

Canadian Historical Snow Water Equivalent Dataset (CanSWE): Recent Update (1928 – 2020) and Future Directions

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ABSTRACT

Reliable and timely *in situ* information of snow water equivalent (SWE) – the depth of water that would be produced if all the snow melted – is critical for water management, flood forecasting, climate monitoring, evaluation of hydrological and land surface models, and for applied research. The Canadian historical SWE dataset (CanSWE) combines manual and automated pan-Canadian SWE observations collected by national, provincial, and territorial agencies as well as hydropower companies. Snow depth and derived bulk snow density are also included when available. This update supersedes the previous Canadian Historical Snow Survey dataset published by Brown *et al.* (2019), and this presentation describes the efforts made to correct metadata, remove duplicate observations, and quality control records. The updated dataset, compiled from 15 different sources, includes SWE information for all provinces and territories that measure SWE. Data were updated to July 2020 and new historical data from the Government of Northwest Territories, Government of Newfoundland and Labrador, Saskatchewan Water Security Agency, and Hydro Quebec were included. CanSWE includes over one million SWE measurements from 2607 different locations across Canada over the period 1928 – 2020. It is publicly available on the Open Canada website.

This presentation will be followed by a discussion with the snow community to identify additional snow datasets that could be included in CanSWE and to clarify the community need for future regular updates of CanSWE.

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