STREAM TENDER MAGAZINE

The Web Magazine Dedicated to the Support of Riparian Areas

All views and opinions expressed in this magazine are solely those of the publisher or contributing writers

September 2017 Issue

In This Issue

Mid–Summer Small Stream Trout on a Fly Rod

Above: *Small streams in mid-summer can be a challenge to fly fish, but occasionally you are rewarded with a real beauty like this brown trout. This mature trout helps make the effort all worth while, but smaller trout can make you smile just as much.*

A Whirling Disease Resistant Rainbow Trout

The Hofer Strain of Rainbow Trout is Resistant to Whirling Disease

There is great news that holds promise for our threatened Bow River strain of rainbow trout. The answer may come from a genetically resistant strain of Kamloops trout that was first identified in Germany. The Hofer strain is resistant to Whirling Disease and it is being hybridized with other strains of rainbow trout to save the fishery in Colorado. This hybridization may also be done on our beloved Bow River strain in the future; if necessary. This discovery holds promise.

Late Summer Trout - Dry Fly Patterns

Above: *Grass hopper dry flies are just some of the many terrestrial dry flies that work great in late summer, when picky trout can be hard to catch. There are many hopper, ant and beetle fly patterns that will bring feeding trout to the surface.*

ATCO Planting–The Last for Spring

Above: *On June 8th, the last spring planting for the "Bow Valley Riparian Recovery and Enhancement Program 2017" was completed on West Nose Creek in the City of Calgary. A team of volunteers from ATCO planted 500 native willows and trees in just a few hours time. ATCO has been participating in the program for the last 5 years. This year's planting was part of their "Day of Caring" annual volunteer program.*

Articles by : Guy Woods and Contributors

Right Photo:
This steep eroding stream bank was first planted in 2014, on the Bighill Creek in the Town of Cochrane. The plants are now starting to establish a thick network of roots in the unstable soil on the severe slope, on the outside bend in the stream channel. This has greatly reduced silt loading into the creek over the last few years and the bank will further stabilize over time.

Bighill Creek Stream Bank Stabilization Sites

"Stream Bank Stabilization Sites are featured in this issue." "Go Online to get more on the Hofer strain of Rainbow Trout."

First Planting Creates Fish Habitat

Above: *Willows planted on the Bighill Creek in 2014 are now providing overhead cover, growing out across the surface of the creek in some areas. This has created substantial fish habitat for the resident trout population in the BH Creek. More positive results such as this are yet to come, in this riparian restoration planting program. It is nice to see some benefits like this so far.*

New Generation of Rainbow Trout in the Bow River

This summer, thousands of small rainbow trout entered the Bow River from the Jumpingbound Creek. The new generation of rainbows was a result of a successful spawn and egg hatch in the spring of 2016. It has been a few years since our last successful hatch on the JP Creek, so this recruitment event was good news for local fly fishers that fish this reach of the Bow River in Cochrane.

A Great Growing Season – So Far

The spring planting season was a success this year and there is more planting planned for the fall. So far, a total of 7,830 plants are in the ground on all three streams in the program. Those streams are West Nose Creek, Nose Creek and Bighill Creek.

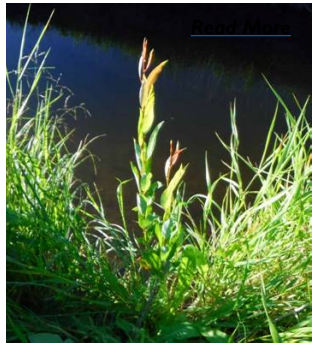
The volunteer contribution is at 137 volunteer person hour, with a total of 28 people chipping in on the Bow Valley Riparian Recovery and Enhancement Program for 2017.

This spring and early summer has provided ideal growing conditions for our crop of native willows and trees. Growth has been fast with a good survival rate.

This will continue if we get adequate rain over the later part of the summer. If we don't, the plants are close enough to the water's edge that stream moisture will help.

Another positive for this year's crop is the fact that we haven't had any major flood events on all three streams. Because the plants were not impacted by high flow situations for the first three months since they were planted, they were advanced enough by then to handle any minor flooding that may occur.

Additional plantings will happen in October, before this year's program is completed. Over 8,000 plants will be in the ground by the time the snow flies in our area.



A Mouth Full of Squirrel

Above: *This small stream brook trout fell for a favourite Bow River Streaming Wet Fly pattern. This turned out to be a pleasant surprise for the fly fisher — me.*

Riparian Zone Objectives:

- *Improved Water Quality*
- *Stream Bank Stability*
- *Cooler Water Temperatures*
- *More Fish Habitat*
- *Bio-Filtration of Surface Water Run-off*
- *Removal of Silt in the Stream Channel*
- *Reduce Silt Loading*
- *Improve Invertebrate Habitat*
- *Create Wildlife Habitat*

Three Year's of Growth Along The Stream Banks of West Nose

In the first week of August, I inspected a reach of West Nose Creek that had been planted with native willows and trees in the 2015 Bow Valley Riparian Recovery and Enhancement Program. It was great to see how well the willows and trees were fairing after three years of growth.

The new plants were getting taller than the summer riparian grasses and they were draped over the water's edge, which was the objective when we first planted them in the spring of 2015. In another few years these plants will be providing the shade and cover habitat that is part of the overall plan for the program.

A good growing season this year was evident in the tall new branches and thick foliage.

Willow Planting Event on West Nose Creek, Calgary .

If you live in or near Calgary and you would like to chip in and plant some native willows along West Nose Creek–Here is your chance. A volunteer planting is planned for Saturday, October 14th, starting at 9:00 AM. For more information, email: info@streamtender.com . I will send you maps for the location and details on what to bring. It should be a fun morning of planting for those interested.

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Bio-Engineering Fish Habitat

Urban Riparian Planting Sites

The "Bow Valley Riparian Recovery and Enhancement Program" has thus far been planting native willows and trees in the Cities of Airdrie, Calgary and the Town of Cochrane. Some planting was completed at a few sites on West Nose Creek, upstream of the City of Calgary.

Riparian recovery planting in these populated centres is an ideal approach to restoring riparian habitat. There is no livestock grazing and the plants only threat is by rodent damage, which is to be expected in such planting programs on area streams.

In a matter of 5 or 6 years, the first obvious signs of plant recovery become apparent on the landscape along the three streams in the program. By then the new willows and trees are tall enough to transform a once barren stream bank into the first stages of a riparian ecosystem.

The BVRR&E Program was first started in 2014, so we have another year or two to go, before the results start to show the transformation along the stream channels of Bighill Creek, West Nose Creek and Nose Creek.

This means that next year the plants from the 2014 planting season will be tall enough to stand out above the summer grass on all three streams in the program.

The Lightning Bug

It was late spring when I received a phone call message from Daryl Harrison, of Cochrane, about tying up some more fly patterns for the 2017 spring fly fishing season. I had tied flies for Daryl before, so it appeared he was satisfied with his previous order and wanted more.

When I returned his phone call, he ordered 18 Lightning Bugs, which he also had me tie on a previous order, in the past. The pattern was easy to remember and I happen to have all the tying materials necessary to complete his order.

On Daryl's first order of Lightning bugs, I had heard about the "lightning bug" fly pattern, but I couldn't picture it, so I went to the internet to do some research on the pattern. It was easy to find in a "Google" Search.

The nymph is a flashy pattern with a Pearl Mylar abdomen and wing case, with peacock herl and pheasant tail, so I happen to have these ingredients in my fly tying supplies. His order was for a batch tied on size 14 nymph hooks.

After tying up the first few patterns, I could see how the fly pattern had caught on, in the fly fishing crowd. Tinted Mylar is an incredible ingredient for a number of successful nymph fly patterns. Trout just can't resist this little bit of flash when it is presented to them in the right way.

When I dropped off Daryl's order of trout flies, I asked him if it was ok to share this effective pattern with some of my readers. He informed me that their would be no problem. I didn't want to mention oneof his secret fly patterns, without his consent.

It is my opinion that the nymph would work in both a size 16 and 14 hook range. Although, Daryl's orders were both tied on a size 14 nymph hook. On this latest order of flies, I used tungsten (2.8mm) beads on the pattern, to get the fly down deep quickly.

For the first time, I tried the slotted tungsten beads, which worked very well, when slipped onto a size 14 nymph hook. Once the fly is completed, most of the slot is covered with thorax material and wing case.

The plan is too tie more of this fly pattern up next winter, when I do most of my fly tying. Because it is a proven fly pattern, I would like to try it out myself, sometime in the future. Fly tiers know that when a customer orders a particular fly pattern more than once; it must be a good one.

Hook: *Size 14, 16—1X nymph hook.*
Bead: *Brass 5/32" or 1/8".*
Thread: *Black or Dark Green.*
Tail: *Pheasant tail*
Abdomen: *Pearl Mylar Small or Medium*
Rib: *Copper wire*
Thorax: *Peacock Herl*
Wing-case: *Medium Pearl Mylar.*
Legs: *Peasant Tail*

I like to use the smaller pheasant tail fibres located on the bottom area of the feather, for both tail and legs.

Future Trout Habitat

Above: *In this photo, there are six willow plants that have been planted just above the surface of the pool in this photo. Some are three years old and the others were planted two years ago. Eventually, the plants will grow out over the pool's edge and provide excellent cover and habitat for the stream's resident trout population.*

Plantings such as these are an important part of the "Bow Valley Riparian Recovery and Enhancement Program", where part of the objective is too enhance fish habitat on the streams in the program. By simply planting a few native willow plants along the water's edge, over the years, we will create prime trout habitat for the future.

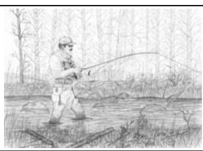
As Long As You Enjoy Yourself

While working on streams in Airdrie, Cochrane and the City of Calgary, people often stop to chat about the creek. Sooner or later, the topic of fly fishing seems to pop up. In July, I talked to a mother strolling her baby along a pathway in Cochrane. After discussing the riparian work that we were doing on the Bighill Creek, the conversation turned into a discussion about trout in the stream.

As it eventually does, talk of fly fishing entered our conversation and she mentioned that her husband was a novice fly fisher. The degree of competency that her husband had in fly fishing was brought up, as if it was important to mention. I replied that it didn't matter how experienced or competent a fly fisher is; as long as they enjoy the sport. This is the most important thing about any sport, in my mind.

In my own experience, I found that the learning process was what kept me focused and made the journey into expertise interesting and a lot of fun. When I first started out, any trout that fell victim to my fly patterns made fly fishing a very exciting experience and those first trout that I caught elevated my excitement and kept me addicted to fly fishing for many years.

Fly fishing is really a non-competitive sport, so just enjoying it, solo or with friends, should be the main objective. The second objective is too enjoy the environment and nature that surrounds you, while you are on the water. The trick is too focus on catching a trout and forgetting about other stuff.



Bighill Creek Riparian Plantings - Before and After 4 Years

Above: *This is a photo of a reach of Bighill Creek, in Glenbow Park, Town of Cochrane, before the "Bow Valley Riparian Recovery and Enhancement Program" was started in 2014. The photo was taken in the late fall of 2013.*

Above: *This photo was taken in June of 2017, four years after the first planting along the water's edge. You can see the new willow growth along the edge of the stream channel. In another few years, the willows will really stand out.*

Five or Six Years Growth - Before Noticeable results

One common question from volunteer planters, for the Bow Valley Riparian Recovery and Enhancement Program, is "How Fast Do the Willows and Trees Grow"? Everyone is in a big hurry to see results these days. So I tell them that it will take at least 5 or 6 years of growth, before the plants are large enough to stand out in the landscape.

However, the benefits of riparian plantings can start during the first season of growth. This is especially true on the stream bank stabilization sites, where erosion is causing silt loading into the stream channel to occur. The new network of root systems from the native plants will only take months to start holding unstable stream banks together.

Also, it only takes a few years before the plants will provide shade and cover over the stream channel. This will help keep the water cool and provide habitat for the resident trout populations. The young plants will start to constrict the flow in the channel, causing it to deepen and expose gravel and boulder substrate, below the existing silt covered bottom of the stream.

This year is the fourth year of the "Bow Valley Riparian Recovery and Enhancement Program", so I am looking forward to showing you some of the sites planted in 2014, next season, in this magazine and on my Stream Tender blog. I do have a folder of photos from different sites that were taken prior to the first plantings, so it will be interesting to see some before and after comparisons of restored lengths of stream channel.

I have also taken some video footage of planting sites, just before they were planted or a year or two later, so I can post some before and after footage on the Bow Valley Habitat Development You-tube Channel in a year or two. This is also something that I personally look forward to doing in the future.

Fifth Year of Riparian Planting Coming Up

This year marks the fourth year of the Bow Valley Riparian Recovery and Enhancement Program. Next year will be the fifth, and I am already excited about the 2018 season. If all goes as planned, we will break the 50,000 native willow and tree planting mark.

So far, we have planted on over 30 kilometres of stream bank on the three streams in the program, which is a lot of ground covered; no pun intended. It feels pretty good to know that we have enhanced the riparian zone along so much stream bank over the past few years. The streams in the program are Bighill Creek, West Nose Creek and Nose Creek.

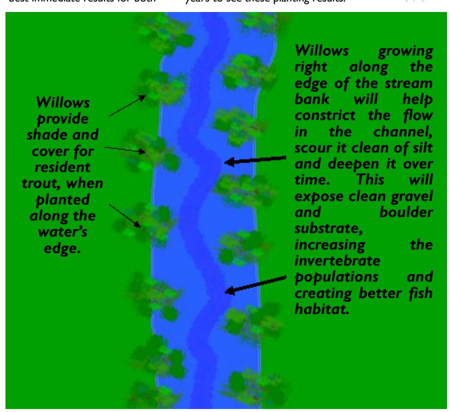
The improvement in fish habitat will be most noticeable on Bighill Creek and West Nose Creek, which both have a struggling trout population. The improvements in water quality will also benefit the trout in these streams as well.

So far, I have really enjoyed watching the stream banks transform into a more bio-diverse eco-system and there will be much more to come.

Some of the Benefits of Riparian Plantings

In our riparian planting program, the majority of native plants are planted along the water's edge, in what is called the capillary fringe. This approach to riparian restoration provides the best immediate results for both fish habitat and improvements in stream channel flow dynamics.

The illustration below shows a few of the benefits of planting native willows and trees right along the edge of the stream channel. It will take a few years to see these planting results.



Pond Weed Removal Program

In the first week of June this spring, local volunteers, which just happen to be fly fishers, conducted a weed removal project on the Lower Mitford Trout Pond. The group's objective was to clean out as many of the weeds in the pond as possible, before the annual "Kids Can Catch" event took place on the 17th of June.

Each year, the kids fishing event on the two Mitford Trout Ponds is something that many young anglers and parents look forward to participating in. Keeping the weed density in the ponds helps reduce the amount of frustration that young anglers have to deal with in their first attempts at becoming trout fisher's.

The system used for weed removal is a simple but effective technique that has been used on the ponds for the last few decades. A length of 1/4 inch steel cable, with rope tied to both ends, is used to uproot the tall pond weeds from the bottom of the ponds. Once freed from the bottom, the weed will float into the shoreline, where they can be gathered and hauled away.

The weeds are raked up onto the shore, where they can dry for easy collection. The annual program only takes a few hours to complete, if you have the necessary volunteer support to chip in. Fortunately, the volunteer fly fisher's that helped out this year, all fly fish on the ponds from time to time, so they are definitely stakeholders in the heath of the pond's fishery.

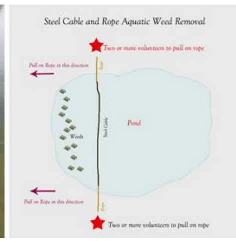
There may be another weed removal project on the ponds, later on in the summer, when warm weather and plenty of sunshine will promote new weed growth. The spring weed removal will help reduce the work load for the late summer program.

The key to a successful outcome using this technique is too move slowly, once the steel cable is positioned for the pull. This will allow the cable to keep in contact with the bottom, as the rope is pulled on both ends. Using a steel cable allows for easy weed removal on any weeds that are wrapped along the cable when it is drawn into the shoreline.

Above: *In this photo, the cable is positioned for a pull on the west side of the lower trout pond. There were two volunteers on each end.*

Above: *This is a photo of the bottom weed growth, before the clean out on the lower Mitford Trout Pond.*

Above: *The weeds have been displaced from the pond bed and they are now floating on the surface. The wind will blow them ashore.*



Above: *This sketch shows how the weed removal technique is used on the Mitford Trout Ponds.*

Stabilizing an Eroding Stream Bank with Native Willows

A large part of the "Bow Valley Riparian Recovery and Enhancement Program" objectives is stream bank stabilization. Areas on the stream channel where eroding stream banks contribute large amounts of silt loading into the stream annually. Most of the sites are located on the outside bend, meander or oxbow of a stream channel.

Stabilization is achieved by planting native willows and trees on the exposed soil of severe or moderate eroding slopes. The objective of these plantings is to established a network of willow and tree roots to re-enforce the loose soil over time. The other benefit is to create habitat along the stream channel.

The process is a simple approach, but very cost effective and time efficient. A stabilization planting treatment is carried out over a few years of planting, until enough surviving plants are established to firm up the banks. When completed, the site is natural in appearance, yet very efficient.

Bow Valley Habitat Development and its partners have been conducting these type of stream bank stabilization sites for years now, and the results have been very positive. Improved water quality and better fish and wildlife habitat are the end result. The first projects were completed on the Bighill Creek, in the Town of Cochrane.

There have been similar stream bank stabilization plantings on both West Nose and Nose Creek, since the program first started in 2014. This work will continue into the future, with high expectations on helping to transform the riparian habitat and improve the water quality in all three streams. Bow Valley Habitat Development will continue to monitor the sites.

Above: *Before photo; this eroding stream bank on Bighill Creek was planted with native willows to help stabilized the eroding bank.*

Above: *After photo; this is the same stream bank erosion site a few years after native willows were planted. The eroding stream bank is now stabilized and no more silt loading is occurring.*

New Whirling Disease Lab

This year, Alberta opened the first whirling disease lab in Canada. The facility is located in Vegreville, Alberta. The lab is an InnoTech facility with $2.9 million dollars for operational costs and 6 full time research technicians. The initial goal is to determine the spread of the disease in our province. Further research on the disease will also be conducted.

Over the past two years, it has been discovered that the parasitical disease has been wide spread throughout the southern part of our province. Positive test samples of whirling disease have been found in the Bow River, Crowsnest, Oldman and Red Deer River systems. By having a lab set up to focus on this scourge to our sport fishery, hopefully, this approach will help our province reduce the chances of spreading it to other watersheds.

Measures to educate the public about precautions that they can take to help stop the spread will also be put in place.

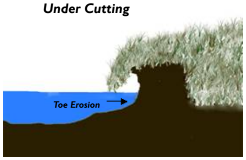
The Different Stages of Stream Bank Erosion

Without the deep root systems of native willows and trees to stabilize stream banks, erosion occurs over time. This erosion is significant on the outside bends or meanders of the stream channel. Native grass and sedge root systems are too shallow and weak to withstand the toe erosion on elevated stream banks.

As the stream bank is eroded at water level, undercutting occurs and eventually, the sod will fold down and collapse. During this process, large volumes of silt enter the stream system. The first sign of a failing stream bank is when the shoreline grasses fold down towards the water's surface. Eventually, the sod will break free and fall into the stream channel.

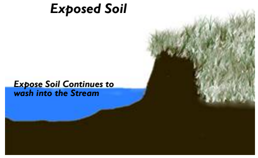
This will expose the soil beneath, which is washed into the stream channel and will continue to slide until the slope stabilizes. Then the whole process will begin again. By planting willows on these critical and collapsed stream banks, the banks are stabilized over time.

Under Cutting



Stream Bank Collapse

Exposed Soil



What is Next? - With Whirling Disease

Once the spread of whirling disease in our province has been thoroughly understood, the next step in research may well be to determine whether any of our rainbow and cutthroat trout strains have some resistance to the disease. If so, there is a possibility that either natural selection or captive breeding will develop a disease resistant population.

In the USA, there are studies being carried out to rear rainbow trout that are resistant to the M. cerebralis parasite. Juvenile trout are exposed varying quantities of the Myxo**spore**, then those trout that are effected the least, are selected for further breeding. In nature this is called natural selection.

By conducting a selective breeding program in a controlled scientific environment, the natural selection process is sped up. Over time, a disease resistant rainbow trout is available to introduce back into the wild.

A strain of Kamloops rainbow trout managed to evolve into a whirling disease resistant population in Europe, thru the natural selection process, so this has already proven to be possible. This strain was called the "Hofer Strain" of rainbow trout. However, this development of a naturally resistant rainbow takes time.

Whirling Disease in Alberta Cutthroat Trout

It is still too early to know how the whirling disease will impact our native strains of cutthroat trout in Alberta. If the disease finds its way into the Job Lake populations, which are used for stocking high mountain lakes, the loss could be substantial. We already know that the Johnson Lake fishery in Banff Park was infested with the disease, but there is no word yet on the Job Lake population and other stream populations, from what I have heard so far. With the cutthroat trout being a threatened native trout, this threat from the disease is especially important.

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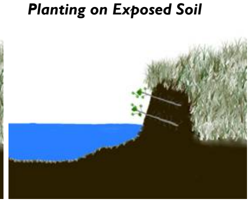
Planting on Eroding Stream Banks

When a eroding stream bank is exposed or in a state of collapse, native willows are planted into the exposed soil, close to the surface of the water and further up the capillary fringe. The root systems of the native plants will stabilize the eroding stream bank over time. Multiple plantings are required to insure that enough plants establish themselves on the eroding stream banks.

The best time for planting is post spring freshets, after high flow levels in the stream. The plants will have the whole summer and fall to develop deep rooting on the exposed stream bank.

Planting on a Collapsed Bank

Planting on Exposed Soil



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New Seeds For Future Riparian Growth

***Above:** New seed catkins on native willow plants that were planted a few years earlier, along the Bighill Creek, Cochrane.*

One of the bonuses of planting native willow and tree plants in our riparian recovery program, is the amount of seed production that you see only a few years after they are planted. In riparian planting restoration work, there will be natural reproduction of new native plants by establishing a good crop of seed producing plants along the stream channel. By having a good crop located right along the water's edge, seed distribution on the ground surrounding the plants and further downstream in the stream channel, is part of the natural process.

As the catkins disperse the seeds into the water in the channel, they will be transported down the system, where a small percentage of them will germinate. High flow events in the creek will enhance the chances of germination, by providing a thin layer of silt over the seeds, when they are washed up onto the stream bank downstream. This is the natural process for starting new willow and tree plants on a creek's riparian zone.

Plenty of rain during the spring and summer will help to get newly germinated seeds started during their first growing season. Native willows and trees need good soil moisture to make it thru the first year of growth.

Natural recruitment of new willows and trees is one of the many things that I look forward to, in riparian restoration planting. On some of the creeks that we plant on, there is very little seed recruitment from upstream, because there just isn't enough native plants to provide abundant seeding.

Thank You - Fellow Stream Tenders

In the later part of August, I decided to take some time and inspect the lower reach of the Jumpingpound Creek, to see how many rock dams there were. The rock dams are built by kids playing in the stream during the hot summer months and I like to open them up in the fall, so that spawning rainbow trout can make their way up the creek in the following spring, to spawn.

Last year, when I did my inspection, I found that someone else had beat me to it and the rock dams had already been opened up. Well, this August I found the same result during my inspection, someone else had already completed the task. This made me feel really good, knowing that other stream tenders know the importance of keeping the stream free for trout migration.

In recent years there has been a dramatic decline in the number of rainbow trout in our reach of the Bow River, between the Ghost Dam and Bearspaw Dam. It is my belief that prior to when the rock dam removal program started, the rainbow trout could not migrate up the system in the spawning season, when the water levels in the creek were low, a result of the many rock dams that had been constructed. Hopefully, we will see an increase in rainbow trout, when a number of successful spawning seasons have been recruiting new generations of trout.

Something as simple as small rock dams can have such a major impact on our local fishery. Now that more people are becoming aware of this problem, I am seeing some change, which is great. This year there were a lot more juvenile rainbow trout in the Bow River. These trout were from the 2016 spawning and hatch on the Jumpingpound Creek. I believe that the success of that spawning season had a lot to do with our local rock dam removal program.

We will see what happens over the next few years, but I am very optimistic about the future of the rainbow trout fishery, when local friends of the Jumpingpound Creek, start to chip in and help out.

Some Bank Stabilization Sites are Set to Receive More Planting in 2018

So far, I am very pleased with the results of our stream bank stabilization planting projects on the streams included in the "Bow Valley Riparian Recovery and Enhancement Program". Plantings on eroding stream banks in 2014 are showing very positive results.

Streams are constantly changing in course, so to deal with this natural phenomenon, additional plantings are required on oxbows and outside stream banks on meanders. It has been noted that a number of stabilization sites are now eroding on the lower and upper end of previous planting areas. This was anticipated to happen over time.

In 2018, additional plantings will be necessary to deal with this issue. Most of the sites have very small areas where ongoing erosion is still occurring. Most of the previous silt loading has been halted by our past plantings. This final stage of stream bank stabilization signals the near completion of stabilization work on streams such as the Bighill Creek, in the Town of Cochrane.

Looking back, it has taken only four years of planting to get to this stage of completion in our riparian program on the Bighill Creek. The next big challenge will be on West Nose Creek, in the City of Calgary. West Nose has a lot more stream bank and bank erosion sites to deal with, so a number of additional years of riparian plantings are in the plans for the stream.

This year, some new stream bank stabilization sites were planted on the upper reach of West Nose Creek, in the City of Calgary. It feels good to get the first treatment of plants on some new locations on this creek. Many more plantings will follow in the years ahead. Over time, it is expected that noticeable improvements in the water quality will be observed as some problem erosion sites are stabilized with new native willow and tree plants.

On Bighill Creek, in the Town of Cochrane, this improved water quality has been one of the first results of our past stream bank stabilization work. More improvements in the clarity of water in the lower reach of Bighill Creek are expected in the future.

On the lower reach of Bighill Creek there has been a noticeable reduction of large sheath pond weed on the streambed. Gravels, cobble and boulders are showing on the bottom of the streambed, where they haven't in the past. This will substantially increase the invertebrate populations on the lower reach and improve the abundance of food in the chain, for resident trout.

The next noticeable difference in the Bighill Creek riparian planting program will be the improvement of fish habitat. Plantings that were completed in 2014 are now starting to grow out over the stream channel. In the next few years, some of the limbs of these willows will be submerged, where they will help to constrict the flow in the channel and increase the velocity of flow. This will help further clean the streambed and provide excellent fish habitat for the resident trout.

***Above:** This stream bank stabilization site was previously planted with native willow plants. However, on the lower end of the bend, more planting is necessary in the 2018 riparian planting program.*

***Above:** This is a photo of the same stream bank erosion site, prior to the first plantings. You can see how silt loading has been reduced in the photo to the left. The stream channel geometry has also changed slightly.*

Late Summer Terrestrial Dry Fly Patterns

Late in the summer, when some of the caddis, midge and mayfly hatches have slowed down, many experienced fly fishers will turn to proven terrestrial dry fly patterns. Terrestrial dry flies basically imitate insects that do not hatch in the water. Bugs like grass hoppers, ants and beetles, to name some the primary insects.

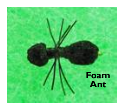
Grass hoppers are the most widely imitated terrestrial dry flies used. Ants and beetles are sometimes overlooked for their importance as late summer dry flies. Mainly, because both ants and beetle imitations are small and hard to see. However, the trout do not have any problem in seeing them.

When cast onto the water, small dry fly imitations like ants and beetles will vanish from the fly fishers sight, so they rely on watching for any rise forms that indicate a take. Then an instant hook set is required. I usually watch the speed of the flow to imagine where my dry fly is, based on the speed of the current. I find that this helps keep track of where my fly might be in the drift. Then watch for any disturbance on the surface of the water.

Some well known fly tiers, like Dave Whitlock, like to tie a small piece of light or bright color foam or poly to their ant and beetle dry flies, to assist in keeping track of where the dry flies are. I have also done this in the past, but most of my patterns are just plain and hard to see when on the drift. It is extremely exciting when you hook a trout on a tiny beetle or ant dry fly, when you are casting blind. It is kind of a surprise, when you can't actually see the imitation.

Grass hoppers are great fun to fish as well. There is no problem seeing these larger sized fly patterns on the surface of any stream. Most of the hopper patterns float high in the water, making them very visible. Deer hair or foam imitations float well. The need for applying floatant to a foam pattern is not required, so these imitations have become very popular.

If you are planning a late summer dry fly fishing trip, make sure that you have a good selection of terrestrial dry flies in your fly box. These variations of dry flies can help make your summer day's fly fishing, really memorable.



"Left Alone, trout streams will take care of themselves. However; human impacts on trout streams can also create the necessity for human remediation."

"Uncover Your Creeks Program" – Fall Planting

This fall, in October, BVHD will be partnering with Evergreen and HSBC, to complete a fall planting on West Nose Creek. The program is part of Evergreen's "Uncover your Creeks Program" and it fits in nicely with the ongoing "Bow Valley Riparian Recovery and Enhancement Program".

The planting event will see another 700 native willows and trees planted along the stream banks of West Nose Creek, in Calgary. This will be the final planting for the 2017 season, which has been a great year.

Evergreen Canada has been a long time partner for Bow Valley Habitat Development's riparian restoration program and this will mark the sixth year that Evergreen and its partners have been involved.

The plants will be in a dormant state, but next spring they will get a head start on the growing season. Hopefully, there will be good moisture in the soil, to make planting a little easier and also get the plants bedded in for the winter months. We will be planting close to the creek, using a team of volunteers.

Ongoing Stream Maintenance Program – Important

Annually, there are always small projects on the Bighill Creek that demand some time to deal with. Primarily small rock dams that kids have built on the creek channel, while playing in the summer heat. With the creek flowing thru the heart of the community of Cochrane, this is quite common and these small dams need to be cleared to allow trout migration up the stream.

More often, nowadays, some one else, besides me, will take the time to remove them, which is very thoughtful of them. The Town of Cochrane, Parks Department Staff has also been very good at taking care of this issue. I think that the community as a whole is becoming more aware of the importance of the streams wellbeing, especially the trout fishery.

This is what education about the eco-system of a trout stream does over time. As the residents of the community become more aware of what we have happening in our home waters, they tend to feel the importance of taking care of it. It is a comforting thought.

The Town of Cochrane, for its size, is blest with a river and three streams within the town limits, not including the two small tributaries that have gained a name over the past ten or so years. That is a lot of flowing water in a relatively small area on the map.

Hopefully, this interest in our creeks and the Bow River will continue into the future and the trout populations will thrive over time. It is a good mission to follow these days. A little effort can make a huge difference.

Opened Up Rock Dams on the Jumpingpound Creek

Opened up rock dams allow spawning rainbow trout free passage up the JP Creek to spawn in the spring of the year.. It only takes a few minutes of time to open up these blockages on the lower reach of the creek.

STREAM TENDER MAGAZINE

All views and opinions expressed in this magazine are solely those of the publisher or contributing writers

Above: *The large Western Green Drake has a stubby body shape with three tails. The color is a dirty green with a yellowish ribbing. You can usually tie this fly on a size 12 dry fly hook.*

The Two Green Drakes

The Green Drake hatches are of major importance to Alberta fly fishers. There are actually two different varieties that keep the interest of late spring and summer fly fishing, "Match the Hatch" enthusiasts.

The large Western Green Drake which is usually first to appear on the water, is a Drunella grandis and doddis and this large mayfly is usually tied on a size 12 nymph or dry fly hook. This hatch brings large trout to the surface in feeding pods.

The other Western Green Drake hatch which is often overlooked is a sub-species of the larger fly and it is called the Drunella flavitincta or flavilinea. Often this smaller Green drake fly is referred to as the "Flav" in short. I use a size 14 hook for both the nymph and the dry fly.

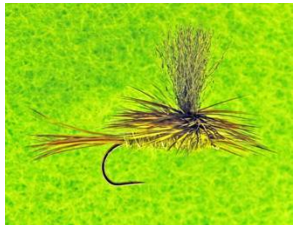
The nice thing about the Small Western Green drake is that it has a longer hatch time and it is available late into the summer months on some local waters.

The large Western Green drake has a short stubby body with three tails and just after and during hatch times the color is a dirty green with yellowish ribbing along the thorax. The small Western Green drake is more slender in body form, so standard dry fly ties such as the Adams will work fine.

Both of these drake mayflies hatch in riffles in streams, so that is where a fly fisher will notice large trout scooping this tasty meal, as it drifts down the choppy water. Trout will often move up into a riffle area at the head of a pool or run, to feed on this hatch.

The trout will always start feeding by targeting the nymph, which floats on the surface as it transforms or emerges from its nymph exoskeleton. Some times an emerger pattern will be the best choice for the fly fisher.

Some fantastic dry fly fishing can be had if you are on the water at the right time and place.



Above: *The parachute dry fly is the most commonly used dry fly design. I tied this one using elk hair for a tail, brown and grizzly hackle and a gray poly-propylene wing. The ribbing was a fine brass wire. The fly was tied on a size 12 dry fly hook.*

West Nose Creek – 2014 Planting Update

This past June, before the shoreline grasses and sedge got too high, I visited a number of planting sites on West Nose Creek, in Calgary. Some of the sites were from the 2014 "Bow Valley Riparian Recovery and Enhancement Program".

Although beavers had been grazing on a number of the plants, there were still areas where top growth stood out along the stream banks. The plants that had been sheared down to ground level were still alive and they should show above the grass in a year or two.

The 2014 planting will transform the riparian zone along the creek in the next few years, providing more shade and cover along the stream banks.

Above: *A number of 2014 willow plants that have avoided the attention of resident beavers in the creek. These plants will be the first to stand out on the landscape.*

Another Stream Bank Stabilization Site

Above: *This is a stream bank stabilization site on the Bighill Creek, one year after the first planting. The creek was in high flow conditions in this photo.*

Above: *This is the same stream bank stabilization site on Bighill Creek - four years after the first planting. The stream bank is still stabilizing with new willow growth.*

Whirling Disease Resistant Rainbow Trout May Save Our Sport Fishery

In the late 1800's, Kamloops rainbow trout from the Columbia River system were transported to Germany. We got their brown trout and they decided to accept an exchange of rainbow trout. The rainbows were reared in a German hatchery and then released into local waters. Over time, somehow, the rainbow trout developed a resistance to the Whirling disease that was present in German streams and lakes.

The native German brown trout had always been resistant to this disease, but the introduced rainbow trout had not. However, for this one particular strain, it developed a natural resistance over time. This was confirmed in a German laboratory. The Kamloops strain, with its resistant genetics, was called the Hofer strain. This name could have come from the individual that confirmed the rainbow trout's resistance.

Word spread about this new finding, and in 2004 and 2005, the Hofer strain was first introduced into the Gunnison River, in Colorado. The Gunnison trout fishery had been wiped out by Whirling disease in the early 1990's, so their department of parks and wildlife was interested in re-establishing the fishery, with this new strain of rainbow trout. The Hofer strain was also successfully hybridized with other strains of rainbow trout that also became Whirling disease resistant.

This new approach to dealing with Whirling disease in rainbow trout fisheries brings new hope for maintaining a healthy rainbow trout fishery for many North American trout streams. The existing trout streams that are either wiped out by the disease, or under threat, are now open to the possibility of restocking with a disease resistant strain of trout.

Due to the fact that the Hofer strain has been reared for domestic food and pond fisheries in Germany, the strain is being hybridized with other wild strains to make their survival in the wild more viable. This hybridization may be possible with the Bow River rainbow trout strain in the future. However, this may all take time and it may be years before a totally resistant strain of rainbow trout resides in our local streams.

What interests me, is the fact that the introduced Kamloops rainbow trout in German waters had developed their own resistance to Whirling disease, over time. It may well be that thru natural selection, our own Bow River rainbow trout may also survive the onslaught of Whirling disease in the future. I have to say that doing research for this article has brought the first good news to me personally, that there may well be hope on the horizon.

As an avid fly fisher, I was really depressed when the first news of a Whirling disease outbreak on the Bow River had first been reported last year.

In recent years there has been a noticeable decline of rainbow trout on our reach of the Bow River, between the Ghost dam and Bearspaw dam. When positive testing on a number of rainbow trout and whitefish samples were identified in 2016, I thought that the disease may be responsible for the decline in our local fishery on the Bow River.

One of the positive samples was from a trout or whitefish that was captured on the lower part of the Jumpingpound Creek. With the Jumpingpound Creek being the only spawning tributary to the Bow River, between the dams, this was especially bad news. Juvenile rainbow trout are especially vulnerable to the disease, so newly hatch rainbow trout on the JP Creek, could fall victim to the parasite.

Presently, there is also work being carried out by scientists to identify the genes in Hofer resistant strains that are immune resistant to whirling disease, so there is hope on that front as well. Is it possible to genetically modify strains of native rainbow trout? This is not a topic in my own wheel house, so I will leave it to the experts.

For now, I will await to read more from our local provincial and federal fisheries biologists about this new approach in dealing with the latest scourge to our trout fishery. At least now I have something to hope for in the future.

How Will Whirling Disease Impact Our Fishery?

It is still early in the game to know just what degree of impact that whirling disease will have on our local fishery. For many years now, the disease has been present in a number of river systems south of the border. Some rivers have maintained a sport fishery with the disease present and other sport fisheries have collapsed. This is probably related to environmental conditions and specific strains of trout that have some resistance to the disease.

If the Hofer strain of Kamloops trout was capable of developing a natural resistance to the disease, other strains may also have this ability. Only time will tell. On some rivers to the south, biologists are studying new generations of juvenile rainbow trout to check the spore count in the fish to determine whether the fish has some resistance to the disease. Trout hatcheries a conducting selective breeding of rainbow trout to develop a resistant strain for re-introduction into the wild.

All of this work will take time, but the promise of having an option or options available to deal with a whirling disease outbreak is encouraging. There has been a lot of press on the disease outbreak in our area and in these releases it is made clear that there is no cure for the disease. This sad bit of news has left a lot of fly fishers very depressed about the future of their cherished sport fishery. Especially those that depend on the sport fishery for their livelihood, such as guides and outfitters.

The outbreak of whirling disease has also been a disaster for those trout farmers that provide small lakes and ponds with rainbow trout for stocking programs. A number of local private trout hatcheries have been totally shut down, with huge losses. The lack of rainbow trout for stocking has had a tremendous impact of the trout pond sport fishery in our area. Many private trout pond owners have invested heavily in their trout ponds and now are having trouble obtaining trout to stock them.

If whirling disease has a major impact on our wild trout fishery, it will take years to deal with the problem of bringing the trout populations back. We can learn a lot from what approach fisheries managers to the south of the border have done over the last few decades to confront a whirling disease infestation, if it has a major impact on our own local fishery.

The fact that it was first discovered in our Bow River watershed in 2016, means that it is still pretty early in the outbreak to know where we are headed and to what degree it will affect our fishery.

One of the big questions that I have, is; "How long has the disease been present in our watershed?" The last time that testing for the disease was carried out on the Bow River watershed, before the 2016 discovery on Johnson Lake, in the Banff Park, was over ten years ago. During that testing no samples tested positive, so I am really curious to know how long it has been present in our watershed?

It is my hope that our local strains of rainbow trout are better equipped to deal with this disease, than some of those in the USA. If they have a higher level of resistance to whirling disease, the long term impacts may not be as bad as we are afraid of. Only time will tell, with patience and hope being our best attitude.

In the meantime, I will continue to monitor some of my favourite rainbow trout streams, watching for any decline in the fishery, especially with new generations that have recently hatched. I will be looking for any deformity.

I have caught trout with deformed tails over the years, but I always thought that the damage may have come from electro fishing. Electro fishing does cause damage to young trout if the current settings are too high. This will result in damage to the spine on the trout. Now I will look at these trout with a different cause in mind.

Mid-Summer Trout - A Fly Fisher's Challenge

When the tall summer grass and sedges along small trout streams reaches its peak in growth, some streams are difficult to approach thru the dense, tall cover of willows and grass. But if any fly fisher is determined to find the wild trout that inhabit the narrow stream channel, the rewards can be significant. You just have to be prepared for some frustrating challenges.

This is not your typical fly fishing, with standard casting techniques. The fly fisher has to adopt some simple dip and flip methods of getting your fly to where the trout are holding. Precise "bow and arrow" casts, along with some roll casting is also required. It is a great training ground for a totally different fly fishing experience for fishing small water. I personally love it.

My preference in equipment is a light weight 7 foot 6 inch rod and sometimes I will use an 8 and 1/2 foot for the challenge. Short fly rods are a lot easier to travel thru the thick bush and work in narrow openings of tall shoreline grass. Especially canary grass, which can reach heights of over 6 feet in mid-summer.

Over the years, I have met other keen fly fishers that also enjoy fishing on small trout streams. Like me, they love to find small creeks that don't receive the fishing pressure that larger streams do, and you will often have a large area of creek that has not seem very much traffic thru the spring and summer. The trout also are not as picky as if they had been fished for on a regular basis.

In the dense forest of growth, trout will usually take a fly when ever it is presented in their feeding zone, if the fly is the right pattern, either dry or wet imitations. Small stream trout are opportunists, so they are eager to eat or strike when they see your offering. Brook trout are my most targeted small creek trout, so finding a good population of them makes for a fun filled outing.

However, brown trout will often inhabit the same small creeks, so an occasional large trout can sometimes be the reward. This combination of both brook trout and brown trout is usually the case on streams north of the Bow River, in an area that I like to fish. Headwater areas of some streams is where you will find high numbers of the brook trout and further downstream, the brown trout is the dominant trout that is found.

When I fish small creeks for spooky wild trout, a lot of walking is usually required to find the eager feeders. It is more like a hunt, when compared to fly fishing the Bow River, where you find a good piece of water and fish it until you get lucky. Knowing fish habitat and reading water is key to having a good day.

Once you have hooked into a few trout, you quickly start to learn about where they like to hold and how the best approach to fish key habitats that will produce results. The second time that you fish a stretch of good trout stream, you will be familiar with where the good pools and holds are, so your chances for success will improve.

Some small creeks that I have fished on for years, I can actually visualize the entire reach in my mind, knowing where the best crossing spots are to get at good pocket water and deep pools. Also, once you have made a path thru the thick shoreline grasses, your second trip is already defined in trampled down grass with good access spots to cast a fly.

On the first trip to a small stream in mid-summer, I like to clear the grass along the stream bank by tramping it down, so that I can get access to cast. When I make my second trip to the same stretch of creek, the key fishing spots are already easier to get at. However, this clearing of access is also good for someone else that fly fish's the creek.

Above: *If you can stay in the shade to make a cast, this will help conceal your presence. Small stream trout are especially spooky when it comes to any movement revealed by your shadow.*

Below: *Keeping a low profile when you approach the edge of the stream channel will make a big difference in your success. Tall shoreline grass can help keep you concealed from wary trout, especially if you are wearing a light or dark color of clothing, which will contrast with the shoreline cover.*

STREAM TENDER MAGAZINE

This Web Magazine is formatted to be viewed on a Computer Screen

Final Spring Planting Competed on June 8th

The final spring riparian planting for the 2017 season was completed on June 8th this year. Volunteers from ATCO chipped in to plant the final spring batch of native willow plants along the stream banks of West Nose Creek, in Calgary. In just a few hours of hard work, a total of 500 plants were in the ground.

This is the fifth year in a row that ATCO has completed a riparian planting project, as part of the "Bow Valley Riparian Recovery and Enhancement Program". The day of planting was part of ATCO's annual "Day of Caring" event. A total of 12 volunteer planters helped complete the project.

We have been luck with the weather on all five planting events that ATCO has participated in. The weather on the 8th of June was overcast, warm, but with a breeze. This made for idea planting conditions for the crop of new willow plants. Later on in the evening, we had a good rain that helped the new plants get off to a good start in their new environment.

The soil along the West Nose Creek was moist and soft, which made for easy planting. When the conditions are just right, the planting goes very well and the survival rate on the new crop is generally pretty good.

Above: *Overcast skies and a breeze made for ideal planting conditions for the crew of ATCO volunteers.*

Above: *Volunteers start by filling their planting bags with the new willow plants. Then it is off to the edge of the creek to plant.*

Above: *The new willow plants were planted by a group of happy planters, right along the edge of the stream bank on West Nose Creek, in the City of Calgary. The soil along the stream bank on the June 8th planting was moist and made the job of planting the 500 native willow plants a lot easier. As forecast, it rained later on that night.*

Beaver Grazing on Riparian Planting Sites - Willow Recovery

When people ask me about beavers eating our plants, during a planting event, I tell them this: "Beaver's don't bother with our young plants until they are two or three years into growth". It is not worth their time, because the plants are so small. And by the second and third year of growth, beaver grazing will not kill the willow plants in most cases.

Willows are very resilient once they have established a good root system, so they can be cropped right to the ground surface and still continue to grow. When they do get sheared off at the base, they will recover with thicker growth. This can happen throughout the summer months, because it is natures way of the plant's survival.

In April of this year, while conducting a tour of a 2014 planting site on West Nose Creek, I noticed some of the plants from the 2014 planting had been sheared off, right at their base. On June 22nd, I returned to the site and took photos of the plants that had been grazed upon and saw that they were already producing new thick growth.

This was not the first time that I had witnessed this, but I thought that I would take a few photos and share this bit of knowledge with you readers. Knowing that beaver damage is not the end of life for a previously planted willow can be a comforting thought.

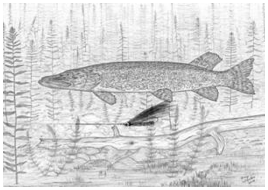
Soon after starting the riparian planting program on West Nose Creek, it became immediately apparent that beaver damage was going to be an issue on our planting program. However, when I say damage, it is only in the short term and eventually, our efforts would show good results over time.

The key is too plant enough willow plants that future abundance of native willows will overtake the landscape, despite the beaver populations on the stream. This will happen, if enough plants are established on West Nose Creek. From that point in time, it will be up to the City of Calgary to manage the population and keep it in balance.

The root systems from willow plants that have been grazed upon are still intact, so stream bank stabilization will still occur. It may just take a little longer for the visual aspects of riparian restoration work to be evident. The plantings completed on Bighill Creek, in the Town of Cochrane, have been more noticeable in recent years, due to the town's beaver management policy, which I think is a good one.

We will continue to conduct our riparian planting program on West Nose Creek and over time, the stream will start to transform into healthy riparian habitat for both fish and wildlife. There will also be great benefits to the water quality on the creek.

Above: *The base of this willow was sheared off in April of this year, by a beaver. The new growth shows the plant's survival was not threatened by this grazing.*



Right Photo:

You can see two of our 2014 plants were eaten down to the ground but continue to grow; even thicker than before. This is just part of natures way of having willow plants provide food for beavers, yet they continue to grow after this type of grazing activity. Nice to see.

Great Rainbow Trout Hatch on the JP Creek

It has been a long spell, since I last observed a new hatch of rainbow trout from the Jumpingpound Creek. After a friend told me of lots of small rainbow trout were seen on the JP this year, I decided to walk down to the Bow River to see if I could spot some small rainbow trout rising.

A few days after the report of a new generation of rainbows, I did my morning walk down to the Bow River. Hunkering down, I watched the water for a few minutes before I saw the first small trout rise, then another. The next step would be a fly fishing trip to confirm that the small trout were in fact rainbows and not browns or brook trout from the Bighill Creek, which was a short distance away.

A day past, before I decided to talk an hour or two to fish the Bow and see if I could hook a small trout. It was very hard to actually hook into such a small trout, but after countless hits and brief hook ups, I managed to land a small trout. Yes, the good news was that they were indeed rainbow trout from the 2016 spawning and hatch on the JP Creek.

This was an excellent surprise for me personally. The lack of catch able size rainbow trout in the Bow River in our reach, has been terrible in recent years, due to the decline in recruitment from the JP Creek spawn. Now there was hope for a few years into the future that we would see more trout to catch and release in our home waters, between the Ghost Dam and Bearspaw Dam.

On that day, I also did manage to catch a few small brown trout as well, which is always a good sign. Along with a 14 inch brown trout, so that was a bonus. With the whirling disease in our reach of the Bow River, it was very encouraging to see that a good number of small rainbow trout were finally present in the river.

The Jumpingpound Creek is the only spawning tributary in our reach of the Bow River, so any successful spawning and hatch of rainbows is very important to this length of the Bow River fishery. I can guarantee that I will be closely monitoring rainbow trout reproduction into the future and hopefully report good news.

Below:

This small rainbow trout was caught and released in the second week of July 2017. The trout was from the 2016 rainbow trout spawn and hatch on the Jumpingpound Creek. The tiny trout was one of many that were present in the stretch of the Bow River that I was fishing on that day. This method of determining reproduction of our local rainbow trout population works well. Simply by fly fishing a small fly pattern, you can confirm how successful the previous year's spawn and hatch was on our local reach of the Bow River.

Rock Dam Removal May Be Helping Out

A few years ago, a rock dam removal program was untaken on the lower end of the Jumpingpound Creek, near the mouth. During the hot summer months, kids like to retreat to the lower end of the JP to cool off and play in the summer flows of the creek.

During their recreation, a lot of small and some large rock dams are built to help create deeper pools for soaking in. These rock dams inhibit spring migration of spawning rainbow trout, so a volunteer program was put in place to open up the dams in the late fall, so that trout could move up the system.

It only takes a few minutes to open up a rock dam and the benefits of this are of great importance to the rainbow trout fishery on the JP and Bow River. During low spring flow periods, trout have enough difficulty in moving up the system, to have to also deal with man-made obstructions on the lower end of the creek.

By opening up the rock dams, a larger number of spawning rainbow trout can move up the system during the spring of the year. Any small programs to assist re-production of rainbow trout on our reach of the Bow River, are well worth the effort.

Below: *Juvenile brown trout like this one are a good sign of successful re-production of brown trout on both the Bighill Creek and the Bow River, below Ghost Dam. Both are known spawning areas for the brown trout.*

More Bow River Brown Trout These Days

One thing that I have noticed, from my own experience these days, is that there are more larger brown trout, than rainbow trout, in our local reach of the Bow River. Large trout in the local Bow River are pretty scarce as well. This seems to be related to the lack of rainbow trout re-production, in my view.

The fact that the chances of catching a large brown trout are far better than catching a rainbow, is something that I have learned to accept. I am not complaining about the presence of more large brown trout, I am just pointing out that things have definitely changed over the years, on our reach of the Bow River.

Ten to twenty years ago, you could catch multiple rainbow trout in the 12 to 14 inch size range in the local Bow, and in the spring, larger rainbow trout were common. Nowadays, there are very few rainbow trout in this size range.

When I was trying to catch a small rainbow trout, to verify a successful hatch of rainbows in 2016, I got lucky and caught a 14 inch brown trout, to finish off my trip. Trout this size, are a real treat for me, on the Bow River in Cochrane. Every now and then, I will catch one, or hear of other fly fishers getting lucky the same way.

The 14 inch trout that I caught that day, jumped clear of the water three times. This brought back fond memories of days gone by on the local Bow and I hope that some day I will see a recovery of the local river sport fishery.

Now that there is a 0 catch limit on our reach of the Bow River, I feel that this should help a bit. For those that like to harvest trout, they will probably fish elsewhere. This reduction in angling pressure will insure more smaller trout that are released, can now survive into maturity.

Below: *This locally caught brown trout was safely released back into the Bow River, in Cochrane. The brown was approximately 14 to 15 inches.*

Great Willow Growing Season This Year

We may not have had a lot of rain this spring, but what we did get came at just the right time, for our willow plants. Ideal growing conditions means a high survival rate and lush growth for previously planted crops.

With most of the plants being planted right along the water's edge, moisture from the stream also helps to sustain the plants during dry spells. Later on in the summer this year, we had plenty of dry weather, but by that time the plants had already developed good root systems.

These good growing conditions don't happen every year, but when they do, a high yield of new riparian growth is our reward.

The first year after planting is always important for riparian plantings. If the plants are well developed by the fall frost, they have a much better chance of surviving the winter months.

We will know for sure this next spring, when the ice leaves.

A Pleasant Surprise

Something that I have noticed over the years is the ability of how some previously planted plants will recover after suffering a temporary stop in their growth. I have seen plants that appear dead, suddenly produce new growth from ground level, at the base of the cutting.

This can happen a few years after the plants have appeared to have died. It is always a pleasant experience seeing this happen. Any additional plants that are destine to survive is always a bonus to our planting program.

It is my belief that the new growth on these survivors is from deep growing shoots that maintain enough nutrient and water from the bottom of the cutting that they eventually break the ground and start to grow.

One year, I conducted an experiment with some cuttings that I had grown for a fall planting program. I decided to keep a number of the plants for over wintering. In the following spring, the top of some of the willows appeared to be dead, but on the lower portion of the cutting, there were new shoots growing up the shaft of the cutting.

This lead me to believe that you should not write off a plant that appears to be dead in the first season after planting. The number of times that I have observed this happening is relatively low, but it is interesting to see it happen.

It will also be interesting to observe how the plants that do survive this way, fair over future years. I have also noticed this happen on more mature plants. Good to see these survivors still hanging on.

Above: *This cutting appears to be dried out and dead, but at the plants base, new growth is starting to take place.*

Still Hanging On

On eroding stream banks, any plants that have been planted to help stabilize them need a number of years growth before the root systems are large enough to re-enforce the soil. Until this happens, the plants may be displaced by ongoing erosion, but they still hang on and continue to grow.

When toe erosion occurs on loose slopes of exposed soil, the soil will continue to collapse and slide into the stream channel, even when they have received plantings a few years prior to this erosion occurring. However, once the root systems are allowed to establish themselves in the exposed soil, they help to anchor the new plants and prevent them from being washed away.

I have observed this happen a number of times over the years and the plants manage to continue to grow, once the cuttings are totally displaced from the soil. The remaining roots will still keep the plants alive until further sliding of loose soil covers them back up.

After this occurs, the plants end up growing right on the surface of the water, where they will provide great fish habitat in the future and help keep the bank stable. They will also reduce flow velocity along the bank.

I have also observed newly planted willows being totally covered by bank slippage, but the willow plants continue to grow, showing foliage above the soil by the end of the season, or in the following growing year. The key is for the plants to have deep enough root systems to help anchor the plant when the bank slides or it is eroded at the base, or toe, by high flows in the stream.

This natural recovery of the plants is a bonus to our overall riparian planting program. After this occurs, further planting treatments are usually planned for the eroding stream bank. Over time, with a little persistence in the planting program, the stream bank will be stabilized.

The costs involved in stabilizing stream banks in this manor are minimal, when you compare the technique with other options such as wattle fences, log-walls and so on. A few dollars worth of plants can go a long way in stream bank stabilization work, if the streams have rich enough soil to support new native willow and tree plants.

Willow and tree cuttings that end up still hanging on after continued toe erosion may appear to be in jeopardy, but surprisingly, they can live on.

Above: *These planted willows have been undercut by toe erosion, but they are still hanging on with well established root systems. Over time they may survive and continue to grow. Future slippage of soil on the eroding bank, may cover them back up.*

The Black Squirrel - A Streaming Wet Fly

I tie the Black and Red Squirrel Streaming Wet Flies, for fishing the Bow River during the high spring flows of run-off. The difference of the two fly patterns is the color of the body, one is dubbed with black yarn or dubbing and the other is dubbed with red. The tail and wing are red fox squirrel tail, using the hairs from the top of the tail.

Both patterns are tied on a size 8 streamer hook, which seems to be the right size for enticing river brown and rainbow trout. The ribbing is pearl Mylar, the hackle is Indian Hen back (natural) and the head is dubbed with a tan dubbing. I use a medium size yellow barbell eye to sink the pattern and attract large trout. It is a simple but effective streaming wet fly for the Bow River.

Back in July of this year, my plan was too fish a small brook trout stream, using my short 7 foot—six inch fly rod. In my hast to get out of the door at my house, in the early morning hours, I grabbed the wrong fly rod. This was only realized when I got to the small creek and started to put on my hip wadders and assemble the fly rod. It wasn't a really big deal, because I could still fish the 9 foot, 5 weight rod with little difficulty.

The 9 foot rod still had a black squirrel streaming wet fly on the leader, so I thought that before I changed to one of my many other choices of fly pattern, I would give the black squirrel a try. Maybe I was also being a little lazy at the time.

It was late enough into the summer that a dark color of streaming wet fly, might just be the hot pattern for the day. A similar pattern of streaming wet fly that I use for small brook trout streams is the Ruff McDuff, so the black squirrel wasn't that far off in appearance. If it didn't produce any action, early in my fishing, I could always change to something else.

As it turned out that day, the black squirrel did its job just fine. On the first good trout holding pool that I came to, I hooked a nice brook trout of approximately 10 inches, which is a large sized trout for the creek that I was fishing. In the following two hours, a few more brook trout were steered into the net.

A simple error of grabbing the wrong fly rod that morning had lead me to discover another good fly pattern for small creek brookies. It was a pleasant surprise — for a fly pattern that I hadn't really considered a good option for small stream trout in the past. This is typical for fly fishing; you never know what fly the trout will respond to, before you hit the water.

Bow Valley Riparian Recovery and Enhancement Program - July 2017 Growth Progress Update

The fact that the majority of plants were in the ground by the end of May this year, advanced growth has been the result. With all plants having both root and top development by the time they were planted, this gives them a head start for the year's growing season.

We didn't have a lot of rain this spring, but what we did get came at the right time for our crop of native willows and trees. Also, the ground was very moist for every planting day. As is always the case, planting next to the water's edge, in the capillary fringe, insures that the plants get good moisture for rapid growth.

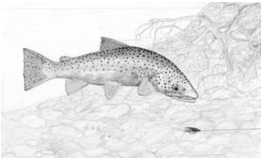
This year's rodent damage hasn't been as bad as on previous years. This may have something to do with ample forage being available, other than our plants. The rodent population could be lower than on other years as well.

Both West Nose Creek and Nose Creek have been especially bad streams for planting, due to rodent damage, but not so much this year. The Bighill Creek beaver populations have been managed by the Town of Cochrane, so there isn't as much beaver damage as there is on the other streams.

When we experience a good growth season, the advanced growth of both willows and trees gives them a better chance of surviving the winter months, so I expect to see a lot of healthy plants this next year on all three streams. The root systems should be well established by the time the frost is in the ground, this year.

I noticed that last year's plants have also grown very fast this year. More so than on some previous years, when we have experienced a dry spring, like we did last year. I hope that this continues.

Below: *This willow from the 2015 planting season, is starting to develop some thick growth over the last few years. The plant photo was taken on West Nose Creek in the middle of July this year.*



Above: *This West Nose Creek willow was planted in the first week of May and the photo was taken in mid-July.*

Willows Growing For Fall Planting

Presently, there is a total of 1,337 native willows and trees growing for the 2017 fall riparian planting. Six hundred of those will be planted on the Bighill Creek, in the Town of Cochrane and 737 will be planted on West Nose Creek, in Calgary. This planting, when completed, will bring the total number of native plants for this year's program up to a total of 8,567.

This will be another great year for the "Bow Valley Riparian Recovery and Enhancement Program" on Bighill Creek, Nose Creek and West Nose Creek. Since the program was first started in 2014, we have planted a total of 50,398, when this fall's planting has been completed. I am really pleased that we broke the 50 thousand plant mark this year and there is cause for celebration for Bow Valley Habitat Development and participating partners in the 4th year of this very worthwhile riparian planting program.

Starting early this fall, Bow Valley Habitat Development will begin working on the 2018 Bow Valley Riparian Recovery and Enhancement Program. As of this year, we have planted native willows and trees on over 30 kilometres of stream bank and this distance will increase as the program forges ahead in the future.

New Generation of Black Cottonwoods on the JP Creek

This summer, I noticed lots of new Black cottonwood trees present on the numerous sand and gravel bars created by the 2013 flood. Black cottonwood trees require flood events to facilitate the propagation of new generations of the plant.

The sand and gravel bars provide the perfect growing medium for the seeds from the mature trees upstream. Many of seeds are buried beneath a covering of silt and gravel during a receding flood in the spring or summer, so the seeds have a moist environment to germinate in.

The ongoing flooding on rivers and streams is vital for sustaining new growth. It has been noted that the creation of reservoirs and dams on river systems reduce the propagation of new generations of this majestic poplar tree.

Hard Fishing Pays Off

Below: *Fly Fisher Ian George spends a few early morning hours fishing the Bow River in Cochrane. After two hours of hard fishing, he manages to catch a few whitefish and the chunky brown trout to the* ***right****.*

The lack of larger trout in the Bow near Cochrane makes the job of catching one hard work; with a lot of casts over likely looking water before a hook up is made. This is a game for only those that have the determination to find a trout in relatively barren water. .

Above Photo: Ian George