Methow Beaver Project

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

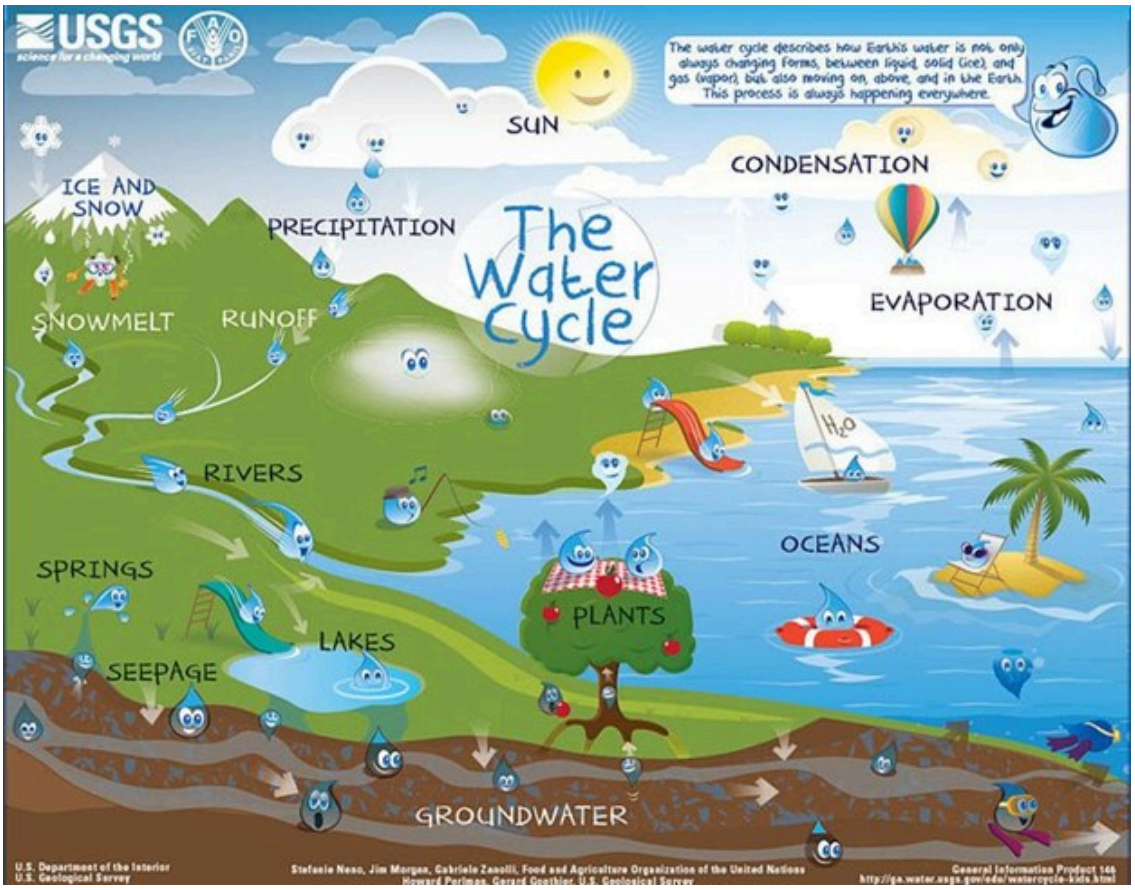
Beavers = Watershed Resilience !

As days lengthen and spring draws ever near, we at MBP encourage you to consider where all that frozen water (aka snow) will end up, how quickly it will disappear, and whether there is anything we can do to keep the precious stuff around longer in our dry, snow dependent region!

Much of the western US depends on snowpack as a primary water source and is directly tied to late season flows in our streams, rivers, and our domestic-use wells. Water is a priority for sustaining our human community but also the entire ecological community we depend on. Chinook, Coho and Steelhead need plenty of cold water flowing in the river to reach their upstream spawning grounds and just as important, juvenile salmon need access to deep, cold pools throughout the summer for rearing. You can imagine how last summer's unprecedented heatwave strained our already beleaguered salmon populations, which already struggle to find suitable rearing and spawning grounds. However, the surface water that sustains our salmon is directly linked to the groundwater that maintains our domestic wells. Our shrinking groundwater reserves are causing wells to dry up, springs to go dry, and irrigation shut offs earlier and more frequently. If that was not heavy enough, droughts and heatwaves make our landscape more prone to devastating wildfires, directly threatening our communities. An average snowpack, as we are fortunate to have this winter,

provides the foundation for critical cold water & late-season flows, however, snowpack is not the only factor determining late summer & autumn stream flow. The average water drop from snow melt has a complex journey through the "plumbing" of our watershed before it leaves the Methow, and we can slow it down. You can use this interactive tool called "River Runner" to follow a single drop of water across the landscape anywhere in the world.

Let's explore the western US water cycle a bit and how it plays out here in the Methow. It snows in the mountains (hopefully a lot) from October-ish to May-ish. As spring days get longer and warmer the snowpack begins to melt and enter our surface and groundwater systems. Sometimes unseasonably warm and sudden spring thaw (like our recent week of high 40 F˚ in February) can lead to rapid snowmelt in the mountains, sending a large pulse of melt-water rushing downstream, threatening homes and infrastructure built within the historic channels and floodplains. Fortunately, we did not have any flooding last week, however we lost a lot of snow cover at low elevations, much of which entered our streams and rivers, heading for the Columbia River & eventually the Pacific Ocean.



Historically, our streams were chock full of structure like beaver dams, fallen dead trees, root balls and substantial aquatic and riparian vegetation. This instream structure acted like speed bumps in a residential neighborhood, slowing the traffic (water) down to a gentle speed and even temporarily parking it in wetlands. Today stream ecosystems are simplified and deliberately straightened throughout our watershed. As shown in the USGS water cycle map, straight and structure-less streams encourage water to move rapidly downstream with unnatural efficiency. Most of our streams and rivers exist in this degraded & channelized state, especially those impacted by beaver removal, timber harvest, roads, development, undermanaged livestock grazing, and most recently, severe wildfire. When streams are straight and lack woody structure, there is nothing to slow snow melt down and spread it out onto the spongy floodplain and wetlands. Late in the summer, when the snowpack in the high country is long exhausted, stream flows drop to extreme lows and even dry up in this current degraded state.

NEWSFLASH…… we can partner with native beavers to moderate this unpredictable weather effect. Millions of beavers once held water on the landscape at a massive scale, but that was before European trappers nearly extirpated them in a brief but devastating fur trapping campaign during the 1800's. Beavers instinctively build dams to deepen water to protect themselves from land based predators like wolves, bears, cougars, and coyotes. Beaver's water storing instincts applied on a large scale naturally de-couples late season base flows from the warming and often unpredictable effects of climate change like early and rapid snow melt. Beaver dam complexes create wetlands that act as giant sponges that can absorb snowmelt during the spring runoff, holding it in reserve, increasing groundwater storage, but then releasing that same water slowly over the course of months which extends and sustains downstream flows late into the dry season until fall rain and mountain snow begins to accumulate once again.

With more beavers throughout our watershed, we might have less to worry about when it comes to the devastating effects of heat waves and drought on our water resources. Increased beaver activity also helps moderate flooding in wetter environments like western WA for the same reasons their dams help in dry environments, acting as speedbumps, slowing water down, storing it on the landscape in floodplain wetlands. We just need to share the landscape with them!

The Methow Beaver Project seeks to capitalize on this beaver partnership potential for increased & natural water storage with all our ongoing projects, from beaver coexistence strategies with local landowners, to relocating beavers from irreconcilable conflict into more tenable stream habitats, to physically installing woody structure in streams in a series of beaver dam analogs (BDA's) in degraded streams throughout the Methow and Okanogan watersheds.

SO, do beavers really save snow? DAM RIGHT they do! And we can help them!

Join us in partnering with beavers and building like beavers to restore watershed resilience! We rely on our enthusiastic corps of volunteers to accomplish our projects, and this upcoming season is no exception. Our project will build instream structures in eight streams in the Okanogan and Methow watersheds and provide exciting, hands-on volunteering opportunities in which you will be able to see results of your restoration actions within minutes. With many of our sites on public land, you will be able to visit these sites for years to come as they continue to dynamically interact with the landscape.

To learn more about the type of structure based stream restoration and beaver coexistence projects we're doing and why, take a stroll through one of our fellow restoration practitioners projects, a recent student voluteer's perspective on beavers, and of course, visit our website.

A video production from the Big Hole Watershed Committee detailing their streamflow restoration project using BDAs in southwest Montana. This project has similar motivations to MBP's own streamflow restoration BDA project, and the people interviewed in the video do an excellent job of explaining:
Holding Back the Snowpack (11:37)

A video recording of Ruthie's "Epiphany". Ruthie is a Westie alumni who spent time in the Methow this past summer as a part of Whitman College's 'Semester in the West' program. Ruthie found inspiration in a visit with the Methow Beaver Project to a beaver and salmon coexistence project site on a Methow River side channel. Check it out:
https://vimeo.com/651794421
(Go to 2:10 to listen to Ruthie's portion, or just listen to all the students' excellent presentations!)

The photo series below shows a few of MBP's recent projects demonstrating how increased in-stream structure (from beavers and humans building like beavers) can improve fish habitat (both complexity & temperature), slow water down and spread it out on floodplains to create spongy wetland storage, and sustain higher base flows later into the dry season with slower water release from increased wetland and groundwater storage:

A narrow, simplified side channel of the Twisp River in July 2020. The wetted side channel is about 3 feet wide and 6 inches deep in a narrow, v-shaped irrigation modified channel.

The same channel in September of 2021 following beaver relocation and successful establishment. The wetted channel is now more than 12 feet wide and over 3 feet deep in many areas and has connected

to other side channels in this historic floodplain of the Twisp River. Habit complexity and connectivity is key for salmon survival and restoration, water storage, and climate resilience.

Pre-restoration condition – June 2020 – armored irrigation diversion, straight, simplified, poor juvenile salmon rearing habitat

Structure Installation – July 2020 – intended to create channel sinuosity through erosion & deposition as well as push high flows onto the adjacent floodplains

First High Flow event after installation - May 2021

Floodplain reconnected and held water while providing juvenile habitat for 6+ weeks – Late April to mid-June 2021

METHOW BEAVER PROJECT

Storing water for the future-one beaver at a time

www.methowsalmon.org

METHOW SALMON RECOVERY FOUNDATION

methowbeaverproject.org

Our email address is:
methowbeaverproject@methowsalmon.org