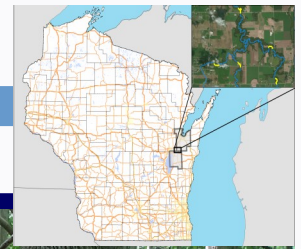


Wisconsin Water Quality Handout



Upper Plum Creek 2015 (EGAD 3200-2018-77)

Watershed Details

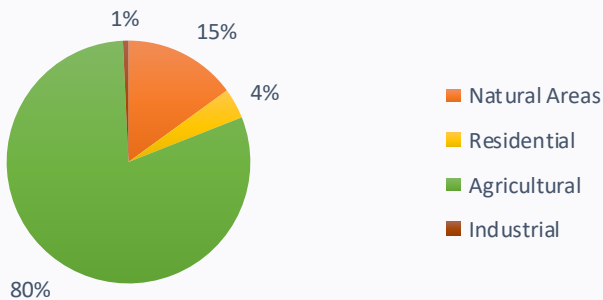
Plum Creek in Brown/Calumet County is heavily influenced by non-point sources of pollution prior to its confluence of the Fox River in Wrightstown. Plum Creek has been identified as one of the highest contributors of phosphorus and sediment to the Lower Fox River. Overall this watershed is characterized by poor aquatic life and habitat. A Nine Key Element Plan was enacted in the summer of 2015 to continue to address non-point sources of pollution in the watershed. Two permitted facilities are located in the Upper Plum and discharge to an Unnamed Tributary to Plum Creek.

Monthly water chemistry samples were collected by citizen monitoring volunteers from May to October. In addition, habitat, fish and macroinvertebrates surveys were conducted by the Wisconsin DNR at sites throughout the watershed to assess the physical and biological conditions of streams in the watershed.



Unnamed tributary to Plum Creek at Holland Road.

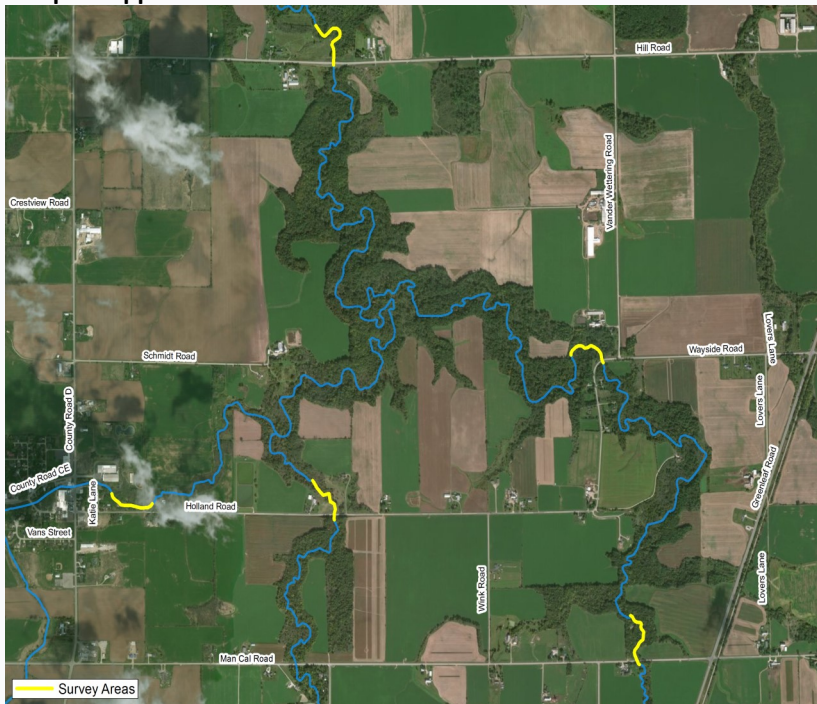
Plum Creek Watershed Land Use



Physical Habitat

Streams in the Upper Plum have wide forested buffers consisting of lower quality tree species such as box elder with steep exposed banks and little ground cover. Habitat ratings were mostly fair with a single good rating. Stream bed composition is heavily influenced by fine substrate with abundant clay. Fish cover and pool habitat is very poor. Unnamed Tributaries to Plum Creek at CTH D is heavily influenced by industrial land use. Above Man Cal Rd adequate undisturbed vegetative buffer width was eliminated.

Map Of Upper Plum Creek



Chemical

Water samples were collected at CTH Z for Total Phosphorus. Concentrations were consistently above Wisconsin's Water Quality standard of 0.075 mg/L from May until October.

Biological

The five survey locations for the Upper Plum had a total of ten fish species, all of which are tolerant to environmental degradation. Indexes of biological integrity (IBI) of fish data were calculated to be poor to fair. Macroinvertebrate samples were collected at three of the locations and all rated as fair on the Macroinvertebrate IBI score.

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Wisconsin Water Quality Handout

Upper Plum Creek 2015

Management Recommendations

Soil Health principles should be adopted to improve infiltration along with sediment and nutrient retention on agricultural lands in the watershed. The re-establishment of adequate vegetative buffers along stream corridors could include the removal of undesirable species such as box elder and buckthorn allowing for the management of more desirable tree species. Additionally, vegetative buffer widths should be expanded to prevent soil loss and to increase distances between nutrient application and waterways. Areas of significant bank erosion and failures exist. Focused efforts to stabilize banks through a strategic approach should be enacted to prevent hard armoring in a small parcel by parcel approach. Permit compliance from permitted facilities must be a high priority to assist in reaching meaningful phosphorous reductions and water quality improvements.

Plum Creek at CTH ZZ	May	Jun.	Jul.	Aug.	Sep.	Oct.	90% LCI-M*	WI WQ-STD
Total Phosphorus (mg/L)	0.16	0.125	0.105	0.204	0.16	0.141	0.127	0.075

*Wisconsin applies the lower 90% confidence interval around the median for Total Phosphorus impairment decisions.



06/10/2015



06/16/2015



06/10/2015

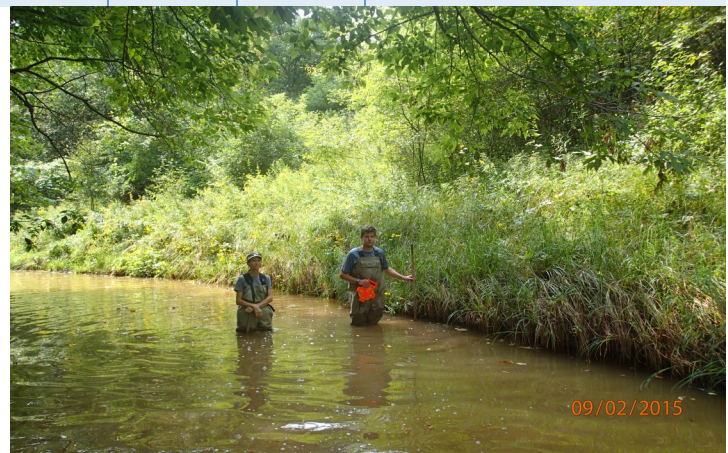
Fish and Habitat Ratings

Stream Site	Fish IBI	Habitat Rating	Macroinvertebrate IBI
Plum Creek at CTH Z	Fair	Fair	—
Plum Creek at Vanderwetting Road	Poor	Fair	—
Plum Creek at ManCal Road	Poor	Good	Fair
Unnamed Tributary to Plum Creek at CTH D	Fair	Fair	Fair
Unnamed Tributary to Plum Creek at Holland Road	Fair	Fair	Fair

Top: Plum Creek at Vanderwetting Road.

Middle: Unnamed tributary to Plum Creek at Holland Road.

Bottom: Unnamed tributary to Plum Creek at CTH D.



09/02/2015

Above: Plum Creek at CTH Z.