



Grays Harbor Conservation District & Grays Harbor Stream Team Macroinvertebrate Citizen Science Sampling Program

Annual Monitoring Report

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Photo by Kelsey Hunter

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2.0 Abstract

The Grays Harbor Stream Team Macroinvertebrate Citizen Science Program fosters scientific appreciation of the local watershed while providing accessible, resume-building opportunities for community members. Volunteers collect and identify aquatic macroinvertebrates and use them for biological indicators of stream health, gaining hands-on skills relevant to environmental careers. Data collected through the program is made publicly available, allowing community members to explore watershed conditions and track trends over time.

From May through August 2026, volunteers sampled macroinvertebrates and water chemistry at four accessible sites: East Fork Wildcat Creek, Lower Sylvia Creek, Mill Creek, and River Mile 24 of the Chehalis River. B-IBI scores across the sites ranged from 24-33, indicating poor to fair biological conditions. These results contribute to a growing dataset that can support continued citizen science, community engagement, and understanding of local watershed health over time.

3.0 Introduction and Background

The purpose of the Grays Harbor Stream Team Citizen Science Macroinvertebrate Program is to foster scientific appreciation of local watersheds while providing accessible, resume-building opportunities for community members. It will document the trends in B-IBI, water temperature, and pH at the sampled sites to allow community members to understand and follow trends in

the health of their watershed. Data will be used strictly as a way for community members to understand the health of their watershed, not for regulatory purposes.

Background

The Lower Chehalis Watershed, Water Resource Inventory Area (WRIA) 22, is the focus of the Grays Harbor Stream Team Macroinvertebrate Citizen Science Program. The Lower Chehalis Watershed faces pressures of urbanization, increasing stormwater runoff and degrading stream health. A 2001 TMDL study identified the need for volunteer monitoring (Ecology 2001) within Grays Harbor County. This program meets that need while offering hands-on scientific training to the community. This watershed plays host to anadromous runs of chinook, coho, and chum salmon, winter steelhead, cutthroat trout, and rainbow trout. Chehalis River tributaries remain as some of the highest producing salmon streams in Washington State. In addition, juveniles migrate downstream in the spring, taking advantage of essential side channels and their cool water, immense food sources, clean gravel, and well-oxygenated water. This project will engage volunteers in assessing stream health through benthic macroinvertebrate sampling, offering hands-on science experience.

Previous studies

The incentive for this citizen science program emerged from two sources. The 2001 Grays Harbor Bacteria TMDL study first identified the need for volunteer water quality monitoring when it documented how increasing urbanization and stormwater runoff were degrading Chehalis Basin stream health. This technical recommendation was later amplified by the Grays Harbor Conservation District and Stream Team's recognition of dual community needs: the absence of baseline biological data in developing watersheds and limited STEM education access for underserved populations. While no additional formal studies directly informed the program's design, these foundational findings established both the scientific justification and social value for implementing macroinvertebrate-based community science.

Study area

The Lower Chehalis Watershed, WRIA 22, is part of Chehalis Basin, Washington's largest watershed. The Lower Chehalis Watershed is largely contained within Grays Harbor County in Southwest Washington State (Figure 1). It follows the Chehalis River and its tributaries while flowing through areas dominated by agricultural use and urbanized areas until pouring into Grays Harbor.

Sampling will be conducted at four sites within Grays Harbor County. Two of these sites are privately owned by landowners with positive working relationships with GHCD. The remaining two sites are public lands owned by the city and state (Figure 2).

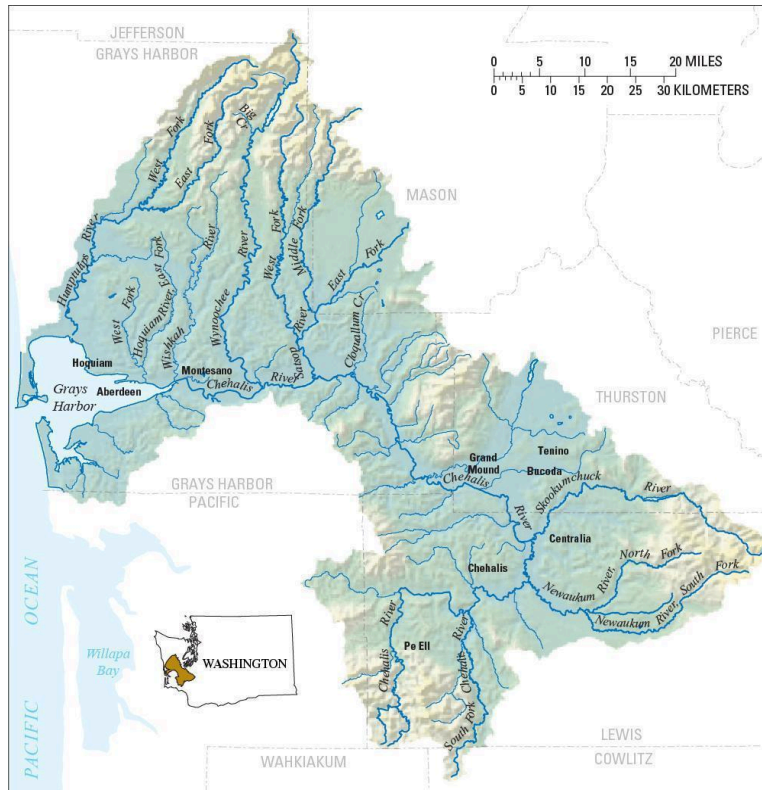


Figure 1. Map of the Chehalis River Basin. It follows the Chehalis River and its tributaries while flowing through areas dominated by agricultural use and urbanized areas until pouring into Grays Harbor.

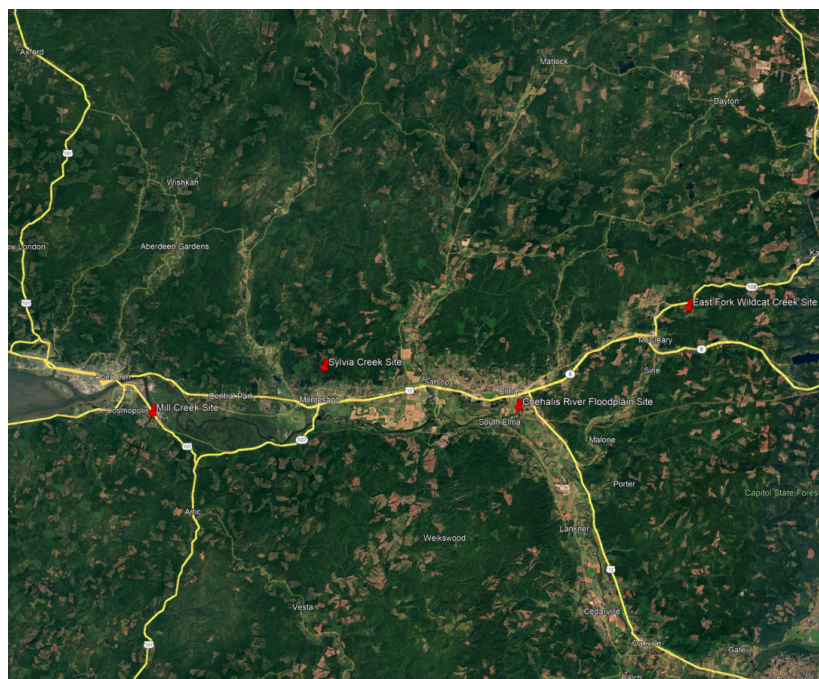


Figure 2. Map of larger study area. The study area, highlighting the four sample sites selected for data collection. The sites are 1) East Fork Wildcat Creek Site, 2) Chehalis River Floodplain Site, 3) Mill Creek

Site, and 4) Sylvia Creek Site. These sites represent distinct hydrological and ecological conditions within Grays Harbor County.

The East Fork Wildcat Creek Site serves as the reference site for this program. It is located northeast of McCleary at latitude 47° 04 '22.93" N and longitude 123° 14' 18.00" W. Human activities include sustainable small-scale tree farming and active restoration projects led by GHCD, featuring native vegetation plantings to accelerate ecosystem recovery.

The Sylvia Creek site is located at Lake Sylvia State Park in Montesano at latitude 46° 59 '51.61" N and longitude 123° 36' 06.43" W. Human activities include enduring logging-era geomorphic alterations, though contemporary restoration efforts by Washington State Parks, including culvert replacements and invasive reed canarygrass removal, aiming to accelerate ecological recovery while accommodating recreational trail use.

The Chehalis River Floodplain site is located south of Elma at latitude 46° 59 '18.21" N and longitude 123° 23' 49.14" W. Human activities include intensive dairy farming and hay production, though conservation efforts, such as bioengineered bank stabilization, aim to mitigate agricultural impacts like erosion and nutrient runoff.

The Mill Creek site is located in Cosmopolis at latitude 46° 56 '56.84" N and longitude 123° 46' 17.02" W. Human activities have heavily influenced the creek through urban runoff, historical mill operations, invasive species establishment, and channel modifications.

4.0 Methods

4.1 Macroinvertebrate Sampling and Identification

4.1.1 Sampling Procedures

We began by selecting a stream reach containing riffle habitats, avoiding areas with heavy sedimentation, during pre-season site visits. To collect samples, a Surber sampler was placed firmly on the stream bottom, facing upstream, in the furthest downstream riffle. All large substrates within the Surber sampler frame were manually inspected and scrubbed underwater to dislodge attached organisms. After thorough removal of biota, the substrate was discarded downstream of the sampling area to prevent cross-contamination. A garden weed tool was used to vigorously disturb the substrate within the sampling frame to a depth of 10 cm for a standardized duration of 60 seconds. This process was repeated seven times within the sampling area. Two 1-ft² Surber net samples were collected from each of four distinct riffles (8 total samples) following standardized reach protocol. Samples were spaced evenly throughout the reach, moving upstream to avoid sediment disturbance. If fewer than four riffles existed in the reach, additional samples were taken from existing riffles to reach a minimum of eight total samples.

The net was carefully lifted and rocks or woody debris that entered the net during sampling were inspected and scrubbed thoroughly while submerged within the water and net. Then, the cleaned substrate was discarded back into the stream. Residual invertebrates from the net and cod end interior were thoroughly rinsed into the processing tub using stream water. Large mineral and organic matter inside the tub were inspected and rinsed to remove all organisms and discarded into the stream. Sample containers were filled with a small amount of isopropyl alcohol. Organisms in the sample tub were removed using forceps and transferred into the sample bottle.

4.1.2 Habitat Assessment Procedures

A standardized habitat assessment was completed using a pre-made field sheet that includes all required metrics. This assessment captures stream dimensions (wetted width, bankfull width, and depth measurements), riparian cover (measured with spherical crown densiometer), and basic water quality parameters. The water quality portion includes air and water temperature recordings, and pH measurements. All assessment categories include clear instructions and predefined response options (when appropriate) on the field sheet to ensure consistent data collection.

4.1.3 Identification Procedures

The composite sample was transferred to a 8-cell ice cube tray and cells were randomly selected using Google's random number generator. The contents of the randomly selected cell were examined and identified until reaching 100 organisms or all organisms were identified, whichever came first. New taxa in unchecked cells were documented for completeness assessments and the proportion of the tray examined was recorded for density calculations.

4.1.4 Data Analysis

Macroinvertebrate identification occurred within one week of the sampling event. Macroinvertebrates were identified to family-level using dichotomous keys and microscopes. These identifications were used to score each site using Washington State Benthic Index of Biotic Integrity (B-IBI) numerical calculations and narrative scores. All data was stored on digital spreadsheets and printed out hard copies. A community Newsletter and an ArcGIS story map were made to share this data with community members.

Table 1. Project Schedule

Task	Timeline
Volunteer Training	April 2026 - April 2027
Field work	May 2026 - August 2027
Identification	May 2026 - August 2027
Draft Annual Report to ECY Project Manager	September 2026
Annual Report	October 2026

4.1.5 Quality Assurance

Quality assurance methods aimed at addressing defects proactively. The QAPP, SOP, and their supporting documents were followed to our best ability during sampling. Quality assurance methods included QAPP, SOP, and supporting document adherence, performing duplicate sampling within each riffle, equipment calibration and pre-checks, and coordinator involvement in all processes of sampling and assessment.

4.2 Data Management

All specimens from each sample were identified to family and tallied up in a Google Doc spreadsheet. B-IBI scores were calculated for each sample and stored in the same spreadsheet. Written notes from the field are kept in a labeled binder.

All of our data is stored on a shared drive maintained by the Grays Harbor Conservation District and in hard copies in our office at 150 Technology Lane, Suite 201, Elma, Washington 98541. We uploaded the 2026 data to an ArcGIS Storymap and into a newsletter and published to our website for community members to access.

4.3 Method Changes during the study

Method changes during this study:

- Removed the use of a 500-µm sieve during sampling as it was crushing the organisms which made them harder to identify. Also, it was not necessary since any large substrate could be manually inspected and removed from the sample tub.
- Used smaller sample jars instead of 1-L sample jars as those were unnecessarily large.

- Field sorting consisted of preserving all of the specimens found in each sample, instead of using the randomized subsample method. This was more time efficient and allowed the identified samples to meet the 100 organism goal.
- Samples were pre-identified in the office before volunteers identified them during the identification events. This was done because volunteers tended to crush, break off pieces of, or lose organisms which made accurate identification difficult.

5.0 Results and Discussion

5.1 B-IBI Calculations

The data shows that the sampled sites throughout Grays Harbor have fair and poor biological water quality (Figure 3 & Table 2). B-IBI scores ranged from 24 to 33 across the four sampling sites. Mill Creek and Lower Sylvia Creek each received a score of 24, indicating poor biological conditions. East Fork Wildcat Creek received a score of 28, indicating fair biological conditions, while the Chehalis River received the highest score of 33, also indicating fair biological conditions.

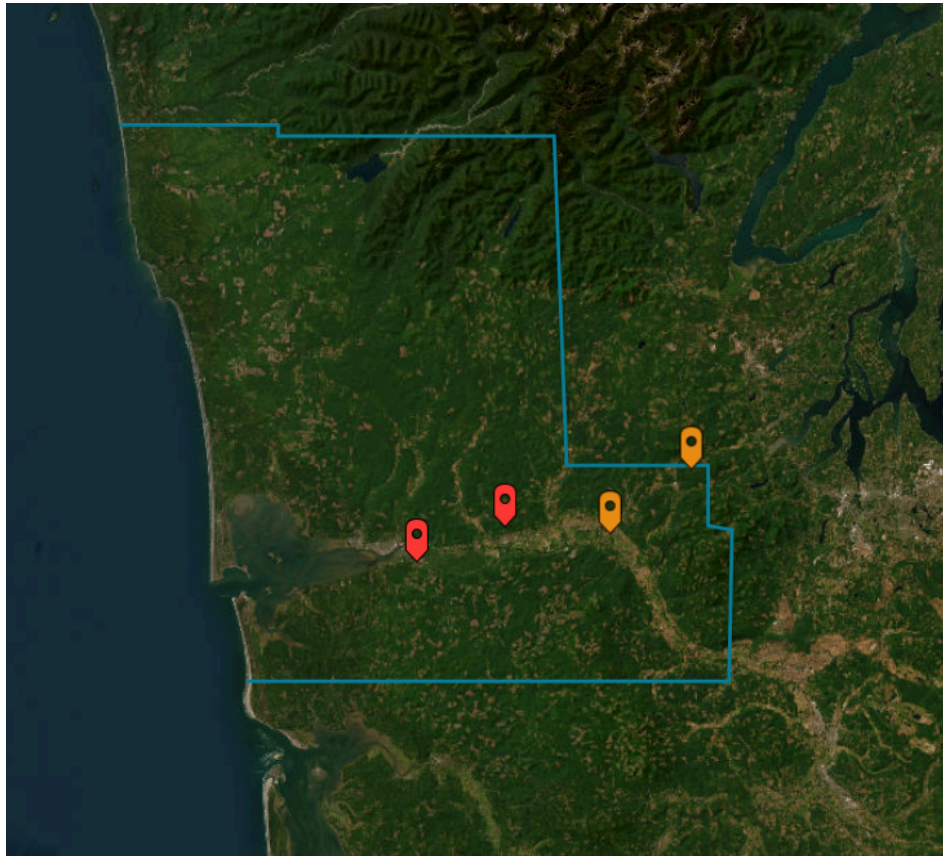


Figure 3. Data for each of the four (4) 2026 macroinvertebrate sampling citizen science program sites. Mill Creek and Lower Sylvia Creek each received a B-IBI score of 24, classifying them as having poor biological conditions (red). East Fork Wildcat Creek received a score of 28, classifying it as having fair biological conditions (orange), while the Chehalis River received the highest score of 33, also classifying it as having fair biological conditions (orange).

Table 2. Data for each of the four (4) 2026 macroinvertebrate sampling citizen science program sites. B-IBI scores across the four sampling sites ranged from 24 to 33. Mill Creek and Lower Sylvia Creek received scores of 24, indicating poor biological conditions, while East Fork Wildcat Creek and the Chehalis River received scores of 28 and 33, respectively, indicating fair biological conditions. Site specific B-IBI scores are presented in Table 2.

Site Name	B-IBI Numerical Score	B-IBI Narrative Score
East Fork Wildcat Creek	28	Fair
Chehalis River RM 24	33	Fair
Lower Sylvia Creek	24	Poor
Mill Creek	24	Poor

5.2 Water Temperature

Water temperatures varied across the four sampling sites, ranging from 10.3°C at East Fork Wildcat Creek to 19.0°C at RM 24 of the Chehalis River. East Fork Wildcat Creek was sampled in May, Lower Sylvia Creek in June, the Chehalis River in July, and Mill Creek in August. Site-specific water temperature measurements are presented in Table 3.

Table 3. Temperature data for each of the four (4) 2026 macroinvertebrate sampling citizen science program sites. Water temperatures ranged from 10.3°C to 19.0°C across the four sampling sites, with the lowest temperature recorded at East Fork Wildcat Creek and the highest at RM 24 of the Chehalis River.

Site Name	Temperature (°C)
East Fork Wildcat Creek	10.3
Chehalis River RM 24	17.0
Lower Sylvia Creek	19.0
Mill Creek	17.8

5.3 Water pH

Water pH measurements were collected during each 2026 sampling event. During the May 9 sampling event, East Fork Wildcat Creek had a pH of 7.15. During the June 27 sampling event, Lower Sylvia Creek had a pH of 7.0. During the July 18 sampling event, RM 24 of the Chehalis River had a pH of 7.2. During the August 8 sampling event, Mill Creek had a pH of 6.8 (Table 4).

Table 4. pH data for each of the four (4) 2026 macroinvertebrate sampling citizen science program sites. Water pH ranged from 6.8 to 7.2 across the four sampling sites. East Fork Wildcat Creek had a pH of 7.15, Lower Sylvia Creek 7.0, RM 24 of the Chehalis River 7.2, and Mill Creek 6.8

Site Name	pH
East Fork Wildcat Creek	7.15

Chehalis River RM 24	7.00
Lower Sylvia Creek	7.20
Mill Creek	6.80

5.4 Habitat Assessment

The habitat assessment at East Fork Wildcat Creek showed greater than 75% vegetation cover, with large woody debris (LWD) present within the wetted width and a variety of native and invasive plant species present. Bank stability scores were 3 on the right bank and 5 on the left bank. Stream depth was 4.3 cm, wetted width was 3 m, and bankfull width was 5 m.

The Chehalis River site had less than 25% vegetation cover, with no LWD present within the wetted width and a variety of native and invasive plant species present. Bank stability scores were 4 on the right bank and 2 on the left bank. Stream depth within the sampling area was 5.8 cm, with a wetted width of 52.8 m and a bankfull width of 110 m.

The Lower Sylvia Creek site had less than 25% vegetation cover, with LWD present within the wetted width and a variety of native and invasive plant species present. Bank stability scores were 2 on the right bank and 4 on the left bank. Stream depth was 8.3 cm, wetted width was 3.7 m, and bankfull width was 8.8 m.

The Mill Creek site had between 25–75% vegetation cover, with LWD present within the wetted width and a variety of native and invasive plant species present. Bank stability scores were 3 on the right bank and 1 on the left bank. Stream depth was 7.2 cm, wetted width was 5 m, and bankfull width was 5.2 m.

Table 5. Vegetation data of the habitat assessments of the four (4) 2026 macroinvertebrate sampling citizen science program sites. The East Fork Wildcat Creek site had greater than 75% vegetation cover, with LWD present within the wetted width and a variety of native and invasive species present. The Chehalis River site had less than 25% vegetation cover, no LWD within the wetted width, and a variety of native and invasive species present. The Lower Sylvia Creek site had less than 25% vegetation cover, with LWD present within the wetted width and a variety of native and invasive species present. The Mill Creek site had 25–75% vegetation cover, with LWD present within the wetted width and a variety of native and invasive species present.

	Most Common Vegetation Present			
Site Name	Native Species:	Invasive Species:	Vegetation Cover (%)	LWD (y/n)
East Fork Wildcat Creek	Western Sword Fern, Salmonberry, Ladyfern, Skunk Cabbage, Cascara, Red Huckleberry, Red alder, Western Red Cedar, Western Hemlock, Trailing Blackberry, Salal	<i>Ranunculus repens</i> , Nipplewort, Purple foxglove	>75	y

Chehalis River RM 24	Alder, Big Leaf Maple, Thimbleberry, Fireweed, Red Elderberry, Hemlock, Beaked Hazelnut	Himalayan Blackberry, Knotweed, Purple Foxglove	<25	n
Lower Sylvia Creek	Cascara, Western Red Cedar, Salmonberry, Western Skunk Cabbage, Giant Horsetail, Bracken fern, Thimbleberry, Goats beard	Reed Canary grass, Himalayan Blackberry, Geranium roberta, <i>Ranunculus repens</i> , Knotweed	<25	y
Mill Creek	Salmonberry, Sword fern, Lady fern, Skunk cabbage, False lilly of the valley, Cascara, Douglas Fir, Red Elderberry, Vine maple, salal, pacific willows, thimbleberry, Nootka rose, Alders, Western Red Cedar, Osoberry, Grand clover, Pacific Ninebark	Himalayan Blackberry, Morning glory, english holly, Herb Robert, Buttercup, English Ivy, Grasses	25-75	y

Table 6. Physical characteristic data of the habitat assessments of the four (4) 2026 macroinvertebrate sampling citizen science program sites. All sites had clear water turbidity and a reach length of 10 m. East Fork Wildcat Creek had bank stability scores of 3 for the right bank and 5 for the left bank, with a stream depth of 4.3 cm, a wetted width of 3 m, and a bankfull width of 5 m. The Chehalis River site had bank stability scores of 4 for the right bank and 2 for the left bank, with a stream depth of 5.8 cm within the sampling area, a wetted width of 52.8 m, and a bankfull width of 110 m. Lower Sylvia Creek had bank stability scores of 2 for the right bank and 4 for the left bank, with a stream depth of 8.3 cm, a wetted width of 3.7 m, and a bankfull width of 8.8 m. Mill Creek had bank stability scores of 3 for the right bank and 1 for the left bank, with a stream depth of 7.2 cm, a wetted width of 5 m, and a bankfull width of 5.2 m.

Site Name	Water Turbidity	Bank Stability (1-5)		Depth (cm)	Wetted Width (m)	Bankfull Width (m)	Length (m)
		Right Bank	Left Bank				
East Fork Wildcat Creek	Clear	3	5	4.3	3	5	10
Chehalis River RM 24	Clear	4	2	5.8	52.8	110	10
Lower Sylvia Creek	Clear	2	4	8.3	3.7	8.8	10
Mill Creek	Clear	3	1	7.2	5.0	5.2	10

6.0 Conclusions

Results of the 2026 data support the following conclusions:

Even though the East Fork Wildcat Creek sampling site is the most pristine, in terms of human impact, it did not receive the highest B-IBI score. Sampling at this site revealed fair biological water conditions, high water temperatures for this time of the year, and a water pH that fell within the healthy range for freshwater. Potentially, these findings could have been influenced by the sustainable small-scale tree farming and the active restoration projects led by GHCD, featuring native vegetation plantings to accelerate ecosystem recovery.

Sampling at the Lower Sylvia Creek Site showed poor biological water conditions, water temperatures above those of core summer salmonid habitat, and a water pH that fell within the healthy freshwater range. Potentially, these findings could have been influenced by the logging-era geomorphic alterations to the site, the active dam just upstream, and the ongoing contemporary restoration efforts by Washington State Parks, including culvert replacements and invasive reed canarygrass removal.

Sampling at the Chehalis River site showed fair biological water conditions, water temperatures above those of core summer salmonid habitat, and a water pH that fell within the healthy freshwater range. Potentially, these findings could have been influenced by the intensive dairy farming and hay production that has historically and presently occurred upstream, at the site, and downstream of the site and the ongoing conservation efforts, such as bioengineered bank stabilization.

Sampling at the Mill Creek site showed poor biological water conditions, water temperatures above those of core summer salmonid habitat, and a water pH that fell within the healthy freshwater range. Potentially, these findings could have been influenced by urban runoff, historical mill operations, invasive species establishment, channel modifications, the active dam just upstream, and contemporary restoration efforts by the City of Cosmopolis and local volunteer-based groups, including invasive species removal and native riparian habitat establishment.

Continuing with annual sampling will be essential to drawing comprehensive conclusions from this sampling program (Embry 2026). Continued sampling will allow us to build a long-term dataset, perform trend-analysis and determine if the possible influences listed above are contributing to the findings. Without continued sampling we would not be able to accurately determine biological stream health, shifts in populations and health, identify macroinvertebrate abundance increases or decreases, and filter out multi-year weather cycles.

7.0 Recommendations

Results of the 2026 data support multiple recommendations. First, the continuation of sampling these sites to be able to collect enough data for trend-analysis. Continuing to sample the existing sites will allow us to build a long-term dataset and identify trends over time. Second, the addition of more sampling sites throughout Grays Harbor County so that whole-picture trends can be drawn. Adding sites throughout Grays Harbor County would help us better understand watershed conditions across a broader geographic area. Finally, the addition of wetland sampling sites to provide a complete picture of the watershed's biological integrity. Sampling both streams and wetlands is recommended because they represent distinct yet connected components of a watershed's hydrology and ecology, each harboring unique macroinvertebrate communities that respond differently to environmental stressors. Assessing only streams misses the crucial bioremediation and storage functions provided by wetlands.

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Appendix A Macroinvertebrate Identification Data and B-IBI Calculations

A.1 Macroinvertebrate Identification Raw Data

Table A.1.1. East Fork Wildcat Creek Site Macroinvertebrate Identification Raw Data.

Species - Common Name	Species - Scientific Name	Number Encountered
Flat Head Mayfly	Haptageniidae	81
Yellow Stonefly	Perlodidae	12
Little Green Stonefly	Chloroperlidae	12
Golden Stonefly	Perlidae	8
Green Rock Worm	Rhyacophilidae	3
Rock Snail	Semisulcospiridae	13

Table A.1.2. Lower Sylvia Creek Site Macroinvertebrate Identification Raw Data.

Species - Common Name	Species - Scientific Name	Number Encountered
Small Minnow Mayfly	Baeidae	27
Flat Head Mayfly	Heptageniidae	16
Little Brown Stonefly	Nemouridae	5
Finger Net Caddisfly	Philopotamidae	5
Net Spinner Caddisfly	Hydropsychidae	18
Tube-Maker Caddisfly	Polycentropodidae	2
Case Maker Caddisfly	Limnephilidae	1
Hover Fly	Syrphidae	1
Riffle Beetle	Elmidae	12
Crayfish	Cambaridae	1
Rock Snail	Semisulcospiridae	29
Aquatic Earthworm	Lumbriculidae	7

Table A.1.3. Chehalis River RM 24 Site Macroinvertebrate Identification Raw Data.

Species - Common Name	Species - Scientific Name	Number Encountered
Small Minnow Mayfly	Baetidae	5
Flat Head Mayfly	Heptageniidae	15
Prong Gill Mayfly	Leptophlebiidae	1
Square Gill Mayfly	Caenidae	2
Ameletid Mayfly	Ameletidae	2
Little Brown Stonefly	Nemouridae	3
Pacific Giant Stonefly	Pteronarcyidae	2
Little Green Stonefly	Chloroperlidae	1
Golden Stonefly	Perlidae	2
Net Spinner Caddisfly	Hydropsychidae	8
American Grannom Caddisfly	Brachycentridae	3
Tube-Maker Caddisfly	Polycentropodidae	2
Finger Net Caddisfly	Philopotamidae	3
Saddle Case Maker	Glossasomatidae	2
Non-Biting Midge	Chironomidae	5
Biting Midge	Ceratopogonidae	4
Riffle Beetle	Elmidae	2
Scud	Gammaridae	1
Rock Snail	Semisulcospiridae	5
Ramshorn Snail	Planorbidae	1
Aquatic Earthworm	Lumbriculidae	4
Hydrzoans	Hydrzoans	3

Table A.1.4. Mill Creek Site Macroinvertebrate Identification Raw Data.

Species - Common Name	Species - Scientific Name	Number Encountered
Small Minnow Mayfly	Baetidae	27
Flat Head Mayfly	Heptageniidae	16

Little Brown Stonefly	Nemouridae	5
Net Spinner Caddisfly	Hydropsychidae	18
Case Maker Caddisfly	Limnephilidae	1
Tube-Maker Caddisfly	Polycentropodidae	2
Finger Net Caddisfly	Philopotamidae	5
Hover Fly	Syrphidae	1
Rock Snail	Elmidae	12
Crayfish	Cambaridae	1
Rock Snail	Semisulcospiridae	29
Aquatic Earthworm	Lumbriculidae	7

A.2 B-IBI Metric Calculation Data

Table A.2.1. East Fork Wildcat Creek B-IBI Metric Calculation Data.

Metric	Description	Value	Units	Score (1, 3, or 5)
Taxa Richness	Total number of distinct families found	6	Families	1
Ephemeroptera Richness	Number of distinct Mayfly families	1	Families	1
Plecoptera Richness	Number of distinct Stonefly families	3	Families	3
Trichoptera Richness	Number of distinct Caddisfly families	1	Families	1
Clinger Richness	Number of distinct Clinger families	1	Families	1
Long-Lived Richness	Number of distinct Long-Lived taxa	2	Taxa	3
Intolerant Richness	Number of distinct Intolerant taxa	5	Taxa	5
Percent Dominant	(Largest single taxon count / Total individuals) x 100	62.79	%	3
Predator Percent	(Total Predator individuals / Total individuals) x 100	24.81	%	5
Tolerant Percent	(Total Tolerant individuals / Total individuals) x 100	10.08	%	5
Total				28

Table A.2.2. Lower Sylvia Creek Creek B-IBI Metric Calculation Data.

Metric	Description	Value	Units	Score (1, 3, or 5)
Taxa Richness	Total number of distinct families found	12	Families	1
Ephemeroptera Richness	Number of distinct Mayfly families	2	Families	1

Plecoptera Richness	Number of distinct Stonefly families	1	Families	1
Trichoptera Richness	Number of distinct Caddisfly families	4	Families	1
Clinger Richness	Number of distinct Clinger families	2	Families	1
Long-Lived Richness	Number of distinct Long-Lived taxa	3	Taxa	3
Intolerant Richness	Number of distinct Intolerant taxa	9	Taxa	5
Percent Dominant	(Largest single taxon count / Total individuals) x 100	21.80	%	5
Predator Percent	(Total Predator individuals / Total individuals) x 100	3.23	%	1
Tolerant Percent	(Total Tolerant individuals / Total individuals) x 100	7.26	%	5
Total				24

Table A.2.3. Chehalis River RM 24 B-IBI Metric Calculation Data.

Metric	Description	Value	Units	Score (1, 3, or 5)
Taxa Richness	Total number of distinct families found	19	Families	3
Ephemeroptera Richness	Number of distinct Mayfly families	2	Families	0
Plecoptera Richness	Number of distinct Stonefly families	4	Families	3
Trichoptera Richness	Number of distinct Caddisfly families	5	Families	3
Clinger Richness	Number of distinct Clinger families	5	Families	1
Long-Lived Richness	Number of distinct Long-Lived taxa	5	Taxa	5
Intolerant Richness	Number of distinct Intolerant taxa	14	Taxa	5
Percent Dominant	(Largest single taxon count / Total individuals) x 100	19.70	%	5
Predator Percent	(Total Predator individuals / Total individuals) x 100	23.70	%	5
Tolerant Percent	(Total Tolerant individuals / Total individuals) x 100	22.40	%	3
Total				33

Table A.2.4. Mill Creek B-IBI Metric Calculation Data.

Metric	Description	Value	Units	Score (1, 3, or 5)
Taxa Richness	Total number of distinct families found	12	Families	1
Ephemeroptera Richness	Number of distinct Mayfly families	2	Families	1
Plecoptera Richness	Number of distinct Stonefly families	1	Families	1
Trichoptera Richness	Number of distinct Caddisfly families	4	Families	1
Clinger Richness	Number of distinct Clinger families	1	Families	1
Long-Lived Richness	Number of distinct Long-Lived taxa	2	Taxa	3
Intolerant Richness	Number of distinct Intolerant taxa	9	Taxa	5
Percent Dominant	(Largest single taxon count / Total individuals) x 100	23.39	%	5
Predator Percent	(Total Predator individuals / Total individuals) x 100	7.26	%	1
Tolerant Percent	(Total Tolerant individuals / Total individuals) x 100	7.26	%	5
Total				24