

Drag Lake Water Management

Background/ Infrastructure

- Drag Lake is headwaters for the Burnt River, and part of the Trent-Severn Waterway (TSW) reservoir lakes system. For a detailed description of the overall TSW water management program, see:
- <http://www.tswpanel.ca/english/downloads/Water-Management-Program.pdf>
- The water outflow from Drag Lake, hence the lake water level, is dam controlled. It is under the authority of Parks Canada TSW staff.



View from the top of the Drag Lake dam (June 21, 2010) – near full fill condition.

- The water level is adjusted via the manual insertion and extraction of a series of 1-foot square logs.



View from the bottom of the dam, with all (7) logs in place.

- There is also a privately owned and operated hydroelectric power generating station located at the dam site. When water is being released by Parks Canada for its water management needs, the outflow is typically directed to power generation, as long as the flow requirements set by Parks Canada can be met. The power company is not charged for the use of the water under the current contract.



View from the top of the hydro dam (with water flow pipe seen to the right)

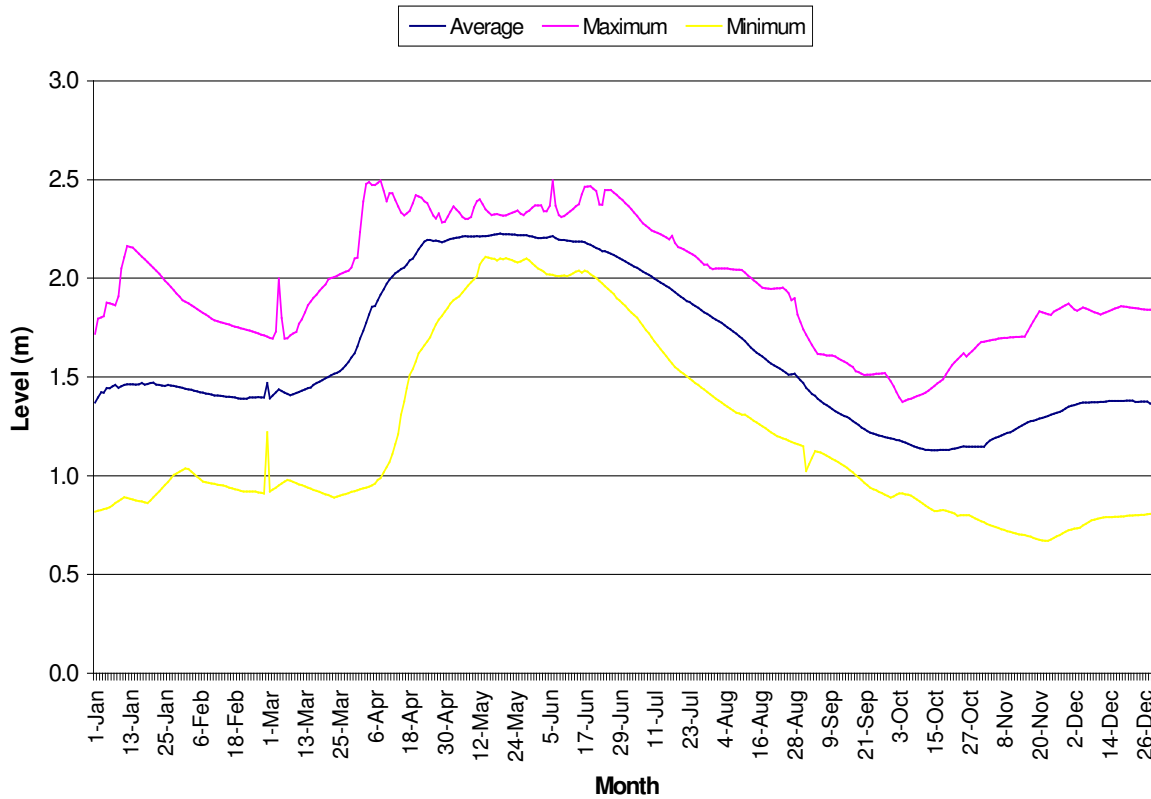


View of power generating station below dam, showing water inflow pipe, and the first electric utility pole used for transmitting generated power to the grid.

Lake Levels

- Stated simply, the annual water management cycle is as follows: fill up the lake in the spring from snow melt and rain, draw down the lake through the summer to sustain minimum navigation levels on the TSW canal (as part of the overall reservoir lakes system), and then establish the winter set lake level in the fall (with the objective of leaving adequate reserve water storage capability to avoid downstream spring flooding).
- Other factors, notably fisheries, also come into play when managing the timing.
- The various lakes in the TSW reservoir system have differing dam infrastructures, and as such see different annual lake level fluctuations.
- For Drag Lake,
 - Total available draw down level = 1.74m (~ 6 feet).
 - Note: in a typical year, only one-half of this is utilized.
 - The available draw down equates to water storage volume ~ 20 billion liters.
 - Following is a graph showing the annual water levels for Drag Lake (= measured lake level in meters above the dam sill):

Drag Lake Levels



Historical Data

- Looking at long term historical averages, Drag Lake is at its target ‘full’ level through the month of May, and is drawn down approximately 1.1m (~ 3.5 ft) to its minimum level in the month of October.
- The target ‘full’ level is actually only 95% of the maximum available (this percentage has been established through practical experience), and the typical minimum we experience is more than 2 feet higher than is available to be drawn down.
- Throughout the years, there are wide variations from the averages. To illustrate, here are the historical measured extremes:
 - Maximum – 2.5 feet above the ‘full’ level (May 1914)
 - Minimum – 7 feet below the ‘full’ level (March 1945)
- It is notable that while Drag Lake typically goes through an annual 3.5 ft swing in lake levels, there is a 9.5 ft difference between the historical max and min.

Coalition for Equitable Water Flow (CEWF)

- DSLPOA is a member of CEWF.
- For information: <http://www.cewf.ca>.