



Ice jams, frazil dams and flood risks: tools and methods.

Chloé Alassimone and Annie Lagadec

Hydro Météo, 201 rue des entreprises, Notre-Dame-des-prairies, QC, J6E 0L9

calassimone@hydrometeo.net

alagadec@hydrometeo.net

Each year, during cold season, several municipalities in Quebec are confronted to ice and frazil risks on rivers. Considerable damage and flooding can be originated by ice jams and frazil dams. Ice jams are usually associated to spring floods. However, in recent years, these events can also be observed in the middle of winter with a winter break up, which increases the risk throughout the season.

Since 1993, Hydro Météo has developed a river monitoring program to assist municipalities during the cold season. The program is intended to obtain data on rivers flow and ice movements in order to rapidly communicate risks information.

The information provided to municipalities offers i) territory knowledge and actual basin state and ii) forecast products. The first component requires territory instrumentation with the addition of hydrometric and weather stations. The data are supplemented by field visits to establish snow and ice cover state. Secondly, different indicators based on potential snow melt and precipitations are used to estimate the impact of melting along the season. The information collected is then combined with forecasts and field data to assess a potential flood risk in a short time scale. Furthermore, a flood threshold based on historical observations is established for adequate risk management.

Risks evaluation affords municipalities a better response time to manage the risk, taking account all the knowledge of the actual situation.

This poster exposes the monitoring process to assess and communicate a flood risk situation which will improve risk management.