

United States Department of the Interior

U.S. Geological Survey

USGS Washington Water Science Center

934 Broadway, Suite 300

Tacoma, Washington 98402

(253) 552-1600. FAX (253) 552-1581

<http://wa.water.usgs.gov/>

Reporting period October to December, 2020

To: Keunyea Song, SAM coordinator

Washington State Department of Ecology, Olympia, WA

From: Richard W. Sheibley

Research Hydrologist, Washington Water Science Center, Tacoma, WA

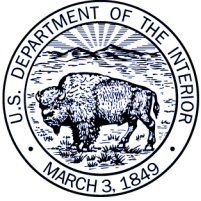
Subject: Quarterly update of USGS level logger maintenance

This memo summarizes and documents the level logger download and maintenance work done during the 1st quarter of water year 2021, from October 1 through December 31, 2020.

During this time period, level loggers from all 33 Puget Small Streams sites plus the two references sites (Griffin and Holder creeks) were downloaded and pulled out of the field. This concluded the data collection for WY2020 at these sites. Data were transferred to network drives in Tacoma, WA to secure data integrity. The sensors at Griffin creek were replaced with a new set to continue data collection in WY2021. This is a sentential reference site for Ecology and will be sampled every year.

In addition to the retrieval of sensors from WY2020 sites, installation began for the WY2021 sites. Of the original list of 33 sites, 15 had to be dropped, 12 were kept and sensors installed, 3 of them the landowners were contacted and did not reply, and 3 still need an initial visit. Of the 15 sites dropped, 3 were replaced with back up sites. Reconnaissance is ongoing and 15 sites are collecting water level data.

Please feel free to contact me at any time with questions about this quarterly summary or any other project related issues.



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March 30, 2021

To: Keunyea Song, SAM coordinator
Washington State Department of Ecology, Olympia, WA

From: Richard W. Sheibley
Research Hydrologist, Washington Water Science Center, Tacoma, WA

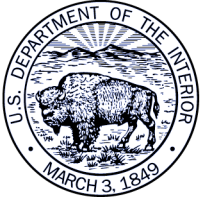
Subject: Second quarter update of USGS level logger maintenance

This memo summarizes and documents the continued site reconnaissance and selection of small stream sites for sampling in Summer 2021. The selection of the 33 SAM small streams has continued throughout the period of January to March 2021. Currently 27 of the 33 sites have been selected and instrumented with level loggers. The remaining 6 sites are either awaiting landowner permission or access due to snowy conditions. It is intended that the remaining 6 locations we be finalized by the end of April 2021. Data downloads will begin April 2021 as well because the first round of loggers will be full by early May 2021.

In addition to the 33 urban gradient sites, the SAM small stream project will sample water and sediment and install level loggers at 2 of Ecology's Puget Sound reference sites for 2021. These sites were recently selected by Ecology and include Griffin Creek, Tumwater Creek, Austin Creek, and Dewato Creek. The SAM small streams project will be sampling Griffin and Dewato creek this summer. Griffin creek is a sentinel site for Ecology's program so we intend to sample that every year as part of the reference sites and also to provide the program with a site with annual data.

Lastly, discussions on the SAM small stream budget for next year and beyond will need to take place soon. During this first year of reconnaissance of a full set of 33 stream sites, **it became apparent that the time needed to complete this task was much more than initially planned.** So far **we have visited 70 stream sites and only have 27 sites finalized.** This has taken a lot of time searching online and in the field for locations, access, and landowner details. We will provide an updated budget estimate to the SAM coordinator in the coming months.

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June 30, 2021

To: Keunyea Song, SAM coordinator
Washington State Department of Ecology, Olympia, WA

From: Richard W. Sheibley
Research Hydrologist, Washington Water Science Center, Tacoma, WA

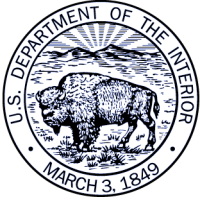
Subject: Third quarter update for WY 2021 SAM small streams work

This memo summarizes and documents the continued work by USGS for the SAM small streams project. From March through June 2021, the selection of the 33 SAM small streams was completed. In addition, level sensors were all downloaded and data stored on the internal servers for future analysis. During the latest round of data downloads, one site went dry. Level sensors were removed and this site was replaced by the next site on the master sample list; Percival Creek near Olympia.

Summer WHM sampling will begin in early July as well as reconnaissance of sites to be sampled next water year.

Lastly, discussions on the SAM small stream budget for next year and beyond will need to take place before the current contract ends in June 2022. During this first year of reconnaissance of a full set of 33 stream sites, it became apparent that the time needed to complete this task was much more than initially planned. We have visited over 70 stream sites to select the 33 used in 2021. This has taken a lot of time searching online and in the field for locations, access, and landowner details. We will provide an updated budget estimate to the SAM coordinator in the coming months.

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October 5, 2021

To: Keunyea Song, SAM coordinator
Washington State Department of Ecology, Olympia, WA

From: Richard W. Sheibley
Research Hydrologist, Washington Water Science Center, Tacoma, WA

Subject: Fourth quarter update for WY 2021 SAM small streams work

This memo summarizes and documents the continued work by USGS for the SAM small streams project. From June through September 2021.

Summer WHM sampling began in early July and at the time of writing this memo, all 33 sites have been sampled and summer WHM work is complete. In addition, reconnaissance of sites to be sampled next water year is well underway and several sites have been instrumented with level loggers. Over the next few months, the SAM 2022 sites will be finalized and water sensors installed.

This summer WHM went well overall, but in the end we had to replace 6 sites because they either went dry (5 sites), or their flow conditions changed (1 impacted by beaver dams). We were able to pick up alternate sites for all of them to have a complete set of 33 WHM sites sampled, however, we will not have water level data for all of these sites.

Lastly, discussions on the SAM small stream budget for next year and beyond will need to take place before the current contract ends in June 2022. During this first year of reconnaissance of a full set of 33 stream sites, it became apparent that the time needed to complete this task was much more than initially planned. We have visited over 70 stream sites to select the 33 used in 2021. This has taken a lot of time searching online and in the field for locations, access, and landowner details. We will provide an updated budget estimate to the SAM coordinator in the coming months.

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