1st NSERC Hydronet Symposium, Winnipeg Delta

March 29th and 30th, 2011

*Monitoring river ice processes at Newfoundland HydroNet sites.* \*J. Morley, J. Nafziger and F. Hicks, University of Alberta.

Ice processes can have a significant effect on fish and egg survival in small steep streams, especially if anchor ice formation is evident. Only a handful of studies have characterized the hydraulics of small (<70m width), steep stream under winter conditions so that the effects on fish can be better understood. Additionally, the extent to which streamflow regulation affects the winter environment for fish just downstream of dams is not well known. In the fall of 2010 four study sites were selected from a biological perspective as part of NSERC Hydronet Project SNG 3.4 – Winter Stressors for Fish in Rivers. The objective at each site is to broadly characterize and quantify the winter iceregime and, specifically, to characterize the environmental stressors and the differences in ice formation between the regulated and unregulated sites. To achieve these objectives, sixteen time lapse cameras were along the banks of the rivers in October 2010. These cameras took hourly photos of ice conditions over the winter of 2010/2011. They will be retrieved in May 2011 and will aid in determining future monitoring efforts at these sites. Expected ice processes could include accumulation of frazil ice on the bed of the channel. This type of ice formation is called anchor ice and can be very detrimental to fish as entire pools can fill with ice.