Nebagamon Creek Abandoned Railroad Grade Removal Project
Douglas County, WI

Post-Construction Monitoring Summary
October 31, 2024

Wisconsin Department of Natural Resources - Fisheries Management Bureau
Lake Superior Fisheries Team – Superior Office

Background

From November 2023 through September 2024, Wisconsin Department of Natural Resources (DNR) completed the Year-1 post-construction monitoring tasks per the Project's approved Monitoring and Data Management Plan (MDMP) and Quality Assurance Project Plan (QAPP). While the QAPP described the post-construction monitoring requirements and procedures, the MDMP stated the Metric Targets for the engineering and fish surveys. The QAPP also described documentation and records requirements, of which are fulfilled by this post-construction monitoring summary.

Summary

Engineering Survey

Wisconsin DNR's engineering contractor completed the As-Built survey in fall 2023. No problems were reported during the survey, and the Metric Target of "Channel slope, channel width, and jump height consistent with design plans" was met. Draft As-Built drawings were submitted to DNR in November 2023, and following review and revision in December 2023 and January 2024, DNR submitted the final drawings to the Great Lakes Fishery Commission in January 2024.

Fish Survey

The Year-1 survey was originally scheduled for fall 2023, based on the Project's anticipated mid-June 2023 start date and subsequent late-August 2023 end date. However, the Project commenced in mid-August and ended in mid-October; the Year-1 survey was subsequently rescheduled for fall 2024.

Wisconsin DNR conducted three individual post-construction electrofishing surveys in fall 2024: one upstream, one downstream, and one within the new stream channel at the railroad grade excavation site (Figure 1). The surveys were conducted with backpack electrofishing units or a barge electrofishing unit (Figure 2). The upstream and downstream stations are DNR's rotational stations that were established by DNR's Lake Superior Fisheries Team prior to the Project's planning and completion. The station within the new stream channel was established after the Project was completed.

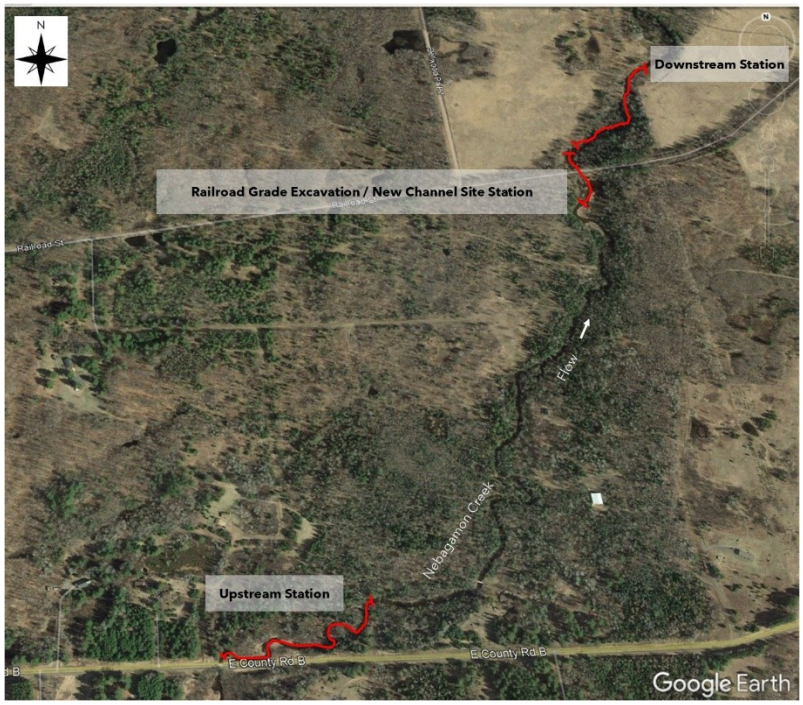

Figure 1. Nebagamon Creek fish survey location map.

Figure 2. Wisconsin DNR Fisheries crew conducting fish surveys in Nebagamon Creek in September 2024. A: new stream channel, B: existing stream channel downstream from new channel (Photo credits: Wisconsin DNR)

Trout species were found at all stations, though with low numbers of individuals. While brown trout was observed at each survey station, rainbow trout was observed only at the downstream station (Table 1). Brook trout was not observed at any station. Smallmouth bass, rock bass, creek chub, and white sucker were the four most abundant species in the surveys. The Metric Target of "Increased downstream and upstream presence, size structure, and relative abundance of coldwater fish species such as brook trout" was partially met in that brown trout was observed in all stations. Brown trout has not otherwise

been observed in DNR's previous surveys. Inversely, brook trout was observed in previous DNR surveys and was not observed in the post-construction survey.

The surveys will be repeated in fall 2025 as part of the post-construction monitoring and again in 2035 as part of DNR's statewide rotation monitoring (Nebagamon Creek is presently on a 12-year survey rotation). Additional surveys will be conducted between 2025 and 2035 as staff and fiscal resources permit. All future surveys at these stations will be used as a proxy to describe the extent of trout and other coldwater species' expansion in Nebagamon Creek.

Table 1. Electrofishing survey summary for coldwater trout species.

	BROWN TROUT		RAINBOW TROUT	
Station	Length Range (inches); Number Captured; Average Length (inches)	Presumed Year Classes	Length Range (inches)	Presumed Year Classes
Downstream	3.3 – 9.3; 8; 7.2	3	2.8[a]	1
New Channel	3.8 – 4.2; 3; 4.0	1	-	-
Upstream	8.2[a]	1	-	-

[a]single individual captured

Photographic Monitoring

Photographic monitoring was conducted at discrete and non-discrete intervals since the Project was completed. DNR maintained its two trail cameras at the excavation/new channel site, one facing upstream and one facing downstream (Figure 3), which recorded photographs at 15-minute intervals. All photographs were submitted to the Great Lakes Fishery Commission, who developed a time-lapse video and published it on its Project web page in July 2024 (https://www.glfc.org/rhp-nebagamon-creek.php). Among DNR's several photograph stations, the top of the eastern embankment was frequently used (Figure 4).

Figure 3. Nebagamon Creek abandoned railroad grade excavation site. A: facing upstream, B: facing downstream. (Photo credits: Wisconsin DNR)

Figure 4. Nebagamon Creek abandoned railroad grade excavation site facing west. (Photo credits: Wisconsin DNR)