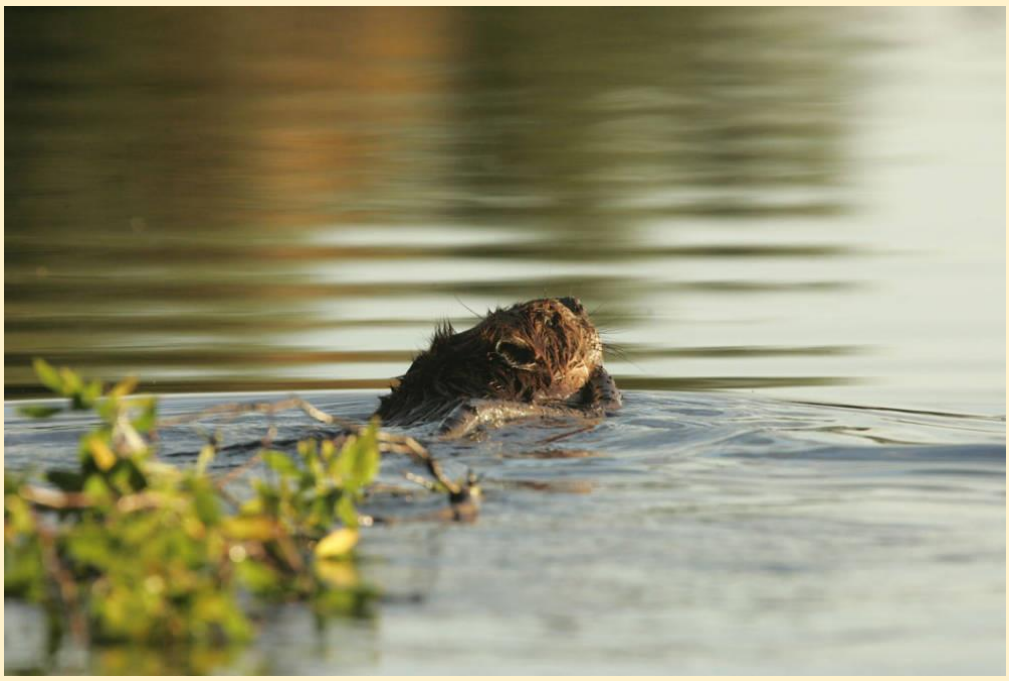
Beavers alter streams



A beaver hard at work maintaining its dam, photo from USFWS

We know beavers engineer their environment by creating a dam and upstream pond. Researchers at Rocky Mountain National Park, along with the U.S. Geological Survey, found beavers can strongly affect the hydrologic processes of the Colorado River. They also found beavers produce greater changes to their environment downstream of their dams.

Other research also suggests some major problems we see in modern day streams came about from beavers being removed from area streams.

Without beaver dams, water simply flows down narrow streambeds. However, water flows over beaver dams along the full width of the dams, spreading water across entire valleys. This water stays spread out down the valley for hundreds of yards. Beaver dams also force water into the soil, where it moves laterally, toward the sides of the valley. The underground water table rises and widens the riparian area along the stream. More vegetation such as willows grow downstream from dams.

During peak flows, or floods, dams dissipate the flow energy. Water slows as it works its way through the intricate set of branches making up

dams. Water also slows as it works its way back to the stream bed, generally flowing through riparian vegetation.

During dry summers, dams keep water flowing. By holding back water behind the dam and placing more water underground, beaver dams slowly release water, keeping intermittent streams flowing longer and farther downstream.

Beavers create wider riparian areas, with more riparian vegetation, and often create more areas for livestock to drink. During dry years, they may provide the only water for livestock.

In the past, beavers probably maintained area streams by their presence. However, some of the first Europeans to enter the Great Basin trapped many beavers from our streams. As more people moved in, they killed beavers as nuisances. Beaver dams caused water to flow where people did not want it, such as on roads. So many area streams lost their beavers. Across the West, millions of beaver dams have been lost.

Many area streams show headcuts or incision, where streambeds have lowered, leaving the water trapped between steep banks or gullies. Lowering the streambed also lowers the groundwater table. Wet meadows have dried out and been replaced by sagebrush. In places, only stream scientists can even tell wet meadows once bordered area streams. Many of these headcuts occurred about the same time Europeans arrived in this area.

The presence of beavers may have reduced or prevented headcuts in the past. Their absence may be responsible for today's incised streams. Beavers are now returning to many streams and land managers are finding their dams and ponds can help heal headcuts. Sediments build up in beaver ponds, raising the streambed. Over time, dams are abandoned and other dams built, raising other areas along streams. Researchers are helping beavers return to streams in the hopes their presence will help streams heal.

February 2017

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