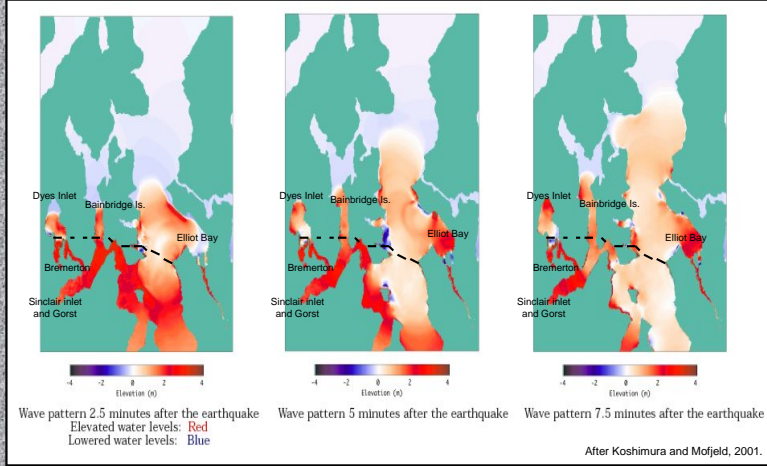


# Examination and comparison of sand units in Sinclair and Dyes Inlets may provide clues to past tsunami events

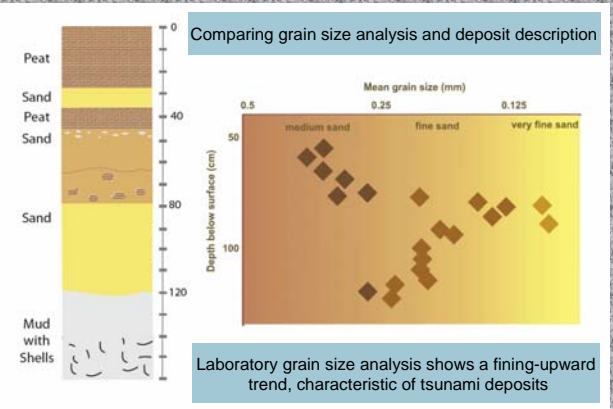
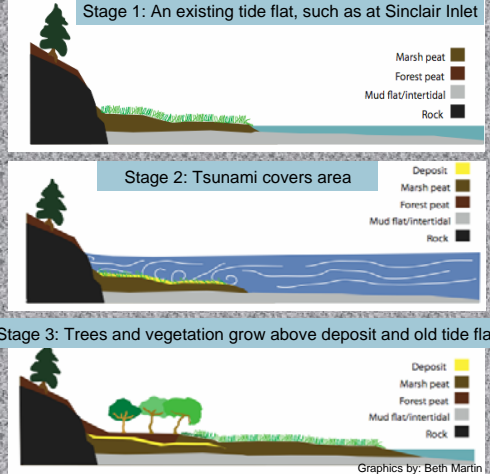
By David Sullivan; Mentor: Beth Martin; Faculty Advisor: Jody Bourgeois

**How can we tell whether a sand deposit is from a tsunami or not?**  
 Tsunami deposits have been found in the Puget Sound area, and the search for more of them is ongoing. Tsunamis are rare events, and the deposits they leave behind display some unique characteristics such as: a fining upward grain size trend; general lack of structure; and a sharp, often erosional contact with the underlying surface.

Overall map showing Puget Sound, local faults and modeled tsunami wave



Graphic representation of tsunami deposit genesis



A point bar in Clear Creek, near Dyes Inlet, showing another possible way of depositing sand



Excavating around the deposit at Dyes Inlet – will I find a tsunami deposit?



**Conclusions:**

The deposit at Sinclair Inlet (Gorst 2) is most likely the result of a tsunami.

The deposit at Dyes Inlet is most likely the result of fluvial processes, but is still being evaluated.



**Comparison of Tsunami and river deposits**

- Cross bedding
- Planar lamination
- Fining upward grain size
- Lack of internal structures
- Erosional contact at base of unit



Indeterminate (at this point) deposit at Dyes Inlet



**References:**

Atwater, B.F., Moore, A.L. A Tsunami About 1,000 Years Ago in Puget Sound, Washington. Science, vol 258, 1992.

Knighton, D. Fluvial Forms & Processes, 1<sup>st</sup> Ed. 1998.

Koshimura, S., Mofjeld, H. Puget Sound Tsunamis – A New Partnership to Model and Map the Hazard. 2001.

Prothero, D.R., Schwab, F. Sedimentary Geology, 2<sup>nd</sup> Ed. 2004.