

**Adopted Regulation Strategy
Lake of the Woods Control Board Regulation Meeting
March 8, 2011**

The Lake of the Woods Control Board held a Regulation Meeting in Kenora on March 8, 2011 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 level was at 55th percentile at the time of the meeting, after having declined at a rate of 10—11cm per week since late January. The Lake St. Joseph diversion has remained open throughout the winter, with diversion flow into Lac Seul at the time of the meeting of 89 m³/s. Basin inflows have been above normal since the fall of 2010. With wet ground conditions and above-normal snowpack in the basin, the strategy for Lac Seul over the near term is to hedge against wetter-than-normal spring and early summer conditions. Regulation objectives for the next several months, incorporating input provided to the Board, include the following:

Based on preliminary results from a review of the 2008 Lac Seul and English River high water event, a cautionary approach is recommended by the Secretariat. The end-of-winter lake level and the rate of spring refill should be conservative to lessen the risk of summer high water levels on Lac Seul and Pakwash Lake. After April 15, Lac Seul outflow should be regulated, as much as possible, so that the level of Lac Seul is no higher than the upper quartile level, instead of being allowed to rise ahead of it.

- Regulation of Lac Seul level and outflow should take into account the preferred Lac Seul, Pakwash Lake and English River levels for the fishery and tourist outfitter interests, to provide good spring spawning conditions and adequate navigation levels at the start of the walleye fishing season.
- Lac Seul level should be constant or rising after April 15 for spring spawning fish.
- The minimum spring lake level should be no more than 1.5 m (5 ft) below the November 1 level for whitefish. For spring 2011, this level is 354.65 m (1163.5 ft).
- The desirable lake level on May 15 is no less than 355.1 m (1165 ft) for navigation for the start of the walleye fishing season.
- The tourist outfitters preferred summer maximum level is 356.6 m (1170 ft).
- Lac Seul level and outflow should be managed to supply water requested by Ontario Power Generation and Manitoba Hydro for hydroelectric energy generation, to avoid spill in wet conditions and violation of low flow constraints in dry conditions.
- A minimum flow of 180 m³/s below Manitou Falls is desirable during spring spawning. If there is not sufficient water to meet this criteria, Lac Seul discharge should be set to maintain a uniform flow through the spawning period.
- River flows at Grassy Narrows should be less than 550 m³/s.

- Lac Seul storage should be used to offset Lake of the Woods high/low outflows for the benefit of users of the Winnipeg River in Manitoba.
- Lac Seul level and outflow should be managed to reduce the need to close the Lake St. Joseph diversion with resulting spill down the Albany River. However, the diversion should nevertheless be closed to reduce impacts in the English and Winnipeg River basins under wet conditions.

B) Strategy

Until April 15 (Drawdown Period)

Lac Seul outflow should be maintained as high as necessary, but no greater than 500 m³/s, to achieve a mid-April water level between 354.8 m (1164 ft) and 355.0 m (1164.7 ft), while considering flows in the Winnipeg River in Manitoba and hydropower requirements. Note that an end-of-winter level is 354.65 m (1163.5 ft) would satisfy the fishery goal of a maximum 1.5 m (5 ft) drawdown from November 1. At the Regulation Meeting, the Representatives and the Board were in agreement that drawing the lake down towards the lower end of the target range, or even to 354.65 m (1163.5 ft) was desirable in order to provide more room to accommodate higher-than-normal inflows after April 15.

After April 15 (Refill Period)

i) Low Inflow Conditions

- Outflow should be managed to ensure that Lac Seul level does not decline, and preferably rises, while providing sufficient outflow to meet downstream hydropower generation and fishery requirements.
- Target for an end-of-June level no lower than lower quartile (355.46 m / 1166.2 ft) with an outflow no lower than 100 m³/s, provided that flows in Manitoba are no lower than 600 m³/s.
- Target for an end-of-June level no lower than 355.1 m (1165 ft) with an outflow no lower than 25 m³/s, provided that flows in Manitoba are no lower than 300 m³/s.
- Consultation with interests, including OMNR staff, tourist outfitters and the provincial hydro utilities, may be necessary to arrive at the appropriate balance between lake levels and outflows.
- If inflow remains low throughout the refill period, outflow should be adjusted to maintain a balance between upstream and downstream interests.

ii) Moderate Inflow Conditions

- Due to concerns of high water, regulate through the refill period to hedge against wetter conditions, so that the risk of outflows above 500 m³/s is reduced.
- Generally target for lake levels between lower and upper quartile, while supplying water for efficient hydropower production and for English River fishery concerns.
- Use additional water to maintain desired fishery flows in the English River below Manitou Falls, provided this does not cause high flow conditions on the Winnipeg River in Manitoba.
- Target for flows in the Winnipeg River in Manitoba between 675 and 960 m³/s.

iii) High Inflow Conditions

- As above, regulate through the refill period to hedge against a return to wetter conditions, so that the risk of outflows above 500 m³/s is reduced.

- 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.
- Endeavour to maintain Lac Seul levels (or projected levels) below upper quartile during the entire refill period. 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.
- Increase outflow to as much as 800 m³/s to keep the level below 357.1 m (1171.6 ft).
- When Lac Seul is above the level at which the Lake St. Joseph diversion comes under Board jurisdiction (356.01 m / 1168.0 ft until the end of May; 356.31 m / 1169.0 ft for June), the diversion flow should be reduced before increasing Lac Seul outflow to more than 500 m³/s.

Lake of the Woods

A) Seasonal Considerations

At the time of the meeting, Lake of the Woods level was projected to be near the lower quartile March 31 level of 322.36 m (1057.6 ft), the lower end of the target end-of-winter level range set at the October Regulation Meeting. The Board has stated that it would generally prefer a lower quartile end of winter level to reduce the risk of higher summer lake levels. Above-normal inflows persisted throughout the winter in the Rainy Lake and local Lake of the Woods basins following wet fall conditions. The snowpack remains above normal throughout most of the basin, with the highest amounts in the local Lake of the Woods basin in Minnesota. Under these conditions, the adopted strategy is to hedge against wetter conditions through the spring and early summer. The points below reflect a number of ideal or desirable regulation objectives over the next few months, based on input provided to the Board.

- Adjust lake level and outflow to achieve a balance between upstream and downstream interests, as inflow dictates.
- Minimize ice damage when possible. Ice damage is greater in the spring if there are rapid changes in levels (on either the lake or the river) and especially if the level rises while there is still a solid ice cover.
- The preferable end-of-April level for the Lake of the Woods fishery is no lower than 322.5 m (1058 ft). Higher levels would be beneficial to northern pike.
- Regulate to avoid, to the extent possible, any reductions in outflow or any large increases in outflow during the spring spawning season on the Winnipeg River (late April to early June).
- For loons on the Winnipeg River, flow changes during the incubation period (approximately mid-May to the end of June) should be minimized.
- A summer Lake of the Woods level 10-15 cm (4-6 in) below the summer peak median level of 323.14 m (1060.2 ft) is desired for south shore residents. These criteria would result in a peak summer level of about 323.0 m (1059.7 ft).
- For wild rice on Lake of the Woods and the Winnipeg River, maintain lower lake and river levels and minimize level and flow increases during the floating leaf stage in June and early July
- For piping plovers on Lake of the Woods, maintain lower lake levels and minimize lake level increases during their nesting and rearing season of May, June and July.
- 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

Until March 31st (Drawdown Period)

Allow the lake level to continue declining to month-end, with a March 31 level between lower quartile and median (322.36 to 322.46 m / 1057.6 to 1057.9 ft). Outflows should not be increased unless prolonged high inflows are projected. The Representatives and the Board concurred at the Regulation Meeting that the lower end of this range should be targeted in order to allow for more room to handle higher inflows during the refill period.

After March 31st (Refill Period)

i) Low Inflow Conditions

- Adjust outflows as necessary, subject to minimum flow requirements as recommended by the Ontario Ministry of the Environment, to keep the lake from declining after the end of April. If possible, have the lake maintain at least a 10 %ile level, with outflows no lower than 100 m³/s.
- Assess conditions immediately before spawning begins in the Winnipeg River so that outflows can be set to prevent, as much as possible, the need for further flow reductions during the spawning season (late April to early June), while ensuring the lake level does not decline.
- Target for a lake level above lower quartile at the end of June (322.73 m / 1058.8 ft) if possible, with outflow no lower than 200 m³/s.
- If inflow remains low throughout the refill period, outflow should be adjusted to maintain a balance between upstream and downstream interests.

ii) Moderate Inflow Conditions

- Assess conditions immediately before spawning, as described under “Low Inflow Conditions” above.
- Outflow increases should be kept moderate during the spawning period and reductions should be minimized.
- Set outflow to as much as 800 m³/s to prevent the peak lake level from exceeding 323.09 m (1060 ft) for the benefit of Lake of the Woods cottagers, if inflow is no higher than median.
- Attempt to keep the summer lake level 10-15 cm (4-6 in) below the summer peak median level of 323.14 m (1060.2 ft) in accordance with the commitment made by the Board following the high water year of 2001. To achieve this, the lake level targets would be approximately 322.7 m (1058.7 ft) for the end of May and 322.9 m (1059.4 ft) at the end of June. Try to balance this with avoiding outflows in excess of the generation capability at Kenora and optimizing hydroelectric generation downstream.
- Through late May and June, attempt to limit Lake of the Woods outflow changes that would adversely affect nesting loons on the Winnipeg River.
- Through June (and early July), undertake to manage lake levels to limit the rate of rise for wild rice.
- By managing Lake of the Woods outflows, along with Lac Seul outflows, try to maintain Nutimik Lake levels in the preferred range.

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 800 - 900 m³/s to keep the lake level (or projected level) below upper quartile in June (approximately 323.2 m / 1060.4 ft). A flow of 900 m³/s on the Winnipeg River would cause the level below the Norman Dam to be about 1.4 m (4.6 ft) above normal; upper quartile level is 0.2 m (8 in) above median on the lake.
- Increase outflow as necessary 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”. In future years, the Board may wish to consider making use of this flood storage during periods of high inflow.
- An attempt should be made to keep outflow increases to a maximum of 100 m³/s per week, except during the spawning season when it would be desirable to not exceed 50 m³/s per week.
- Note however, that persistent higher inflows could necessitate inflow increases of 200 m³/s per week or more.