



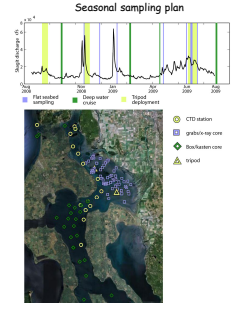
Export and Retention of Fine-Grained Sediment on the Intertidal Complex of a Small Mountainous River: Skagit River Tidal Flats

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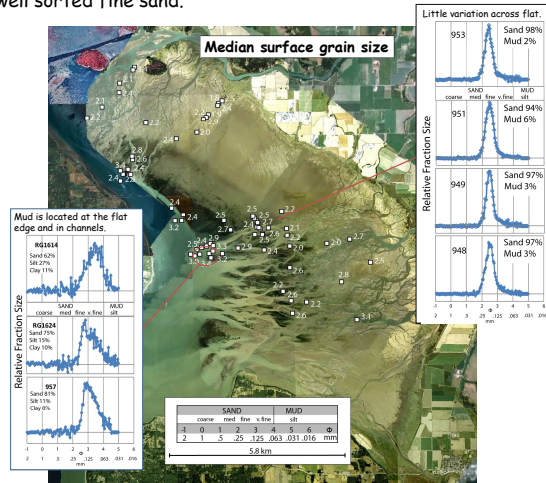


The Skagit River originates in the Cascade Mountains and flows 240 km to Whidbey Basin of Puget Sound. It delivers about 35-50% of the freshwater discharge to Puget Sound with peak discharge during the spring freshet and winter storms.

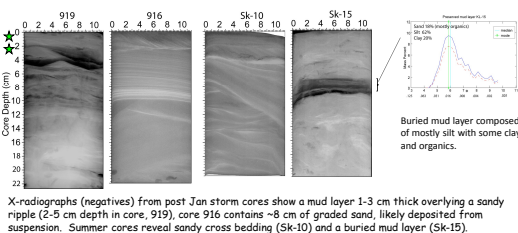
Stream gauging at Mt Vernon from 1980-1991 suggests that suspended-sediment concentration is also bimodal with most of the sediment released in the winter (Collins 1998). In order to capture this variability in sediment discharge, we focused on three sampling periods: low (August), Freshet (June) and storm (Nov-Jan) discharge. Sampling in subtidal regions followed in August and February.



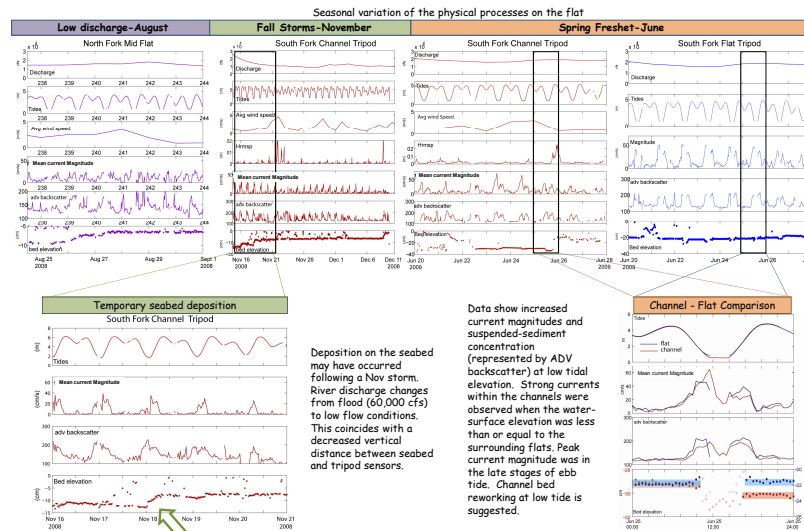
Tidal flat surface is composed of a uniform, well to moderately well sorted fine sand.



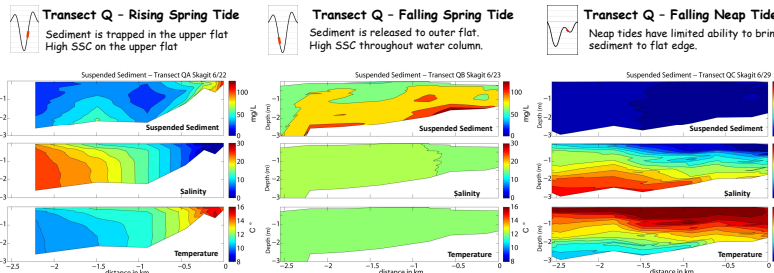
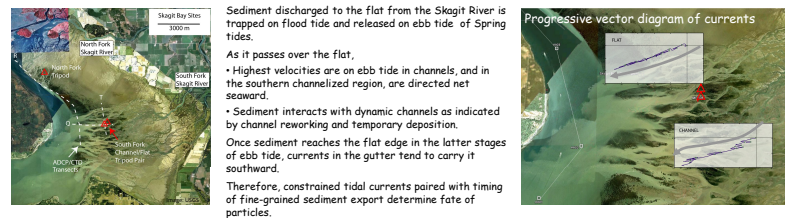
Sedimentary structures are preserved within the seabed



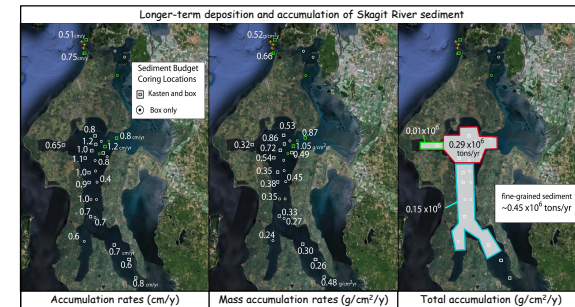
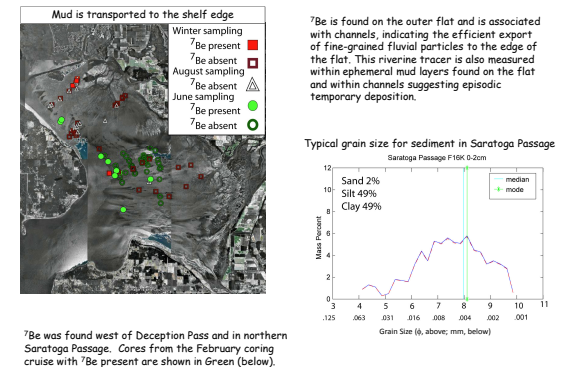
Physical processes move fine-grained sediment to the flat edge.



Examination of sediment trapping and release- Spring Freshet



Fine-grained sediment is delivered to sub tidal regions rapidly and seasonally.



Mass accumulation rates (g/cm²/y) were obtained for cores collected in Saratoga Passage, and a few cores from outside Deception Pass (to north). These cores contain almost entirely silt and clay (<2%), and a simple budget indicates that approximately half a million tons of sediment accumulate annually in Saratoga Passage. Less northward is more difficult to constrain, because sediments leaving Deception Pass are broadcast widely.

