

SITE 2 GRAVEL BAR

Rivers have a natural tendency to meander as they flow through the landscape. As the river flows through a meander bend the water on the outside of the curve has farther to travel and flows faster than the water that flows along the shorter path on the inside of the curve.

The faster water causes erosion on the outside of the meander bend. The slower moving water on the inside of the bend cannot carry the sediment load, so sand and gravel are deposited. Gravel or point bars are created on the inside of the meander bends. Any river with erodible banks (the Horsefly has very erodible banks) is expected to have some outside bank erosion and point bar formation

The gravel bar at this site is undergoing the initial stages of plant succession. Early 'pioneer' species, such as willow and cottonwood are naturally invading the recently deposited gravel. These opportunistic plants provide the foundations for healthy riparian plant community development.

If you look into the center of the river you will see boulders and rock clusters that the water is flowing over. These provide cover and resting areas for fish. Depending on how the boulders are situated, gravel may be deposited to create spawning areas or pools will be formed.



SITE 3 OXBOW

This oxbow is the result of the natural tendency of rivers to meander. As the river meanders, it reduces its grade, thereby reducing the flow of water and increasing the sediment deposition. Eventually the grade is reduced so much that deposited sediment blocks the channel. When this occurs the river will cut a new channel and the old meander becomes an oxbow.

SITE 4 BACK CHANNEL

Back channels and oxbows provide important habitat for fish. This type of 'off-channel' habitat provides refuge for fish during high water. During the spring these off-channel areas contain warm water and abundant supplies of food. There is often more cover and places to hide from predators, giving young fish safe places to rest and feed. Young fish thrive and grow in this type of 'rearing' habitat.

SITE 5 ENTRANCE TO SPAWNING CHANNEL

Through the use of temporary fence panels installed at this location, adult sockeye are counted, by sex, into the channel. An exacting count of the number of adults "loaded" allows for the calculation of yearly survival rate based on the number of fry counted out of the channel the following spring.

The weir site also is used to control the water depth in the bottom half of the channel through the installation of "stop logs".

SITE 6 WATER INLET TO SPAWNING CHANNEL

At this location, a control valve is regularly adjusted to prevent both over flooding or drought within the channel. Just upstream of the valve, a specially designed intake structure draws water containing less silt during freshet/flood events.

SITE 7 RELICT RIVER CHANNEL

This boardwalk crosses an old river channel. As a river meanders, new channels are created and old channels are abandoned. Relict river channels and off channel areas provide important flood relief during high water events. These areas can store water and prevent down stream flooding. Look on both sides of the boardwalk at the sedges, rushes and grasses growing in this area. This vegetation slow flood water and dissipates flood energy.

SITE 8 FISH HABITAT

Look across the river at the overhanging vegetation and undercut banks along the river. This provides cover for fish, cool shade in the summer, and habitat for insects which the fish feed on. Stream-side vegetation also absorbs flood water energy and reduces erosion, preventing large amounts of sediment from entering the stream. This is an important function of riparian vegetation, as natural spawning areas are negatively impacted when sediment fills in the 'interstitial' spaces within the spawning gravel.

At low water riffles can be seen in the center of the river. Riffles are the shallow faster flowing stream sections, which usually have clean gravel beds. These turbulent sections add oxygen to the water and provide good fish spawning and egg incubation areas. In addition, most aquatic insects also require clean river gravel for most of their life cycle.

The trail was originally constructed with the help of a Ministry of Environment Youth Team with funding and support from Quesnel River Watershed Alliance, Fisheries and Oceans, Cariboo Chilcotin Fish Enhancement Society, and the Horsefly Community Development Centre.

The Horsefly River Roundtable upgraded the trail in 2010 to improve accessibility for low mobility residents and tourists.

For further information contact:

www.horseflyriver.ca

Horsefly Salmon Habitat Trail



A 2.9 km (Roundtrip) trail along the beautiful Horsefly River and Fisheries and Oceans Spawning Channel.



Horsefly Salmon Habitat Trail

This trail was built to highlight the natural instream and riparian habitat that makes the Horsefly River so important to not only Sockeye but to a wide variety of other fish species including coho and chinook salmon and rainbow trout.

Sections of the trail also take you along the Horsefly River Spawning Channel built by Fisheries and Oceans Canada in 1988-89 to enhance the sockeye salmon run.

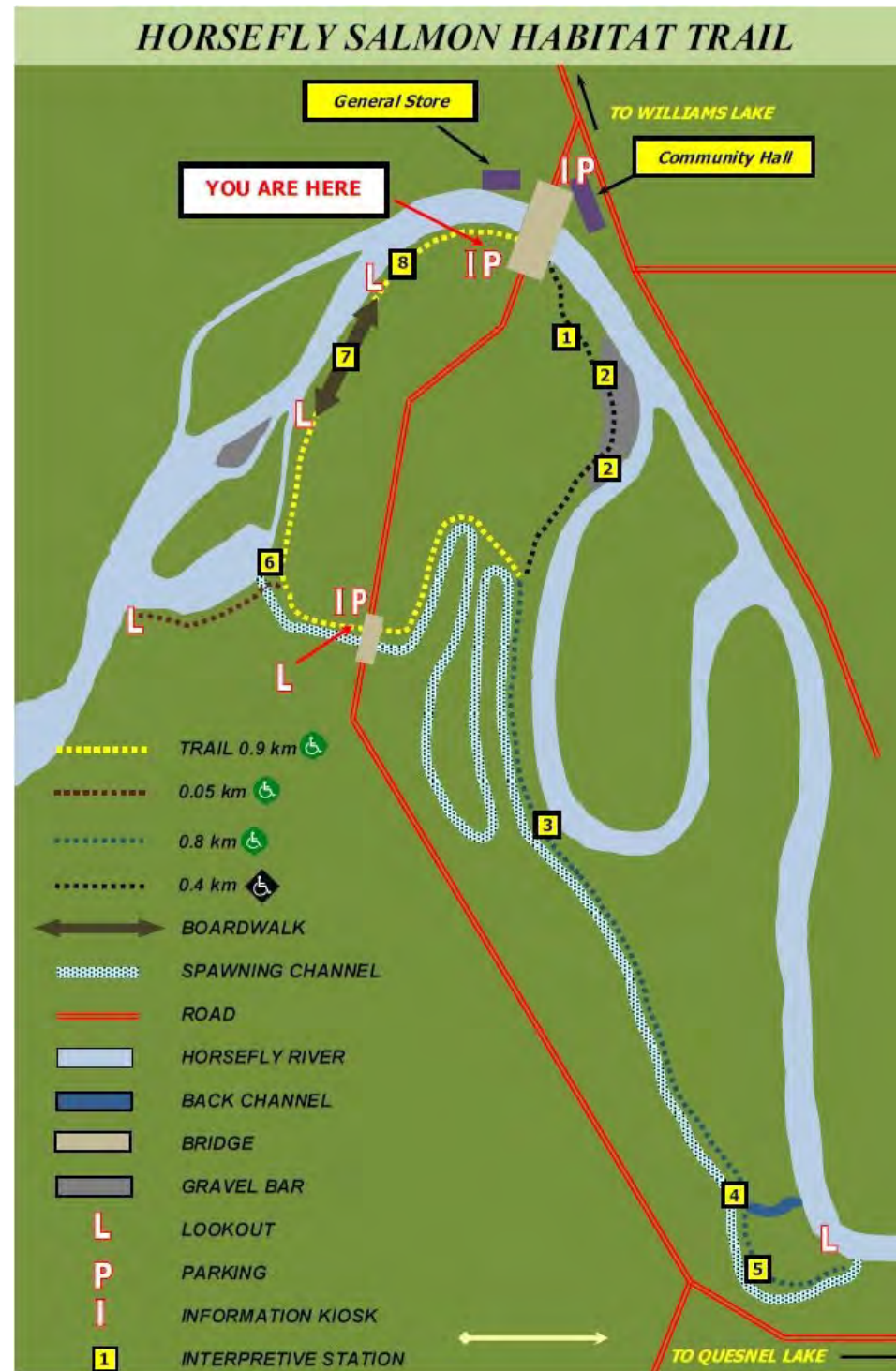
Specific habitat features are explained at each of the numbered interpretive stations along the trail. There are also four lookouts marked on the map. These are good spots to observe the river in all seasons and to see fish spawning during late summer.

The community built and maintains this trail and they ask that you respect the natural habitat. Be alert as this is wildlife habitat and bears use the area. Also remember, that rivers change seasonally and from year to year and there can be dangerous currents and deep water anywhere along the river.

Leave the instream habitat for the fish.



Sockeye Salmon (*Oncorhynchus nerka*)



SITE 1 RIPARIAN FOREST

Riparian areas are the transition zones between the aquatic (water) and terrestrial (land) environments. These areas are very diverse and provide important habitat to both aquatic and terrestrial species. Riparian vegetation includes large deciduous and coniferous trees, a variety of shrub species, grasses, sedges, rushes, and herbs all adapted to grow in wet and frequently flooded soils. The riparian area is important for both terrestrial and aquatic wildlife. The riparian area is essential habitat for over 80% of terrestrial wildlife including moose, deer, amphibians, and a wide variety of birds.

Riparian vegetation can act as a filter, preventing sediment and pollutants from entering the river. Roots of riparian vegetation bind and restrain soil particles, reducing erosion and helping to stabilize stream banks. Streamside vegetation also provides habitat and forage for insects, which can be a significant food source for fish.

Riparian areas also provide a source of in-stream woody material and stream cover for moderating water temperatures.

Once large woody debris enters a stream, it can divert or obstruct flow, thereby increasing channel complexity. This complexity provides fish with cover from predators, creates rearing areas, and offers refuge during high flows. In addition, woody material contributes to the retention of small organic debris, making this energy supply available for food consumption by aquatic insects that ultimately serve as food for fish.