

The Bighill Creek Project

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The 2010 Ranch House Spring Creek Project!

Ranch House Spring Creek is a small feeder tributary to the Bighill Creek, located in the Town of Cochrane. In 2009, during a fisheries study of the lower Bighill Creek, juvenile brook trout were trapped on the lower reach of this small cold water spring creek.

Apparently, small trout from the hatch on Bighill Creek were utilizing the spring creek as a nursery habitat, which provided a safe habitat for the small trout until they were large enough to compete in the main stem of the Bighill Creek.

The juvenile trout were found in numbers below a small waterfall that was located approximately 100 metres upstream of the mouth. The small waterfall prevented any trout from migrating upstream and occupying good habitat that existed up from the barrier.

The waterfall had been created by huge volumes of flow from a storm drain that entered the stream approximately 80 metres upstream of the waterfall. The storm drain's source was a new development built on the north side of the Bighill Creek valley.



Above: This is a photo of the small waterfall that was taken from a position near the surface of the stream, directly below the barrier.

In 2010, BVHD obtained funding from the ACA Grant Program and all of the necessary permits and permissions, to remove the small waterfall and enhance the stream channel with boulder habitat that would allow juvenile trout to migrate upstream of the existing barrier.

The project was completed in July of 2010 and within two weeks of the completion, small trout were observed in the habitat upstream of the newly modified stream channel. One of the small trout was captured for a positive identification and it turned out to be a brook trout from that spring hatch on the Bighill Creek.

The small trout was captured on a very light piece of mono-filament and a size 22 trout fly pattern. This was the smallest trout that I have ever



Above: This shows the modified stream channel after the project was completed.

The problem with the storm drain is something that needs to be addressed in the near future. The volume of run-off that enters the Ranch House Spring Creek during freshets is too much for the existing stream channel to handle. Future erosion problems will continue to develop downstream of the inflow area on the stream channel.



Above: This photo shows the volume of flow that comes out of the storm drain during a typical run-off event!



Above: This is a photo of the stream channel in Ranch House Spring Creek, below the culvert, during a run-off event. You can see from the turbulence created in the creek channel that erosion on the stream banks is occurring and future bank collapse is imminent!

Additional Willow Planting Program for Bighill Creek in 2011!

In addition to the B&B willow planting program on Bighill Creek this year, BVHD obtained partnership funding from Inter Pipeline Fund for a large crop of more new willow plants.

The funding dollars would provide an extra 441 willow and tree plants for the stream banks along Bighill, but in addition to that number, BVHD donated another 595 plants.

Of the total crop of willow plants 241 were large diameter cuttings that had been pre-rooted prior to planting. These larger diameter stakes are larger in diameter than the normal willow cuttings and they are longer as well.

The advantage of large cuttings is that they are faster growing and more harder than the smaller sized cutting plants. The disadvantages of a larger cutting is that it takes longer to collect the cuttings and they require heavier equipment for the planting process.

A gas powered augur is used to prepare a hole of a larger sized diameter into the ground and more mud slurry is required to fill the remaining hole once the cutting is planted. The cuttings are also planted deeper than the smaller variety which makes the deep root systems more advantageous in drier conditions!

BVHD plans on using this planting option more often in the future, on Bighill Creek!



Future Willow Planting Programs for BHC!

There are plenty of metres of stream bank on the Bighill Creek that will be destined to be planted with willow and trees in the future! At this point in time, there is a lack of good riparian cover along the Bighill Creek within the centre of the Town of Cochrane.

Every year, towards the middle of summer, the stream channel in this reach of the creek develops huge amounts of Large Sheathed Pond Weed in the stream bed. This aquatic weed thrives in stream channels that have good exposure to plenty of sun light and it will collect silt near its contact with the stream bed, slowly building up the silt covered bottom of the stream, often smothering a once gravel and cobble covered creek bottom.

Once a thick riparian cover of willows and trees is established, most of this thick weed will be reduced and the velocity of the stream channel will increase and the clean stream bottom will be enhanced, similar to what it is like further upstream!

This will improve the water quality for trout and provide more habitat that they are dependant on for their survival!

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