A comparison of two areas post wildfire. TOP: Area without beaver dams and wetlands. Fire burned to edge of stream. BOTTOM: Area with beaver dams and wetlands. The wetlands provide wildlife and livestock a safe zone during wildfires. Post wildfire, the beaver ponds and wetlands provide habitat as well as protect downstream water quality by trapping ash and sediment eroding off hillslopes. Continued beaver trapping and hunting gives us the top photo. HB 3932 will give us more of the bottom photo.

Credit: Joe Wheaton

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BEAVER STUDY RESULTS RELATED TO WATER STORAGE
Compiled by
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Colorado: near San Luis Valley, on Cochetopa National Forest (Houk 1924). The Forest Service in a recent survey found that water stored above the beaver dams in the area examined to be the equivalent of 24,000 Colorado statute inches running for 24 hours, enough to irrigate 30,000 acres for one day.

Maine: Dixmont and Montville study areas (McCall et al 1996)**.** Paired study areas (27,429 acres each). Both initially opened then one closed to trapping (untrapped) from 1989 to 1992. The other remained open but had a 54% decrease in beaver harvest from 1989 to 1992. Decline strongly correlated to decline in pelt prices.

Wetlands (1989 vs 1992): Untrapped = 120 vs 134 (+14), Trapped = 103 vs 110 (+7).
Surface water area (1989 vs 1992): Untrapped = 284 vs 390 acres (+106), Trapped = no change (+0).

Minnesota: Kabetogama Peninsula. (Naiman et al 1988). Study area = 61,776 acres. As beaver dams increased from 71 (1940) to 835 (1986), impounded area increased from 640 acres to 9308 acres. Impounded area a mix of wet meadows, ponds, bogs, deciduous shrubs representing increased surface and groundwater stored. Increase from 1% to 13% of landscape impounded. Considered at max change.

Montana: Price Creek (Fouty 2003, 2008). Maximum water depths were measured along three stream reaches in 1995. Reach 1 had no beaver dams while upstream reaches 2 and 3 had abundant beaver dams. Average maximum water depth in reach 1 was 0.9 versus 2.15 and 1.73 feet in reaches 2 and 3.

Utah: Bear River Basin (Hafen 2017). Thirty-five beaver dams were measured for pond area and volumes. Pond areas varied between 0.006 to 0.13 acres and pond volumes from 1,030 to 47,646 gallons of water.

Washington: Skykomish River headwaters (Dittbrenner et al 2022). 69 beaver relocated into 13 headwater streams reaches….. Successful relocations resulted in 64,194 gallons of surface water storage per 328 ft (100 m) of stream in the first year following relocation. Dams raised water table elevations by up to 1.08 ft, stored approximately 2.4 X as much groundwater as surface water per relocation reach.

Wyoming: Coal Creek (Grasse and Putman 1950). Pond volume computed for 25.98-acre beaver pond. Water stored behind the dam estimated at 75,616,148 gallons. The water stored in the pond would maintain stream flow for 117 days at 1 cfs if water entering the pond were to be completely cut off.

Wyoming: various streams (McKinstry et al 2001). Stream riparian width: With beaver ponds averaged 111.2 ft. Without beaver ponds averaged 34.4 ft.

Canada, Elk Island National Park (Hood and Bayley 2008). 19,521 acres of the park was examined to assess the effect of climate on the amount of open water with and without beavers. Beavers arrived in area in 1954. Year 1950 (no beavers) was the second driest year on record with only 12.5 inches of precipitation with 2002 (beavers present) the driest with 8.5 inches precipitation. However, 2002 had 2.6X m more open water than 1950 (1467.6 vs 565.1 acres) even though 1950 was 47% wetter.

England: Devon (Puttock et al 2017). A pair of beavers were reintroduced into a 7.4-acre beaver enclosure in March 2011 which contained 600 feet of stream. Stream drained 49.4 acres. By 2014, 13 dams had been built inside the enclosure. Surface water area had increased from 0.02 acres to 0.29 acres and water stored in ponds from zero to 193,110 gallons.

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