memo

Project Name |	Brown's Creek Tributaries Restoration Project	**Date** |	12/4/2024
To / Contact info |	BCWD Board of Managers		
Cc / Contact info |	Karen Kill, District Administrator		
From / Contact info |	Mike Majeski, Dan Mossing, P.E.		
Regarding |	Benefits of Recent Beaver Activity & Dams		

Background

Since the Tributaries Restoration Project was completed in 2021, the project has attracted several beavers to the project area, in part due to the increased water levels in the tributaries as a result of the rock riffles installed for the project. Beavers have been selectively building their dams on top of the rock riffles, likely due to the stability the rock riffles provide in the channel. There are also ample food sources adjacent to the tributaries including numerous aspen and willow trees that are favored by beavers. The beaver dams that have been documented over the last 3 years have not persisted for long periods of time, mostly due to human interference and breaches caused by flood events.

Beaver Activity in 2024

Several beaver dams were documented in 2024 including one located just upstream of the Diversion Structure, three smaller dams upstream of the wooden walk bridge north of the IESF filter (Figure 1), and a very large dam at the north end of the IESF pump pond (Figure 2).

Figure 1. One of three small beaver dams upstream of the wood walk bridge north of the IESF filter.

Figure 2. Large beaver dam at the north end of the IESF pump pond.

Discussion

The Tributaries Restoration Project was developed to address channel incision (downcutting of the stream bed), floodplain abandonment, and degraded native vegetation along the three tributaries upstream of the Diversion Structure. Two primary goals of the project included reconnecting the tributaries to their floodplains and restoring wetland hydrology to support wetland plant communities. These goals were largely achieved following installation of the rock riffles that prevented further channel incision and increased baseflow water elevations in the channel which restored hydrology of the adjacent wetlands. The addition of beaver activity in the project site has further benefited the resource by impounding water on the floodplains which intercept suspended sediment and absorb nutrients that would otherwise discharge to Lake McKusick. The beavers are also helping to restore the native sedge/ shrub community that existed here prior to development by foraging on pioneer and early successional trees such as aspen and boxelder that have invaded the wetlands following degradation of the riparian corridor (Figure 3). Due to the stacked benefits the beavers provide, it is recommended the beavers be left undisturbed to promote natural restoration of the riparian corridor. However, if the large beaver dam at the IESF pump pond continues to increase in elevation, a water level management system such as a "beaver pond leveler" (Figure 4) should be considered to allow the IESF facility to function as designed.

It should be noted that the existing beaver dams do not pose a long-term threat to fish passage since the dams tend to be transitory, and many native fish species can navigate over or through the dams during flood events.

Figure 3. Example of beaver foraging on aspen and other early successional trees along the tributary corridor.

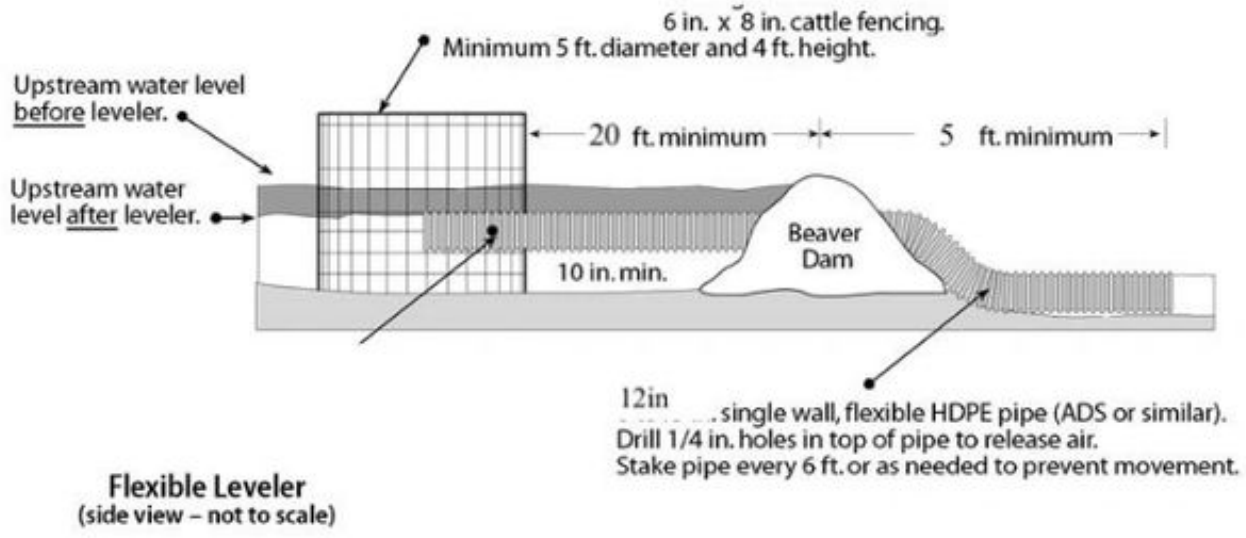

Figure 4. Example of a "beaver pond leveler" that could be installed to maintain the function of the IESF pump pond. Source: https://beaversnw.org/flooding-reduction

Recommendation

It is recommended the BCWD post this information on their website for public awareness and to connect with City of Stillwater staff and residents along the tributaries to discuss the watershed's desire to support beaver activity in this area and to preserve beaver dams when found.