A Pond of Gold


Lorne Fitch

Storing Water, Naturally

Water ... we can't live without it. No substitute exists for this precious and beautiful resource, which has usually been scarce in the Rocky Mountain West. In the future, the flow of water may decline as our climate becomes warmer and drier. The amount of snowpack in the mountains will be less, melting and runoff will occur earlier in the spring, and stream flow will diminish earlier in summer. By late summer when we need water the most, it may be in short supply.

Many people believe that water will be the new gold of the future. As the reality of climate change becomes ever more apparent, we will need to catch and store water more effectively. We've given water lots of advice, in the form of expensive dams and big reservoirs but is that always the best solution? Likely not. Have we overlooked a natural ally in our efforts to conserve and manage water? Yes, consider the beaver!

There's Liquid Gold in Those Beaver Ponds!

For more than 10,000 years, beaver have been building dams and storing water across the landscape. Historically, millions - tens of millions - of beaver were busy in nearly every watershed across the North American continent. The cumulative effect of their ponds on water storage was enormous. Beaver ponds created diverse and productive habitat for creatures great and small; they contributed to the health of the land. Let's look at some of the many natural services and benefits provided by these original engineers.

Beaver Ponds – Overflowing with Riches

$$ in the Bank

The work of beaver provides an impressive list of valuable goods and services for humans - including cleaner sources of domestic water, more reliable water for irrigation and livestock, forage, opportunities for watching wildlife, hunting and fishing.

Speed Bumps for Streams

Beaver dams and ponds check the velocity of streams and dissipate water energy laterally. This decreases the risk (and costs) of major flooding and slows erosion.

Pulsing with Life

Beavers create ponds and wetlands that provide unique habitats for plants, insects, amphibians, fish, songbirds, waterfowl and mammals - including many species not found along the streams. This can enhance the diversity and connectivity of the overall landscape.

Building Riparian Foundations

Sediment captured by beaver ponds broadens stream valleys over time with rich deposits of soil to build diverse and productive riparian zones, wetlands, and meadows. Water tables become higher which creates and maintains a diverse mosaic of vegetation, particularly willows that protect and stabilize stream banks.

Water in the Bank

Beaver ponds store surface water and re-charge ground water. This increases water supply and releases water more steadily throughout the year - especially vital during droughts.

Controlling the Thermostat

Much of the stream water captured by ponds is stored underground in shallow aquifers and may re-enter the channel downstream. This keeps water temperatures cooler in summer and warmer in winter to the benefit of trout and salmon.

Natural Filter for Cleaner Water

Ponds trap and store tons of sediment which improves water quality downstream. This natural filtering and buffering of possible contaminants and recycling of excess nutrients (like phosphorus) assures cleaner water for fish and humans alike.

Canopy of Blue Branches

Many of these benefits increase with the cumulative number of ponds in a watershed and their longevity.

Fewer Beaver, Fewer Benefits

In the 1800s, European fashion prized beaver pelts for hats, which spurred a westward wave of exploration as trappers searched for beaver. Excessive trapping eliminated beaver from most areas by the early 1900s. This was followed by intensive use of the land - much to the detriment of healthy watersheds. Without beavers, streams cut downward and some dried up, water tables dropped, woody vegetation disappeared and wildlife declined. The impacts on us have been considerable - including uncertain water flow, higher costs for water treatment and increased likelihood of erosion and flooding. Thanks to better management and reintroductions, beaver populations have rebounded over the past 50 years but only to 10-20% of their original numbers. Full recovery has been stymied ... partly because we have not understood and appreciated these many services provided by beaver and the benefits for us.


Michael Gerrand


John Weaver

A Beaver Tale

A ranch family in Alberta "leaves it to beaver"

Water has often been a scarce and precious resource in the Rocky Mountain West - for both ranchers and town folks alike. In the foothills of the Canadian Rockies, the Gardner family has operated the Mt. Sentinel Ranch since 1898. Sure, sometimes beaver were inconvenient near the ranch entrance road, but the Gardners accommodated beavers elsewhere on their land and even had beaver imported to restore populations. When stream flow diminished during drought times, beaver ponds provided a critical supply of water for their livestock. The riparian areas of the Mt. Sentinel Ranch are lush, with tons of forage for livestock amidst willows that sustain beaver. By allowing beavers to be beavers, the Gardners have conserved water while livestock and wildlife have prospered. People living downstream have also benefited from their careful stewardship of the upper watershed.

Don't Miss a Golden Opportunity

Life is all about water - a substance more precious than gold and likely more scarce as we move into a warmer and drier future. With their ponds serving as natural water reservoirs, beaver can help us. But only if we accommodate their activity in more places. Will we stick to our outdated intolerance or will we partner with Nature's engineer to help store more water for free? The health of our watersheds - from headwaters to drinking tap - depends on our answer.

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