



Little  
Traverse  
Lake  
Association

Promoting the protection and preservation of the lake and its watershed

# 44.9° north



## *Beaver dams vs. water levels*

### **Background**

The Association has long been aware of the impact of beaver dams along Shalda Creek on the water levels of the Lake. For decades, local residents have collected water level data and tried to ensure the stream was free of blockages.

Long ago, National Park Service (NPS) staff would often pitch in to work alongside local residents to clear beaver dams. We have actively recorded water level data which is available on the website: [www.LittleTraverseLake.org/lake-levels.html](http://www.LittleTraverseLake.org/lake-levels.html)

### **Impact of beaver dams**

Since 2015 we, at great financial expense, have contracted engineering firm, Gosling Czubak,

to provide professional oversight of data collection and an independent analysis of the impact of beaver dams. We have worked to receive permission from the NPS to clear dams to determine their impact on mitigating high water levels that were creating negative impacts to private property (yards under water, structural damage to buildings, elevated water levels challenging septic systems). Gosling Czubak issued their final report summarizing the impact of beaver dams that have been built and removed during the study years of 2015-2020. This is their professional conclusion contained in their December 2020 report, which is available at [www.LittleTraverseLake.org/lake-levels.html](http://www.LittleTraverseLake.org/lake-levels.html)

### **Highlights**

The data from several years of beaver dam removals leads to the following conclusions:

- 1** Dams between LTL and CR669 can significantly reduce creek flow rates, reducing the ability of LTL to drain naturally. Removal of the dams has shown increased downstream flow rates.
- 2** Dams between Little Traverse Lake and CR669 can lead to increasing water levels at LTL leading up to dam removal in comparison to decreasing levels at CR669 during the same time.

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3 Little Traverse Lake water levels have shown rapid and significant water level decline following removal of dams between LTL and CR669.

4 When no dams are present between LTL and CR669, water levels at LTL normally decrease following seasonal high-water levels in the early spring season even with continued rainfall.

5 Dam activity between LTL and CR669 can restrict flow more and have a greater impact on LTL water levels than culvert restrictions.

6 Allowing LTL water levels to naturally decrease without beaver dam obstructions is important to provide buffer capacity in the lake going into the higher rainfall fall season.

7 Significant dam activity downstream of CR669 during high water levels can elevate water levels at CR669, including increasing water levels above the top of the recently installed larger culvert. This new culvert reduced culvert restrictions to non-detectable levels under normal conditions. Removal of larger downstream dams showed water levels at CR669 greatly improved with large drops.

8 Dam activity, if significant during high water levels, can reduce the creek flow at CR669 and LTL, thus affecting the ability of LTL to naturally drain.

**Recommendations**

It was previously concluded from the 2016-2017 data that the greatest response to dam modification events occurred when LTL water levels were greater than 595'. The two dam modifications allowed in 2020 both occurred when LTL water levels were just below or at 596'. Significant decrease in water levels were noticed following the dam modifications allowed during these periods of high-water levels. The following recommendations are requested:

1 Allow Little Traverse Lake Association to maintain the section of Shalda Creek between LTL and CR669 free of dam obstructions at all times.

2 Monitor water level elevations at the County Road 669 crossing. If water levels at this culvert rise above 594', allow beaver dams downstream to "Fishcamp" to be cleared.

3 Consider a partnership with a local conservation organization to relocate nuisance beaver that

may be encountered between Little Traverse Lake and Fishcamp and investigate natural deterrent measures that could be used in this area.

4 Allow creek maintenance and restoration at inactive and problem dam locations between Little Traverse Lake and Fishcamp.

**Additionally**

While not the focus of this report, discussions are merited in regard to long term impact of any policy that does not allow dam modification downstream of CR669. Dams have been built further downstream of Fishcamp which impounded over three feet of water as was seen back in 2014. If no maintenance or beaver management is allowed, it is feared that existing dams could continue to grow, could fill with silt, and create long term challenges for the creek to effectively transport drainage from the watershed. A buildup of debris from dams already exists and constricts the stream meriting channel width restoration. The impact to property has been experienced and could be even more significant over time without a long-term management policy partnership with Little Traverse Lake riparian owners.

**Working agreement**

LTLA is currently working with Cleveland Township, Leelanau County Road Commission, and the National Park Service for these policy recommendations suggested by Gosling Czubak as the result of their professional analysis of data to be adopted as a standing working agreement moving forward.

