

A photograph showing a large beaver and several smaller beaver kits in a dark, enclosed space, likely a den. The beaver is lying down, and the kits are huddled together. The background is dark and textured, possibly wood or stone.

Methow Beaver Project

Partnering with beavers to adapt to climate change and its predicted impacts.

Greetings Beaver Believers,

This spring, the MBP team has begun in-stream work on our WA Dept of Ecology Streamflow Restoration in Wildfire Impacted Streams project. This project has been in the planning and permitting phase for two years and now the real restoration work is ON. Wooohoooo! We are targeting 7 (of the far too many) streams impacted by the 2014 Carlton Complex Fires and 2015 Okanogan Complex Fires, in hopes that this low-tech, low-cost woody structure and beaver reintroduction restoration approach will be more widely adopted and applied to many more degraded streams in our area and in our sister watersheds of the Upper Columbia River.

Loup Loup Creek Streamflow Restoration

In April, we jumped into a reach of Loup Loup Creek and began placing wildfire-killed wood into the stream to add structural and hydrological complexity back to the system. This large reach of Loup Loup Creek, a tributary of the Okanogan River, is being restored in partnership with a private landowner and WA Dept. of Natural Resources owned land. Replacing woody structure in the wildfire impacted stream slows water down, spreads it out, allows it to sink into the ground, stores it longer as groundwater, and slowly releases it with gravity through our dry late summer and early fall to increase late season base flows. We observed positive results right away! The woody structure immediately began to slow stream flow and forced a change of flow direction in new and complex pathways connecting water to dry parts of the channel and long abandoned floodplain.

Reintroducing structural complexity into a simplified and degraded stream channel jumpstarts natural stream evolution cycle to move towards greater complexity- what we might call “messiness”. Mother nature thrives on messiness, which actually builds resilience in a natural system. (Maybe this will help us all not feel so bad about putting off the spring cleaning in our messy homes, we are just making them more resilient. Right? Might have to work on that analogy).

We expect woody structure additions in degraded streams like Loup Loup Creek to help reconnect streams with their floodplains; by putting natural small wood structure in the way of water, we can capture sediment to raise the elevation of our degraded stream beds, push more water onto floodplains, and start restoring essential but long absent habitat functions. These seasonal functions include extended water storage of spring high flows for the benefit of local ecosystems throughout summer and fall, as well as to downstream biological communities, including us humans, year-round.

So far, we've implemented over a ½ mile of streamflow restoration treatment on Loup Loup Creek. As the habitat continues to improve, we will reintroduce beavers into this historically beaver occupied stream reach to improve and expand our woody structure restoration efforts. See the photos below for a before and after small wood structure addition comparison in one small reach

of Loup Loup Creek.

And a HUGE thanks to Aaron Boley's crew at Three Rivers Arbor Care for providing expert saw work and tree climbing services for this effort!



Loup Loup Creek Before



Loup Loup Creek After

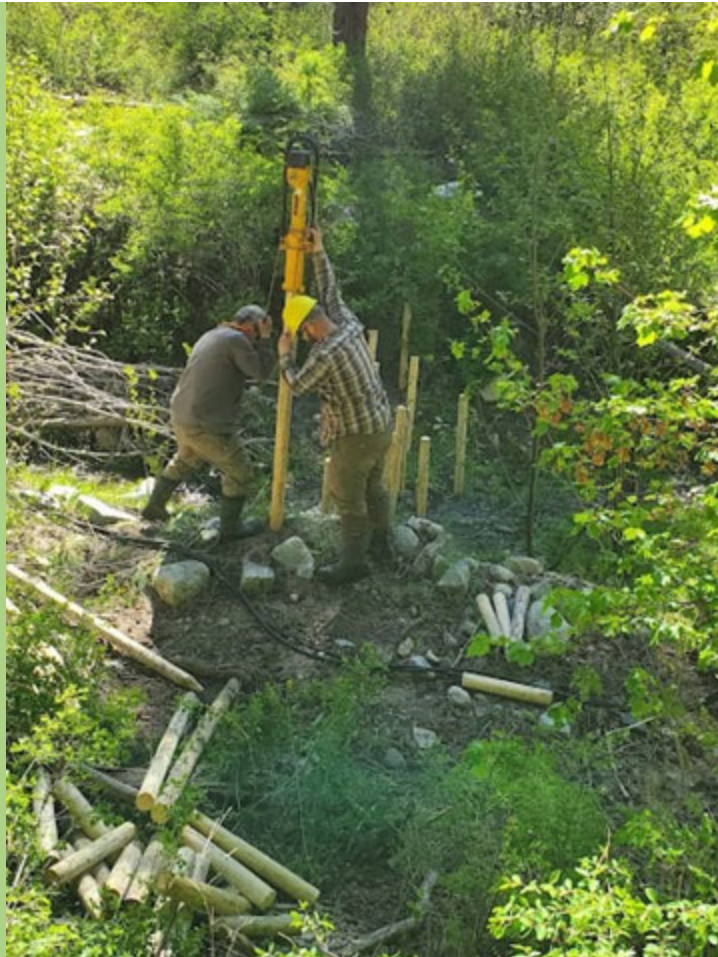


Aaron's team and MBP staff

Texas Creek Small Wood Structure Restoration

In May, we worked in Texas Creek building post-assisted BDAs (beaver dam analogs) to slow down and spread out water in this small, high-gradient stream. This will store it for later release in summer and fall when water typically has become more scarce downstream. Texas Creek has severe and lasting damage from the Carlton Complex fires and subsequent flooding and debris flows following extreme summer thunderstorms right after the fires. Texas Creek is one of our most challenging sites for stream restoration for all the factors listed above.

Building BDAs is tough work, but in the end, it is incredibly rewarding. First, we rely on the hard work of the crew from Methow Natives, LLC to pound untreated wood posts in a zigzag line across the stream channel. These folks provide the expertise and practiced muscle necessary to move the handheld, low impact, yet heavy equipment and operate the 90-pound hydraulic post pounder over their heads and in constantly varying stream substrates and conditions, no small task.



Once the posts are pounded, we tightly weave conifer boughs into the post line to mimic the semi-permeability of a natural beaver dam. See the photos below, noting the change in surface water storage. We've built a series of over 20 BDA structures within about a mile of stream habitat, with opportunistic small wood placement treatments in between.

Aaron Boley's arborist crew worked with us at this site too, climbing overgrown and mistletoe-infested Douglas Fir trees to provide wildfire thinning of low branches which can become ladder fuels to move ground fires into the forest canopy. Ladder fuels in the form of low branches on mature trees but also, and even more responsible, the sapling trees in the understory of mature conifer stands, can lead to the devastating crown fires and stand replacing fires we have been seeing more frequently over the last decade. Wildfire thinning also provides our essential BDA building materials which are primarily fir boughs for weaving our beaver dam-like structures that slow water down, capture sediment and nutrients, and provide a starting structure for beavers to work off when they do return to the creek.

We also had INCREDIBLE and much needed help from our FABULOUS volunteer

crew for intensive material gathering, weaving, and wood loading days. If you would like to get involved in this kind of work, please reach out via email and we will happily sign you up for an incredibly rewarding workday in a stream that needs your helping hands!



Texas Creek Before: (narrow channel of surface water)



After: (Widening of surface water being stored and sinking into the ground for slower return downstream)

We've been in the planning and permitting stages of this much anticipated project since 2020 and it is so gratifying to finally get our boots wet, our gloves dirty, our muscles tired, and faces smiling with satisfaction and wonder!



A BIG shout out to Jason Shira, our licensed hydrologist at Aspect Consulting, helping us monitor changes in groundwater with in-stream piezometers that will help show how effective these streamflow restoration strategies are.

In Gratitude

We would like to recognize our AMAZING funding and landowner partners that have made this project possible with a \$1.3 million streamflow restoration and conservation easement grant from the Washington State Department of Ecology, which includes support for restoration in 7 streams over 3 years, a long-term monitoring effort to determine the success of the project, applicability for other stream restoration projects, and access to public and private lands, as well as protection of restoration actions in perpetuity in the form of conservation easements on nearly 500 acres of private lands. In addition, we are receiving significant financial and/or collaborative support from the Wildlife Conservation Society (funding innovation, implementation, and education and public outreach around new restoration practices), as well as Seattle City Light, the Washington Department of Fish and Wildlife, and the Washington Department of Natural Resources.

We have more stream restoration workdays scheduled for the coming months- stay tuned for further updates and photos. If you use social media, you can see more frequent updates and photos by following our Facebook, Instagram, and Twitter accounts.

If you are in the area and interested in getting involved, please get in touch by emailing us at methowbeaverproject@methowsalmon.org.



MBP Volunteers 2022

One last exciting tidbit of news: the film crew for Mutual of Omaha's *Wild Kingdom* visited us for two days in mid-May to document some of the critical beaver restoration work we're doing. If you grew up watching nature documentaries on TV, then you are likely familiar with the old *Wild Kingdom* program. It's one of the pioneering TV programs in the nature documentary genre. They are now producing a TV series called "Protecting the Wild" (slated for release in January 2023) and one of the episodes is dedicated to beaver conservation and habitat restoration. The crew was able to film our current restoration work in Texas Creek, along with one of our completed restoration sites from the Spring of 2020 at the Twisp River floodplain, and at an active beaver pond complex near Winthrop. Our MBP crew and fish biologist partners (from the Methow Salmon Recovery Foundation or MSRF) and WDFW Wildlife Area Manager Brandon Troyer, gave interviews and provided tours of the various sites for the film crew. The program host, Peter Gros, an internationally renowned wildlife educator, even donned a dry suit and went for a snorkel with MSRF Biologist Grace Watson, to look for juvenile salmon that are using habitat created by beavers. We look forward to seeing the final product this coming winter and invite you all to a future screening! Stay tuned.....



Peter Gros and MSRF Biologist Grace Watson



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Partnering with beavers to adapt to climate change and it's predicted impacts.

Greetings Beaver Believers,

As we endure another summer heatwave, we'd like to acknowledge beavers as the climate change heroes they are! Beaver ponds expand the thermo-regulatory or cooling aspects of water during hot weather and significantly reduce surrounding ambient air temperature. Their dams slow water down, keep it around longer as surface and groundwater that would otherwise dry up or run off, and then release it slowly over a longer period of time. This natural water storage provides reliable and essential refugia for all our human and non-human friends alike who rely on freshwater systems. This is especially important as long stretches of unusually hot days are predicted to become more frequent in the future. Beaver habitat building and expansion can be a critical solution, of the many needed, in adapting to our changing climate but we need your help in spreading the word that

Beavers are Climate Heroes!



The MBP team is addressing climate change issues by continuing to make streams more hospitable for beavers by installing low-tech, low-cost woody structure in streams and planting more deciduous vegetation (aka beaver food) impacted by the Carlton and Okanogan Complex fires. Most recently, we jumped in Chiliwist Creek in the Okanogan River watershed to add small wood, post assisted structures, often referred to as beaver dam analogues (BDA's), to slow water down and keep it around longer while helping restore habitat that will hopefully be conducive to beavers in the near future.

We also installed groundwater monitoring wells to gather the data that will help show how woody structure restoration and beaver reestablishment benefits groundwater storage over a short period of time. Our amazing partners include landowners, the Okanogan Land Trust, WA Dept of Ecology, and the Wildlife Conservation Society! Having completed phase 1 of that project, we will jump back in (hopefully into a little deeper water) in October to plant more riparian vegetation to support beavers and other wetland species returning to the site. Learn more about this work below:

Chiliwist Creek Restoration Project

Chiliwist Creek watershed was severely burned in the 2014 Carlton Complex fires and then further damaged by the precipitation events that caused massive debris flows following the fires. Debris flows after wildfire can carry sediment, ash and even boulders and trees down our small mountain streams. Debris flows in small streams often leave a scoured and deeply incised creek in their wake. To assist and accelerate the recovery process, MBP staff hauled, heaved,

and pounded in almost 500 posts to create 30 small wood structures (BDAs) that act as speed bumps for water and sediment. Once the installation of posts was complete, some of our amazing volunteers assisted us with weaving conifer boughs into the structures to create a semi-permeable beaver dam-like structure. These BDAs will slow the water down allowing sediment to settle behind the dams and raise the stream bed elevation back up to its floodplain. At high flows, these structures can help mitigate flooding by forcing water onto adjacent floodplains and dispersing that energy. At low flows in deep summer, these BDAs will slow and store more water in this arid environment and help restore the once amazingly rich riparian habitat for future beaver occupation. During late July, Chiliwist Creek went dry in reaches, which it did not do before the fires when beavers were occupying the reach. We're especially excited to see how the BDA's support natural water storage function over the next year. Fingers crossed that beavers find their way to the site and claim it as their fixer upper project.



Our summer intern, our enthusiastic and dedicated landowner and a volunteer assist with BDA weaving in a severely incised portion of Chiliwist Creek.

Sharing the Beaver Love with the next generation of Conservationists!!!

We had a great time sharing and exploring one of our beaver-based stream restoration projects with the University of Washington's Doris Duke Scholars in early July. If you or someone you know has a rising college student, check out the Scholars program and the amazing academic adventures they have!



Huge Thanks and Tear-y Goodbyes to our Awesome Summer Intern....Katie!!!!



Eight weeks have flown by and MBP regretfully had to say goodbye to another awesome intern, Katie, from Colorado College. During her tenure, Katie gained professional experience helping us build BDA's, surveying stream habitat and evaluating stream water quality, installing and developing groundwater and surface water monitoring wells, rescuing stranded endangered juvenile salmon from drying side channels of the Methow, and taking on any task cheerfully and efficiently! Regretfully, one thing she didn't get to see, or work with, was a live beaver but she learned a ton about them and their important role as a keystone species in our watersheds. We know Katie will do great things with her big ideas, can-do attitude, and curiosity. We wish her the best in future endeavors. We'll miss you, Katie!



Working hard digging a ground water well.



Checking out the soil horizons from a groundwater well.



Katie helping relocate juvenile salmonids in July before a salmon habitat restoration project on a Methow River side channel that included removing the derelict concrete irrigation infrastructure seen in the photo.

Beavers in the News

Given the extreme temperatures over the Western USA this past month, there have been numerous articles about how beavers are **Climate Change Heroes**,

by providing natural air conditioning to the ecosystem and built in resilience during droughts and floods.

How do they do it, you ask? Well, read on...

Beavers are heat wave heroes

<https://www.vox.com/down-to-earth/23273240/heat-wave-beavers-climate-change>

The Beaver Emerges as a 'Climate-Solving Hero'

Dam-building beavers are helping stave off some of the worst effects of climate-driven droughts and floods

<https://www.scientificamerican.com/article/the-beaver-emerges-as-a-climate-solving-hero/>

Golden State Naturalist Podcast. Interview with Emily Fairfax

<https://podcasts.apple.com/us/podcast/beavers-drought-and-wildfire-superheroes-with/id1608442752?i=1000574991211>

Op-Ed: Want to fight climate change and drought at the same time? Bring back beavers

<https://www.latimes.com/opinion/story/2022-07-25/climate-change-beavers-wetland-restoration>

Beavers aren't the only climate hero. A huge HOORAY! to Congress for prioritizing Climate Adaptation in recently passing the Inflation Reduction Act. A HUGE thanks to our partners like Oregon Natural Desert Association for consistently moving the ball forward on ecological restoration and social valuation of functioning ecological systems.

https://www.politico.com/newsletters/playbook/2022/08/08/how-it-really-happened-the-inflation-reduction-act-00050279?utm_source=newsletter&utm_medium=email&utm_content=the%20fascinating%20sometimes%20hair-raising%20story%20of%20how%20the%20%26quot%3BInflation%20Reduction%20Act%26quot%3B%20became%20law&utm_campaign=across%20the%20steppe

Volunteer Methow Beaver Naturalists 2022

In the next month, as weather turns toward Autumn, beavers will begin preparing in earnest for winter. During this crunch time, provisioning winter food stocks becomes **priority 1** and often calls unwanted attention to their presence. We often have beaver conflict calls during this time and if we cannot resolve it with a coexistence solution, may have need for a few beaver relocations. Watch your email for announcements for beaver husbandry and vegetation delivery opportunities at the hatchery.

Site Monitoring

As we revisit previous years' beaver relocation and structure restoration locations, we're always fascinated by what we find, and it's not always beavers. The beauty of stream, wetland, and riparian habitat created and maintained by beavers is that it supports so many other species!!! Different species take advantage of different elements of beaver habitat such as the woody structure used by snakes for hunting or resting or connecting cross creek habitats for small mammals like squirrels or the instream cover that hides baby salmon utilizing the new pools and riffles for food and slow water refuge.



We spotted this Western Terrestrial Garter snake snoozing on one of the new woody structures in the middle of the creek

Celebrate our furriest local Climate Change Heroes and help support beavers in

the Methow or Okanogan River watersheds or your home watershed. Give back to the beavers, a species that gives freely to so many others! Donate to the Methow Beaver Project (<https://methowbeaverproject.org/donate-to-methow-beaver-project/>) or to your local beaver conservation organization to support beaver-based stream restoration, beaver coexistence programs, and relocation of beavers when coexistence is not achievable. Call us to find out more... and Thanks for Reading!



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