The impact of acid precipitation on aquatic ecosystems may be intensified by melting snow. When snow melts rapidly in the spring, the stream or lake may be "shocked" with an excessive amount of acid. In the spring, at the time of acid snow melting, the various aquatic organisms are reproducing and are the most sensitive increases in acid.

**Little Moose Lake**

During the winter of 1976-77, there was no significant snow melt from mid-December through February at Little Moose Lake, New York. The highest depth was 130 cm. (top graph). The snow had an average pH of 4.4 in Feb. (middle graph). The snow started to melt in early March. (bottom graph).

![Graph of Little Moose Lake - 1977](image)

**Snow Thaw at Little Moose Lake**

The first major thaw in early March resulted in the release of 80% of the stored acid in a one week period. During the first couple of days, the snow melt water pH was 3.4-3.6. The pH gradually rose over the eight day period to pH 5.0.
pH at Little Moose Lake

The pH levels in Little Moose lake are normally about 7.0. During the snow melting, in early March, the lake pH dropped to 6.0. An outlet stream from the lake reached a low pH of 4.8. A small brook nearby hit a low pH of 4.6 during the snow melt period. The average pH in this brook during the rest of the year is about 5.4. There was a definite relationship of the amount of aluminum in the brook vs. pH. As the pH decreased, the aluminum concentration increased.

Captive populations of adult, year old, and larval brook trout had been maintained over the winter in Little Moose Lake water without any problems. During the snow melt in March, 3 adult brook trout died, 25 one year old trout died, and about 50,000 recently hatched trout died. Various other abnormal behaviors were also observed.
Contributors

- Charles Ophardt, Professor Emeritus, Elmhurst College, Virtual Chembook