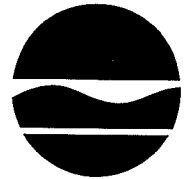


**New York State Department of Environmental Conservation
Assistant Commissioner**

Albany, New York



Alexander B. Grannis
Commissioner

June 12, 2008

Mr. Russ Trowbridge
Advisor
International Joint Commission
U.S. Section
2401 Pennsylvania Avenue, NW
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Sent via Facsimile: 202-254-4562

Dear Mr. Trowbridge:

The New York State Department of Environmental Conservation ("DEC") is pleased to respond to your May 5th request for additional information on our justification for supporting Plan B+ as environmentally superior to Plan 2007, the International Joint Commission's ("IJC's") recommended plan for the regulation of water levels on Lake Ontario and the St. Lawrence River.

DEC regrets the IJC's decision to reject the recommendation of the International Lake Ontario-St. Lawrence River Study Board ("LOSLR Study Board"), in its final report on the Options for Managing Lake Ontario and St. Lawrence River Water Levels and Flows ("LOSLR Study"), in support of Plan B+, even while recognizing that this Plan is the most achievable and environmentally beneficial regulatory plan of the options presented by the LOSLR Study Board. Plan 2007, which was not directly recommended by the LOSLR Study Board, is alleged to strike a balance among the interests that the IJC has decided to take into consideration. The IJC contends that Plan 2007 conserves more of the benefits provided under the current regulation plan, 1958DD, and provides environmental benefits superior to Plan 1958DD. DEC disagrees with this assessment.

DEC's position is based on the overwhelming numbers of scientists who dispute the IJC's claim that Plan 2007 provides overall environmental benefits and who assert, that in some respects Plan 2007 is worse environmentally than Plan 1958DD. The contention of these scientists is based on documented evidence that supports the findings that, in order to reverse the damaging environmental effects of the current plan, regulation changes must occur in several areas. A list of specific references, which are cited throughout this letter, is enclosed for further reference. Changes which DEC believes must be made to Plan 2007 are discussed below.

1. Better mimic the natural variation in water levels.

This change from current IJC protocols requires a regulation plan that will better mimic the natural long-term variability in water levels. It calls for a widening of the annual water-level range, especially by allowing low lake levels to occur during periods of low supply, resulting in long-term fluctuations of varying frequency and amplitude.

Quantitative evidence has demonstrated that lake-level fluctuations drive vegetative change in Great Lakes wetlands, while regulation of lake levels has been shown to reduce diversity of wetland habitats (Nilsson 1981, Nilsson and Keddy 1988, Renman 1989, Rorslett 1989, Waters and Shay 1990, 1992, Wilcox and Meeker 1991, Shay et al. 1999, van der Valk 2000, Seabloom et al. 2001). In Lake Ontario, these fluctuations are requisite to any long-term improvement in wetland biodiversity. Plan 2007 does little to achieve the environmentally-necessary fluctuations in lake levels.

The only real change which Plan 2007 envisions is somewhat lower water levels during the time span when supplies are so low that there is little choice otherwise. Further, DEC believes that generally higher summer water recommended under Plan 2007 would be injurious to the favorable growth of meadow marsh plants. In this view, we are supported by the LOSLR Study Board, which affirmed that the IJC's moderation of water-level fluctuations since regulation began has significantly restricted the long-term hydrologic environment of Lake Ontario and the St. Lawrence River. Water-level fluctuations are important to the maintenance of coastal wetland plant communities.

The IJC's current regulation, Plan 1958 DD, has compressed the natural range of water-level fluctuations by one half, from approximately 1.5 m without regulation to 0.7 m with regulation (Wilcox et al. 2005). Wetlands were a key component of the LOSLR Study Board's environmental analysis (Hudon et al. 2006) because they provide important habitat for many species of fish and wildlife, and even small changes in lake level can flood or dewater vast areas of wetland habitat.

In Lake Ontario, regulation and a prolonged period of above-average water supplies resulted in a large increase in emergent wetland dominated by cattails and a decrease in marsh meadow (Wilcox et al 1992, 2005, 2008, Wilcox and Meeker 1995). Meadow marsh requires periodic high levels to kill invading upland plants and succeeding periods of low levels to produce drier soils that are amenable to sedge and grass species, but which are too dry to support cattails invading from lower elevations (Keddy and Reznicek 1986, Maynard and Wilcox 1997, Wilcox et al. 2005, 2008). For a pictorial display of cattail intrusion and dominance on Lake Ontario over the past five decades under regulation, please refer to the figures in the enclosed paper entitled "Cattail invasion of Sedge/Grass meadows in Lake Ontario: photointerpretation analysis of sixteen wetlands over five decades" by Wilcox et al 2008.

2. Better mimic the natural, seasonal range variability.

This change from current IJC protocols is needed to improve seasonal fall-winter-spring wetland water levels.

Plan 1958DD's regulatory requirements have caused the dewatering of many wetlands throughout the Lake Ontario/St. Lawrence River system during the fall-winter-spring period. This problem is causing catastrophic habitat consequences to spring spawning fish populations, migrating waterfowl, and overwintering fauna, especially muskrat populations which are essential to wetland plant community biodiversity (Farrell et al. 2005, 2006, Toner 2006, Cooper et al. 2008, Wilcox et al. 2008). The Lake Ontario 101-year hydrograph averages published by the IJC (Wilcox and Xie, in review) demonstrate that water-levels under Plan 2007 will be even lower than occurs under Plan 1958DD during the fall-winter-spring period, only worsening this already damaging condition.

Furthermore, an assessment of seasonal lake-level characteristics demonstrated that, under Plan 2007, mean winter lake levels would be reduced by 13 cm or more than Plan B+ and springtime levels by more than 10 cm. These differences result in less winter habitat for muskrats and reduced access to spring spawning habitats for fish such as northern pike (Wilcox et al. 2005, Wilcox et al. 2007, Wilcox and Xie, in review). Under these suppressed seasonal conditions, muskrats have little chance for overwinter survival. LOSLR study results identified low winter water levels as a critical factor limiting muskrat populations (Farrell et al. 2006, Toner 2006).

Muskrats are the keystone mammal in wetlands of the Great Lakes. They substantially benefit wetland habitat by cutting emergent vegetation, such as cattails and bulrushes, for food and shelter. Muskrats are a major consumer of cattails. The unvegetated pools around muskrat lodges and platforms, formed by cutting activity, create open areas within the wetlands and improve overall wetland productivity (Environment Canada 2002). They can influence the richness of vegetative species in the wetland; offer substrate for seed germination; help decomposition processes; provide nesting sites for birds and turtles, including some species at risk; and increase micro-topography in wetlands. Many bird, mammal, plant and fish species such as the northern pike respond favorably to the increases in open water and edge and channel effects created by muskrat disturbance (LOSLR Study 2006).

3. Recognize that the meadow marsh regulation component of Plan 2007 would be environmentally beneficial only by coupling the long-term water-level variability enhancement with higher fall-winter-spring water levels.

The meadow marsh indicator component of the IJC's regulation plan would benefit only by linking together the two goals discussed above. These benefits are not provided under Plan 2007.

DEC believes that it is also questionable whether any favorable response by meadow marsh could be sustained under Plan 2007, which calls for generally higher summer water levels. Furthermore, without enhancing the long-term variability of water-levels,

coupled with higher fall-winter-spring wetland water levels, fish and wildlife populations and vegetative biodiversity will continue to diminish.

In summary, Plan 2007 provides little change from 1958DD and ignores water-level variability needs for wetland vegetation, as well as worsening seasonal habitat access for waterfowl, fish, muskrats, and other wetland inhabitants. Clearly, Plan 2007 does not begin to approach the environmental benefits under Plan B+.

It should also be pointed out that riparians have a lot to gain under Plan B+, as periodic low lake levels can rebuild beaches that provide a natural protective barrier to shoreline properties, as well as restoring and replenishing lost sand dune areas. This has happened spectacularly on the unregulated upper Great Lakes during current low water levels. Water-level fluctuations play a major role in the development and stabilization of beaches and coastal dunes along Great Lakes shorelines (Anderton and Loope 1995, Loope and McEachern 1998, Loope and Arbogast 2000).

Further, although Criterion 7 of the draft Order of Approval calls for regulation to protect the resiliency of wetlands and biodiversity on Lake Ontario and the St. Lawrence River, there is no possible means by which this criterion can be met with Plan 2007 for the reasons stated above.

I hope that this information articulates DEC's concern with Plan 2007's ability to mimic the natural water-levels which are so greatly needed to restore the health and biodiversity of the natural resources of Lake Ontario and the St. Lawrence River. The references listed below serve to both justify the accuracy of DEC's arguments, and provide more detailed information on the issues discussed above.

Please don't hesitate to contact me if you need additional information.

Sincerely,

James M. Tierney

Enclosures

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