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Hydrology and Earth System Sciences Discussions



# *Interactive comment on* "Modelling acidification, recovery and target loads for headwater catchments in Nova Scotia, Canada" *by* C. J. Whitfield et al.

**C. J. Whitfield et al.**

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Responses to comments from Referee #1:

1. The text in the Conclusions section has been clarified to explain the emissions reductions necessary to meet critical chemical limits by 2030. 2. Due to shallow depths on the Canadian shield in Ontario, it is necessary to compare soil profile weathering rates rather than catchment rates. This has been clarified within the article. 3. A table of dry deposition factors for chloride and sulphate was added. Explanation of the dry deposition factors in terms of steady state of sulphur has been provided. 4. We have included a range of charge densities and discussed the implications for lake response



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to decreasing acid deposition. 5. Figure 4 has been changed to show the time-series (83-02) for Bird Lake.

Responses to comments from Referee #2: 1. Further clarification of the calculation of dry deposition factors has been provided. 2. Explanation of the rationale for setting uptake to zero has been provided. 3. Change in pH at Bird Lake has been included (Figure 4) 4. A brief summary of the chemical recovery trends reported for Nova Scotia lakes has been provided.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 3595, 2006.