AWRA newsletter
Washington Section
AMERICAN WATER RESOURCES ASSOCIATION

Spring 2021

PRESIDENT'S NOTES

Tom FitzHugh
Stantec Consulting
AWRA-WA Section President

Hello AWRA-WA members. I hope this finds you safe and sound, as the world continues to deal with unprecedented challenges into 2021. I am excited to take the reins as President for 2021, and congratulations to our outgoing President, John Chandler, on a very successful 2020 despite the impacts of the global pandemic. We have kept busy, with three virtual events since December and ambitious plans for 2021.

December 9th, featured AWRA-WA's first-ever virtual networking event. More than twenty students and professionals gathered on-line for the event, which included a panel discussion and a series of small group networking sessions using Zoom breakout groups. Due to the overwhelming positive feedback on this event, we are planning at least two more similar networking events in 2021. More details about the event are on page 5.

A second virtual event was held on December 15th, where we tabulated the 2020 Director election results and introduced the 2021 leadership team. I am excited to report that all of our 2020 directors, listed on the next page, have returned for 2021. Additional AWRA-WA officers include Vice President Jenna Mandell-Rice, Treasurer Stephen Thomas, and Secretary Jessica Kuchan.

The December annual meeting also featured a fascinating presentation by Ashly Mihle of King County on the County's efforts to turn wastewater into biosolids which can then be used as fertilizer. More details about that presentation are on page 3.

Finally, we had a virtual lunch meeting on February 4th, where Robert Sandford of the United Nations University Institute for Water, Environment and Health spoke compelling on the opportunities that currently exist to transform global water policy. More details about the meeting are on page 4.

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While virtual meetings are not ideal, because of the lack of in-person interaction that has always been a key part of AWRA-WA's events, they have been very well attended and allowed us to bring in high-profile speakers such as Robert Sandford who are not local to Washington.

Our plan for 2021 is to continue with virtual events as long as that is necessary for public safety, including dinner/lunch meetings, networking events, and the annual state conference.

The annual conference committee has already started meeting to plan for that event, which as always, will be held in October. Currently we are leaving our options open as far as whether the event will be virtual, in-person, or a combination of formats. We are also beginning to ramp up preparations for the AWRA National Conference, which will be held in Seattle in Fall 2022.

Many thanks to our corporate sponsors who helped us keep all of our events free or low-cost since early 2020, while keeping the Washington Section financially sound through difficult times. We will be again providing at least two fellowships to students in 2021. And as always, I want to thank our membership for sticking with the AWRA-WA during 2020. If you have any questions or comments for the Board please contact me at thomas.fitzhugh@stantec.com.

2021 Virtual Conference: Oct 6-7 2021

Theme: Transboundary Water Resource Management in the Walla Walla, Palouse, Spokane basins and Columbia River Treaty.

The Washington Section of the American Water Resources Association 2021 Conference will be in a virtual format this year. The event will take place October 6 and 7, 2021. The format will be similar to that used in 2020. This year we will highlight the multiple transboundary efforts happening throughout Washington State, from the Walla Walla to the Lake Roosevelt and Spokane areas. There will also be some discussion of the Columbia River Treaty. The conference committee has already started getting speaker commitments! We are also working on expanding the platform to encourage more opportunities for networking with other AWRA-WA folks. For more information on the 2021 conference, you can contact Katherine Ryf at KRyf@landauinc.com or Stan Miller at samillerh2o@comcast.net.

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Jessica kuchan

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December 15, 2020 Members Meeting Summary

By Jessica Kuchan, Confluence Law

Ashley Mihle, King County Bios0lids Program – Speaker for AWRA-WA

The AWRA-WA members meeting on December 15, 2020, included an address from 2020 President John Chandler, an address from incoming President, Tom FitzHugh and presentation on King County's Biosolids Loop Program by Ashley Mihle.

John Chandler provided the members with an overview of the Washington Section's 2020. John explained that despite the impacts of the unprecedented pandemic, the Washington Section broadened engagement through virtual events and prepared to host the national conference in 2022. The Washington Section has continued to focus on long term planning including supporting fellowships and investing in providing members with learning opportunities. John explained that the Board has continued to focus on engaging the membership on committees and additional nominations for board members. John introduced and gaveled in the Board of Directors for 2021.

Tom FitzHugh, the incoming President, re-introduced himself to the membership. Tom has been on the Board for four years. He is a Water Resources Scientist with Stantec Consulting, working primarily in water resources planning and reservoir operations modeling. Tom previously worked for the Nature Conservancy and the U.S. Bureau of Reclamation. Tom explained that the goals for the Washington Section in 2021 include more virtual events and preparing for the National Conference in 2022. The Section will also continue to work to create more membership events and engagement.

The feature presentation at the members meeting was provided by Ashley Mihle of King County's Loop Biosolids Program. King County operates treatment plants that process wastewater for nearly two million citizens in King County. The treatment facilities use an anaerobic digester in which microorganisms break down organic material into biosolids. The treatment plants generate at least 10 dump truck loads a day, or approximately 130,000 tons a year, of biosolids. The biosolids are then used as a soil amendment because it is rich in organic matter. The Washington State Department of Ecology requires that the biosolids be used on farms, forests and in gardens, with certain restrictions. King County refers to its Biosolids product as Loop because it is a renewable resource that returns carbon and nutrients to the soil. In addition to capturing biosolids through the wastewater treatment, King County also captures biogas for renewable energy and reclaimed water that is then used for irrigation.

Starting in the 1970s, King County's Loop Biosolids Program began with forestry partners, including the Mountain to Sounds Greenway, and then with agricultural users to create the "loop" of applying biosolids as soil amendment. Currently, 74 percent of King County's biosolids are used on agricultural lands in Eastern Washington, 2 percent is used for compost and 24 percent is used for forestry. King County, in collaboration with Washington State University, has over 25 years of data from farmers using biosolids. The studies have found that biosolids provide many benefits to the soil, including releasing nitrogen, improving soil water holding capacity and improving root mass and plant growth. In addition to the soil benefits, the program offsets climate impacts; effectively taking 9,000 cars off the road, and has allowed farmers to use less or no fertilizer on their lands.

CWU Student Chapter Update

By Joe Petralia, Chapter President

The winter quarter has been productive for the AWRA-CWU student chapter. Members have been involved in regular membership meetings, event planning, and some members have submitted applications for the AWRA-WA fellowship. CWU's student chapter is comprised of graduate students in the geology program, and our members are working on diverse thesis topics. These topics include hydrogeology and geochemistry in the Upper and Lower Yakima River Basins, the geomorphic effects of dam removals on the Elwha River, spectral properties of organics living on snow and ice, and large wood and groundwater interactions at Taneum Creek. We have discussed plans for a speaker series related to hydrology in the Yakima River Basin, as well as a field trip for this upcoming spring quarter.

Feb 4, 2021 Dinner Meeting – Robert Sandford: A Transformational Moment: 21st Century Global Water Policy in a Post-Pandemic World

By Patrick Vanderberg, Seattle Public Utilities

Bob Sandford, Global Water Futures Chair in Water and Climate Security at the United Nations University Institute for Water, Environment and Health.

On February 4th, WAAWRA hosted Robert Sandford of the United Nations for a virtual lunchtime presentation. Bob Sandford, "The Winston Churchill of Water", holds the Global Water Futures Chair in Water and Climate Security at the United Nations University Institute for Water, Environment and Health. In this capacity Bob was the co-author of the UN Water in the World We Want report on post-2015 global sustainable development goals relating to water. He is also lead author of Canada in the Global World, a new United Nations expert report examining the capacity of Canada's water sector to meet and help others meet the United Nations 2030 Transforming Our World water-related Sustainable Development Goals.

His talk, called "A Transformational Moment: 21st Century Global Water Policy in a Post-Pandemic World", discussed the state of our global water policy before and during the COVID-19 pandemic, and mused on the potential futures we might realize. He started with some examples of how specific countries were addressing their deficiencies in water policy before the pandemic. Australia, for example, rolled back a number of environmental laws, and as a result are experiencing worsening climate disasters such as rampant wildfires. Europe, however, has had somewhat more success in crafting water policy to combat climate change. The political whiplash of the past 5 years or so, however, have made the narrative for the US somewhat less evident. However, he explained that the Biden administration can help correct course in the US by investing in infrastructure, updating water-related legislation, and gather more data to enable higher quality analysis and modeling. He also reminded us that "one crisis does not end just because another arrives", and explained that while there was a 10% decrease in carbon emissions in the US in 2020 precipitated by the pandemic and subsequent economic slowdown, emissions still increased due to the flywheel effect (once it starts, it takes enormous power to stop) and feedback loops (more warming leads to more emissions and vice versa) of climate change.

Mr. Sandford then turned his expert gaze to the future and discussed the potential timelines our planet faces. It's well known that climate change will have impacts that will reverberate over the entire globe. He explained this even more by connecting the importance of preserving Arctic carbon sequestration. There is three times more carbon sequestered in Arctic permafrost than in all the forests on Earth, and if warming continues on its current trend, the Arctic will at some point be releasing more carbon to the atmosphere than the entire US at full industrial capacity. He then offered his opinion on our best mindset to bring to this challenge. He stressed that we can't act as if it's too late to do anything and that our best and most cost-effective approach to restoration is to lean into the Earth's natural restorative powers. By protecting the oceans, forests, and topsoil, we stand the best chance to weather and hopefully reverse the worst effects of climate change.

December Virtual Networking Event

Tom FitzHugh, Stantec Consulting

On December 9, 2020, AWRA-WA held a virtual networking event for students and early career professionals in or interested in the water resources field. The event was sponsored by the AWRA-WA Mentorship Program. It was attended by about 25 people, split between students, early career professionals, and experienced water resources professionals in a variety of fields. The first part of the event consisted of a panel discussion on career experiences and advice, with three panelists: Annika Fain of Fain Environmental, Tom Martin of PUD No. 1 of Clallam County, and Dylan Ahearn of Herrera Environmental Consultants. Questions posed by other participants were addressed by the panel on topics such as how each panelist got into their particular career field and what qualifications and skills were most useful for them in making the most of their career. The second part of the event was a virtual networking session held using Zoom breakout groups. Attendees were split into groups of 2-3 to chat with other attendees for 5-10 minutes a session. The virtual nature of the event allowed it to be attended by both Washington State members and at least two people living outside Washington, from Montana and Pennsylvania. Positive feedback was received on this event, so AWRA-WA is planning to hold at least two more events of this type in 2021.

Virtual Dinner Meeting March 25, 2021 6 PM (Register here)

Capital and Financial Planning for Utilities in the Face of Economic Uncertainty

Alex Shannon

Alex Shannon is Vice President and Director of WSP's water practice in the Northwest Pacific district. In this role, he is responsible for leading a team solving some of the area's most challenging problems. His technical background is in finance and economics, and most recently served as HDR's National Water Economics Lead. Alex specializes in helping utilities make complex financial and capital planning decisions, using custom models and project prioritization methods. His presentation will focus on how Covid-19 is impacting water, wastewater, and stormwater agencies' financials and how to weather the continuing storm. The presentation will focus on strategies to manage spending and projects and include a deep dive into prioritizing projects in a way that makes sense. He'll talk about how to have more dynamic and "living" plans to meet today's demands for flexibility with all of the pressures that agencies face. Finally, he will discuss capital planning in the context of affordability and financial sustainability. Register online for FREE at https://www.waawra.org/event-4219352

2021 WA-AWRA Student Fellows Announced

By Stan Miller, Principal – Northwest Inland Water Resources

Congratulations to the 2021 WA-AWRA Student Fellows! As was expected during this trying academic year there was a drop in the number of applicants for the fellowship, from ten in 2019-20 to four this year. Fortunately, we received some very strong proposals, both from Central Washington University and the University of Washington. At their meeting on Monday March 1, 2021 the Board of the Washington Section of the AWRA voted to award three $2500 fellowships for the 2020-21 year. This year the awards go to:

- Ashlee Abrantes: "Utilizing Environmental DNA as an Index for Freshwater Conservation and Management"
- Rachel Fricke: "Employing Mobil Applications to Assess Human Benefits From and Risks To Water Resources"
- Sam Fixler: "Investigation of Channel Morphology and Groundwater Connectivity at Taneum Creek, WA."

In addition to the cash award the students will receive a professional membership in the national association. Ashlee and Rachel attend the University of Washington in the School of Aquatic and Fisheries Biology. Sam is doing graduate work in Geology at CWU.

2020 AWRA Student Fellows

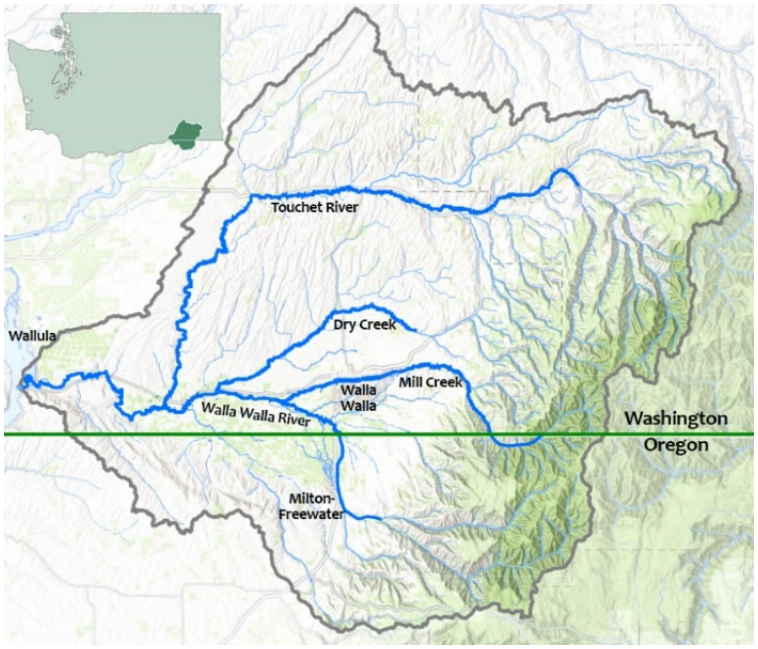
Alyssa Demott Long-term geomorphic effects of the Glines Canyon Dam removal on the Elwha River, WA, USA

Hisham Eldardiry Adaptive Reservoir Operation in the Transboundary Nile River basin

Ravi Appana Improving the Representation of Groundwater Dynamics in Regional Hydrologic Models

Strategic Planning for Water Management in the Walla Walla Basin

By Amanda Cronin, AMP Insights



The Walla Walla basin at the WA-OR Border
Credit: WA Dept of Ecology

Soon after pioneers started using what would become some of Washington's oldest water rights in the 1860's, allocation of water among people became a central theme of the Walla Walla Basin. Water management has been challenging in this unique basin straddling Washington and Oregon as long as the Valley's water users can remember. The Walla Walla River and its tributaries regularly slow to a trickle and, before a 2000 agreement with major irrigators, the Walla Walla River regularly went dry in the summer. Lack of instream flow in the mainstem and tributaries continue to impede recovery of critical fish species, including Endangered Species Act (ESA) listed bull trout and steelhead and reintroduced spring Chinook. At the same time, agricultural irrigators can regularly be short on water and even water rights with relatively senior priority dates can be curtailed or are not available for irrigation. Given that many of the Basin's cities and towns are located in floodplains (including the City of Walla Walla), flooding has caused significant property damage in the winter months, most recently in a major flood event in 2020. Climate change further stresses water supplies as the low-elevation Blue Mountains become more rain dominated, the timing of runoff changes and low summer flows worsen and winter precipitation events become more intense. While there have been significant efforts to improve water management, Basin partners and the Washington State legislature have recognized the need for a more targeted effort to address water management.

In the Basin, a broad coalition of stakeholders and co-managers has taken on the ambitious task of developing a strategic plan for water management for the next thirty years. The effort, dubbed "Walla Walla Water 2050", brings together water users and managers on both sides of the border of Oregon and Washington. This group of diverse stakeholders has had just over a year to come together (all virtually) to craft a plan for water resources management which is due to the Washington State legislature in June of 2021. The highly collaborative process is driven by the consensus-based Strategic Plan Advisory Committee, consisting of representatives from agriculture, environmental, local, state and tribal state government. Also informing the development of the plan are a number of working groups including; Data, Studies and Monitoring Work Group, Ecological Function Work Group, Water Supply Needs Working Group, Implementation Work Group and Land Use Work Group all of which have met virtually over the course of 2020 and early 2021 to discuss issues related to water management.

Currently, the group is considering a range of potential strategies to address instream and out of stream water needs and the aquatic habitat needs of critical species related to, floodplain and riparian habitat, water quality, land use and water resource management. Potential strategies range from restoring and protecting floodplain and riparian land to removing fish barriers and from managed aquifer recharge, water rights acquisition to agricultural best management practices. The Strategic Plan is complimented by a parallel process called the Bi-State Flow Study which is considering options to improve flows in the mainstem Walla Walla River via a pump exchange with the Columbia River and/or major storage reservoir. The Walla Walla 2050 process is supported by a group of consultants led by Cascadia Consulting, including AMP Insights and Northwest Land and Water. Walla Walla Water 2050 is a public process and online meetings are easy to join. More information:

https://www.ezview.wa.gov/site/alias__1962/37597/walla_walla_water_2050_workgroup.aspx

Efforts to Address Instream Flow in the Walla Walla Basin

By Sarah Dymecki, Washington Water Trust

Touchet River, Walla Walla Basin
Photo: Sarah Dymecki: WWT

The Walla Walla Basin has long suffered from insufficient streamflow in the Walla Walla River and its two main tributaries, the Touchet River and Mill Creek. Water demand continues to increase due to agricultural and community development, altering the quantity, timing, and quality of streamflow in the basin. In past years, sections of the Walla Walla River, lower Touchet River, and Mill Creek have been dewatered and temperatures remain high throughout the critical summer irrigation season when flows are at their lowest. ESA-listed Steelhead, Bull Trout, and reintroduced Spring Chinook lack quality migration corridors and habitats as extreme channelization and disconnection of floodplains has greatly altered the historic system. The most widely accepted minimum instream flow prescriptions for the Basin were identified by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) in 2011 to not only support these critical fish species, but maintain healthy ecological function. As more flow remains instream, fish species can travel farther upstream to high quality habitat, water temperatures stay cooler, floodplain functions improve, and rivers become more braided leading to decreased flood energy.

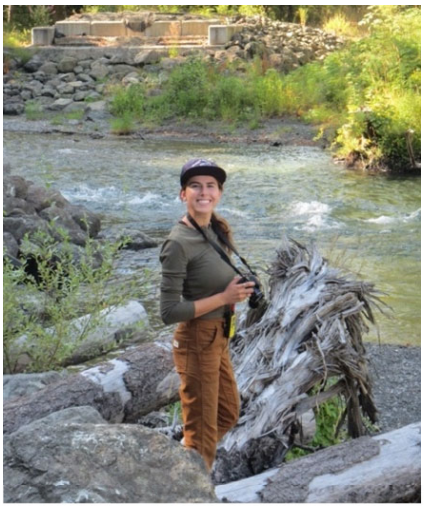
Over the last year, a wide-ranging group of stakeholders has met under the Walla Walla Water 2050 strategic planning effort to address water management within the Basin. One of the main strategies of the Plan is to increase streamflows in the Walla Walla mainstem, Touchet River, and Mill Creek to help address these ongoing issues. Using the minimum instream flow prescriptions identified by CTUIR as a target, the group has identified a variety of methods to increase flows in the Basin over the next 30 years. One of these is temporary or permanent instream water transactions through the WA Trust Water Rights Program. Among the many who successfully use this program to benefit flows in the mainstem and its tributaries are CTUIR, the Walla Walla Watershed Management Partnership (WWWMP), the Department of Ecology, National Fish and Wildlife Foundation (NFWF), Walla Walla County Conservation District, cities, and irrigators. Washington Water Trust (WWT) has been a partner in these efforts, finding creative solutions for both landowners, fish, and rivers through temporary and permanent water transactions, with their first instream flow acquisition in the Basin in 2001.

With the support of CTUIR and NFWF, WWT has developed a specific strategy to continue this work throughout the Basin. Focused on water leases and acquisitions, WWT aims to increase streamflows through voluntary agreements with landowners in order to achieve environmental, wildlife, and economic benefit. In the 20 years since their first Basin transaction, WWT has worked with willing landowners to successfully shepherd 13 projects through the Trust Water Rights Program in this area. These efforts have left approximately 2,150 acre-feet and 14.6 cfs of water instream in the Walla Walla River, Touchet River, and Mill Creek. WWT has since widened their strategy to increase streamflow in the basin to incorporate floodplain reconnection and habitat restoration. By incentivizing late season water leases and early season irrigation within the floodplain, water transactions can add instream flow during the most critical months and address the ongoing fish passage, habitat, and water temperature problems within the Basin.

As important as it may be, instream flow is just one piece of the watershed that needs improvement in the next 30 years. Climate change and future development will only exacerbate low flows, flood events, channelization, and lower fluvial and riparian habitat quality. WWT will continue to work towards increasing protectable instream flows in the basin, but it is very clear that these transactions must create resiliency across many levels. The Walla Walla Water 2050 Strategic Plan offers WWT, and all partners involved, the ability to continue addressing these factors under one umbrella.

Long-term geomorphic effects of the Glines Canyon Dam removal on the Elwha River, WA, USA

Alyssa DeMott, Central Washington University Graduate Student and 2020 AWRA-WA Fellowship Recipient



After decades of planning, one of the largest dam removal projects in the world began on the Elwha River in 2011. Two large dams were emplaced on the Elwha in the early 1900s, and both dams underwent incremental removals from 2011 to 2014 as a part of the major river restoration project. The restoration project aimed to repair the damaged riparian ecosystem in hopes of providing aquatic species, like salmon, with the pristine habitat they had before the dams were constructed. My research focuses on the geomorphic changes that occurred on the middle reach of the Elwha after the upstream Glines Canyon Dam was removed. Though previous researchers have examined the geomorphic effects of the dam removal on the middle reach of the Elwha River in the years during and immediately after the dam removal (East et al., 2018; Free, 2015; Ritchie et al., 2018), the longer-term impacts had yet to be examined. Because dam removals are becoming more and more common, it is important to understand the long-term geomorphic impacts of dam removals on alluvial rivers. After all, aren't we curious if a river does indeed return to a more "natural state" post-dam removal? With this study, I aimed to quantify the geomorphic changes that have occurred on the Elwha River from 2012 to 2020 to better understand how a river evolves after a dam removal. I focused on four main parameters: large wood, channel sinuosity, channel braiding, and sedimentation.

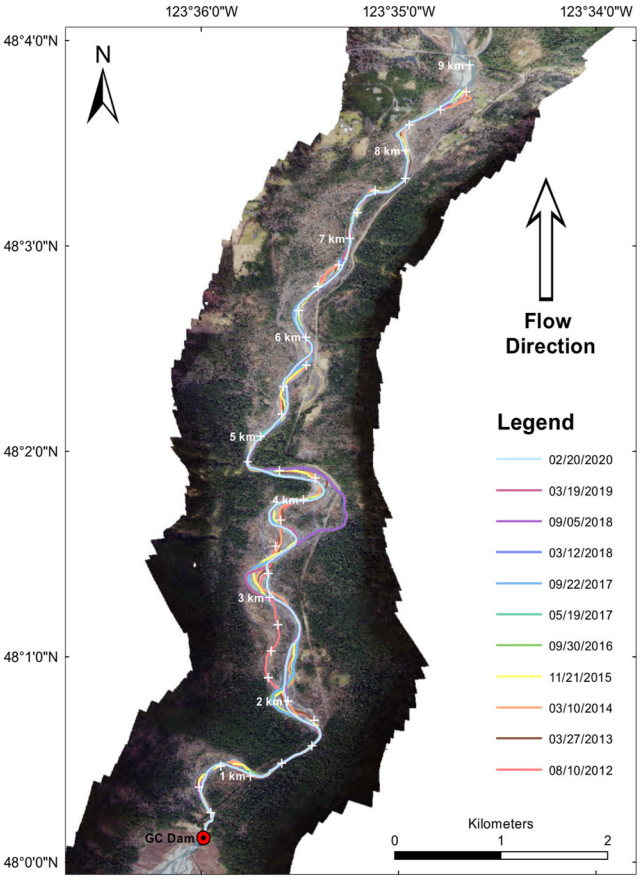


Figure 1. Digitized main channel sinuosity lines for each date mapped overlain on a 2020 GigaPan image of the middle reach of the Elwha River. GigaPan image from Andy Ritchie/USGS.

To analyze the changes in these parameters over time, I utilized high-resolution GigaPan imagery that was acquired by Andy Ritchie of the USGS during multiple low-elevation flights along the river corridor from 2012 to 2020. I digitized individual logs and logjams over the study period to identify changes in large wood, mapped the main channel over time to understand sinuosity, and mapped secondary channels to examine changes in channel braiding (fig. 1). Pebble counts were also completed in the field to better understand how sediment size distribution has changed on the middle reach since the dam removal, and to identify if there are still changes in sediment size happening today.

Though this project is still in progress, the image analysis and initial pebble counts have yielded some interesting preliminary results. Individual log quantity on the middle reach of the river was at its lowest point at the beginning of the study period in 2012, but then peaked in 2013. After 2013, the individual log quantity decreased, and quantities dropped steadily from 2017 to 2020; individual log quantity had almost returned to its 2012 value by 2020. In contrast, by quantifying logjam area on the river from 2012 to 2020, I found that the sum of logjam area values (total area covered by jams) was at its lowest in 2012, but steadily increased throughout the study period, reaching its highest value in 2020. These two trends tell us that after an influx of logs on the river early in the dam removal process, the river mobilized and reworked these individual logs to form logjams. As jams were established on the river, individual logs were recruited to the existing jams, allowing them to grow larger in size over time. The decrease in individual logs over time is consistent with this recruitment mechanism. As logjams

form, individual logs are recruited to existing jams, thus reducing the number of "free logs" while increasing the area of logjams. These findings are also consistent with past studies which found that logjam growth occurred in the middle reach as logs were transported from upstream (Leung et al., 2019).

Main channel sinuosity on the middle reach was at its lowest value at the beginning of the study period, but increased over time, peaking in 2017. After 2017, however, main channel sinuosity decreased and after leveling out from 2018 to 2019, the sinuosity plummeted again. Interestingly, though the 2020 sinuosity was relatively low compared to most of the study period values, it did not return back to its 2012 sinuosity. The main channel is still more sinuous than it was before the dam removal; however, until future analysis is completed years from now, it is difficult to tell if the main channel has reached a new equilibrium that is more sinuous than before the removal, or if sinuosity will continue to decrease in the future.

Similar to sinuosity, channel braiding was at one of its lowest points at the beginning of the study period in 2012 but increased significantly during the dam removal process in 2013. After 2013, channel braiding decreased and leveled-out for much of the study period. In the fall of 2016 and 2017, channel braiding decreased slightly, but this is likely attributed to extremely low discharge values that occurred when the GigaPan images were captured. In general, channel braiding was relatively consistent from 2014 to 2020, suggesting that perhaps the river established a new equilibrium for channel braiding, one that is slightly more "braided" than before the dam removal.

A comparison of sediment size distribution trends from this study and a 2015 study reveals some interesting trends. When plotted with 2012 and 2014 sediment distribution data from Free (2015), the 2020 sediment distribution curve plotted between the 2012 and 2014 curves at all compared study sites. In 2012, before the initial sediment release from the dam removal, sediment size on river bars was generally coarser. In 2014, after an influx of sediment that eroded from the former upstream reservoir, sediment size was generally much finer. The intermediate sediment size distribution in 2020 suggests that while some of the fine sediment deposited from the reservoir in 2014 was likely removed from the bars over time, some of this sediment may have remained and mixed with the coarse sediment that was observed in 2012.

Though data analysis from this study is still in progress, we can already see some interesting geomorphic trends in the parameters studied. Many of these trends suggest that the river may be approaching a new equilibrium with a more complex and sinuous channel, and a mixed sediment distribution. It is possible, however, that the river may still be evolving. Future analysis will be needed to identify if the changes observed in this study are the establishment of a new equilibrium for the middle reach, or if the river will continue to evolve geomorphically.

Acknowledgements

I would like to thank AWRA-WA, Geological Society of America, Northwest Scientific Association, and Central Washington University for funding my research and allowing me to pursue this project. I would also like to thank my advisor, Lisa Ely, for her continued support with this project. My project would not have been possible without the imagery of the Elwha River provided by Andy Ritchie of the USGS, as well as the permit I was granted by the National Park Service to conduct my fieldwork in Olympic National Park. Lastly, I would like to thank my field assistants, Tucker Jensen and Trent Adams for their help in the field.

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THE AWRA NATIONAL CONFERENCE IS COMING TO WASHINGTON IN 2022!!!

We are excited to announce that AWRA-WA will be hosting the AWRA Annual Water Resources Conference in 2022. The date and venue have not been finalized yet, but the event is anticipated in early-November of next year in Seattle or vicinity.

WE NEED THE SUPPORT OF OUR MEMBERSHIP TO MAKE THIS A SUCCESS!

The best way to help is by leading or joining the various Committees.

Committees
Technical Program Committee
Finance Committee
Technical Field Trips Committee
Exhibits Committee
Student Activities Committee

If you have any questions or would like to be a part of this planning effort, please reach out to the Conference Planning Committee Chairs **by April 22, 2021**:

Rabia Ahmed (rahmed@greeneeconomics.com)

Felix Kristanovich (felixk@windwardenv.com)

(Note that if you have already communicated your interest to the Conference Planning Committee Chairs in response to the announcement made in March of 2020, please contact us again to confirm if you are still interested and the Committee you would like to be part of.)

American Water Resources Association, Washington Section
P.O. Box 2102
Seattle, WA 98111-2102

(Change service requested.)

Special Thanks to Washington Water Trust and Associated Earth Sciences, Incorporated for word processing support on this newsletter.

2021 MEMBERSHIP / CHANGE OF ADDRESS FORM

(↖ please circle, as appropriate ↗)

Annual membership in the state chapter costs $35.

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