Water Level & Flow Update for the Lower Nelson River

Weekly Update # 7 February 21, 2020

Lower Nelson River (Split Lake to Hudson Bay)

Water up and impoundment has not started at Keeyask (planned to begin in February). Flows on the Nelson River are high as heavy Fall rainfall in the southern parts of the watershed flows north on its way to Hudson Bay - this will continue all winter. Hydro system flows to Split Lake and the Lower Nelson River come from 2 sources – Lake Winnipeg (LW) outflows through Kelsey generating station (at 3115 cms or 110,000 cfs) and Churchill River Diversion (CRD), through Notigi control structure (960 cms or 33,900 cfs)*see map*. These combined flows (of 4,075 cms or 143,900 cfs) have been relatively constant since early December. The Nelson's flow downstream of Keeyask is 4,480 cms (or 158,200 cfs) (measured at Limestone GS).

Nelson River flow depends on Lake Winnipeg Water level: Lake Winnipeg outflows are largely controlled by the Jenpeg Generating Station (upstream of Kelsey Generating Station). These flows are maximized every winter to allow as much water as possible to flow out of Lake Winnipeg to fuel generating stations on the Nelson River to meet heating demands by Manitobans. The maximum amount of water flow (termed *maximum discharge*) changes depending on the level of Lake Winnipeg – last year with Lake Winnipeg 2 feet lower, maximum discharge through Jenpeg was 65,000 cfs; while this year with the lake 2 feet higher, maximum discharge has been 95,000 cfs! Very similar conditions were experienced in Jan/Feb 2011 with Lake Winnipeg and Jenpeg outflows at similar high levels.

Map of Churchill and Nelson Rivers with control structures and generating stations.

As of February 19, Lower Nelson River lake and forebay levels are:

- Split Lake 168.35 m (or 552.3 ft)
- Clark Lake 167.94 m (or 551.0 ft)
- Gull Lake 156.17 m (or 512.4 ft)
- Stephens Lake 139.76 m (or 458.5 ft)
- Long Spruce forebay 110.90 m (or 361.2 ft)
- Limestone forebay 85.07 m (or 279.1 ft)

Graphs of Split, Clark and Gull Lakes and Nelson River flow are available on the following pages.

Changing ice conditions at Split Lake's outflow through Clark Lake can cause water levels to fluctuate quickly on Split Lake as either ice forms and backs up water in the lake, or melts and releases more water downstream.

Since early December water levels on these lakes have fluctuated due to ice conditions by almost 2.0 feet, while hydro system operations have remained relatively constant.

This update is based on a combination of current and forecasted weather data from Environment and Climate Change Canada; recent and historic stream flow conditions based on both federal and Manitoba Hydro data.

If you have any questions or concerns, please contact:

Dale Hutchison-Waterway Community Engagement @ (204) 360-3505.

More information on water level forecasts and current year actual outflows are on our website at:

https://www.hydro.mb.ca/waterlevels/

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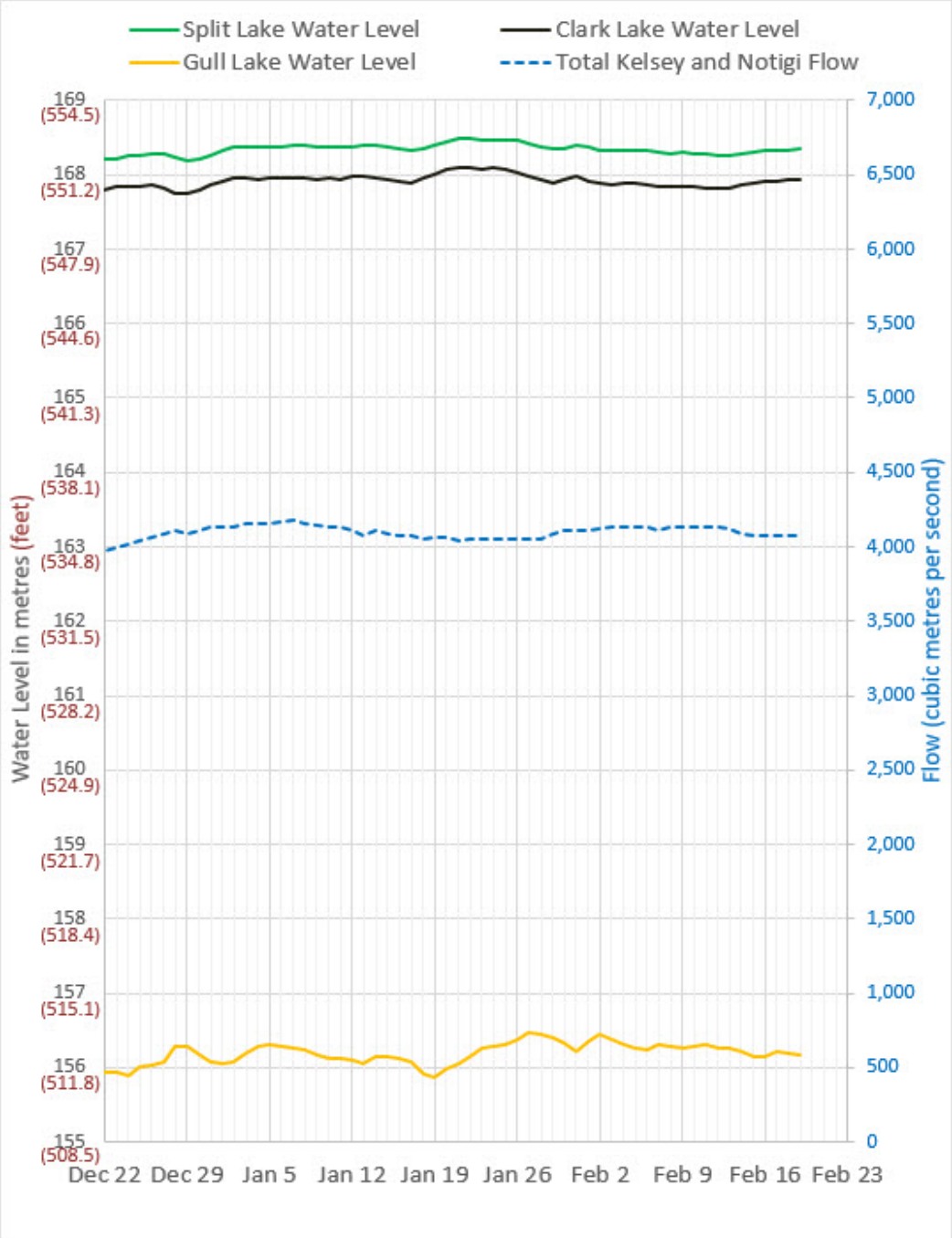
Lower Nelson River Lake Levels and Flows to Split Lake (December 22 to present)



Note: The water gauge on Clark Lake was out of order for a three day period (Jan 2020). All values shown above are daily averages.

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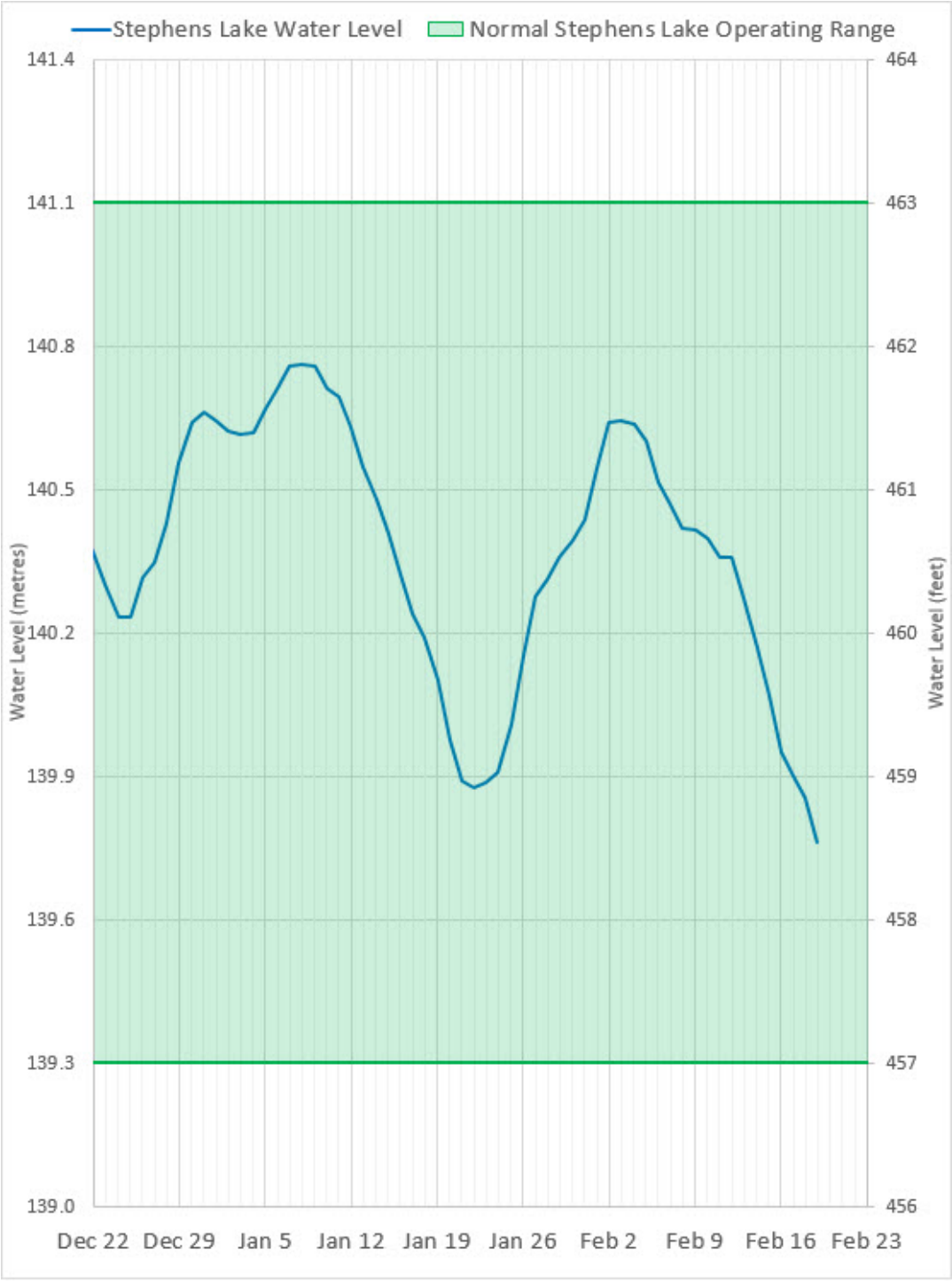
Stephens Lake Water Levels (December 22 to present)



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