, in the Town of Cochrane.

These large diameter cuttings were planted with long parts of the main cutting exposed above the ground. The result is more shoot development and foliage over the next few years.

This dense planting will help to stabilize the stream bank and provide protection to a pathway that is located only a metre away from the top of the stream bank. Over time, only the more heavy willow plants will survive and develop strong root networks.

It is good to see another watershed group taking action to protect our area streams. Hopefully, this group will also conduct some planting programs further upstream on the Jumpingpound Creek in the future.



HOME



"Lake Whitefish are a great sport fish for the fly fishing crowd. They feed heavily on small and large aquatic invertebrates, minnows and terrestrial insects.

Some fly fishers call them fresh water bone fish, because of their powerful runs when hooked on a fly rod."





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"Large Number of Stage Two Plants Planted This Year"

In this year's "Bow Valley Riparian Recovery and Enhancement Program" another record was added to the list. So far, 7,000 of the plants planted have been "Stage Two" plants, which are more advanced in growth than the standard "Stage One" that are normally planted.

Both the root and top development on a Stage Two plant is more prominent and gives the plant an added boost to the growing season. The more developed plants take more tending prior to planting and they are slightly more expensive as a result.

The larger number of Stage Two plants was an added bonus to the program and the extra costs were absorbed by Bow Valley Habitat Development. We should see a much larger willow and tree plant by the end of next year's growing season.

Over the past few years, more than 30,000 plants have been planted and the partnership involvement has made the program a success. With this in mind, BVHD thought that a little extra effort, in the form of a contribution was in order.

The Stage Two plants are a little more resistant to small rodent damage, having larger and more developed limbs or branches. The root systems are much more advanced as well, giving the plants a more rapid means of nutrient intake. The key to successful planting of the Stage Two plants is to plant them in moist ground, right along the water's edge.



"Willows and Poplars are Nitrogen Fixer's"

The perfect range of PH in soil for willow and poplar tree planting is between 5 and 7.5. If the PH is below 5 the soil is too acidic and it needs more lime to neutralize it, which is a bit of a problem when planting along streams.

If the soil is too alkaline or above a PH reading of 7.5, there needs to be more organics to bring the level down. Both willows and poplars can bring nutrient into a high PH soil level, but getting the plants to survive long enough to do this can be a real challenge.

I have found that there are usually areas along the stream channel where the PH level is close enough to acceptable to support initial growth. Sometimes the plants will struggle to survive, but some of them do manage to make it. Those that do, enrich the soil with more nitrogen and eventually, the soil is transformed from a high PH level to one that is more conducive to willow and tree growth.

My plantings close to the water's edge seem to do better on areas of the stream channel where the soil is poor for willow and tree growth. It could be that the water has enough nutrient to sustain the plants.

This challenge of planting in poor soil is just part of the whole riparian recovery program and eventually, the persistence of multiple plantings will pay off. Sometimes, plantings those varieties of willows that are more adapted to poor soil are the best choice for primary recruitment, and other varieties will eventually follow.



"Plants From Previous Year's - How Are They Doing?"

West Nose Creek

Over the past few years, the stream that has received the greatest number of plants is West Nose Creek, in the City of Calgary. There are approximately 20 kilometres of stream channel within the City limits and a few planting sites upstream.

With approximately 7 kilometres of the creek already planted, this small system will show the greatest transformation of all three streams in the program. The West Nose also has the greatest potential for transforming into a spring creek trout fishery.

So far, the results of the previous plantings are huge and in another few years this will become quite obvious.



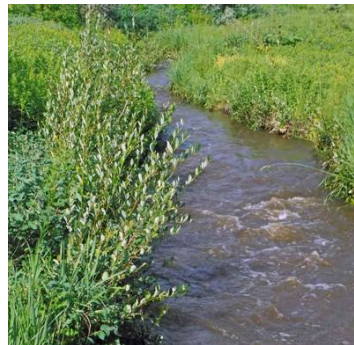
"The First Plantings on Bighill Creek in 2012"

Prior to the "Bow Valley Riparian Recovery and Enhancement Program" there was a riparian recovery project happening on Bighill Creek, in the Town of Cochrane. Those plantings that were done in 2012 are now standing out on the stream banks of the BH Creek.

The shoreline plantings are now providing shade to the stream as well as added stream bank stability. It took a few years for the native willows and trees to be prominent enough to be noticeable to the passer by, but now they are tall enough to produce the expected results.

Since those first initial plantings, additional plantings have been completed on areas of the stream bank where grow rates are slower so over time, the entire stream banks will be covered with native willows and trees. Areas that produced a lower survival rate, are eventually filling in with plants. It is a clear case of "persistence pays".

In a few years time, the program will be completed. Until then, BVHD and its partners will continue to plant both willows and trees.



"Willows From the First Plantings are now Providing Fish Habitat"

It is great to see that willows that were planted along the water's edge are now providing overhead cover and habitat for the resident trout populations in Bighill Creek. It took exactly four years for this to happen on the creek, which isn't a bad return on the initial investment for only a few dollars per plant and some volunteer time.

If you closely look at the photos on both sides, you can see how the willow plants are also constricting the flow in the stream channel. This will help to scour the gravel and cobble stream bed clean thru out the year.

The amount of fish habitat will increase over the following years, thus further enhancing fish habitat in the creek. All of this is very natural and no man made structures were required to achieve the long term goal of creating fish habitat in the Bighill Creek.

This type of fish habitat enhancement is a whole lot easier on the eyes, when compared to other options available to fish habitat enhancement professionals.

Above: This photo clearly shows how planted willows will provide good overhead cover or habitat for trout. The willows also constrict the flow in the stream channel and provide stream bank stability.

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Bighill Creek

On many areas of the Bighill Creek that have been planted in recent years, the willows are already starting to provide overhead cover for the resident trout population. In another three years, the new willow and tree plants will stand out in the landscape.



Nose Creek

Both planting sites on Nose Creek at Willowbrook and Sierra Springs in the City of Audrie, have been very difficult sites for growing willows and trees. Despite this, there are now signs of a stable crop of both native willows and trees growing along the creek. Planting will continue at both of these sites, into the future. Two new planting areas we planted this year and these new sites are showing a much more positive result.



Other titles by Guy Woods that are also available at Amazon.ca are:

"Fishing These Parts"
And
"Fly Fishing and Other Stuff"



Learn how to tie a perfect Doc Spratley Wing in Guy Woods latest Book:

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Stream Tender Magazine



"Beaver Dam Notching Program a Success"

Beaver dam notching involves creating an opening in old beaver dams to allow fish migration both upstream and downstream. It can also be carried out during a pre-spawn window to allow spawning trout passage up a system.

The work is completed during the in-stream activities period allowed on specific streams. All of the necessary permits and permissions need to be in place and the work is supervised by either a fisheries biologist or an aquatic environmental specialist. Each dam is opened up by hand and the reservoir is slowly drained down to insure that no sudden flush of water volume creates erosion problems downstream of the dam.

An opening no smaller than the natural stream channel width at surveyed baseline points along the system is created. This means that the opening should not be more narrow than an existing narrow channel width, which is measured either upstream or downstream of the notched dam.

Following this procedure insures that remnants of the old beaver dam will still maintain a damming effect during any future floods on the creek. Similar to what is known as a dry dam constructed for flood mitigation.

Beaver dam notching has been carried out on the Bighill Creek, both in and upstream of the Town of Cochrane for a number of years, by Bow Valley Habitat Development and a volunteer force. I am happy to report that the program has been very successful in allowing trout migration up the system.

Last year, a number of beaver dams were notched to continue this worthwhile program and during a July inspection, a number of old beaver dams were still open for trout passage. Active dams are still present on the creek and this will insure that the natural benefits of beaver dams on the system is maintained.

This notching program is carried out only when necessary on inactive beaver dams.



Above: These four old beaver dams were notched last year and they are still open. The photos were taken in July of 2016, on the BHC.

Bighill Creek Trout Numbers are On The Rebound

It was a very dry spring and early summer this year. As a result, all of the local trout streams were under low flow conditions. Fortunately, the weather didn't get hot enough to magnify this problem for the resident trout populations. Due to the low water levels, I didn't fish smaller waters during the dry weather. It would be just too hard on the trout, which get a little stressed when the water is low in their habitats.

Trout will retreat to the deepest cover of undercut stream banks, woody debris and willows that are growing over the water, when the levels drop. This is a good time for anglers to leave them alone and turn their attentions to the larger streams and rivers. The Bow River is always a good bet.

In mid July, we started to get a little more rain and soon the streams were flowing a little higher and when the water was clean enough, a fly fisher could check out the fishing on area streams, like the Bighill Creek.

I managed to get a few brief fishing trips on the BH Creek in the first week of August. Fortunately, the trout were cooperative and a few were interested in my fly patterns. It was good opportunity to assess the trout populations in the creek, which I love to do from time to time.

One thing that I noticed in the first few hours of fishing, was that there were more smaller trout in the creek this year, especially brook trout. This was great to see and I suspected that both of the

spawning tributaries on the lower reach of the Bighill were responsible for this recruitment of young trout. Those tributaries are Millennium and Ranch House Spring Creeks.

As long as we have good spawning and trout hatcheries on these two small spring creeks, the fishing in the BH Creek will continue to improve. This is something that a few local fly fishers are intent on making sure that it happens. So far, this support has worked out very well for the resident trout of the Bighill Creek.

Over the summer months, a few of us have volunteered our time to clear a few blockages and clean up some garbage along the creeks in the Town of Cochrane. It feels good to be putting something back into the sport fishery.



Above: This is what the Bighill Creek looked like in the first week of August this year. Good flow and enough trout to keep a fly fisher interested. At least for this fly fisher.

Squirrel Hair Streaming Wet Flies

This year I seem to be fishing more Squirrel Hair-Streaming Wet Fly patterns for my trout fishing. It all started this spring when I was doing great on Bow River rainbow trout, using a Red Squirrel-Streaming Wet Fly. Both black and red have always worked good for spring rainbow trout.

Later on, while fishing for both brook trout and brown trout, good catches were experienced with some of the more colourful Squirrel Hair patterns. The Yellow and Chartreuse Seeker patterns, along with the Hockey Player were good producers. Most of these patterns are tied with Red Fox Squirrel Tail fur.



Patterns are tied with Red Fox Squirrel Tail



Left: The brown trout in this photo was not a giant, but like any trout, it was a good trout. It is amazing how aggressive smaller trout can get, for even a larger sized Streaming Wet Fly pattern like the size 8 "Stroker" fly pattern that I used to capture this trout. The small trout was released safely back into the creek, like I do with all of the trout that I catch. Occasionally, I like to take a quick photo of the fish, before they are put back into the water. It is like recording a memory.

Right Photo:

This narrow opening in a small beaver dam on Bighill Creek has created a nice deep pool habitat directly below the notch in the dam.

There is nice spawning gravel on the tail-out of the pool, which may be used for spawning by trout this fall, when the water in the creek runs clear.



"The Urban Fisheries Program for 2016"

The Urban Fisheries Program covers a number of maintenance duties that will help to protect and enhance the trout fishery on streams located in the Town of Cochrane and the City of Calgary.

In recent years, many volunteer hours have been accumulated working on this program and the results are showing benefits. The primary activities to date are insuring free passage to spawning trout on

Bighill Creek's system and lately West Nose Creek. This work program involves removing blockages and old beaver dams.

This year, opening up rock dams that have been built by people on the Jumpingpound Creek was started. Hopefully, this program will continue well into the future.

Other activities in the program are directed towards scientific studies to collect baseline data and

document important information relating to the fishery on the streams.

This year, BVHHD obtained a research license from ASDR Fish and Wildlife, to conduct a study of whether the trout eggs on West Nose Creek produced any hatch from last fall's brown trout spawning.

Due to high flows during the study window, this program was rescheduled for 2017.

Notched Beaver Dams Create Pool Habitat

Notching beaver dams creates fish habitat by scouring a pool directly below the notched dam. By creating a constrictive plunge at the opening of the dam, the constricted velocity of water flow will

scour a deep pool over time. The opening created is especially efficient during high flow events, such as rain freshets during the spring and summer months. This is a simple

method of creating a nice natural pool habitat for resident trout.

The scouring also frees up spawning gravel that further enhances the fishery on the stream. Trout will often spawn in the tail-out.

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Maintaining a Spawning Tributary – Ranch House Spring Creek

Maintaining a spawning tributary on one of your favourite trout streams can involve a lot of work in some cases. Ranch House Spring Creek is a spawning tributary to the Bighill Creek and for a few dedicated volunteers, it requires an annual maintenance program to insure a successful spawn each fall.

Prior to the installation of a storm drain outflow from a nearby development, the small spring creek didn't require much, but now it needs constant attention. The main problem is erosion and in-stream blockages from woody debris that jam up at certain locations along the creek.

During heavy rain events, the storm drain discharges a huge volume of flow that is too large for the natural existing stream channel on Ranch House Spring Creek. The narrow channel is not able to handle the huge flow and as the water rushes down the system, it gathers woody debris that jams up at constriction points on the creek.

These jams of branches and trunks of willows create blockages that hinder or stop fish migration either upstream or downstream on the small creek. The problem becomes of major significance in the fall, when the brook trout try to move up Ranch House to spawn.

The maintenance work prior to the fall spawning season requires that these blockages are opened up to allow fish migration upstream. All of the work completed is covered by the necessary permits, permissions and paperwork required and is supervised by an Aquatic Environmental Specialist. Only blockages that prevent fish migration are opened up.

A few years ago, BVHD made it clear that there would be some long term problems relating to the discharge of a storm drain into Ranch House Spring Creek, so this annual maintenance program is part of the remediation work necessary to insure the stream continues to provide habitat and reproduction for the Bighill Creek system.

It is not known at this time, how the erosion of the existing stream banks will impact the creek as a spawning and nursery habitat for brook trout, but this problem will continue to be monitored over the future years. Both photos and measurements of the mean average stream bank-full width have been documented for baseline, so we will see.

One positive note in this transformation is the presence of more spawning habitat along the lower reach of Ranch House Spring Creek.

the high flows from storm drain discharge have freed up more spawning gravel and habitat on the middle to lower end of the creek. This has created spawning opportunities for larger trout on the very bottom end of RHS Creek.

This year is the first time that I have become hopeful that brown trout may also start to use the creek as a spawning habitat. If this is the case this fall, I will be happy to report the news in the December issue of Stream Tender Magazine this early winter. New developments such as this are always great to see and to report, but at this time the thought is only speculation.

The biggest concern about the storm drain discharge impacting the trout spawning season, is a late fall high flow event that could destroy an entire fall's spawn. The trout spawn in October, so having a late season rainy period or a snow fall that quickly melts would result in a huge flush of water coming down out of the storm drain system.

One thing is certain, the storm drain is here to stay, so future negative impacts to Ranch House Spring Creek are bound to happen. All that we can do is continue to work on the creek and hope for the best.

"During and After Flood Events"



Above: The storm drain causes the flooding of the RHS Creek channel during rain, hail or melting snow events on a nearby development.



Above: This photo shows the normal stream channel after a recent flood created by the storm drain upstream.

Above: This photo shows a huge discharge of water coming out of the storm drain, causing flooding and erosion on the RHS Creek downstream.



Above: This photo shows a male and female brook trout that were spawning on Ranch House Spring Creek in the fall of 2015. The future of this brook trout spawning event on RHS Creek is now under threat of being lost forever.

Above: This brush pile blocking the stream channel was caused by a large volume of water from the storm drain upstream. The flood of water moves woody debris downstream, creating jams at key areas on the stream channel. These must be cleared for the trout's fall spawn.

New Parking Lot Over RHS Creek

Another concern faces the Ranch House Spring Creek trout population. Recently, plans to expand the parking lot over RHS matter would be a high priority in the final plan for the rumour mill. The project would involve covering the entire creek that is presently bordered by two main parking lots.

Bow Valley Habitat Development contacted the person representing the Town of Cochrane in this proposed project, so to see if measures would be taken to protect the trout fishery. Both spawning and nursery habitat issues were addressed in the discussion.

Fortunately, BVHD was assured that the creek would be high on the list of guidelines for the project construction plans.

The Town of Cochrane is well aware of the importance of the creek to the area's fishery, so this matter would be a high priority in the final plan for the construction works to complete the project. BVHD supplied the Town of Cochrane with some key baseline data on when the trout spawning in the creek and how long the trout egg incubation takes, before the trout hatch. Hopefully, this information will help to develop a time window for when the construction project is carried out.

Ideally, the parking lot construction will be planned in compliance with the in-stream activities window for the Bighill Creek watershed. This would help to avoid any negative impacts.

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"Millennium Creek Trout Hatch"

The fall spawn of brook trout on Millennium Creek in 2015 totalled 38 redds or egg nests and the hatch in the early part of 2016 was really good. With large numbers of brook trout fry on Millennium Creek, the recruitment of new fish for the Bighill Creek will be significant this year.

The creek was very low during the early spring and summer, but it rebounded in the later part of July, after good rains replenished the ground water. The stream was back on Millennium Creek, I suspect that this higher flow in the last part of the summer will help move a lot of brook trout parr down into the Bighill Creek.

Over the summer, a few blockages were removed on

the stream channel, to facilitate migration upstream and downstream. This should insure that a good population of juvenile trout make it down to the BH Creek.

This fall's spawning on Millennium Creek will mark the 7th year of spawning on the new spawning channel that was constructed in 2010.

If we look back over the past 9 years since the stream was completely restored on the main channel section. It will be the 7th year of spawning on the new spawning channel that was constructed in 2010.

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"Lots of New Trout for the Bighill Creek in 2016"

During a clean-up along Ranch House Spring Creek this August, I was happy to show volunteer Eric Schumann some small trout from last year's spawning on the creek. By that time in the summer, the brook trout that had hatched in early spring were large enough to be easily spotted among the bottom cover habitat on the small stream.

The brook trout were a little over 7 cm in length and they were growing fast. By August, the trout had their typical red spots that could only be distinguished if the trout were examined close up. The parr marks or large black spots along their sides was all that an observer could see from a distance.

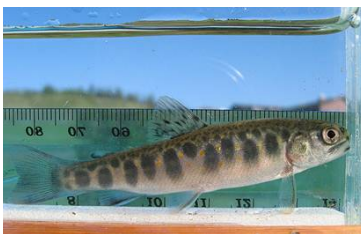
There was quite a large number of the juvenile trout in Ranch House this year. This new generation of brook trout would help to replenish the trout populations on Bighill creek. After growing large enough to move

down into the large flowing stream channel of the BH Creek.

I suspected that on that August day, we were seeing only a small number of the trout that had hatched and that most of the young trout were already in the Bighill Creek's main channel. If there is limited food for a large number of trout, they will migrate downstream to new habitat.

In the fall of 2015, only 10 brook trout redds were documented on the RHS Creek, so the incubation and hatch must have been very successful, with so many small trout present in the creek this year. The clear, clean spring water is the perfect spawning and incubation factor for a good hatch of new brook trout.

Hopefully, the fall spawn for this year will be better than the last, and we will see another good hatch in the 2017 season.



Above: This juvenile brook trout hatched on Ranch House Spring Creek and was photographed on the stream, during a fisheries study that was completed in 2009. You can see a blurred Town of Cochrane office building in the background. This brook trout measured 7.5 cm in length and you can see that it is in very good shape.

Despite that negative impact of a storm drain system that now enters the small spring creek, there is hope for many future spawning events on the Ranch House Spring Creek. However, maintenance on the stream will be necessary to insure an annual spawning event.