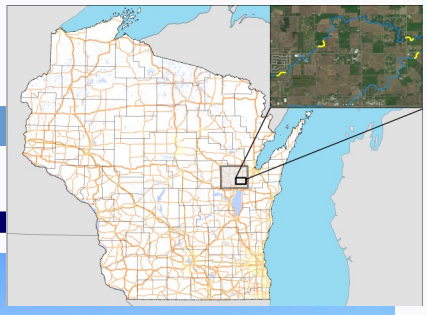
Wisconsin Water Quality Handout



Upper Apple Creek 2015 (EGAD 3200-2018-61)

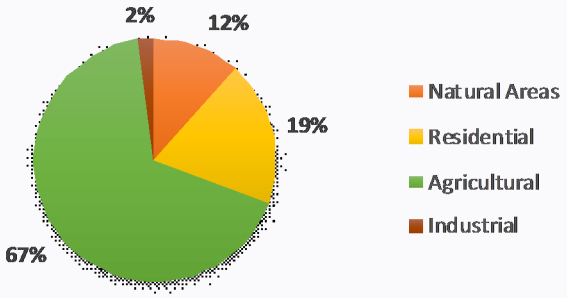
Watershed Details

Upper Apple Creek in Outagamie County flows primarily through an agricultural landscape before flowing into the Fox River near Wrightstown. In 1996, a priority watershed plan was developed for the Duck, Apple, Ashwaubenon Creek watersheds to address potential non-point sources of phosphorus and sediment.

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 Apple Creek on STH 55.

Apple Creek Watershed Land Use



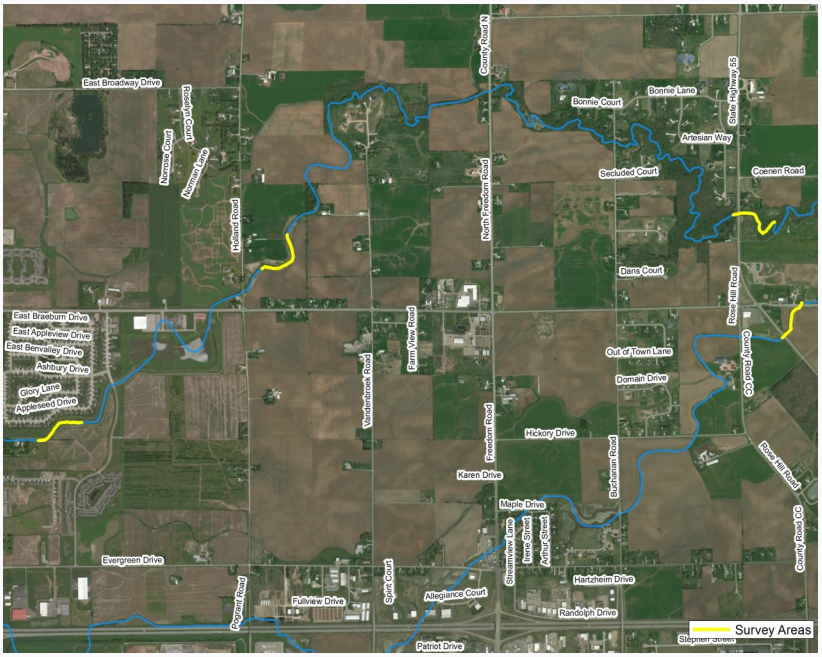
Physical Habitat

Streams in the Upper Apple flow through a heavily agricultural landscape. The habitat ratings were fair at all sites because of the lack of pool habitat and fish cover, modified stream channels, and an abundance of fine sediment.

Chemical

Total Phosphorus concentrations were collected downstream at CTH J and were 2.5-5 times higher than Wisconsin's Water Quality Standard of 0.075 mg/L throughout the growing season.

Map Of Upper Apple Creek



Biological

The four survey locations in the Upper Apple Creek had a total of 13 fish species, all of which are at least moderately tolerant to environmental degradation. Indexes of biological integrity (IBI) of fish data were calculated to be poor to fair. Young of the year Largemouth Bass were especially prevalent at French Road likely due to online storm water ponds near the City of Appleton. Macroinvertebrate samples were collected at three locations and were rated as fair to good on the Macroinvertebrate IBI.

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WISCONSIN DEPT. OF NATURAL RESOURCES

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Upper Apple 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. Construction site erosion control needs to be properly planned and maintained to adequately prevent significant erosion loss during events. Urban storm water best management practices should continue to properly site treatment ponds and consider additional infiltration practices to reduce the rate of storm water delivery to streams. Additionally, vegetative buffer widths should be expanded to prevent soil loss and to increase distances between nutrient application and waterways. Conservation practices to address dissolved phosphorous should be a high priority in this sub watershed.

Upper Apple Creek at CTH J	May	Jun.	Jul.	Aug.	Sep.	Oct.	90% LCI-M*	WI WQ-STD
Total Phosphorus mg/L	0.358	0.252	0.33	0.215	0.207	0.249	0.231	0.075

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

Fish and Habitat Ratings			
Stream Site	**Fish IBI**	**Habitat Rating**	**Macro invertebrate IBI**
Apple Creek at STH 55	Fair	Good	Good
UNT to Apple at STH 55	Fair	Fair	Fair
Apple Creek at French Road	Fair	Fair	—
Apple Creek at Holland Road	Fair	Good	Fair

Top: Apple Creek at STH 55

Middle: Creek Chub on Apple Creek at STH 55

Bottom: Drain pipe on UNT to Apple Creek at STH 55

Above: Exposed banks on Apple Creek STH 55