

Adopted Regulation Strategy
LWCB Regulation Meeting - May 29, 2008

The Lake of the Woods Control Board held a Regulation Meeting in Kenora on May 29, 2008 and adopted the following strategy. The strategy was formulated considering basin conditions, hydrological and meteorological forecasts, and the input of the various interests concerned with basin management. Input was provided in written and verbal reports as well as from the Board's Regulation Guide (<http://www.lwcb.ca/reg-guide/index.html>).

For an update on current conditions, please refer to the Basin Data section of the Board's web site at <http://www.lwcb.ca/waterflowdata.html>. For regulation actions and directives taken under the strategy please see the Regulation Actions at <http://www.lwcb.ca/regulation/index.html>.

Lac Seul

A) Seasonal Considerations

Lac Seul regulation over the near term will hedge against a higher risk of wet conditions. Regulation will be carried out to provide storage in the event that inflows remain high, or become even higher. Ideal or desirable regulation objectives for the next several months, based on input provided to the Board, include the following:

- Lac Seul level and outflow should be managed to reduce flood risk on the lake and downstream in Ontario and Manitoba.
- Attempt to meet the preferred Lac Seul, Pakwash Lake and English River levels for the fishery and tourist outfitter interests.
- The tourist outfitters preferred summer maximum level for Lac Seul is 356.6 m (1170 ft).
- Supply water requested by Ontario Power Generation and Manitoba Hydro for hydroelectric energy generation; avoid spill in wet conditions and violation of low flow constraints in dry conditions.
- Due to maintenance, Manitou Falls turbine capacity will be reduced to 440 m³/s for most of September; Caribou Falls turbine capacity will be reduced to 426 m³/s for most of August and September.
- The preferred English River flow at Grassy Narrows is less than 550 m³/s.
- Use Lac Seul storage to offset Lake of the Woods high/low outflows for the benefit of users of the Winnipeg River in Manitoba.
- Avoid closing the Lake St. Joseph diversion with resulting spill down the Albany River.

B) Strategy

i) Low Inflow Conditions

- With current basin conditions, a return to low inflow conditions is not expected in the near term. However, conditions could change if warmer, drier weather predominates over the summer.
- If possible, set Lac Seul outflow to maintain desirable fishery flow below Manitou Falls.
- Reduce outflows as necessary to maintain the lake level above lower quartile. If the required reductions would lead to English and/or Winnipeg River flows less than minimum requirements of the provincial power utilities, consultations would be necessary with the OMNR in Red Lake and Sioux Lookout, as well as with the two provincial power companies, to determine an appropriate balance between upstream and downstream conditions.
- Severely restrict outflow to maintain lake levels above lower decile. Again, consultations would be necessary to appropriately balance upstream and downstream interests.

ii) Moderate Inflow Conditions

- Target for Lac Seul outflow within a range of approximately 100 to 400 m³/s and the lake level in the 25-75 %ile range to satisfy the overall objectives.
- Within the general outflow targets, supply water for hydropower production and for English River fishery concerns. Regulate with the Caribou outage and Ear Falls outage/construction in mind to accommodate OPG's requests if possible, while accounting for other interests as well.
- If flows on the Winnipeg River in Manitoba are high, use the storage available in Lac Seul to minimize the water released downstream. However, Lac Seul levels throughout the entire report period should not be above 356.75 m (1170.4 ft).

iii) High Inflow Conditions

- Balance Ear Falls outflow with the rise in Lac Seul level to reduce flood risk both on Lac Seul and on downstream areas such as Pakwash Lake and the Winnipeg River in Manitoba.
- Outflows should remain below 450 m³/s for moderately wet conditions, below 500 m³/s for most conditions and below 600 m³/s in all but extreme conditions.
- Regulate Lac Seul outflow to as high as 500 m³/s at Ear Falls to prevent the lake level exceeding 356.75 m (1170.4 ft) from June 30 to October 31; the Lake St. Joseph diversion should be reduced to the extent necessary to achieve this. (The Lake St Joseph Diversion falls under LWCB authority when Lac Seul level is above 356.311 m (1169 ft) in June and above 356.616 m (1170 ft) in July through December.)
- Once the diversion is closed, regulate outflow to as high as 600 m³/s to prevent the lake exceeding 356.9 m (1170.9 ft), to as high as 800 m³/s to prevent the lake exceeding 357.05 m (1171.4 ft) and as high as necessary to ensure that the upper storage limit of 357.2 m (1171.9 ft) is not exceeded.

Lake of the Woods

A) Seasonal Considerations

Inflows to Lake of the Woods at the time of the meeting were in the upper normal range. Most of this inflow was upper basin flow, through Rainy Lake, rather than from local inflow. Therefore, higher inflows were considered likely to be sustained, and any increase in local runoff would quickly push inflows into the high range. As a consequence, the strategy was adopted to hedge against wet conditions.

Ideal or desirable regulation objectives for the next several months, based on input provided to the Board, include the following:

- Adjust lake level and outflow to achieve a balance between upstream and downstream interests, as inflow dictates.
- For loons on the Winnipeg River, flow changes during the primary incubation period (normally to about the end of June) should be avoided. About 4½ to 5 weeks of relatively steady flows are needed for nesting success. Loons can make a second or third attempt, which means they could be on their nests into August for late nesting.
- For south shore residents, average summer levels lower than those experienced in the 1990s are preferred. In response, the Board agreed in 2001 to work towards summer levels up to 15 cm (6 in) lower.
- For piping plovers on Lake of the Woods, maintain lower lake levels and minimize lake level increases during their nesting and rearing season, which could extend beyond mid-July this year.
- For wild rice, the most important period for controlled and stable water levels is during the floating leaf stage from early June to mid-July. During this period, the optimal level of Lake

of the Woods is between 322.48 m (1058 ft) and 322.78 m (1059 ft); most important is that any increases in water level should be gradual.

- Water levels are also important during wild rice harvesting, which runs from about mid-August to mid-September on Lake of the Woods. If the water level is too high, the top of the plant will be too close to the water. If water levels are too low, the crop may be inaccessible to the harvesters' boats or canoes. Levels near 322.78 m (1059 ft) seem to be satisfactory.
- For walleye spawning and fry development on the Winnipeg River, avoid a significant drop in river level during the period up to end-June.
- For sturgeon spawning and fry development on the Winnipeg River, avoid a significant drop in river level during the period up to mid-July.
- For recreational users on Lake of the Woods, maintain water levels in the range of 322.8 to 323.1 m (1059 to 1060 ft).
- Within the regulation parameters for Lake of the Woods, regulate outflows to assist in meeting targets/preferences for the Winnipeg River in Manitoba.

B) Strategy

i) Low Inflow Conditions

- As with Lac Seul, with current basin conditions, a return to low inflow conditions is not expected in the near term. However, conditions could change if warmer, drier weather predominates over the summer.
- If possible, avoid outflow reductions that would impact on walleye and sturgeon eggs and hatchlings (possibly to mid-July).
- Reduce outflow to as low as 150 m³/s to prevent the lake from declining below 322.7 m (1058.7 ft) for July through September and 322.6 m (1058.4 ft) in October. Maintain, or reduce, outflow to as low as 100 m³/s to prevent to lake from declining below 322.5 m (1058.1 ft)
- If Lake of the Woods level drops below 322.2 m (1057.1 ft) reduce outflow to 70 m³/s, following consultations with OMNR and OMOE regarding fishery and water quality concerns.

ii) Moderate Inflow Conditions

- Outflow increases should be kept moderate during the period when sturgeon eggs or larvae could be impacted (possibly to mid-July) and outflow reductions should be avoided.
- Target for summer peak levels of 323.00 - 323.05 m (1059.7 - 1059.9 ft) with outflows in the 300 to 700 m³/s range. (i.e. levels 10 - 15 cm or 4 - 6 in lower than the historic median peak level, as per the 2001 Board decision.) Set outflow as high as 800 m³/s to keep the lake level from exceeding 323.09 m (1060.0 ft).
- Balance attempts to achieve the above preferred peak level range, and ideally not exceeding a peak level of 323.14 m (1060.2 ft / historic median peak level), with consideration of the impacts of the required outflows on downstream interests in both Ontario and Manitoba.
- Attempt to limit Lake of the Woods outflow changes that would adversely affect nesting loons on the Winnipeg River.
- Try to manage lake levels to limit the rate of rise of the lake for wild rice during the floating leaf stage and to benefit the piping plovers nesting at Windy Point and on the Sable Islands.
- Lake of the Woods should be regulated to target for an end of October water level between 322.8 m (1059.0 ft) and 323.0 m (1059.7 ft) with a preferred level no higher than median (322.88 m/1059.3 ft) with outflow between 300 and 700 m³/s.

iii) High Inflow Conditions

- Balance higher water levels on the lake with the impact of increased outflows downstream, both in Ontario and Manitoba.
- Do not increase outflow above 900 m³/s to keep the lake level (or projected level) below

323.3 m (1060.7 ft).

- Increase outflow as necessary to try to prevent the lake level (or the projected level) from rising above 323.47 m (1061.25 ft), which is the legislated top of the normal operating range. Note however, that the Convention and Protocol states “during periods of excessive precipitation the total discharge from the lake shall, upon the level reaching 1061 sea-level datum, be so regulated as to ensure that the extreme high level of the lake shall at no time exceed elevation 1062.5 sea level datum”.
- An attempt should be made to keep outflow increases to a maximum of 100 m³/s per week. Note, however, that persistent 90 %ile inflows would necessitate outflow increases of 200 m³/s or more per week.