

*Stewardship Practices being developed | Altwasser-Charolais Site*

SAR Primer Guideline	Stewardship practices	Recommended techniques	Habitat type *	Nature of action**	Comments
Riparian areas in settled landscapes	Protect existing riparian areas		R, S	A	<p>The channel of Brett Creek was straightened by alterations made in the banks through bioengineering interventions. This stabilized erosion processes in the riparian zone, deepened the channel and added circa 5 acres of cultivatable land to the property where he grows pasture and hay.</p> <p>The riparian areas of the Brett Creek River were fenced. Water holes were built to provide proper access to water for the cattle and avoid damage to the banks. Water holes were built by putting proper culverts, shale gravel and rocks in specific points.</p> <ul style="list-style-type: none"> <li>“Before the work, this creek was slow moving and had much less water. When we altered the stream and fixed the banks there was more natural flowing water and less mud on each side. We gained land just because there is no more mud. Trees don’t grow in muddy areas and when the cattle gets in there it kills everything anyway. So we put these fences up, planted de trees and the vegetation obviously grew, controlling the flow.”</li> <li>One of the main outcomes of this project was that it created more control over the land nearby the creek in relation to the humidity of the area and the access of the cattle to water.</li> <li>This action enhanced fish and other aquatic life habitat and created a protected riparian buffer that attracted the fauna from the uphill range areas nearby.</li> <li>This program initiated by the FRISP project of the BC Cattlemen Association, through Lee Hesketh. Lee provided access to a group of young adults to assist in planting the trees. All Keith had to do is maintain the fence. When the project was short of funds Keith took over to plant more trees.</li> </ul>
	Establish new or restore degraded riparian buffers	Plant native vegetation (minding width)	R, S	R	Native trees were planted in the riparian area of the Brett Creek (75% willow, and cottonwood, cedar, spruce). The seedlings were donated by Peter Spencer’s nursery from plant material that was not good enough for forestry and was going to be discarded. Keith thinks he could have planted firs and these could be harvested in 50 years.
		Protect plantings from wildlife and livestock	R, S	A,R	The native trees planted in the riparian area of the Brett Creek were protected by fencing.
	Control invasive species		R	M,R	<p>Keith has a problem with weeds along the fence built to protect the riparian buffer (burdocks and stinging needles).</p> <ul style="list-style-type: none"> <li>He controls them mechanically to prevent spread to the pasture and hay fields which would reduce the farm’s productivity.</li> <li>“We don’t use any herbicide spraying at all other than some spot spraying. At some point in time you have to spray weeds because they outgrow the grass. When you cut them they come back. We are allowed to do hand spray but not boom spray. Also, there is a proper way to do it: you spray out so no residues go in the creek.”</li> </ul>
Drainage maintenance in agricultural waterways	Stabilize banks using bioengineering methods		R, S	R,M	Bioengineering interventions aiming on straighten and stabilizing erosions were applied to the banks of Brett Creek.
	Avoid over application or poor storage of manure		R, S	A	<p>The best methods are applied for storing and applying manure, in order to avoid eutrophication of streams and wetlands.</p> <ul style="list-style-type: none"> <li>“Pete Spencer corrected us on the distance of manure and field tanks form the water source. “</li> <li>Keith thinks the problem of E. coli in streams is more due to wild life access to water than the cattle.</li> </ul>

\* Types of habitats: R = riparian buffer, D = ditches, S = stream channel, and N = novel habitat; \*\*Nature of actions: A = avoidance, M = minimization, R = rehabilitation/restoration, and O = offset.