Water Level Extremes Information Worksheet

Introduction

The following information worksheet is intended to be used in conjunction with the video "Extreme Water Levels – What you can do" to assist you in preparing your waterfront for water level extremes.

To assist with navigation, it is divided into six sections:

A) Identifying your high and low water level risks
B) Typical types of docking systems
C) Docking system suppliers
D) Sources of information for In-lake water systems
E) Preparing your Home/Cottage for water level extremes
F) In the event of an approaching or active water level emergency

A) Identifying Your High and Low Water level Risks

This step consists of two components. The first is to establish the historic high and low levels on your lake or river. The second is to determine if your waterbody has flood lines mapped by a local authority.

Historic High and Low Water Levels

1. Open your browser and go to www.cewf.ca. In the upper right corner of the Home Page, you will see a link to Water Levels Website. Click on this. (Alternatively, you can proceed directly to the TSW Water Levels website at https://www.pc.gc.ca/en/lhn-nhs/on/trentsevern/info/infonet/niveau-eau-water-levels.) Once there, click on your River basin, then on your lake. A water levels graph will open.

2. This graph shows the change in water levels through the year. The upper yellow line is the historic maximum and the lower purple line, the historic minimum. The middle orange line is the average and blue line, the actual water level for the current year up to today's date. You can read the water level from the scale on the left. The scale is measured from the sill of the dam that controls the water level for your lake. The sill is the concrete base in the dam's spillway upon which the stop logs are stacked.

3. Record these levels in the following Worksheet or a separate piece of paper.
   - Today's Water Level _____
   - Historic High Level _____
   - Historic Low Level _____
   - Difference Between Today and Historic High (A)_____
   - Difference Between Today and Historic Low (B)_____

4. Take these last two numbers and transfer them to your waterfront using a tape measure to get the vertical heights above (A) and below (B) todays water level. To transfer up a sloping bank, you can use a string, leveled either by eye or using a builder's level. You may wish to add some margin of safety to account for greater extremes in the future. If the slope is relatively shallow or the vertical height quite substantial, it will be necessary to do the transfer as a series of 2 or more steps. (See Figure 1). Mark the high-risk level using either a reference point at that level or perhaps some heavy rocks. Do the same with the low level. This will be a bit more challenging since the low level will be underwater. If you have a fixed dock, you could locate the low risk level relative to a position on a dock leg. Alternatively, identify a feature or features in the water which would become exposed at the low risk level. In some cases, with gently sloping banks, this may involve wading some distance out in the water or using a boat.

5. You should also assess your property for the potential for ice damage. Ice damage typically occurs as water levels rise in the Spring. The ice sheet breaks away from the shore and can be pushed by strong winds onto the shore to levels exceeding the historic high-water levels. Properties most susceptible to ice damage are those exposed to a wide expanse of lake. In these cases, you will want to add an extra margin of safety to the high-risk level of your shoreline infrastructure. With climate change and the increase in extreme weather events, severe ice damage may occur earlier in a year when the floating ice sheet is relatively thick.

Mapped Flood Lines

In addition to historic high and low water levels, you should check if your lake or river has a mapped floodplain. The flood lines associated with this mapping are based on the "Regulatory Flood" which is the worst case of either a 1-in-100-year flood event or a "Regional Storm" which, in the case of both Haliburton and Peterborough, is based on the Timmins storm of August, 1961. As noted below, the floodlines on lakes in Haliburton are based on historic data.

Haliburton County

- As of late 2025, Haliburton County has produced revised floodplain mapping based on LiDAR data flown in 2022. To access the mapping, visit https://lidar-halcty.hub.arcgis.com/ Then click on the Mapping Interface. You can then click on the 'How To' section on the right side of the page to get more information and also zoom in to find your property. Note it is useful to turn on the '2023 Ortho Map' and 'Parcel Outline' features located under the Map Layers button at the bottom of the map, to allow you to see your property in more detail.
- If your property is on a river, the flood zones presented on the map are based on either the 1:100 year flood event or the Regional Storm as noted above. This is a calculated floodline.
- If your property is on a lake, the floodline marked on the map is an historic floodline, not a calculated floodline. In many cases this will match the High Water Levels recorded on the TSW water level graphs discussed in Section A2 above. In a few cases, the HWLs plotted on the maps are from an historic record which pre-dates the TSW digital record and are therefore higher than the digital record.

Peterborough County

- As of late in 2022, Peterborough County is currently active in producing flood line maps for a number of streams in the county. Within the Municipality of Trent Lakes, flood line maps are available for parts of Nogies Creek and Miskwaa Zibbi River (See Schedules A1-1 and A1-2 of the Official Plan).

City of Kawartha Lakes

- In the City of Kawartha Lakes, flood line mapping is available through the Kawartha Region Conservation for the Burnt River from the Town of Burnt River to just North of Cameron Lake. Visit https://www.kawarthaconservation.com/permits-and-planning/property-mapping/

B) Typical Types of Docking Systems

(Photos courtesy of Houston Marine Systems)

Aluminum Standing docks with various leg configurations and either aluminum, wood or composite removeable decking

Aluminum wheel in docks with wood or composite removeable decking

Aluminum Winch Up Docks with wood or composite removeable decking

Floating docks with various flotation devices

Jet Float type docks

(Photo courtesy of Jetfloat BC)

C) Docking System Suppliers

The following is a partial list of dock suppliers who can offer removeable systems for your waterfront. This list is not inclusive nor does CEWF receive benefit from any company listed.

Houston Marine Systems - http://houstonmarinesystems.com/

The Dock Shop - https://www.thedockshop.net/

The Dock Spot - http://www.thedockspot.com/

R&J Machine - https://www.rjmachine.ca/

Canada Docks - https://www.canadadocks.ca/

Various hardware and building suppliers throughout Haliburton and Peterborough Counties who will also have information on local contractors.

Jetfloat Docks - https://www.jetfloat.com/products/

D) Sources of Information for In-lake Water Systems

The following is a partial list of suppliers of in-lake water systems. This list is not inclusive nor does CEWF receive benefit from any company listed.

The Pump Shop, Haliburton - https://thepumpshop.ca/

Local Hardware and Building Suppliers will have information on local contractors.

E) Preparing your Home/Cottage for water level extremes

There are a number of sources of information for flood preparedness.

- The Federation of Ontario Cottagers Associations (FOCA) is a good place to start. Visit:https://foca.on.ca/water-levels/ There are a number of other useful links from this site.
- This link provides background to Ontario's Flood Management strategy and is worth reviewing. https://www.ontario.ca/page/protecting-people-property-ontarios-flooding-strategy
- One link which offers specific suggestions on flood proofing your dwelling is the following. https://floodservices.ca/flood-services-canadas-guide-to-flood-proofing-your-house/

F) In the Event of an approaching or active water level emergency:

There are a number of sources of information as we approach and enter a water level emergency:

- The Trent Severn Waterway issues periodic Water Management Updates - https://www.pc.gc.ca/en/lhn-nhs/on/trentsevern/info/infonet/point-gestion-eau-water-management-updates
- Local radio stations, Canoe FM 100.9 and Moose FM 93.5, will broadcast information for Haliburton. Various radio stations such as Wolf 101.5 FM, Move 99.7 FM, Magic 96.7 in the Peterborough/Trent Lakes area may also broadcast information.
- The Ministry of Natural Resources and Forestry for Ontario has a flood warning system - https://www.gisapplication.lrc.gov.on.ca/webapps/flood/#currentFloodInformation
- If you are within the boundaries of the Kawartha Conservation Authority, there will be flood information on their website: https://www.kawarthaconservation.com/environmental-sciences/flood-forecasting-and-warning/
- If you are within the boundaries of the Crowe Valley Conservation Authority, flood information is available on their website: https://www.crowevalley.com/crowe-valley-conservation-authority-current-water-level-readings/
- The Counties of Haliburton (www.haliburtoncounty.ca) and Peterborough (www.ptbocounty.ca) will have flood warning and water level information during an extreme event.

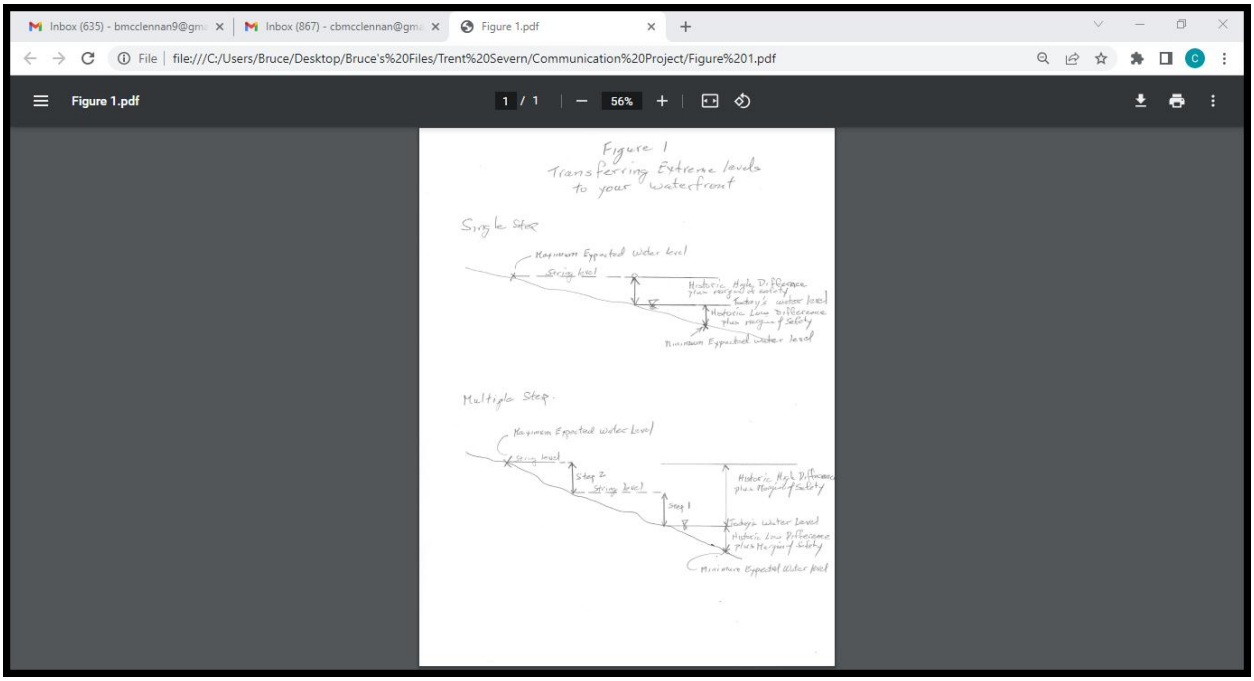
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Figure 1.pdf
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Figure 1
Transferring Extreme levels
to your waterfront
Single Step
Maximum Expected water level
Historic High Difference
plus margin of safety
Today's water level
Historic Low Difference
plus margin of safety
Minimum Expected water level
Multiple Steps
Maximum Expected water Level
Step 2
Step 1
Today's water level
Historic Low Difference
plus Margin of safety
Minimum Expected water level