Adopted Regulation Strategy
Lake of the Woods Control Board Regulation Meeting
March 6, 2012

The Lake of the Woods Control Board held a Regulation Meeting in Kenora on March 6, 2012, 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

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

- Operate Lac Seul primarily as a hydropower reservoir to benefit downstream hydropower plants in Ontario and Manitoba, but with consideration of other interests, such as the fishery.
- To the extent possible, limit winter drawdown on Lac Seul to provide good spring spawning conditions, adequate navigation levels at the start of the walleye fishing season and protection of eggs of fall spawning fish (i.e. to minimize whitefish egg exposure and mortality).
- Regulate Lac Seul outflow to assist in providing satisfactory freeze-up conditions on the English and Winnipeg Rivers (for both level concerns and to avert frazil ice problems) as well as on Lac Seul.
- 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

To April 15 (Drawdown Period)

Incremental Lac Seul outflow adjustments should be made through March, relative to inflow, in order to target an end-of-winter (April 15th) lower-quartile level (354.44 m / 1162.9 ft).

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 (355.461 m / 1165.2 ft) with an outflow no lower than 100 m^3/s, provided that flows in Manitoba are no lower than 600 m^3/s.
- Target for an end-of-June level no lower than 355.1 m (1165.0 ft) with an outflow no lower than 25 m^3/s, provided that flows in Manitoba are no lower than 300 m^3/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. Note that a lower decile outflow for May for the 1976-2005 period was approximately 55 m^3/s while a 5^{th} %ile outflow was below 20 m^3/s.

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 m^3/s is reduced.
- Generally target for lake levels between lower and upper quartile, while supplying water for 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 flow in the Winnipeg River in Manitoba between 675 and 960 m^3/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 m^3/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.
- Seek to maintain Lac Seul levels (or projected levels) below upper quartile through the refill period. Outflow should remain below 450 m^3/s for moderately wet conditions, below 500 m^3/s for most conditions and below 600 m^3/s in all but extreme conditions.
- Increase to as much as 800 m^3/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 m^3/s.

Lake of the Woods

A) Seasonal Considerations

The Lake of the Woods basin remains dry following six months of below-normal precipitation. Many upper areas of the basin have been at record minimum levels and flows since the fall; winter precipitation, though somewhat improved over the last two weeks of February, remains below normal. Should conditions remain very dry, regulation should be focused on conserving water while providing for critical downstream flows. 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 water level (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 Lake of the Woods fishery is no lower than 322.5 m (1058.0 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. Satisfying these criteria would result in a summer peak 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)

Manage outflow to reach a March 31st 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. In recent years, the Board has sought to target the lower end of this range in order to allow for more room to handle higher inflows during the refill period.

After March 31st (Refill Period)

Refill of Lake of the Woods is largely dependent on spring rainfall and is highly variable. There is no single outflow that can accommodate the range of possible future conditions at this time of year. Lake level and flow outlooks must be continually updated and outflows adjusted in response to changes in conditions and forecasts.

There is significant concern about the risk of low spring levels and flows due to the drought conditions across the basin. After March 31st, should dry conditions persist, the focus of regulation should be on preventing the lake from declining further and promoting a controlled lake level recovery while maintaining critical flows downstream.

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. If possible, have the lake maintain at least a 10 %ile level, with outflows no lower than 100 m^3/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 a lake level above lower quartile at the end of June (322.72 m / 1058.8 ft), if possible, with outflow no lower than 200 m^3/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 m^3/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), try to manage lake levels to limit the rate of rise for wild rice.
- By managing Lake of the Woods outflow, along with Lac Seul outflow, 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 m^3/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 m^3/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
- An attempt should be made to keep outflow increases to a maximum of 100 m^3/s per week, except during the spawning season when it would be desirable to not exceed 50 m^3/s per week. Persistent higher inflows could, however, necessitate inflow increases of 200 m^3/s per week or more.