cally and laterally. Supratidal marshes are inundated by high tide only at extreme spring tides, at most about 100 hours per year in years with sufficiently high tides. Typically, half of these inundations take place in (late) winter. Large ice cakes may be floated on top of supratidal marshes (just landward from tidal creeks) and remain stranded there, because flood currents continue to flow landwards for about 30 minutes after the time of high water. The sediment concentration of ice cakes may vary from 0 to 23% by weight and appears to consist mostly of silt-sized and finer material, but its variation within ice cakes as well as geographically is unknown and nearly impossible to predict. Research elsewhere suggests that coastal marsh accretion accelerated after colder winters and that amounts of ice-rafted debris equaled amounts of summer sediment accretion. Hence the hypothesis that winter ice contributes significantly to tidal marsh accretion. Erosion of tidal marshes by winter ice seems to occur mostly in a lateral sense, i.e. on the banks of tidal creeks and channels. However, the creation of vertical ice walls along tidal creeks also has a stabilizing effect. This process too, has never been quantified.

As much as 60–85% of original tidal marshlands have been locked away behind dykes, a process that affected the storage capacity of the estuary as documented elsewhere. Tidal marshes are important primary organic matter producers, contributing significantly to the food chain. Questions regarding the mutual effects between winter ice and the construction of tidal turbines are not part of the Strategic Environmental Assessment (SEA), presently carried out under auspices of the Nova Scotia Government, thus suggesting that this is a solvable engineering issue. Thus, the extent to which winter ice contributes to the health of the few remaining salt marshes and the extent to which tidal turbines may interfere with ice formation, ice circulation and sediment budget of a fragile environment remains a risky unknown.

A research agenda for Fundy: results from the 2006 'Fundy Session' at the Atlantic Geoscience Society Colloquium

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During the 2006 AGS Colloquium, we convened a session on "Sedimentation in the Greater Bay of Fundy". The aim of this session was to define a research agenda, an exercise that had not been carried out for a long time and which we deemed necessary because of: a) global change implications, b) renewed interest in tidal power generation, c) changing views on coastal zone management practices. These were the most important topics of the agenda: (1) map the entire Bay floor using multibeam bathymetry, paying special attention to mussel reefs and large sand and gravel bedforms; (2) establish the timing of origin of the big sand waves on the bottom of the Bay; (3) establish a sediment budget, paying special attention to the different contributions of bedload, suspended load, organic and inorganic matter; (4) improve understanding of sea level rise over the last 10,000 years; (5) establish the proportions of organic and non-organic material in the sediment column; (6) establish a sediment monitoring system in the upper Bay prior to removing the Petitcodiac causeway; (7) quantify the role of winter ice as a source of sediment and in relation to marsh ecology; (8) quantify the effects of (increased) wave activity on exposed marsh cliffs; (9) compile detailed high-resolution LiDAR surveys of marshes and mudflats; (10) integrate modern and historical bathymetric data with historical aerial photography and HR satellite imagery; (11) expand monitoring of dredge spoil disposal sites, as at Saint John (NB), to elsewhere; (12) address bottom fishing and its effects on benthic communities and sediment erosion. The 2008 session has been convened to document progress and revisit the agenda in the light of recent (political) developments.

Radial growth of trees from northeastern to southeastern Labrador

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Prior to the Mount Allison Dendrochronology (MAD Lab) sampling in the summer of 2007, little tree ring work was conducted in Labrador, with the most studies coming from the eastern coast and from one species. Given this, the information is still quite spotty, as the cost of transportation and limited tree availability has limited a systematic sampling across the landscape. Over this backdrop, the MAD Lab initiated a more region-wide study breaking Labrador into three zones (east, west, and north). Within each zone a consistent grid was used that will link the entire region together, while at the same time highlight the major zones of homogenous tree cover currently found. This talk will illustrate some of the early results of areas in southeastern Labrador, while at the same time discuss some of the difficulties in sampling the more northern locations. Three species will be discussed (white spruce (*Picea glauca*), black spruce (*Picea mariana*) and balsam fir (*Abies balsamea*)). Preliminary results from chronologies of black spruce and balsam fir developed from the southeastern region will be compared to the other chronologies in adjacent