

Stream Status

Overall Strategy: Routine Watershed Management

Water Quality Rating: B

Stream Class: Groundwater Large Watershed Nonurban (GWL)

Stream Type: Unstable, incised, highly erodible channel primarily comprised of an unconsolidated, heterogeneous mixture of gravel, some small cobble and sand.

Subwatershed Land Cover: 11% developed, 45% forests and woodlands, 9% grassland/shrubland/sparse vegetation, 27% planted or cultivated, 8% wetlands.



BASIC FACTS

Section	7
Township	32
Range	19
Stream Length	0.6 miles
Subwatershed Area	2061 acres
Baseflow	1.98 cfs
Bankfull Flow	5.94 cfs
Entrenchment Ratio	1.30
Width:Depth Ratio	10.00
Sinuosity	1.16
Slope	0.03
Rosgen Class	A4
DNR Trout Stream	Yes

Fish Species:

Brook Trout

CMSCWD References:

Lower St. Croix River Spring Creek Stewardship Plan ('03)

Macroinvertebrate Data (2002-2003)*

Metric	Score	Mean of Spring Creeks
Chironomidae Species Richness	20	21
Invertebrate Taxa Richness	33	31.75
HBI	4.61	4.4
% EPT	41.55	36.9
% Dominance	32.42	35.5
Most Common Families	Midges, Black Flies and Small Minnow Mayfly	

Water Chemistry (2000-2002)*

Parameter	Site Mean	Site σ	MPCA NCHF Benchmark MIS/St. Croix River		Mean of Spring Creeks
TP [$\mu\text{g/L}$]	33.57	3.38	90	55	42.47
NO ₂ +NO ₃ [mg/L]	2.49	0.74	0.1	0.203	2.15
TSS [mg/L]	4.83	5.14	8.8	7.5	15.96
Temperature [C]	6.90	3.98	13.0	10.30	9.95

*Refer to 2010 Watershed Management Plan Section V, Stream Management Plans for definitions of macroinvertebrate metrics and water chemistry parameters.

Overall Assessment: Fall's Creek

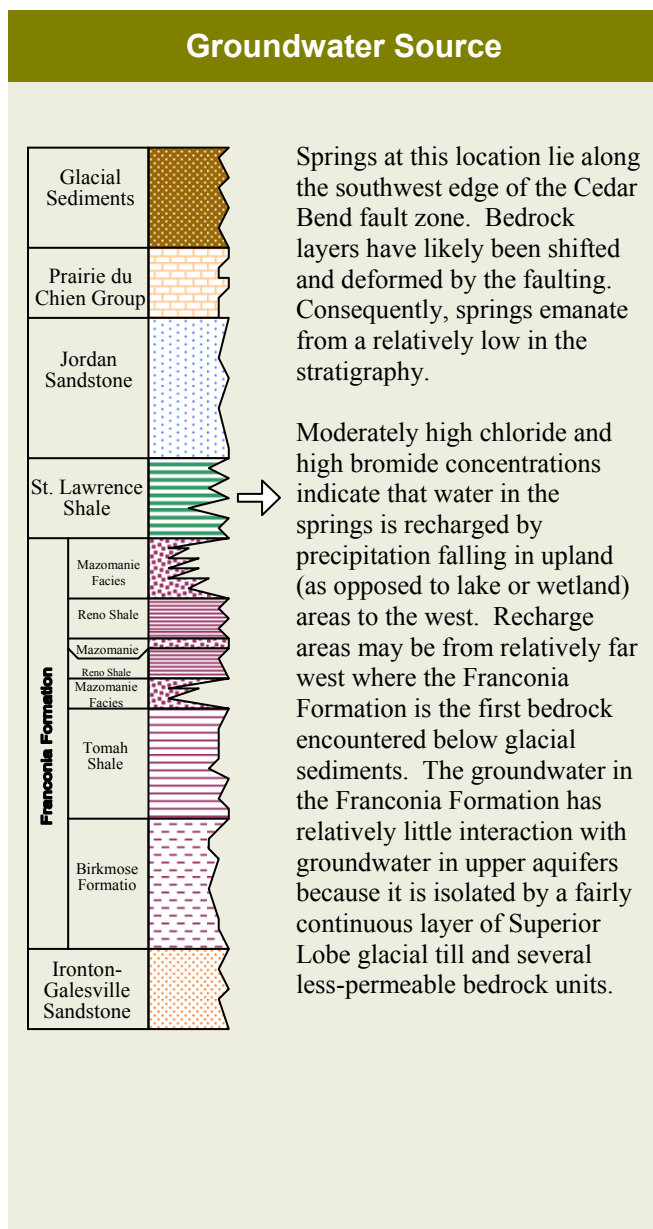
The Fall's Creek watershed is comprised of forested ravines, abandoned farm fields and S.H. 95 right-of-way. The lower portion of the watershed includes the Fall's Creek Scientific and Natural Area. Fall's Creek has one of the larger watersheds in the study area and in its upper reaches is an ephemeral stream with two major branches extending several miles west of S.H. 95. The last 0.8 miles of stream is a perennial, cool water stream. In 2009 MNDOT constructed a project near the fork of the major branches, to repair the inslope gully erosion and installed stormwater retention/infiltration ponds to treat stormwater runoff from Hwy 95.

This area is considered to be the finest and most ecologically diverse natural area in Washington County and is of state-wide significance. Fall's Creek has a natural reproducing population of brook trout. However, population size is limited by habitat. In-stream habitat is moderate due to sedimentation and lack of significant pools and in-stream cover. Three intolerant macroinvertebrate genera are found in abundance at this site indicating that water quality is excellent. In terms of total number of macroinvertebrate taxa collected, Fall's Creek ranks first among the twenty spring creeks surveyed as part of this Study.

The forest communities adjacent to Fall's Creek include northern hardwood-conifer forest, black ash seepage swamp, floodplain forest and lowland hardwood forest. This area also includes a small bedrock bluff prairie and small areas of dry and moist cliff.

During the surveys, a pair of Louisiana water thrushes (*Seiurus motacilla*), a State Special Concern species, was observed within the lower ravine of Fall's Creek. The DNR Natural Heritage Program lists five high quality plant communities, three rare plants and four rare bird species for this area. Excellent quality wetlands, including tamarack bogs, are located in the western portions of the Fall's Creek watershed. The Blanding's turtle (*Emydoidea blandingii*) is a state-listed threatened species that may be encountered throughout the watershed.

Based on macroinvertebrate data from the 2003 *Lower St. Croix River Spring Creek Stewardship Plan*, Fall's Creek has a water quality rating of 'B.' Hilsenhoff's biotic index (HBI) is good especially in the presence of wetlands contributing organics. The data also show a very good percent EPT (percent of pollutant intolerant mayflies, stoneflies and caddisflies in the sample).



Key Management Recommendations

- Two-cell (detention and infiltration) stormwater pond installation at the north fork of Fall's Creek, just upstream of Hwy 95.
- Enlarge the infiltration pond immediate upstream of Hwy 95 at the south fork of Fall's Creek to better accommodate flows for a minimum 2-year event. Construct a sediment-trapping detention pond upstream of the infiltration pond.
- Manage landlocked depressions in the upper portions of the Fall's Creek watershed to retain stormwater, consistent with protection of sensitive wetlands that are susceptible to stormwater bounce.
- Work with Mn/DOT to evaluate stormwater rate/volume control options where the two major branches of the ravine cross Hwy 95 in order to ensure that wildlife crossings are maintained, yet do not exacerbate stormwater management problems to Fall's Creek.
- Work with DNR Scientific and Natural Areas Program to repair and stabilize eroding portions of Fall's Creek.
- Initiate a citizen monitoring program.

* See *2010 Watershed Management Plan* Section V, *Stream Management Plans* for additional information on District stream management activities.

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