



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2025 Tomahawk River Survey Report Lower Tomahawk River Watershed, Oneida County

Waterbody Code: 1515800

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Introduction And Objectives

The Tomahawk River is a warm mainstem river meandering 62.2 miles through the Lower, Middle and Upper Tomahawk River Watersheds within Vilas, Oneida and Lincoln Counties. The Tomahawk River has a 4.0 mile third order section, a 25.7 mile fourth order section and a 32.5 mile fifth order section. Two stream shockers were used to collect all species within two transects in the Tomahawk River. The objectives of the survey were to assess the overall health of the fishery, quantify the smallmouth bass fishery and qualitatively assess the habitat present.

DNR Contact

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Watershed/Region Information

62.2 miles long
HUC 10 watershed size: 445 mi²
Land use: 50% forest, 44% wetland,
2% grassland, 3% other

SURVEY INFORMATION

Reach	Site location	Survey date	Water temperature (°F)	Station length (ft)	Gear	Dippers	Target species	Qualitative habitat score	Habitat status	IBI
8m above highway 70	45.88612, -89.74210 45.884122 -89.742809	7/22/2025	68.4	1,110	Stream shocker	6	All	44	Fair	Very poor
60m upstream camp 9 rd bridge	45.81171, -89.81747 45.81403, -89.81745	7/22/2025	66.2	1,375	Stream shocker	6	All	28	Fair	Fair

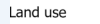


Tomahawk River, Oneida Co., WI

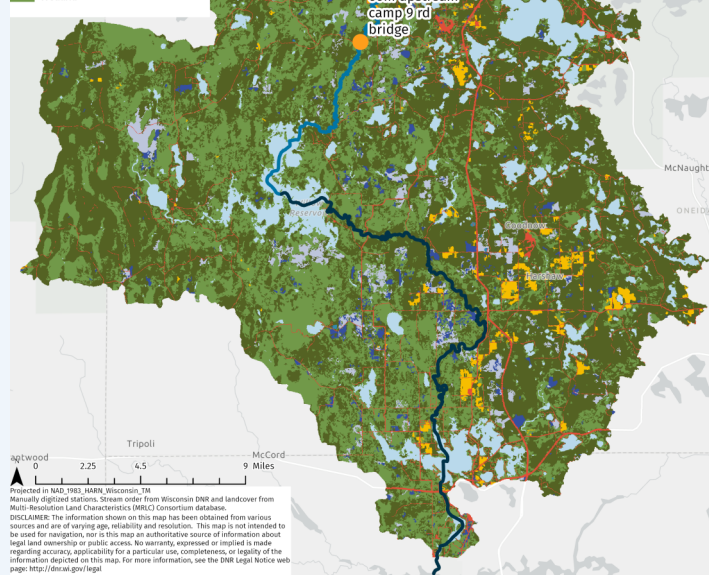
Stream order



Station



Land use



Sampling reaches on the Tomahawk River during the 2025, stream order and land use within the Tomahawk River HUC 10 Watersheds.

Survey Method

- All stations were sampled according to DNR wadable streams monitoring protocol.
- Trout were counted and measured. Other species were counted allowing an Index of Biotic Integrity (IBI) score to be calculated.
- Metrics describing the fish populations include average length, catch per unit effort (CPUE) and length frequency.
- Qualitative fish habitat rating for streams > 10 meters was used to index factors potentially influencing the fish community including riparian buffer, bank erosion, pool areas, width to depth, riffle areas and the amount of sediment.

Metric Descriptions

- Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all smallmouth surveys, we typically quantify CPUE as the number of a given size class of bass captured per mile of stream.
- Length frequency distribution** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals.
- Index of Biotic Integrity (IBI)** is a rating of environmental quality based on the fish assemblage. Scores of 90 - 100 indicate excellent stream quality, while scores less than 30 indicate poor stream quality. Our analysis utilizes the IBI for Wisconsin warmwater streams. Warm mainstem systems in Wisconsin are those in which the maximum daily mean water temperature is usually >24.6°C (76.3°F).
- Fish Habitat rating** is a scoring of the relative quality and quantity of aquatic habitat available to support a healthy fish community. Scores of 75 - 100 indicate excellent fish habitat, while scores less than 20 indicate poor fish habitat. Our analysis utilizes the fish habitat rating for systems < 10 meters or > 10 meters depending on the mean stream width.

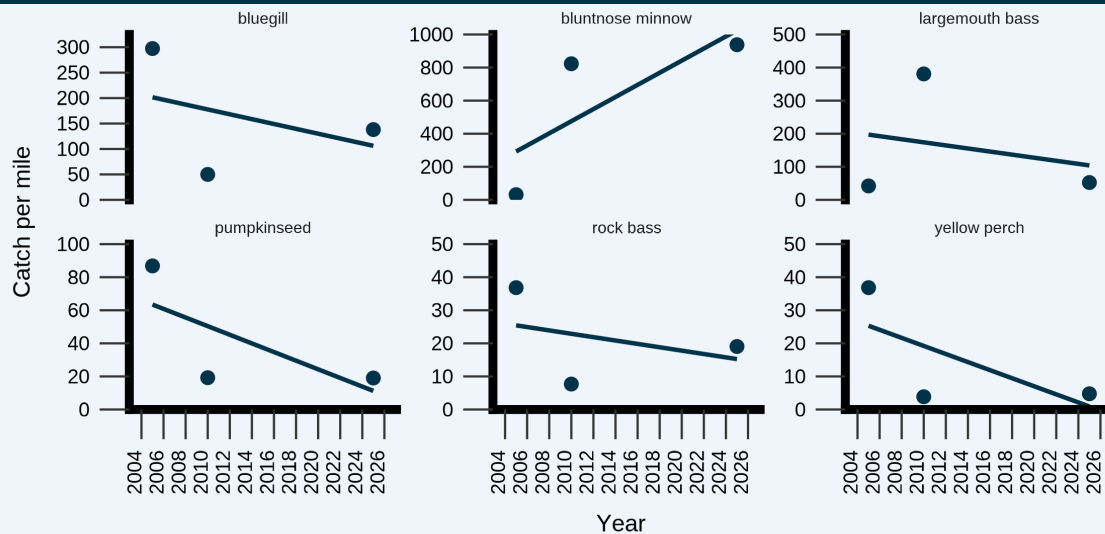


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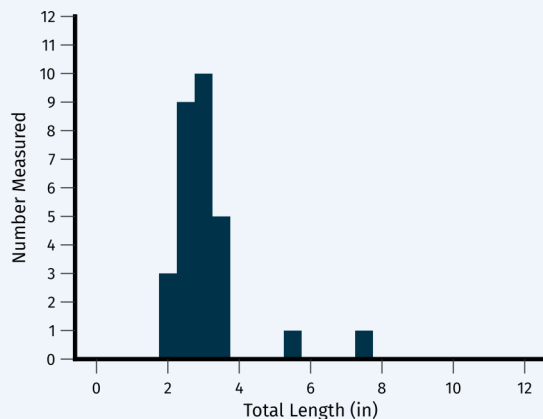
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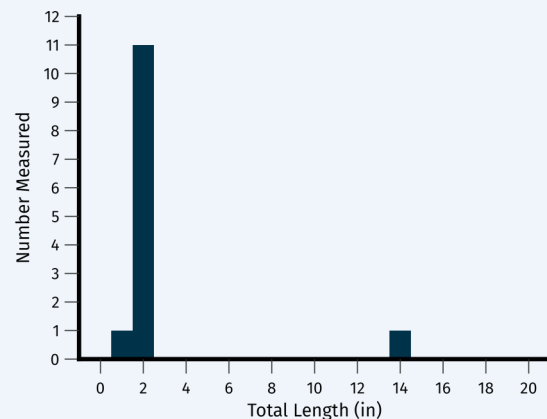


Species Summary

- Thirty bluegill were captured in the Tomahawk River. Lengths of bluegill varied between 2.0 to 7.5 inches with a mean length of 3.1 inches. Catch rate was 63.8 bluegills per mile.
- Thirteen largemouth bass were captured in the Tomahawk River. Lengths of largemouth bass varied between 1.2 inches to 14.5 inches with a mean length of 3.0. Catch rate was 27.8 largemouth bass per mile.



Length frequency of bluegills captured in the Tomahawk River Oneida County, WI during the 2025 survey. Lengths bin are every 0.5 inches.



Length frequency of largemouth bass captured in the Tomahawk River, Oneida County, WI during the 2025 survey. Lengths bin are every 1.0 inches.

Summary

- A fish community consisting of 14 species was found in the Tomahawk river in fair (30) to poor condition (15) using a warm mainstem IBI.
- Catch rates of all fish have decreased since the 2005 survey except for bluntnose minnows, creek chub and northern redbelly dace.
- The Camp 9 Road bridge at the lower reach was being replaced with water being diverted around the bridge during sampling.
- Runs, deep outside bends and fine sediment were common in sampled reaches. Water celery and elodea was the dominate aquatic vegetation present in the upper river reach while the lower reach had minimal water aquatic vegetation.
- Sampling efficiency may have influenced results as most of the reaches consisted of runs or deep areas creating difficulties in capturing fish despite using two barge shockers and six people. A raft mini boom should be considered to improve sampling efficiency in the future which may potentially better represent the fish community in the system.