Vanguard Chapter – Oakland County Michigan
Paint Creek Woody Habitat Installation – Phase 2

May of 2022

Overview of Phase 2:

The report and photos show the installed Phase 2 in-stream woody debris habitat structures in a section of the Paint Creek that flows through Rochester Hills, Michigan. These pictures were taken in May of 2022, almost a year after installation, to document how the structures survived the winter and the seasonal spring high water events. This report can be compared to a similar one made after the structures were installed in the summer of 2021.

This series of Phase 2 pictures begins at the Tienken Road Bridge, which was the upper limit of our permit, and works downstream. The downstream end of the Phase 2 permit meets the upper limit of our completed Phase 1 project.

In May of 2022, when these pictures were taken, the creek was flowing at a moderate level.

Executive Summary:

All structures are in good condition and performing as designed. There were no breaches along the bank edge for any of the vanes. Some additional rocks buffering the upstream back edge at the bank of one or two vanes might be helpful to assure there are no problems in the future.

A separate spreadsheet has been prepared describing in more detail the current structural status of each structure, as well as the make-up of the creek's substrate near each structure.

General Observations:

- There appears to be significantly more "moss" or stringy algae on all the rocks as well as the log structures than last year.
- There must have been some significant wind events since several trees were blown down over several of our structures.
- There were some very high-water flows since several areas showed sand deposits on normally dry grass. It appears the water bypassed a river curve and flowed across an "Ox-Bow" to a lower section of the creek depositing sand as the levels went down.
- High water also removed several "log jams" we had identified for removal this spring. They are no longer there today.
- Several Vanes had significant silt and sand built up on their upstream edge thereby building back some bank erosion. It didn't take long!

Questions?

Contact Mr. Joe Bruce, Vanguard TU Conservation Chairman.

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Looking upstream across the “Ox-Bow” where the river crossed and deposited sand as it receded back to the natural creek bed.

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A picture of the heavy algae slime found on all the rocks this year.

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Habitat Structure 1 – Logs were placed parallel to the current flow and along the curve in the creek providing a deep hole for fish habitat and bank protection. In this picture you can see some of the underwater logs that were installed in 2021. A large tree has fallen over some of the in-stream structures creating additional in-stream habitat.

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Habitat Structure 2 – Log vanes were installed on an eroding bend just below Structure 1. The large tree above the structures was blown down possibly by the same wind that took down the tree by Structure 1.

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Habitat Structure 3 – An underwater log was installed just below habitat Structure 2. It runs parallel to the creek flow to provide fish habitat. It was also somewhat covered by the fallen tree.

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Habitat Structure 4 – Three vanes were placed in a high erosion area to build up the bank and to create more stream center flow. You can see the silt & sand buildup along the bank they are creating.

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Habitat Structure 5 – A small rock dam just below the third vane was opened in the middle to promote greater center flow. You can still see some remaining rocks on either side. This rock dam removal also helped eliminate the creation of a full sun shallow pool that heated up the water. Note the shoreline silt buildup behind the Vane.

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Habitat Structure 6 – A log structure was installed just below habitat Structure 5, the opened-up rock dam. This log provides in-stream fish cover and runs parallel to the creek flow.

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Habitat Structure 7 – A log structure was installed across the stream flow to provide cover and riffles in a slow flow area. Note the deeper pool that has formed downstream of the log.

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Habitat Structure 8 – Logs were placed in-stream along an eroding bank curve to protect it from further erosion during high water and to provide some in-stream habitat in the deeper pool area that was at the bend. Some drift logs have lodged themselves above the in-stream structure.

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Habitat Structure 8 – Another view of the logs placed in the deeper pool to protect the bank and to provide in-stream habitat.

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Habitat Structure 9 – In-stream logs were anchored to the creek bottom just above the sandbar and deep pool. These logs are just below Habitat Structure 8, and at the top end of another pool to provide in-stream cover.

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Habitat Structure 10 – This vane was installed to protect and build back an eroding bank. This location is just below Habitat Structure 9. The position of this vane also improved the center flow of the creek. Note the significant sand & silt buildup along the bank.

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Habitat Structure 11 – This vane was installed to improve center flow of the creek and to provide in-stream cover just above some riffles and a deep pool.

Habitat Structure 11 – Note the heavy green algae on the rocks and the log.

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Habitat Structure 12 – Several in-stream logs and a vane were installed to protect the bank, with added logs crisscrossing in the pool. The placement of the structure is under the large tree in a deeper pool area to help reduce erosion at its base.

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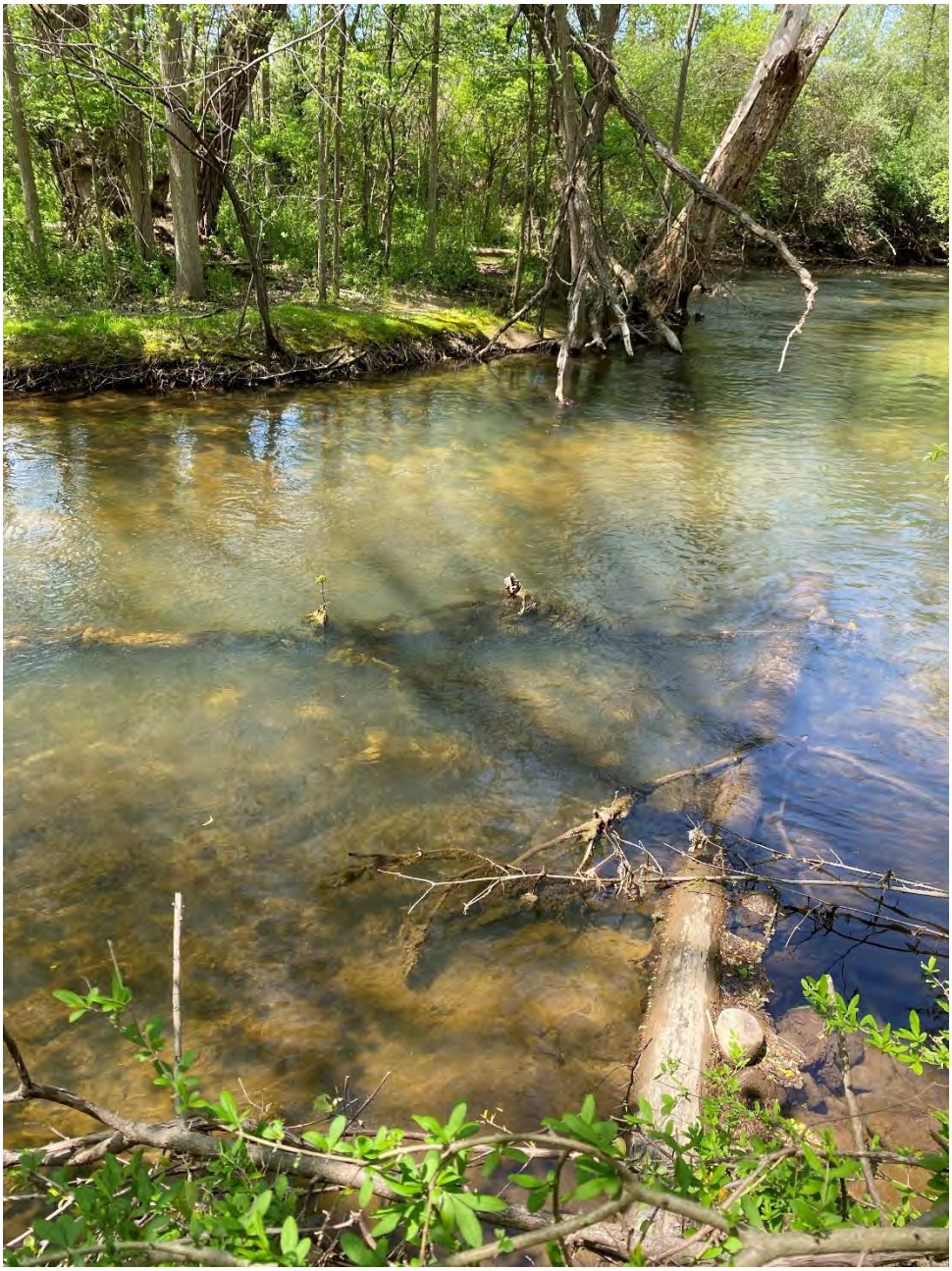

Habitat Structure 12 – Several in-stream logs and a vane were installed to protect the bank, with added logs crisscrossing in the pool that you can see in this picture. The placement of the structure is under the large tree in a deeper pool area to help reduce erosion at its base. Notice the silt build-up at the bank on the upper side of the Vane.

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Habitat Structure 13 – This vane was installed to help direct center flow and to protect and build back an eroding bank. Since there was also a developed pool, several other underwater logs were placed here to establish additional deeper water habitat. You can see an older rotting tree fell to the right this winter creating more in-stream habitat along the bank.

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Habitat Structure 13 – This vane was installed to help direct center flow and to protect and build back an eroding bank. Since there was also a developed pool, several other underwater logs were placed here to establish additional deeper water habitat.

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An upstream look at Paint Creek where Structures 12 and 13 are located on the right bank.

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Habitat Structure 14 – A vane was placed to protect the bank under a large tree and to direct more center flow. Another underwater log was placed just below the vane, parallel to the flow, to provide additional in-stream cover.

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Habitat Structure 15 – An underwater log running parallel to the flow was placed on the far shore of this large deep pool as part of Phase 2's work. The log was covered by a fallen tree this winter making for a nice holding spot in the pool below some riffles.