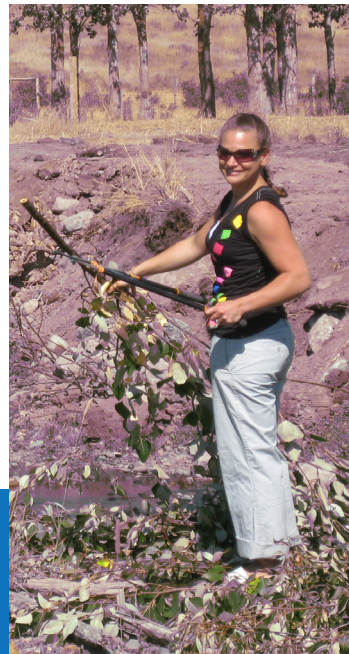


WHAT YOU CAN DO TO BE A **STREAM STEWARD**

- Maintain a **vegetated buffer** along riparian areas while cultivating, spreading manure and fertilizing.
- **Fence** off the stream from livestock.
- **Improve** road crossings and culverts.
- **Plant trees** within the riparian area.
- Make sure **livestock cannot access riparian areas** from confined areas such as pens or feedlots.
- **Avoid** working the soil and pasturing cattle near riparian areas when soils are wet.
- Provide **alternate water sources** for your livestock and fence off sensitive areas.
- **Avoid** manure build-up and do not spread manure on frozen ground.
- Place supplements and feed **away from riparian areas** (a minimum of 30 m, as stated under the Provincial Agriculture Waste Control Regulation).
- Distribute livestock evenly and exercise **good pasture management**.
- Complete an **Environmental Farm Plan**.
- **Attend** meetings and participate in stewardship projects.
- **Educate yourself** on stream health and stream rehabilitation.

Contact us for assistance with fencing materials, off channel watering systems, and tree planting along the Murray Creek riparian corridor.



Murray Creek Rehabilitation Project

2011 ANNUAL NEWSLETTER

OUR GOALS:

- *To enhance the habitat along Murray Creek for the benefit of all users, fish, & wildlife.*
- *To facilitate the process of the agricultural community voluntarily working towards water stewardship along Murray Creek.*



CONTACT & RESOURCES

If you are interested in rehabilitation work on Murray Creek contact us for more information, materials, and supplies.

Richard Martens: **250-567-9402** • Wayne Salewski: **250-567-9542** • Brian Frenkel **250-567-6603**

Get information on **Environmental Farm Planning** at:

<http://www.agf.gov.bc.ca/resmgmt/EnviroFarmPlanning/index.htm>

Detailed information on **Best Management Practices** is available at:

<http://www.env.gov.bc.ca/wld/BMP/bmpintro.html>

Murray Creek flows into the Nechako River within Vanderhoof town limits. Salmonids, including trout and young Chinook salmon, live within the waters of Murray Creek. At the mouth of Murray Creek adult Chinook salmon and the endangered Nechako White Sturgeon spawn. Contaminants and sediment introduced into Murray Creek ultimately reach the Nechako River and impact fish species spawning and inhabiting waters downstream.

Stewardship measures taken by landowners, government, private industry, and citizens are improving Murray Creek and resulting in a healthier ecosystem, improved conditions for livestock, and protection of land assets.

ABOUT THE MURRAY CREEK REHABILITATION PROJECT

The Murray Creek Rehabilitation Project brings together land owners, businesses, schools and environmental stewards that collaborate to rehabilitate Murray Creek. We hope to increase the number of salmonids that inhabit Murray Creek, as well as improve water quality to create a healthy ecosystem. This will in turn contribute to the health of the Nechako River and the salmon and white sturgeon that spawn at the mouth of Murray Creek.

The Murray Creek Rehabilitation Project has been well received by most of the land owners along the creek, as well as members of the community and governments.

FUNDING & PROJECTS

To date the Murray Creek Rehabilitation Project has secured funding and in-kind contributions that have gone towards a number of in-stream works projects including fencing off the stream, off channel watering, bioengineering to stop erosion, replanting the riparian zone, and replacing inadequate culverts to be fish friendly. As well as educational field trips for elementary and secondary school students, public education, and research (UNBC Graduate study in Community & Watershed Health).

PARTNERS & COLLABORATORS

The Murray Creek Rehabilitation Project partners are Murray Creek landowners, BC Cattleman's Association, Farmland - Riparian Interface Stewardship Program (FRISP), Regional Cattleman's Association, Regional District of Bulkley Nechako, District of Vanderhoof, Rio Tinto Alcan, Habitat Conservation Trust Foundation, Fisheries and Oceans Canada, Fraser Salmon and Watershed Program, University of Northern British Columbia, Ministry of Environment - Environmental Stewardship Division, Avison Management Services, M4 Contracting, School District #91, and the Northern Regional Drinking Water Team which includes Fraser Basin Council, Northern Health and UNBC.

2011 FUNDERS : TOTAL \$72,000

- Environmental Damages Fund: \$29,000
- Pacific Salmon & Watershed Program: \$35,000
- Department of Fisheries and Oceans: \$8,000
- Environmental Farm Planning will be well over \$30,000 once submitted.



Properly installed culverts allow for adequate volume and capacity of water to flow through, and fish passage. This culvert was replaced this summer at a washed out road crossing on private land. Rainbow trout fry were found at this crossing, and the properly installed culvert allowed for both fish passage and renewed road access to adjacent fields.

***FACT:** In 2011, DFO found juvenile Chinook salmon (fry) as far as 6 km upstream in Murray Creek from the Nechako River. These fish likely spawned in the Nechako River and moved into Murray Creek to find rearing habitat (a place to grow).*



Bank stabilization, cattle crossing armoured, in-stream boulders and logs, and tree planting were some of the in-stream rehabilitation measures completed at the Demonstration Site on Murray Creek. These measures will slow down water flow, reduce bank erosion and siltation into the creek, and provide improved habitat for fish, and better water quality overall.

In 2010 over \$110,000 was invested into rehabilitation measures on Murray Creek.



Livestock are healthier and have greater weight gain when they have access to clean water. Providing off channel fresh water preserves water quality. You can view this waterer at the Demonstration Site.

MAJOR PROJECTS IN 2011

Projects that were completed this year included:

- Three undersized culverts were removed and replaced with arch culverts that were the appropriate size for the stream crossing. Additionally, one undersized culvert was removed and the crossing was reinforced to allow fording the stream with no damage.
- Stream bank restoration took place to restore bank integrity on two separate sites.
- Two new stream crossings were installed to tie into two new fencing projects that will control cattle movements.

Project Highlights

- A **culvert assessment** was completed that examined all culverts, private and crown, that Murray Creek flows through within the entire watershed. This was a \$17,000 investment by DFO. What was found is that many culverts installed decades ago do not meet the water flow standards and requirements of today, nor do they allow fish passage. Culverts that impede water during spring freshet increase the risk of road failure and cause fields to be flooded for extended periods of time.
- The **Murray Creek Demonstration Project** was launched this past fall. The site, a section of Murray Creek that was rehabilitated in 2010, was established to demonstrate the regrowth of the riparian zone along Murray Creek, and various in-stream rehabilitation methods. The site doubles as an educational tool for students from area schools and UNBC, as well as the general public. A sign and brochure guide visitors through the site and explain the measures that were completed to improve stream habitat and the riparian zone. School District 91's Project Agriculture program included this as part of their 2011 curriculum.
- Dave Martens & Sons installed an **off channel watering system** designed by Henry Wiebe. Richard Martens was pleased as it removed cattle from the stream. It is gravity fed water and all excess water flows back into the stream. Richard feels it will water four hundred head daily with ease. If this systems looks right for your operation, the Murray Creek Rehabilitation group is willing to cover the cost of installation.
- DFO provided \$8,000 for **fencing materials**. This allowed us to fence additional portions of Murray Creek. If you are a producer with an Environmental Farm Plan and a project that will fence cows out of the stream, we can help with posts and wire. Contact Richard Martens for more information (see reverse).
- Dr. Margot Parkes a UNBC Professor and Canada Research Chair in Health, Ecosystems, and Society – has obtained two grants that pertain to Murray Creek and adjoining watersheds in Northern BC. Dr. Parkes comes here to **examine the effect of changing ecosystems on the health and well-being of communities**, with a focus on water as a common resource for livelihoods, food security, culture and economies.

- One UNBC Graduate student has submitted a project proposal for **graduate studies examining ground water and its relationship to riparian health**.
- Ecological Taxation – David Zehnder has been working with the BC Cattleman's Association to define a study on Murray Creek that will examine an opportunity to provide **compensation to landowners that are protecting riparian zone** with an annual cheque for this exclusion of usage. This is one of many areas in the province that is being included in his study and could help to form policy and process to reward wise water stewardship producers.