



We are a not for profit stewardship organization working towards a healthy, productive, and diverse Tsolum River. Our charity works with all levels of government and the community.

2020 Newsletter, Vol 2.

Gravel Bar willow staking complete for 2020

By Caroline Heim

We have just completed our third consecutive year of gravel bar live staking in the upper Tsolum River. One of the top priorities in our 2016 Tsolum River Recovery Plan was to stabilize the large gravel bars that are located throughout the Tsolum River. These gravel bars are the result of an excessive quantity of bed material that has made its way into the Tsolum and are the unfortunate legacy of historical logging.

One proven method to stop this material from continually migrating down the river and potentially filling in valuable fish habitat is to plant elevated gravel bars with live willow stakes. These living stakes are planted deeply into the bar with the help from an excavator that digs the individual holes. The stakes are almost completely buried and serve to trap material as it moves down the river during winter floods. As the willow become larger more established shrubs, they function to intercept even more material. Over time, the gravel bars become more elevated above the flowing river channel, which leads to a more natural river. Willow staking mimics nature since re-vegetation of gravel bars would naturally occur over the long term, leading to riparian areas and possibly forests by creating the right conditions for other tree species to colonize the bars. Our work accelerates an ecological process and is called “bioengineering”.

This September we planted almost 6,000 willow cuttings into six different gravel bars upstream of Highway 19. With the help of the experienced K’omoks First Nation members, Edgett Excavating Ltd., volunteers and TRRS Directors, we were able to plant approximately 0.5ha of elevated gravel bars. Gravel bars that were planted in 2018 and 2019 are thriving and we have passed the 2-hectare milestone for total bars planted since we started three years ago.



Thanks to the Habitat Conservation Trust Foundation for helping to fund this project.

River Riddles:

1. I have shells, live under sand in the Tsolum River and drink water to eat my food. What am I?
2. The thorns of our branches poke and prick. I grow near to the ground so watch out, don’t trip. But if you’re careful, you can pick a berry, its taste is sure to make you merry.

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Dove Creek Bedload Trap By Caroline Heim

TRRS has been monitoring the Dove Creek bedload trap since it was built in 2018. It has been doing the job of intercepting bedload (boulders, gravels and coarse sand) that moves down Dove Creek during winter high flows. In early 2020 we noted that it was nearing capacity and started planning for our first “clean out”. In early September we re-visited the site to remove the accumulated material that had filled in over two years.

The original bedload trap was a huge pool that was dug in the main channel of upper Dove Creek just downstream of the Duncan Bay Main logging road. Dave Gooding, P.Eng., designed the trap to intercept the huge volume of material (called bedload) that mobilizes during winter storms and high water. The source of this material is upstream logging road and steep bank failures that result in an excess of material ending up in upper Dove Creek. This material is not beneficial to fish and other aquatic life; in fact, it fills in the channel and has the potential to keep moving downstream with each winter flood.

Before starting the project, we obtained the appropriate government permits to be able to work in the creek within the timeline and season that has the least impact on all species of fish. In late August we spent a week capturing and removing juvenile fish from the stretch of Dove Creek where we were going to be working. Using a combination of seine nets and minnow traps we live captured and re-located a total of 704 coho salmon and cutthroat trout from the work area (approximately 50m of stream channel length).

This number highlights the huge potential and value of Dove Creek in supporting fish. Prior to excavating the bedload trap we set up downstream silt fencing, and a dam upstream of the site so that we could temporarily divert the creek around the work site. Then the work began



Dove Creek bedload trap in July 2020 before project.

of removing dump truck loads of bedload.

A total of 26 dump truck loads of material was removed from the trap in two days! Check out the before and after pictures to get a sense of the amount of material that is carried down the creek. Thanks to the K’omoks First Nation Fisheries Guardians who helped with the Environmental Monitoring, volunteers who helped with the project, and Edgett Excavating. Thanks also to our private donors who helped fund this restoration project. We will continue to monitor the trap on an annual basis.



Dove Creek after project, September 2020



Digging out the bedload. Sediment control and fish nets in place to protect the water quality and stop fish from entering the site.

Towhee Creek and Juvenile Fish Program By Caroline Heim

We have been busy continuing to collect baseline information about juvenile fish in the Tsolum Watershed. Directors and volunteers have established 24 sites in the Tsolum River and tributaries that are monitored every month using minnow trapping. Results are compiled including information such as species, life stage, length and habitat type. This data provides a “snapshot” baseline for 2020 which will be used in the future for comparison. It will tell us which tributaries are most important to the survival of young trout and salmon and how numbers change as summer water temperatures rise. We are expanding our investigations into the more remote parts of the upper Tsolum so that we can learn more about where different species of fish live, their overall health, and their seasonal movements.

A big focus earlier in 2020 was Towhee Creek which is a tributary that originates in the forest uphill from GP Vanier Secondary School and then flows behind the artificial turf field through the CV Exhibition Grounds to the Tsolum River. Even though Towhee Creek is small and season-

al, it supports a surprising number of fish that seek quieter off channel waters during high winter flows. This Creek has a series of six ponds that were deepened back in 2005 to provide winter habitat for rearing coho. Sampling from March-May 2020 indicates these ponds can support at least 4,000 juvenile coho salmon. A report with the findings from this work is on our website: www.tsolumriver.org

Results highlight the importance of small tributaries that can often be overlooked as mere “ditches.” Our efforts now are to share our results with the School District and other levels of government to ensure that Towhee Creek is valued, preserved and protected against any future development. This “outdoor classroom” is a gem and we will continue our partnership with Vanier teachers to offer outdoor science and environmental education to students who will be the future stewards of our streams and rivers. **Thanks to the Comox Valley Community Foundation** for funding us to purchase research equipment.



Artwork by Stewie McIntosh.

Charles Brandt receives National Lifetime achievement award

Father Charles Brandt, TRRS Director and one of its founding members, will receive a Canadian Museum of Nature Inspiration Award for 2020 in the Lifetime Achievement category. Charles was nominated by the Comox Valley Land Trust and was whole heartedly supported in the application by TRRS.

Charles's dedication to the natural world and tireless work to remediate the years of damage to the Tsolum River caused by the Mount Washington copper mine is an inspiration to us all. In the words of Charles "the human community and the natural world must go into the future as a single sacred community."

Thank you Charles

Thanks to Volunteers for fish rescues

Several areas have been identified in the watershed where fish become "stranded" in off channel areas or small tributaries that dry up in summer. From Railway Ave area ponds, to Towhee Creek, Teachers Creek and Chilli Creek, volunteers discovered areas where fish were in danger of dying due to poor water quality or lack of water altogether. Thanks to the many volunteers, especially Laura O'Brien, Allan Chamberlain, David Morwood, Derek Tripp, Norm and Kerry Wiens, Alicia Saunders, Gaelen Noble-Kats , and Vitya and Bela Hermanek for helping with re-locating thousands of juvenile Coho Salmon this past spring and summer.



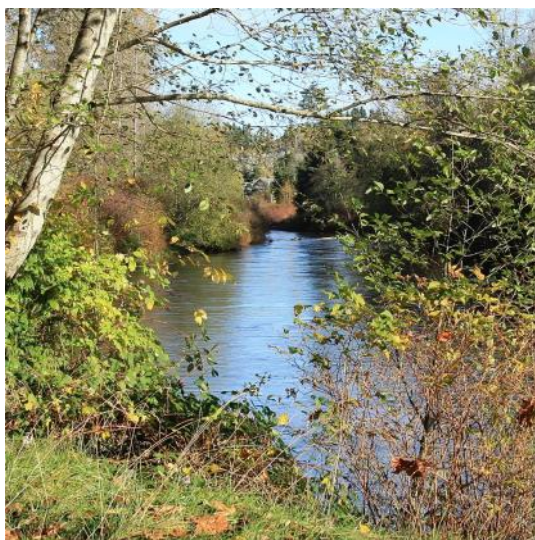
Tsolum Heroes– Remembering

By Laura Ann O'Brien

Dave Burkard and Linda Zaleschuk were true Tsolum spirits who lived on the River near town and were great stewards of it. We came to know them and their neighbours when we collaborated to improve a serious bank erosion problem threatening their homes. After that, if we needed a strong, steady hand to man pumps at the HQ/Wolf Creek hatchery, or help launching the awkward rotary screw trap in the spring near their home, or driving supplies or volunteers around, or pretty much anything else, Dave was always willing to lend a hand. They were both keen volunteers, active members and great people. Dave passed away suddenly in December 2016 and Linda died recently from cancer. Linda and Dave cared for the River and supported our commitment to the watershed with their dollars, time and ideas. We will miss them.

Stewart Duncan and Bob Hager

In the past few years, we placed benches at Tsolum Spirit park in honour of Stewart (past president, long-time director and volunteer) and Bob (director, fundraiser and mine site reclamation champion). The benches were in need of a little TLC as the Tsolum weather took its toll over the years. They are revitalized now thanks to the efforts of directors, Stewie McIntosh and Wayne White. The benches stand in quiet observance of the river, in reverence of the stewards Stewart and Bob were and in gratitude for their contributions to the health of the Tsolum.



Charles Brandt submitted the winning photo (left) for our 2020 Tsolum River photo contest for BC River's Day in September.

Membership and Donations

Support from our membership helps us continue with the work of restoring the Tsolum River Watershed. If you think your membership has lapsed, please renew or make a lump sum donation. Membership is \$10 per year for individuals and \$15 per year for families.

An easy way to donate is through our website at www.tsolumriver.org. You can pay with credit card or through Canada Helps by clicking on the links on our website. Another option is to mail your cheques to Box 488, Merville, BC. V0R 2M0

Thanks for your support

Western Toadlet Migration in Merville

By Caroline Heim

The annual toadlet migration in Merville stumped TRRS volunteers this June when they chose an alternate route to cross Railway Ave. Alicia Saunders (in photo), biologist and TRRS volunteer, worked together



er with Sally Gellard, long time TRRS supporter and Western Toad steward, to monitor the growth of the tadpoles in the large wetland in Merville where they live the first several weeks of their lives. A sad observation was that the introduced and invasive American bullfrog feed on Western Toad tadpoles.

When the toadlets emerged from the wetland and started their hopping and crawling migration towards the Tsolum River in early July, they chose to cross at a very busy intersection at the corner of Headquarters and Sprout Roads. TRRS western toadlet volunteers were dismayed at this choice of location as the intersection sees a lot more traffic than the “usual” crossing location. Cars are the largest threat to toadlet survival during the Merville migration with hundreds of toadlets succumbing in their attempts to cross the road. Volunteers worked hard to assist toads, to alert drivers in the neighbourhood to slow down and drive around the toadlets, and to install poly fencing to direct toadlets to a culvert crossing under the road. It appears the toads prefer to “take the high road” than the lower culvert so the fence was dismantled after a week.

Huge thanks to Mainroad Contracting and Ministry of Highways who re-scheduled their paving plans in the area on very short notice to avoid doing the work during the toadlet migration. Thanks also to all the residents and volunteers in Merville who avoided squishing toadlets and who showed their support and concern for the survival of this amazing amphibian. We would like to seek a long-term solution to the annual mortalities but with unpredictable migration routes, this is more difficult. We look forward to working with other interested agencies and partners to formulate a plan for next year’s migration.

Tsolum Flows

Thanks to a donation from the Pacific Salmon Foundation, the society was able to purchase a state of the art flow metre called a Flowtracker 2. This highly accurate instrument is available on loan to 7 different watershed groups in the Comox Valley region. Data collected using the Flowtracker 2 is recognized and shared with provincial and federal water managers. With summer low flows often at critically low levels, being able to measure real time flows in the watershed and communicate our findings to managers will hopefully encourage drought responses such as limiting allocations on certain water licenses. Accurate flows also provide direction for the timing of augmenting water into Headquarters Creek via the dam at Wolf Lake. Thanks to Thea Rogers at BC Conservation Foundation for hosting workshops on the use of the Flowtracker to the different groups in the valley and to all the volunteers who help out with flow monitoring.



River Riddles Answers: 1. Fresh water mussel; A globally threatened creature that needs clean water 2. Native blackberry.; Small but packed with flavour.