

Stream Status

Overall Strategy: Routine Watershed Management

Water Quality Rating: A-

Stream Class: Groundwater Urban Watershed (GWU)

Stream Type: A steep, deeply entrenched and confined, channel that is incised in coarse depositional materials.

Subwatershed Land Cover: 24% developed, 57% forests and woodlands, 14% planted or cultivated, 5% wetlands.



Macroinvertebrate Data (2002-2003)*

Metric	Score	Mean of Spring Creeks
Chironomidae Species Richness	15	21
Invertebrate Taxa Richness	32	31.75
HBI	4.03	4.4
% EPT	35.1	36.9
% Dominance	29.33	35.5
Most Common Families	Scuds, Small Minnow Mayfly, Nematid Broadbacks	

Water Chemistry (2000-2002)*

Parameter	Site Mean	Site σ	MPCA NCHF Benchmark MIS/St. Croix River		Mean of Spring Creeks
TP [$\mu\text{g/L}$]	47.52	8.33	90	55	42.47
NO ₂ +NO ₃ [mg/L]	1.48	0.24	0.1	0.203	2.15
TSS [mg/L]	12.93	6.13	8.8	7.50	15.96
Temperature [C]	8.66	5.23	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.

BASIC FACTS

Section	6
Township	31
Range	19
Stream Length	0.3 miles
Subwatershed Area	111 acres
Baseflow	0.51 cfs
Bankfull Flow	4.16 cfs
Entrenchment Ratio	1.70
Width:Depth Ratio	9.00
Sinuosity	1.02
Slope	0.09
Rosgen Class	A4
DNR Trout Stream	No

Fish Species: N/A

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

Overall Assessment: Judd Street Creek

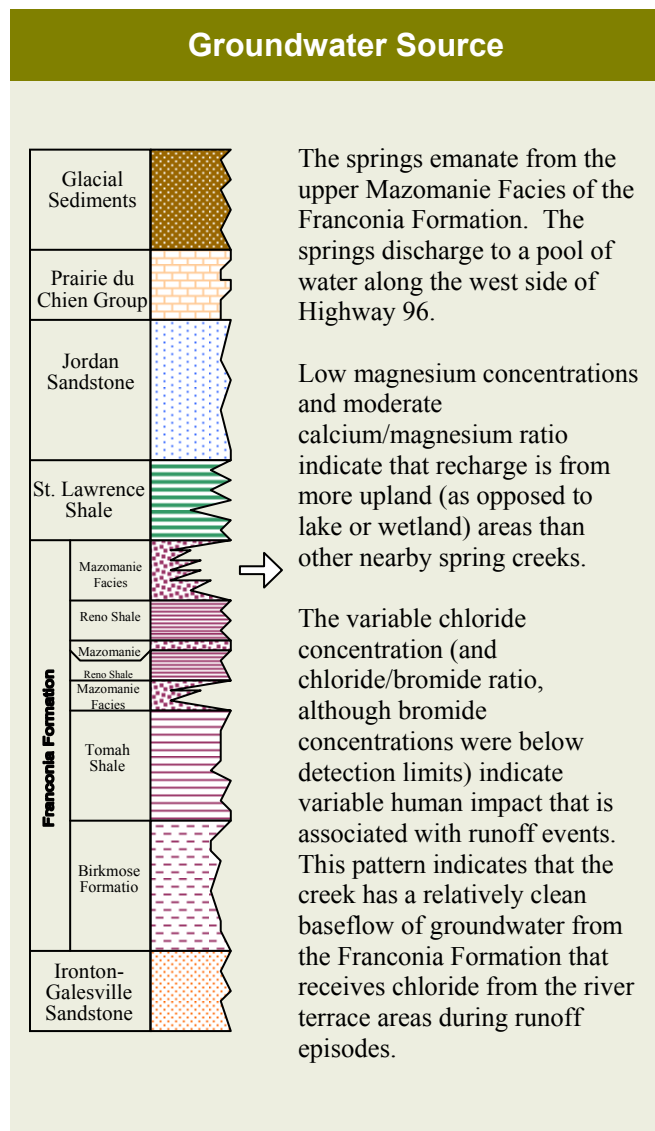
Judd Street Creek is located within the southern portion of Marine-on-St. Croix. Judd St. Creek drains from the upper St. Croix River terrace located upslope of Highway 95. From this upper terrace, flows spill down a short slope to the middle St. Croix River terrace along Highway 95. From Highway 95, Judd Street Creek flows approximately one half mile as a ditch to Judd Street.

Much of this section appears to have been routed around residential homes on the west side of Judd Street. Where the stream meets Judd Street, a concrete cistern box collects ground water and contributes additional flows to the creek. Downstream of Judd Street, the stream flows about 150 feet, where it outlets to the St. Croix River. Judd St. Creek receives runoff from a 61 acre watershed.

The upper-most portion of the watershed ends abruptly at the Wisconsin Central Rail. While the topography continues to slope upward, west of the rail (in the general vicinity of Jackson Meadows) the rail grade has interrupted this flow and diverted it towards the Mill Stream watershed. Land use includes hayfields in the upper watershed and residential in the lower watershed.

The middle portion of the watershed, however, is forested. The Judd St. watershed receives groundwater discharges from two groundwater-dependent wetland complexes.

The wetland complex located on the upper St. Croix River terrace is a continuation of the wetland complexes that encompass the Minnow Farm site to the north. The wetland communities present within the Judd Street watershed include mixed hardwood seepage swamp and rich fen. Unfortunately, these wetland communities are dominated by smooth buckthorn (*Rhamnus frangula*) and reed canary grass (*Phalaris arundinacea*), which has substantially lowered the quality of the wetlands. Judd Street Creek flows through a mixed hardwood seepage swamp wetland complex as it crosses Highway 95. This mixed hardwood seepage swamp includes numerous, small inclusions of tamarack swamp, rich fen and spring discharge points that support, in addition to Judd Street Creek, several other spring creeks. No rare feature records are known for this area. Although some fish habitat is present, there are no records of fish for this stream. However, 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*, Judd Street Creek has a very good water quality rating of 'A-.' Hilsenhoff's biotic index (HBI) is very good, and the data show a decent percent EPT (percent of pollutant intolerant mayflies, stoneflies and caddisflies in the sample) and richness. Organic enrichment is likely natural from wetlands.

Key Management Recommendations

- Install rain-water gardens in swales along Judd St. Creek. Because of their visibility, these rain gardens could serve as educational/demonstration sites.
- Where stream-side buffers are lacking or of poor quality, create/improve buffer with plantings of native vegetation.
- Within mixed hardwood seepage swamp (between Highway 95 and Judd Street), the City, Watershed and Mill Stream Association should work together to control buckthorn and, where appropriate, reestablish native tree and shrub species. In particular, these efforts should be encouraged along the stream corridors.

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

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