

June 2014 Issue

Great Trout Hatch on the Upper Spring Creek This Year

In the first week of May this year I visited the Upper Spring Creek to see if I could find any newly hatched trout. It turned out that there were plenty to see in the areas in and just downstream of the spawning beds.

I checked out some of the same small quite water habitats along the edge of the stream as I did in the previous year's monitoring program. Once again I found trout fry holding in the same spots as in the spring of 2014.

However, this year there were a lot more than in last year's survey. This will be great news for the Biggill Creek's trout populations, with lots of new trout repopulating areas of the stream on the upper reaches.

Both Millennium Creek and the Upper Spring Creek produced a good hatch of brook trout this year and this will help make up for the loss of no spawning activity on Ranch House Spring Creek. Due to the surplus water

that was pumped into Ranch House Spring Creek last year, from the Cochrane Lake, there was no spawning in the tributary. The loss of a total year's recruitment from Ranch House Spring Creek is a tremendous set-back for the restoration of the BH Creek fishery.

Having three primary spawning tributaries to the Biggill Creek is a real positive asset to any small trout stream. So looking after these creeks is very important.

Lateral Margin Habitats are Very Important Micro Habitats for Juvenile Trout !



When I am on the hunt for finding newly hatched trout on any spawning tributary, I always search the small little backwaters and current breaks found along all flowing streams. This is where trout fry will end up after they are washed downstream from there gravel egg nests, after emergence.

These lateral habitats are also usually full of organic materials covering the bottom, including plant debris and other growing aquatic

weeds. This makes for perfect cover for hiding trout fry and usually provides an abundant invertebrate population for a food source for small fish.

Once the fry become better swimmers and more confident in wandering further for food and habitat, they will travel upstream or downstream in the main stem of the stream. However, this will take a few weeks to happen. Density dependency will also force fry to move to other

lateral habitats along the stream.

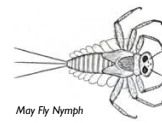
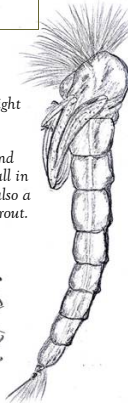
Density dependency is when the competition for food from other trout forces the less aggressive fish to move to new habitat. This migration will leave the trout that are forced to move, vulnerable to predation from more mature fish and other predators.

Usually, by the end of May, it will be very hard to find juvenile trout along the stream banks of the creek.

Juvenile Trout Food

Trout fry will feed on a variety of aquatic invertebrates such as the midge larva and pupa (right photo).

When may fly nymphs and caddis larva are very small in their life stage, they are also a prime target of juvenile trout.

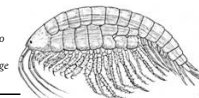


May Fly Nymph

Caddis larva will build a protective case from pebbles or plant material (like the photo to the right), or some will have no case for protection.



Juvenile Shrimp or Gammarus, (like the photo to the right), are a prime source of food for early stage trout.



How Large are These Trout - Just After They Emerge ?

This Juvenile Brook Trout was captured during a fisheries study on Biggill Creek in 2009. The trout had just emerged from the gravel redd and it measured 27 mm in length.



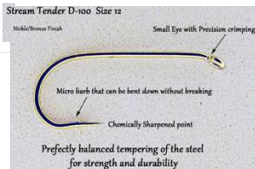
It is hard to get an idea of how large these juvenile trout are from the photos that you have seen in this article. So I looked back in my files from the 2008 and 2009 fisheries study that Bow Valley Habitat completed in 2009.

I found one that shows a juvenile trout just after it had emerged from a spawning bed and was captured in a bottle trap for processing. In the background you can see the centimeters marked on the viewing glass. This trout has just finished feeding off of the egg sack that it had for initial survival while living in the gravel before emergence.

At this stage in their lives, trout fry have very under developed fins and on some of the trout fry that I captured, the caudal fin was almost worn completely down, from the trout struggling to free itself from the spawning bed. However, this trout in the photo was in pretty good shape.

The newly hatch trout are very delicate creatures and it will take a while before they become strong enough to swim in the faster flowing waters of the main stem of the creek. It is very important that there is a good supply of micro invertebrates for the next weeks of their lives.

HOME



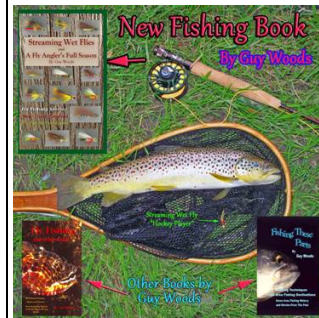
See These Products and More at the link below:
Stream Tender Store

Stream Tender Tapered Leaders

These quality tapered leaders come in both 9 foot and 7.5 foot lengths for big and small waters! We carry 1X to 5X in the 9 foot lengths and 1X to 4X in the 7.5 foot lengths. Read the package to the left to get an idea of line diameters and tip line test in pounds!

9' Price - \$2.45 and 7.5' - \$2.35

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





Mountain Whitefish Numbers on the Rise

This spring, while fly fishing on the Bow River in Cochrane, I caught a lot of smaller sized Mountain Whitefish. More so than I have in previous years. This is a good sign of things to come. Over the past 10 years or so, I have noticed a sharp decline in whitefish on the Bow here in my home waters and this has puzzled me.

At one time, back approximately 20 years ago, you could catch plenty of this sport fish on the stretch of the Bow River between the Ghost Reservoir and the Bearspaw Dam. Since that time, the Town of Cochrane has changed its effluent treatment system and started to



pipe the untreated sewage into the City of Calgary for treatment, before the water re-enters the Bow River.

With this loss of nutrient entering the Bow just downstream of the Town of Cochrane, the amount of food for whitefish has declined and thus the numbers of fish. Aquatic invertebrate numbers are reduced when the amount of nutrient declines in the river.

Further upstream, the Towns of Canmore and Banff have also improved their effluent treatment systems and reduced the amount of nutrient enrichment into the Bow River. So all of this combined has made the Bow a little cleaner, but less enriched with organic nutrients.

This change in the balance of nutrient has probably caused an adjustment in whitefish populations.

Now that the Town of Canmore has more than doubled its population, over the past 10 years, the amount of nutrient in the Bow River has once again increased.

Despite the very efficient treatment facility in Canmore, the volume of treated water has increased substantially and now the river is getting more productive for both food and fish populations.

This could explain the sudden increase in whitefish in the Bow downstream. I hope that the trend will also help increase the number of trout that reside in the Bow as well.

Fortunately, the Town of Cochrane and the City of Calgary, both have very efficient water treatment plants for our drinking water supply, so this is not a concern when it comes to human consumption.

Removing Stream Blockages to Allow Fish Migration Upstream



In the spring of 2015, Bow Valley Habitat Development obtained all of the necessary permits and permissions to conduct a beaver dam removal program on the lower reach of Bigbill Creek.

As is always the case, it was easy to find enough volunteers to help achieve this objective. Local fly fisher's know that by removing old beaver dams and stream blockages will insure that there is free passage for trout to migrate up the system.

Early season is the best time to complete this task, because trout have a natural tendency to migrate up small streams in the spring of the year when there are high flow events to help them on their way.

Usually, right after a fresher or during the melt of spring ice and snow is the perfect time for trout to navigate the waters of small creeks. Instinctively, trout know that the higher flows will allow passage around or over obstacles that would block passage under normal flow levels.

However, during a dry spring with little run-off or precipitation, the conditions are not suitable for a typical spring migration. This is where volunteers with waders and a good amount of determination can help out in the situation.

On one Saturday morning, a group of four volunteers removed four major blockages on the lower reach of the Bigbill Creek, in the Town of Cochrane, Alberta. More dams are scheduled to be opened up, in the next month or so on the stream.



Above: The mature willow in the centre of the stream channel in this photo is still alive, so dead woody debris was removed from a blockage that the tree had created, allowing trout migration up past the old willow's location.

A funny thing happened on the day of the project that convinced newer comer Tim Carlson that the work being done was worth the effort. While working in his chest waders, removing pieces of old branches from around the old mature willow tree pictured above, a small trout went darting upstream past him. The trout had been holding just downstream from the blockage, just waiting for the opportunity to scoot up the stream channel when there was an opening.

The fish swam right under the nose of Tim, while he was bent over pulling limbs from a jam under the old willow tree. It is incidents such as this that can convince a volunteer that their work is doing some real good for the fishery in the creek. Bow Valley Habitat Development has permissions from the first three landowners up from the confluence of the creek with the Bow River. By the time that the program is completed, later this spring, trout will have a

route to move freely up the bottom 3 kilometres of the creek. Over time, brown trout will eventually have access to the Upper Spring Creek, where they can spawn and recruit new generations of trout into the upper reach of the Bigbill Creek. This is one of the primary goals behind the program.

Presently, only brook trout are spawning in the Upper Spring Creek and historically brown trout have also utilized the spring creek for reproduction.

"It Should be a Great Year For Spawning Rainbow Trout on the Jumpingpound Creek and Other Area Streams"

Over the past three months, we haven't had a significant run-off event on the Jumpingpound Creek this year. If there are no beaver dams to block a migration up the system, we should see a great spawning season for the rainbow trout that both live in the creek and migrate upstream from the Bow River.

I also suspect that the trout may have started spawning earlier this spring than they normally do, because of the warmer water temperatures in the creek. This means that the rainbow trout eggs have already been incubating in the gravel spawning beds for some time now.

On a normal year, the eggs usually start to hatch in July and young rainbow trout fry will also start to emerge from the safety of the gravel redds. At this point in time, even if we get a week or more of a lot of rain, resulting in high flows, the trout eggs will probably already be starting to develop into an eyed egg stage.

Once the eggs are this far advanced, they should be hardy enough to survive being flushed down the system, if a moderate flood does take place. After seeing that some rainbow trout eggs survived the big flood of 2013, I have gained a whole different perspective on how resilient trout eggs can be.

The same holds true for many of the other rainbow trout spawning streams in our area that are tributaries to the Bow River. Streams on the Highwood Creek system and further south on the Oldman and Crownest streams.

However, I will need to wait and see in the early summer of 2016, when the young of the year (YOY) migrate down in the Bow River in the Town of

Cochrane. This is when the spawning success from the year before can be realized.

If there was a good hatch the year before, I will usually catch plenty of small rainbow trout in the 4 to 5 inch size range. I creek and I often feel giddy about catching such a small trout on my trout flies, but with smaller hooks and a gentle removal of the hook, along with a caring release, will help my conscience.



HOME

Click Here [Stream Tender Store](#)

Stream Tender.com

"Bow River Series"

Available in 2 sizes

1, 2 & 3 weight and 4, 5 & 6 weight

Fly Reels

Stream Tender Store

Go Wet - Go Invisible!

Available in 4 lb., 6 lb. & 8 lb. Test

Stream Tender.Com

Fluorocarbon Leader

June 2015 Issue



Bank Stabilization is a Primary Goal in the Bow Valley Riparian Recovery Program !

The previous plantings on all three streams are showing positive results in bank stabilization and future erosion prevention. This will greatly reduce the amount of silt loading into the streams. Some erosion sites are recovering more quickly than other sites, but the long term benefits will show over time.

This spring, the amount of frost heaving was exceptionally high, when compared with other spring thaws. Fortunately, many of the banks that have already been planted were held together by the root systems that are now establishing a hold in the softer soils along the stream banks.

It is expected that after a few years of growth, the newly planted willows will be advanced in growth enough to withstand a major high flow event in the creeks. After two or three years, the root systems are strong enough and spread out far enough to re-enforce the unstable slopes of banks.

This year, more plants will be added to previous stabilization sites, to make the remediation work more stable and insure adequate growth in the future. The outside stream bank on bends and oxbows of the channel are the most common stabilization sites that need our attention.

“Every Spring Frost Heaving is a Major Cause of Unstable Stream Banks and Silt Loading into the Channel”



Plantings at the Base of an Eroding Slope - Prevent Toe Erosion

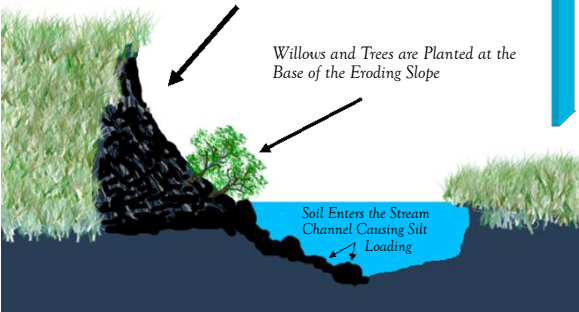
If there is no healthy riparian growth, such as willows and trees, on the outside bend of the stream channel, erosion can result. Over time, the base of an outside stream bank will experience “toe” erosion and cause the slope to destabilize.

This can be extreme when the outside bend is elevated from the surface of the stream. The result of toe erosion on high banks is

especially bad for silt loading into the streambed. Every year, during spring runoff or during a period of high precipitation, large amounts of soil will slide down into the stream, causing major silt loading over gravel substrate and accumulations in slow velocity areas of the stream channel. By planting willows and trees at the base of these eroding slopes

The banks will eventually stabilize and further silt loading will be brought to an end. Multiple plantings or treatments are required to accomplish this goal. Over the past few years, Bow Valley Habitat Development has been working on this approach to stream bank stabilization. The results thus far are very encouraging and the program is ongoing. Look for future updates on this program.

An Elevated Outside Stream Bank with Major Toe Erosion at the Base



Bow Valley Riparian Recovery Program 2015 is Even Larger Than the 2014 Program !

In December of 2014, in the issue of Stream Tender Magazine, I mentioned a goal of 14,000 plants for this year's program. It was a lofty goal to set, but I was optimistic that we had a good chance of reaching it.

I am pleased to report that we may well achieve the objective for the 2015 BVRR Program. So far, we have funding and commitments to plant over 13,000 plants, so there is a strong possibility

that we may get to over 14,000 yet this year. There have been some big donations from some of the corporations and NGOs that are involved in this year's work program. Recently, I found out that DFO was once again making a major contribution for funds, so all together the program for 2015 is huge.

Last year, we planted a total of 10,500 plants over 11.5 kilometres of stream bank on all three streams and a few

small tributaries. The tributaries are Ranch House Spring Creek and Millennium Creek. The 2015 program will complete more plantings on the same streams and the area of stream bank will increase substantially.

So far, this two year program will make a big difference on a large portion of the streams riparian habitat and I look forward to visiting the planted sites in the future, so that I can take some photos to share with you.



Stream Tender Store

HOME

June 2015 Issue



Willow Plants After Three Years of Growth

After a few years of planting native willow stock along the stream banks of Nose Creek and Bighill Creek, it is nice to see some of the results of those plantings.

As is the normal case with willow planting on riparian areas that are void of any native plants, some plants do very well and others are slow to grow. This is a result of soil conditions and natural events such as flooding and droughts.

In some areas, the plants will grow exceptionally well and after just three years of growth, the plants are quickly developing as

a part of the natural landscape. Soon the crop will stand out above the sedge grass and other existing cover.

It is also nice to see the first planting producing seeds for further recruitment of native willow plants, in the natural process. This natural seeding of the stream channel will help areas downstream of the main planting sites recover over time.

In a few more years, when the plants are tall enough to show up in a photo of a length of stream channel, I will be able to show you some good before and after photos of entire planting sites.



Photos Above and to the left: All of these Plants are growing in Sierra Springs, in the City of Airdrie, Alberta. The plantings were done along the stream banks of Nose Creek. The plants pictured in the photos are three years of growth in an area that has good soil conditions for fast growth.

The Stage One Willow and Tree Plant

Bow Valley Habitat Development uses both Stage One and Stage Two willow and tree plants for its planting programs. The two stages are comprised of plants that have both root and top development.

The Stage One plant is the most commonly used plant for the programs. This stage of development has basic top and roots

both growing on the cuttings and it allows the plant a head start in its first growing season.

The Stage Two is nursed to a more advanced stage of growth and it requires a more timely planting method to insure plant survival.

Stage Two plants can have new top growth with limbs as long as 40 mm in length.

The Stage One plants are planted when the new buds have just started to develop new leaves and in some cases very short limb growth.

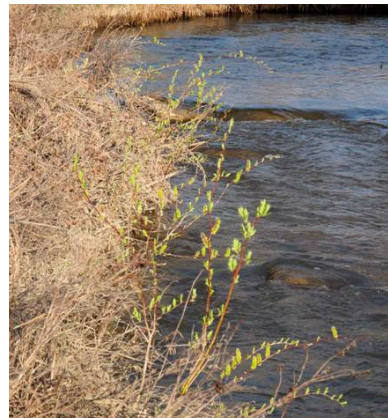
For most volunteer group plantings, the Stage Two plants are used so that volunteers can see the plants off to a better start in their first year of growth. With a more prominent limb growth,



Above: The soil was washed off of this Stage One plant so that you can see the developing root system on the cuttings. This development will get the plant off to a good start the growing season and by the fall, the limbs will be robust enough to winter over.

HOME

Three Years of Growth on Bighill Creek



Having been familiar with the planting sites on the Bighill Creek, in the Town of Cochrane, for more than 50 years, it is great to finally see some positive results for the recovery of the riparian zone along the creek.

To restore the riparian habitat on areas of the stream that have been void of this type of growth for so many years, says a lot about the efforts of volunteers and their hard work. It hasn't been an easy task and there are reasons why the restoration sites have not recovered on their own, over the last half of the century, at least.

Primarily, the soil conditions are too blame. The areas that have been worked on were mined for clay in the early days of the town's development and this disturbance of the natural soil chemistry is one of the main causes. However, this is about to change.

Over time, the organics that new willow and tree plants produce will enhance the soil and microbial life along the water's edge. This will result in a more natural stream side environment and the benefits to biodiversity will also become apparent in future years. Including more fish and wildlife.

Three Years of Bank Stabilization is Showing Great Results !



Using The "Head Start" Planting System

Unlike the normal nursery stock of willow plants, the use of cuttings for regenerating riparian areas is the preferred method of planting in the Bow Valley Riparian Program.

The cuttings allow deep penetration of the soil, so that the root systems are down where the moisture level is, rather than in the upper 8 to 10 inch top soil. This is especially important for willow plants which require good moist soil for development during the growing season.

Roots will develop on the upper part of the cutting if there is sufficient moisture for their early stage development, but as the soil dries out they will die off and the deeper roots will maintain the plant.

By planting willow close to the water's edge, a new cutting will have a better chance of survival, in soil which maintains moisture throughout the spring and summer months.

The soil along stream channels benefits from capillary reaction, where the water from the stream is drawn up from the surface level in the elevated stream banks.

This maintains a permanently moist zone within the planting areas along the streams. This moist zone may drop when there are low stream levels in the creeks, but under normal flows the willows will continue to grow.

After the first year of growth, the willow plants have established a network of roots that are further reaching and this will insure a better chance of survival even if the moisture levels drop in the stream bank soil.

The "Head Start" Planting System is also advantageous for collecting native willow stock from the same watershed where the plantings will occur. This insures that the right mix of indigenous plants are used for riparian recovery on a stream.

Most of the plants that are used in the Bow Valley Riparian Program are those of the Salix family of willow plants. Many of this variety of willow plant are hard to find if you shop at the local tree nursery, so collecting them from the watershed is the best approach for a successful planting program.

June 2015 Issue

“Major Bighill Creek Bank Erosion Site is Starting to Stabilize”



Above: Eroding stream banks like the one pictured above are responsible for loading tonnes of silt annually into the stream channel on the Bighill Creek. By planting Stage One willow cuttings in the most area at the base of the steep slopes, the erosion impacts will start to reduce and eventually the steep banks will stabilize over time. This is the most cost effective method of dealing with problem sites such as this one. The banks require a number of treatments (plantings), in the first attempts to establish willow plants, but it is still worth the effort.



Above: This willow plant was covered by more bank sliding, yet the plant continues to grow, one year later. With the willow cuttings planted deep into the base of the eroding and steep slope, the plants are well anchored for any future slippage on the steep unstable stream bank.



Above: These willows were planted along the stream bank of Nose Creek in Sierra Springs, in the City of Airdrie, in 2013. Although their growth is slow, they will eventually provide some good overhead cover along the stream bank. As you can see in this photo taken this early spring, the water quality in the creek is very poor at certain times during the year. However, there is still a population of pike that reside in the Nose Creek.

“Rainbow Trout are Back in Bighill Creek - Along with Some Other Surprises”

I still fish the Bighill Creek from time to time, to monitor any increase in the resident trout populations. Besides the normal population of brook trout and brown trout in the stream, I have noticed a sudden increase in the population of rainbow trout over the past few years.

When I was just a young boy, growing up in the Town of Cochrane and fishing when ever I had a chance, there were lots of rainbow trout populating the stream. Even after Alberta Fish & Wildlife stopped stocking rainbow trout in the mid—1960s, there were always a few rainbows to be caught in the Bighill.

Back then, you could catch them right in the what is now Ranch House Park and the Glenbow area of town, on the creek. Some of the rainbow trout that I caught back then were very large for a small creek. I remember a few 18 inch fish that ended up on the dinner plate. Of course, nowadays the killing of any trout from the creek would be considered in bad taste.

Last year, I noted that I was catching more small rainbow trout than I had in previous years, so this definitely made me think of the old times and I looked forward to a possible recovery of their populations. All that the rainbow trout need to survive in the Bighill is enough water and habitat to provide them with a place to safely reside.

The creek is too muddy and silt laden during the spring spawning season, to provide any spawning habitat and conditions, but the trout will still move up the creek from the Bow River. So you can consider the creek as both a nursery habitat for small rainbow trout and also now a habitat for some larger trout.

Over the last few years, the largest rainbow trout that I caught was approximately 12 inches, but I did witness Joe Thompson catch a nice 14 inch fish last year. This got me all excited and now I have a special interest in seeing where the population of rainbow trout will go

from this point in time. We may see some real interesting developments in the near future.

I expect that the present population that stays in the creek will reach the same size as they once did in the stream. Wouldn't that be something, hooking into an 18 inch rainbow trout on such a small body of trout water.

All of the rainbow trout that I have caught thus far are fat and very healthy looking fish, so apparently there is enough of the right type of food for rainbows in the creek. When the trout get a little larger, there is also a good population of minnows for the hungry big trout to feed on. This forage fish would accelerate the growth of the rainbow trout in a shorter period of time.

Another big surprise for me this spring, was the capture of a cutthroat trout in the Bighill Creek. I could not believe my eyes when I took a second to look closely at what was in my net. The distinct red

lash under the mouth and gill plate was easy to spot. The cutthroat trout also had the typical spotting pattern, heavy spots on the tail area and an absence of spots on the sides.

This is the first cutthroat trout I have caught on the Bighill Creek since the early 1960s, when a few from the Bow River would wander up the creek looking for a place to live. Back then, there were still a lot more cutthroat trout in the Bow River in Cochrane. I suspect that they were washed down from the Jumpingood Creek and the Ghost watershed.

Hopefully, the Bighill Creek fishery recovery will continue to provide such pleasant surprises as what has occurred over the past few years. Discoveries such as these help to motivate all of those involved in any work to make the creek a healthy sport fishery and just a great place to visit.

I will continue to monitor the creek with my fly rod for any more developments in the recovery of the sport fishery.

Ranch House Spring Creek Will Be Ready For Spawning This Fall

After the 2014 issue with Cochrane Lake water being pumped into the Ranch House Spring Creek, during the fall spawning season, hopefully we will see the creek back to normal by this fall. I have inspected the creek and this spring the streambed was covered in silt and algae, but soon it should be flushed clean.

All we need at this point in time is a few good days of rain to wash the streambed free of what had been deposited last year. I expect to see brook trout spawning again this fall, with a little help from Mother Nature and some eager trout to pursue their reproductive instincts.

There were a few blockages in the stream channels course and these have all been removed, except for one which we will get after later on this summer.

The blockages consisted of woody debris that had jammed in the stream channel after all of the water that came down the system last year. The one remaining blockage is a willow tree that was undercut and ended up in the stream channel. If the flush of a few days of good rain doesn't clear this final blockage, we will get after it before the trout move up the creek to spawn.

The volume of flow is still good this spring, despite the dry weather. So there must be a good ground water supply that is feeding the springs. If we get some more decent rainfalls this June, I think that the creek will be in great shape for the fall spawning season.

Ranch House Spring Creek is such a small creek but it is definitely an important spawning tributary to the Bighill Creek.

HOME

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

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

[Volume One](#)

[Volume Two](#)

