

Canadian Perspective

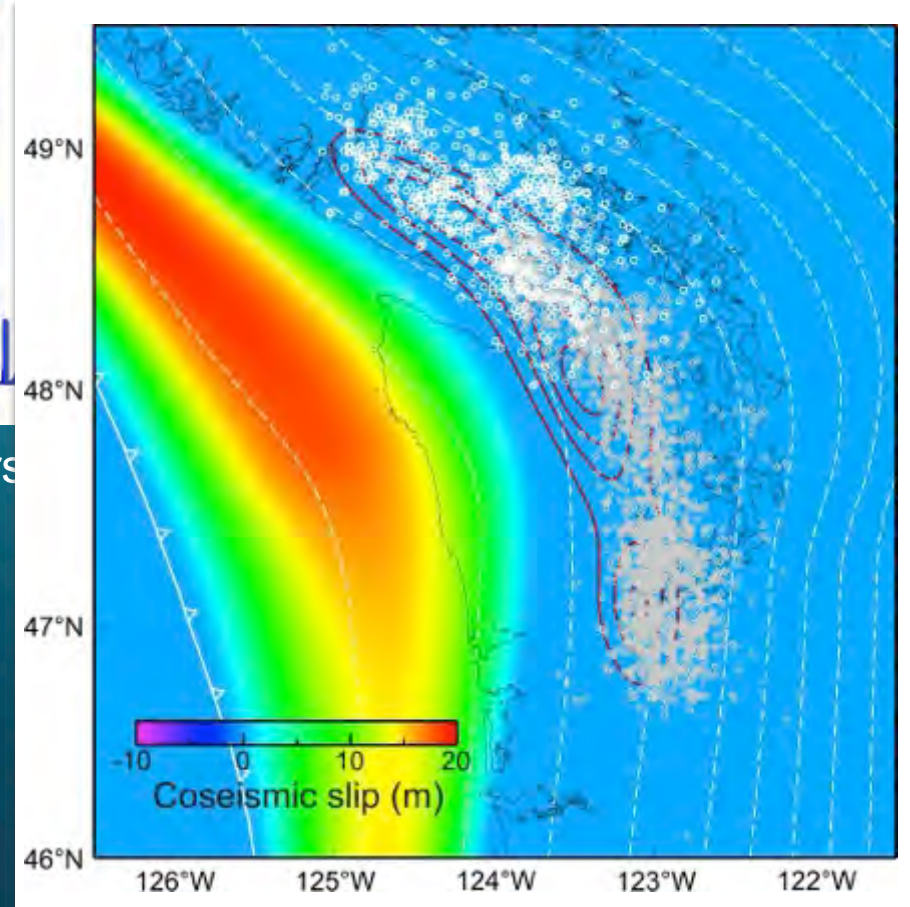
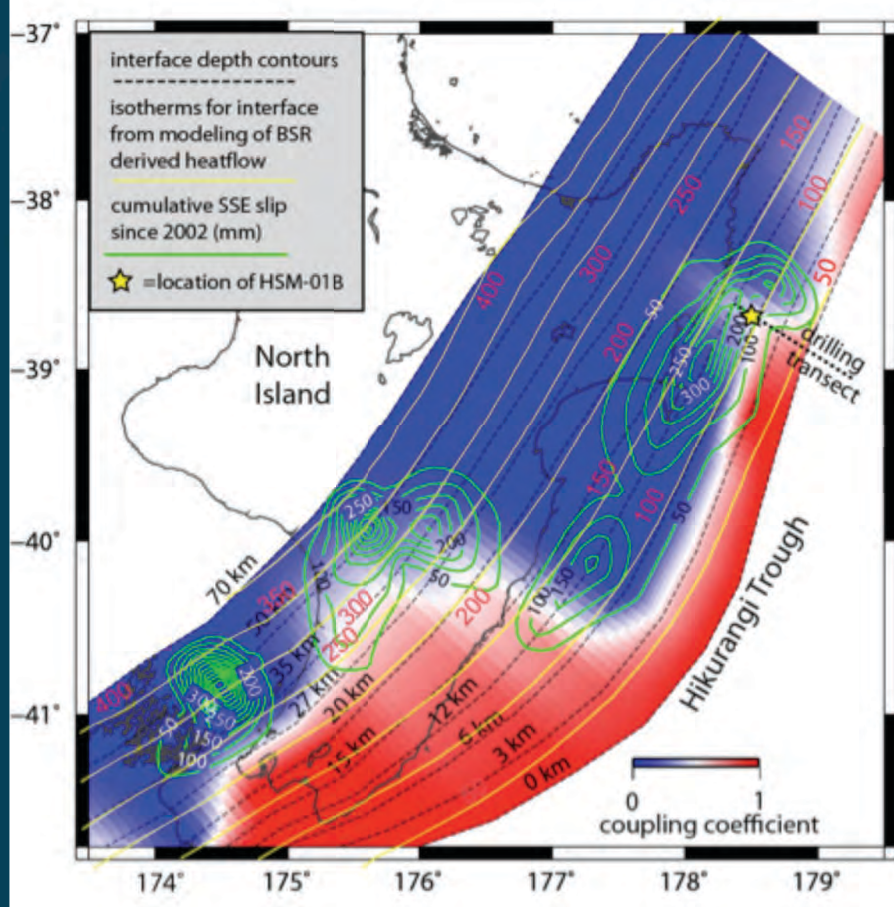
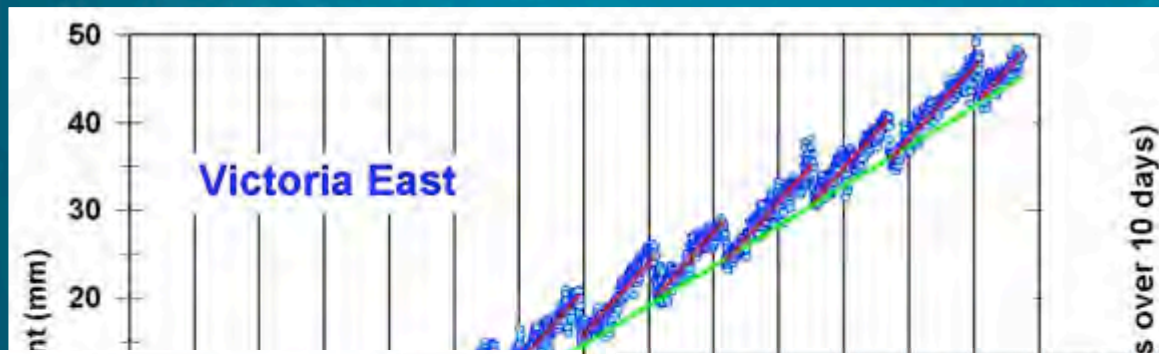


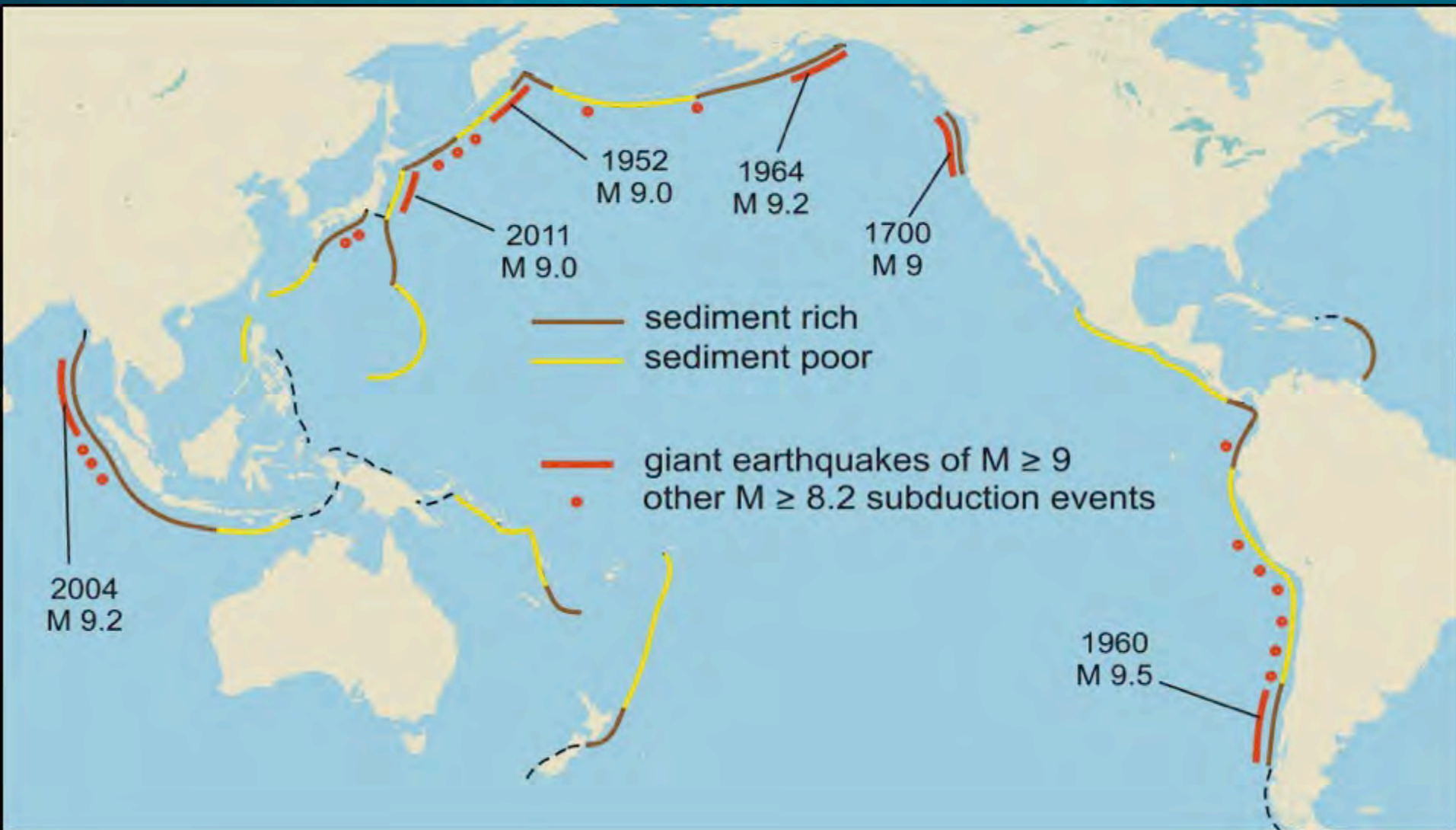


**GeoPRISMS New Zealand Primary Site
– Canadian Perspective**

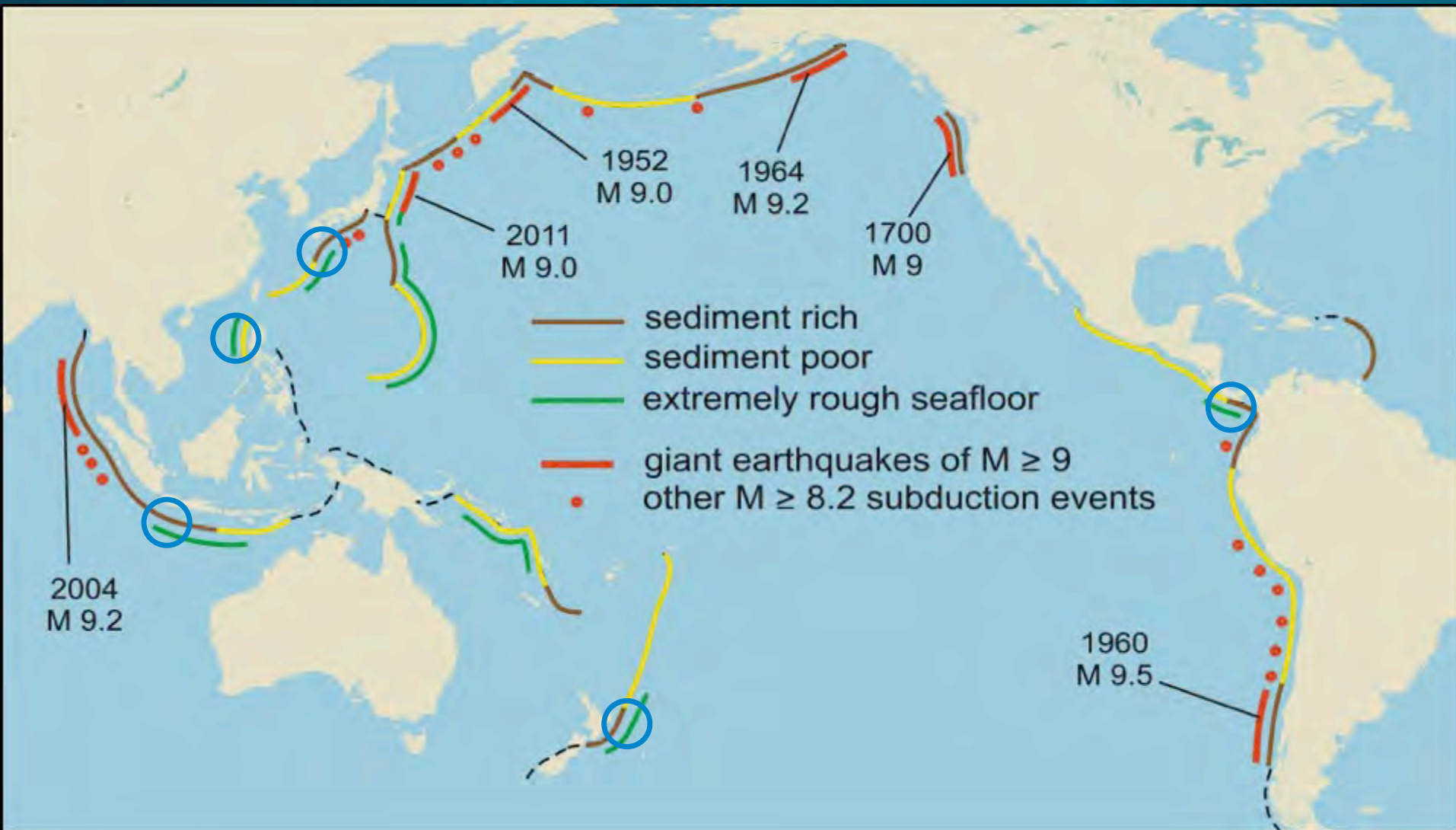
**Kelin Wang
Geological Survey of Canada**

- **Slow slip events (and tremor)**
- **Megathrust coupling and great earthquakes**
- **Cabled seafloor observatories**





Correlation of giant earthquakes with smooth incoming seafloor



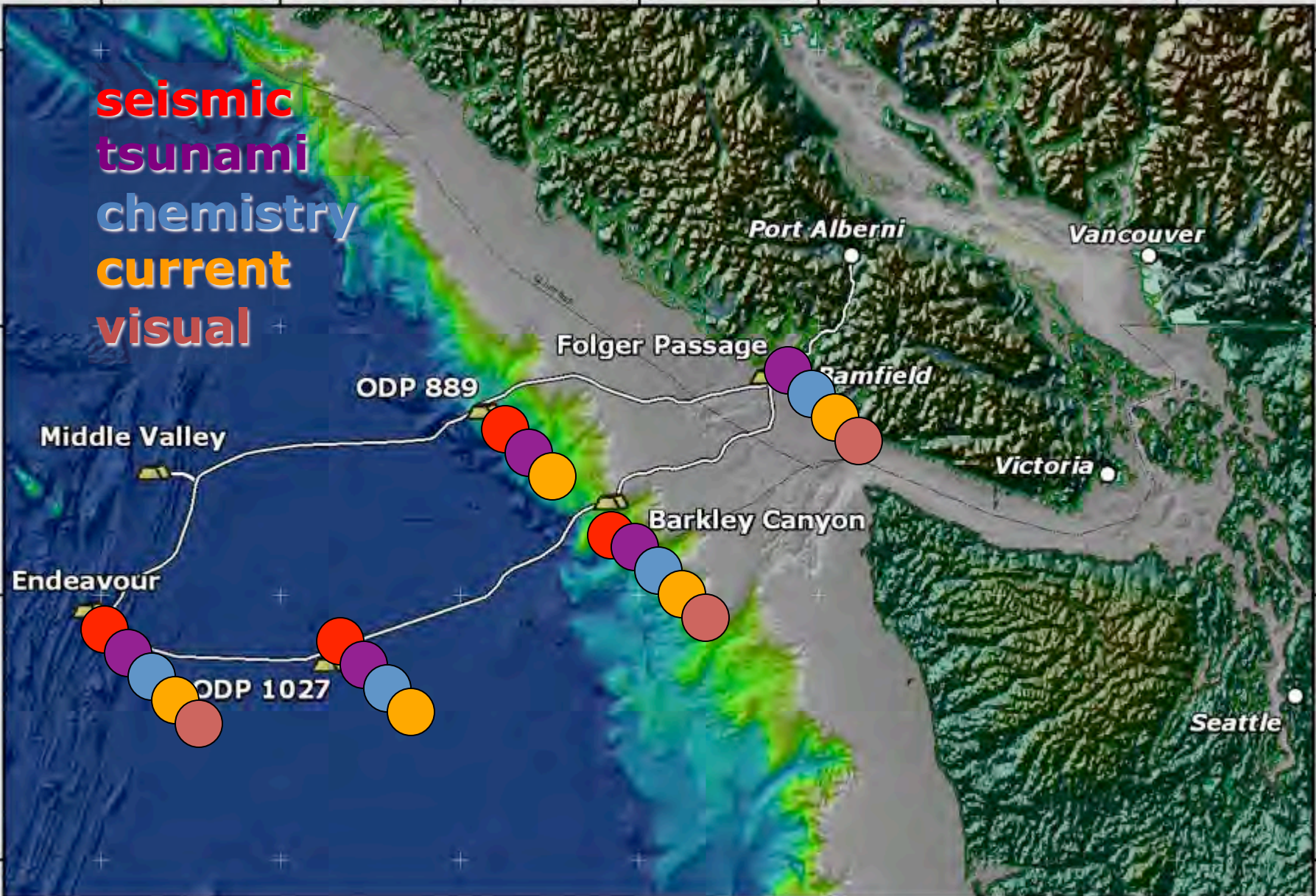
GPS evidence for relating subduction faults (“panglossing”)

- ★ University of Victoria
- shore station
- backbone cable
- ▲ repeaters
- branching units
- ▾ nodes
- junction boxes
- instruments



840 km fibre-optic cable
6 nodes, over 100 instruments
Open, real-time data access
Power – 9 KW
Data – 5 GB bandwidth



seismic
tsunami
chemistry
current
visual



Legend

-  Science Node
-  Cable Route PSR12

Basemaps:
USGS Open File No. 99-369
Projection: Mercator, LTS 48°



University of Victoria

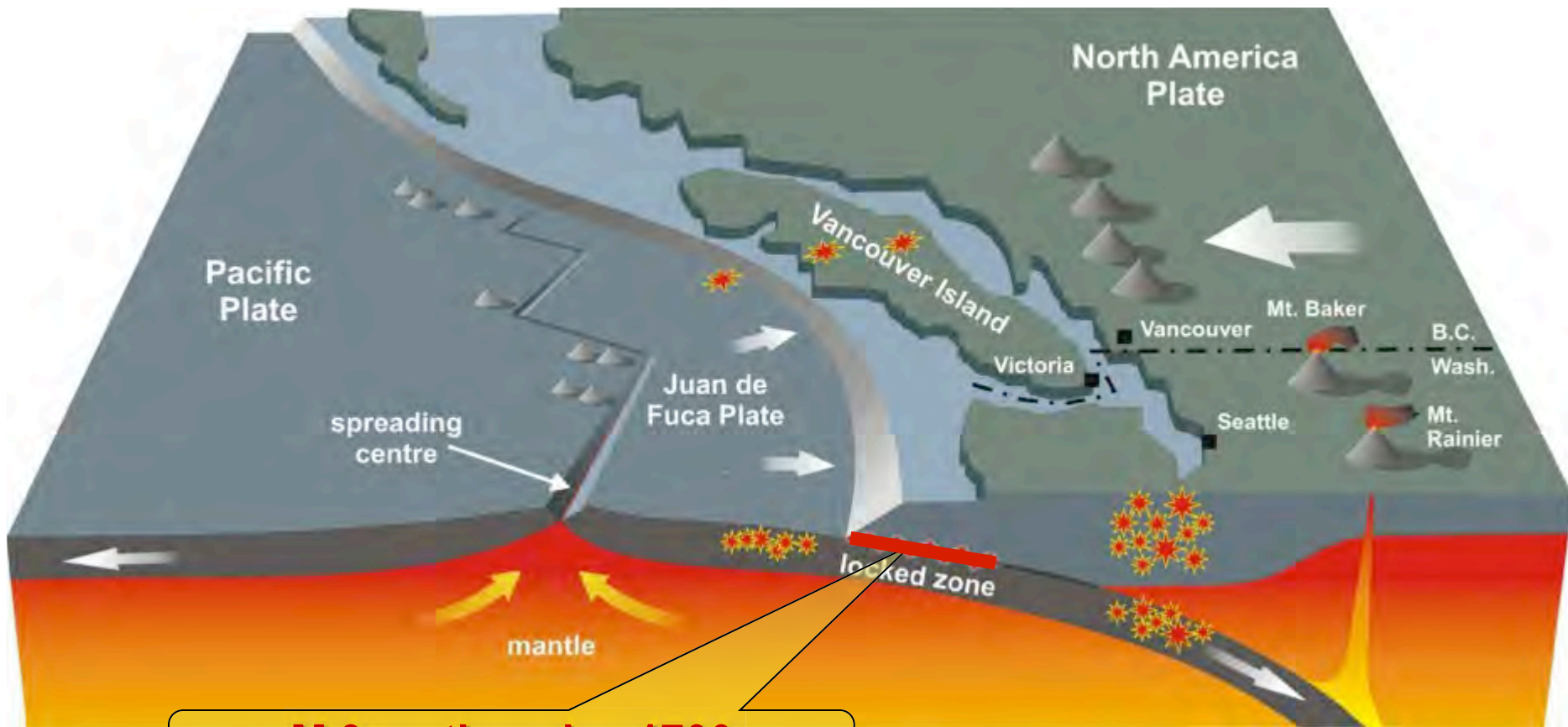
NEPTUNE Canada Observatory
Proposed System Layout



2007/05/14

Scientific themes

Earthquake processes and tectonics



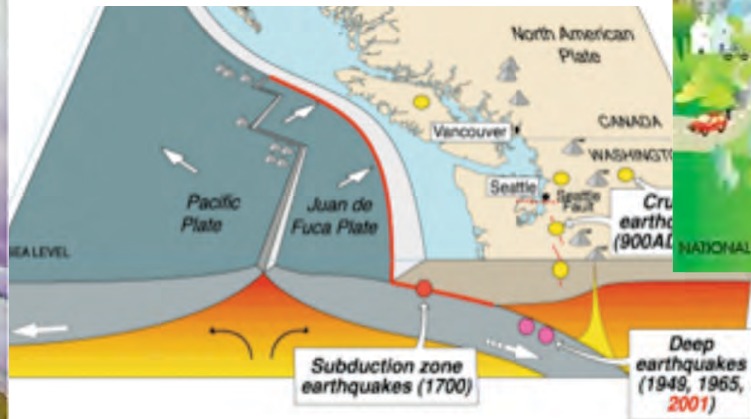
M 9 earthquake, 1700

Scientific themes

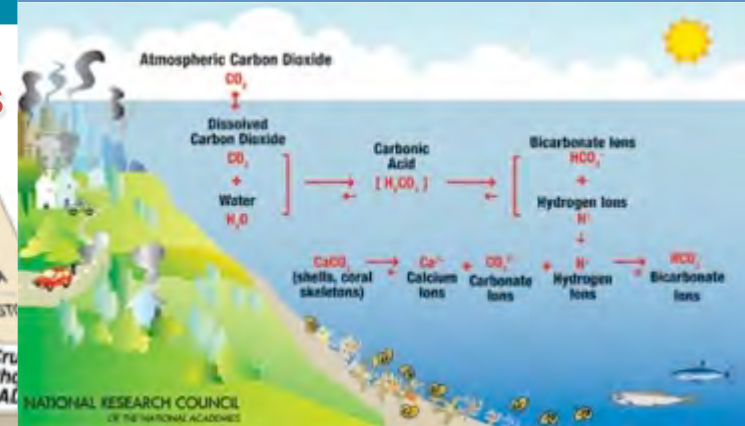
subsea geofluids



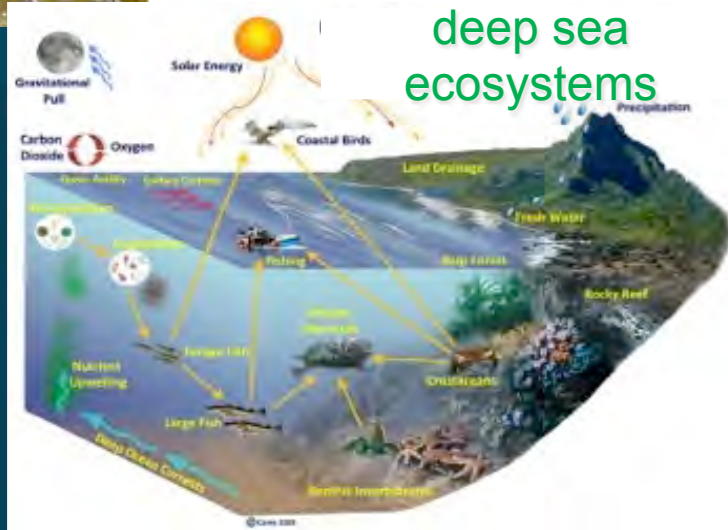
earthquakes and tectonics



marine life and climate change

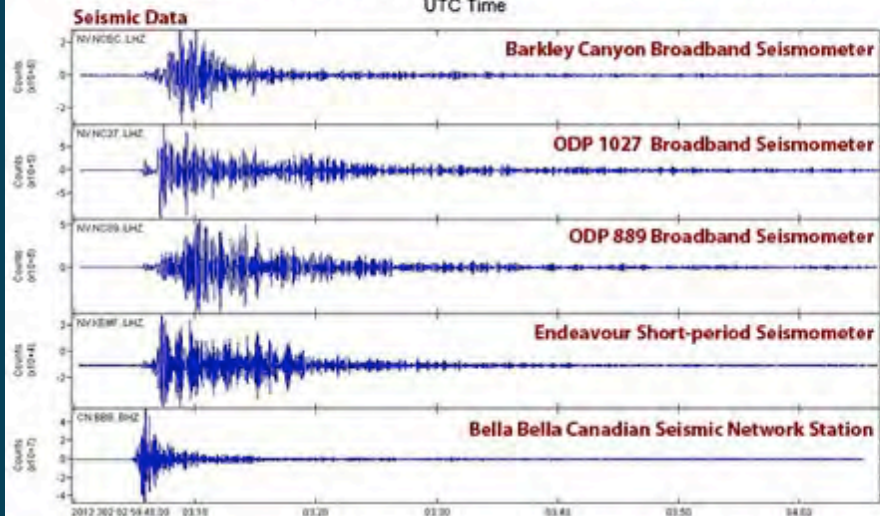
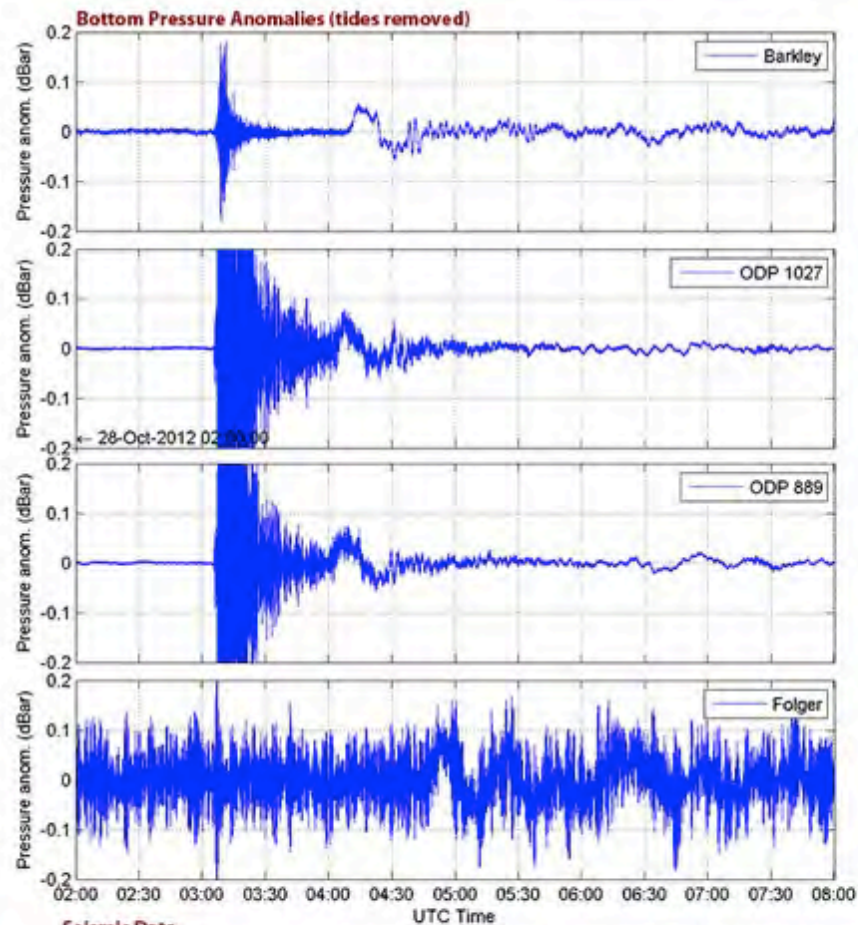


deep sea ecosystems

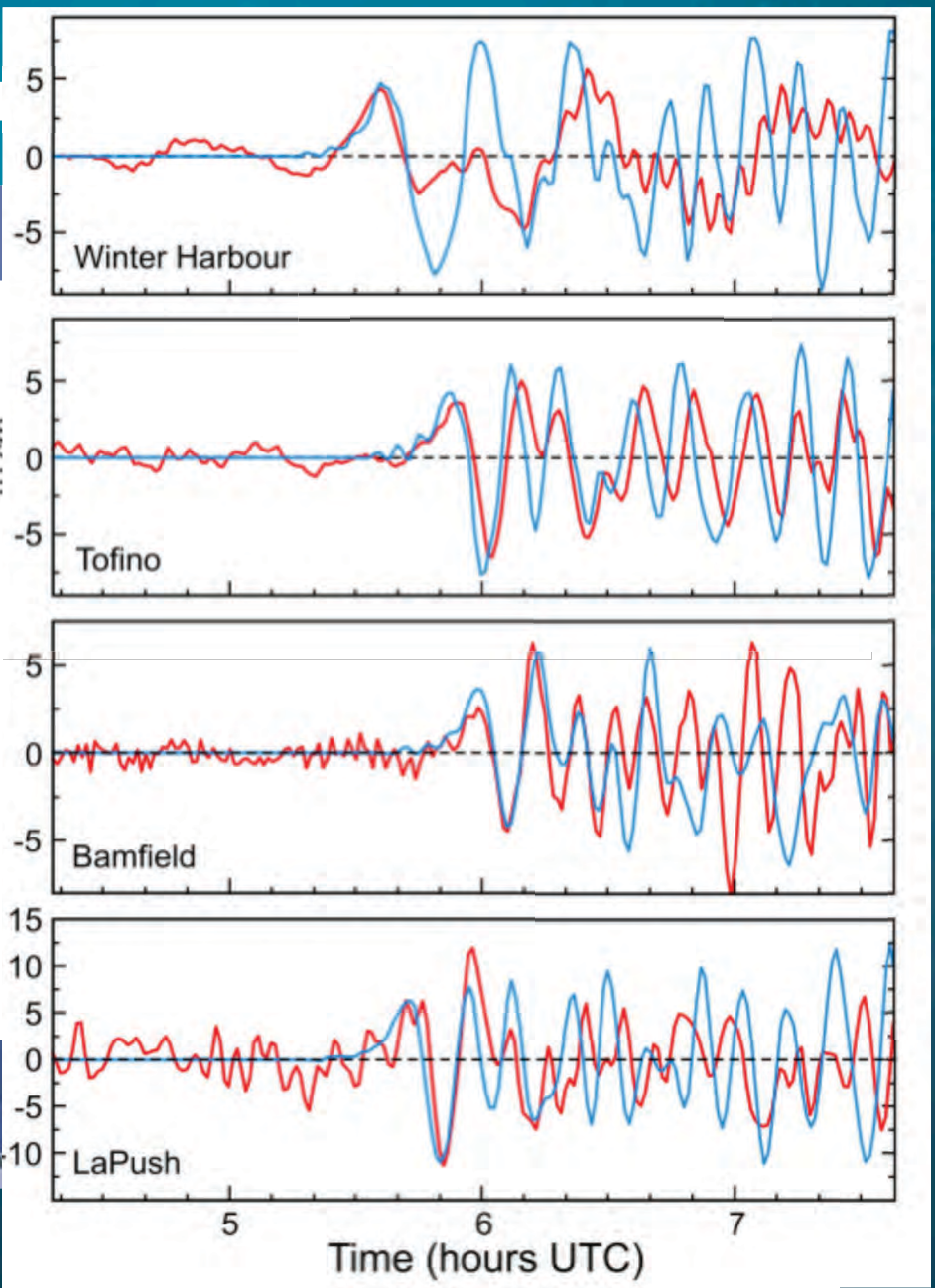
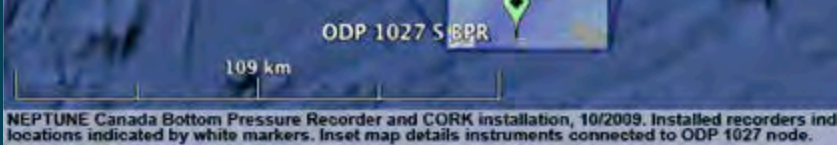
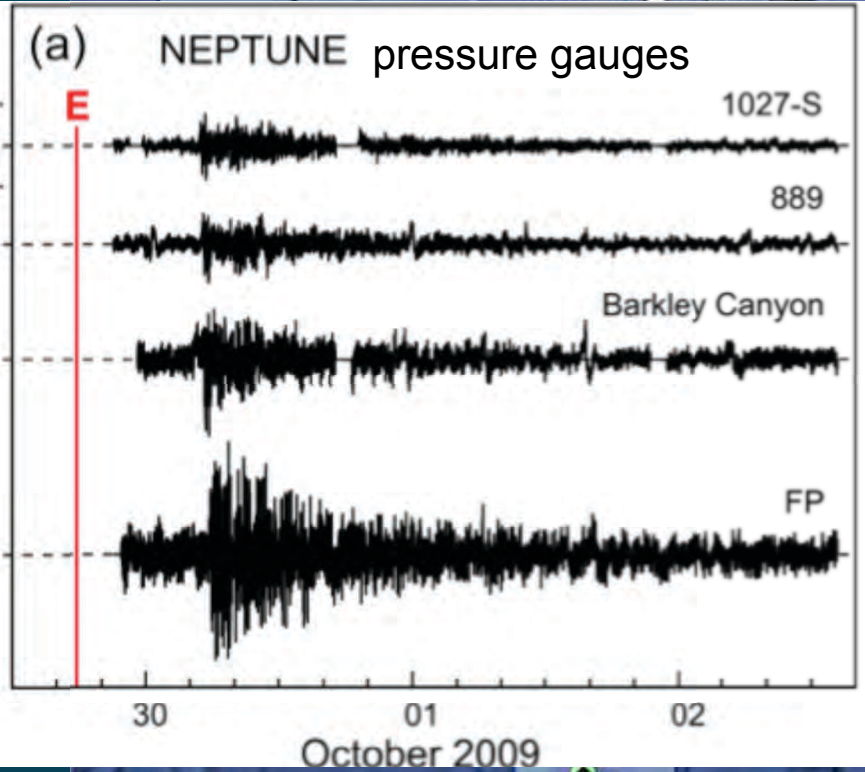


engineering and information science

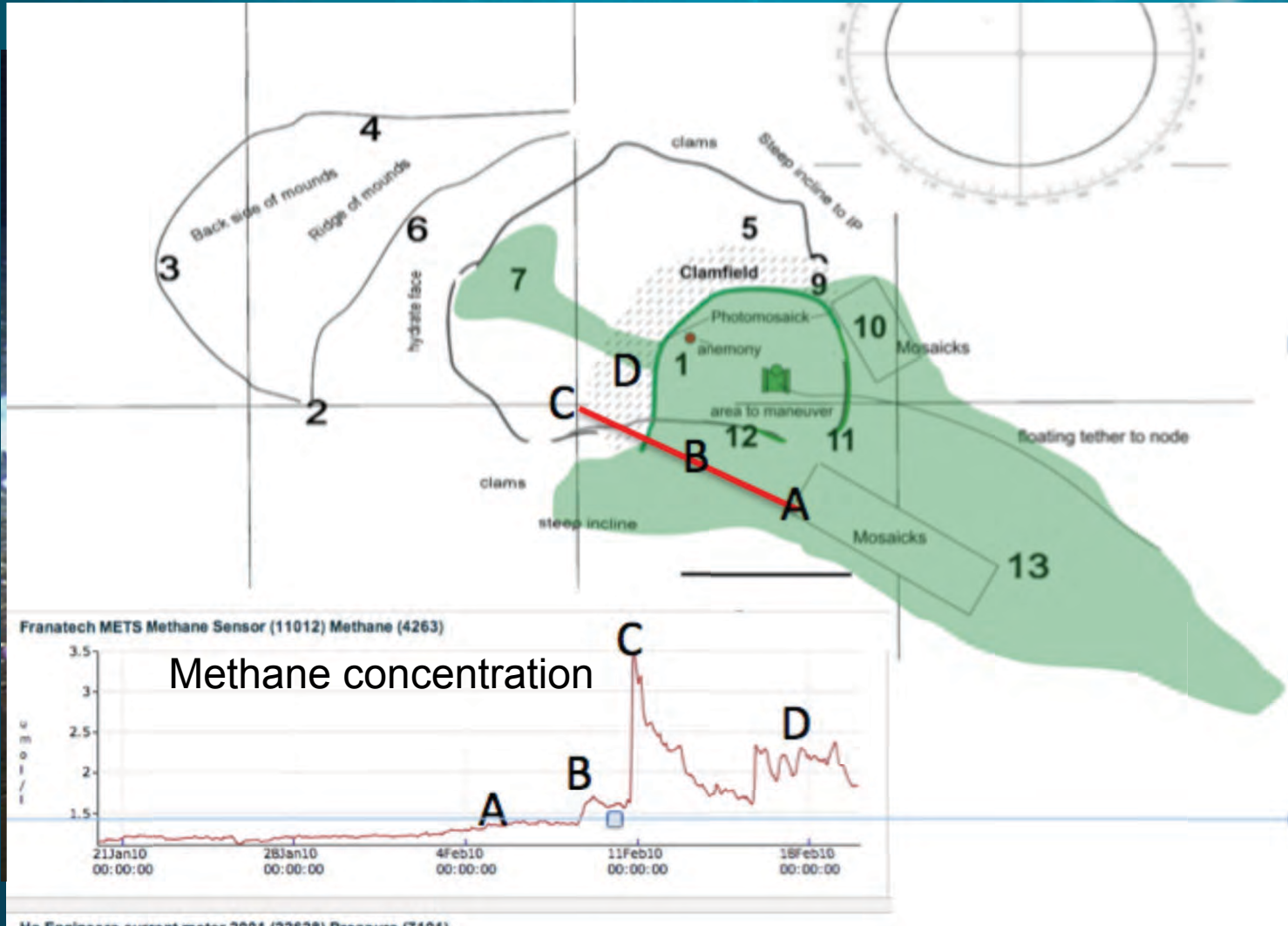
Haida Gwaii earthquake, Oct., 2012



Samoa tsunami

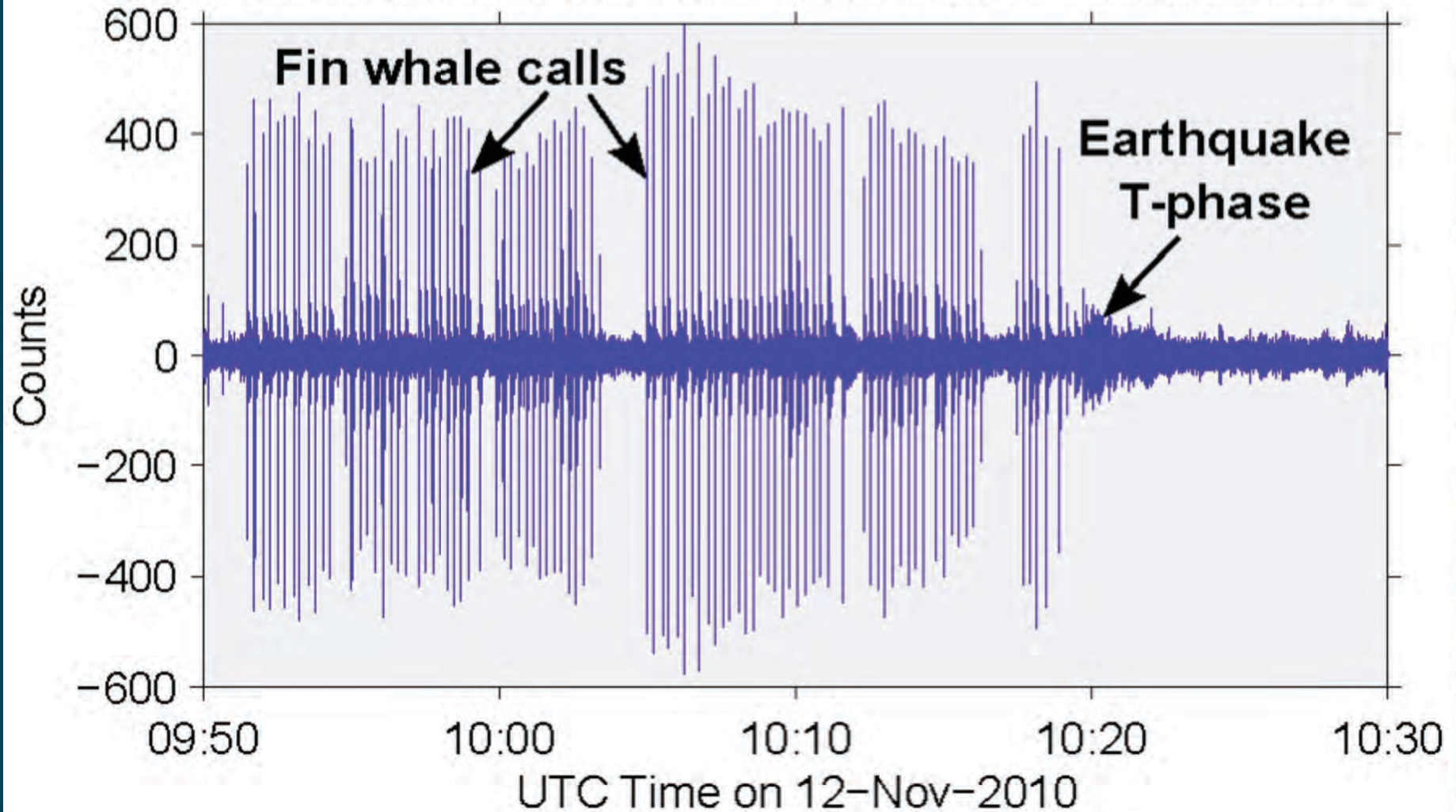


hydrate、gas

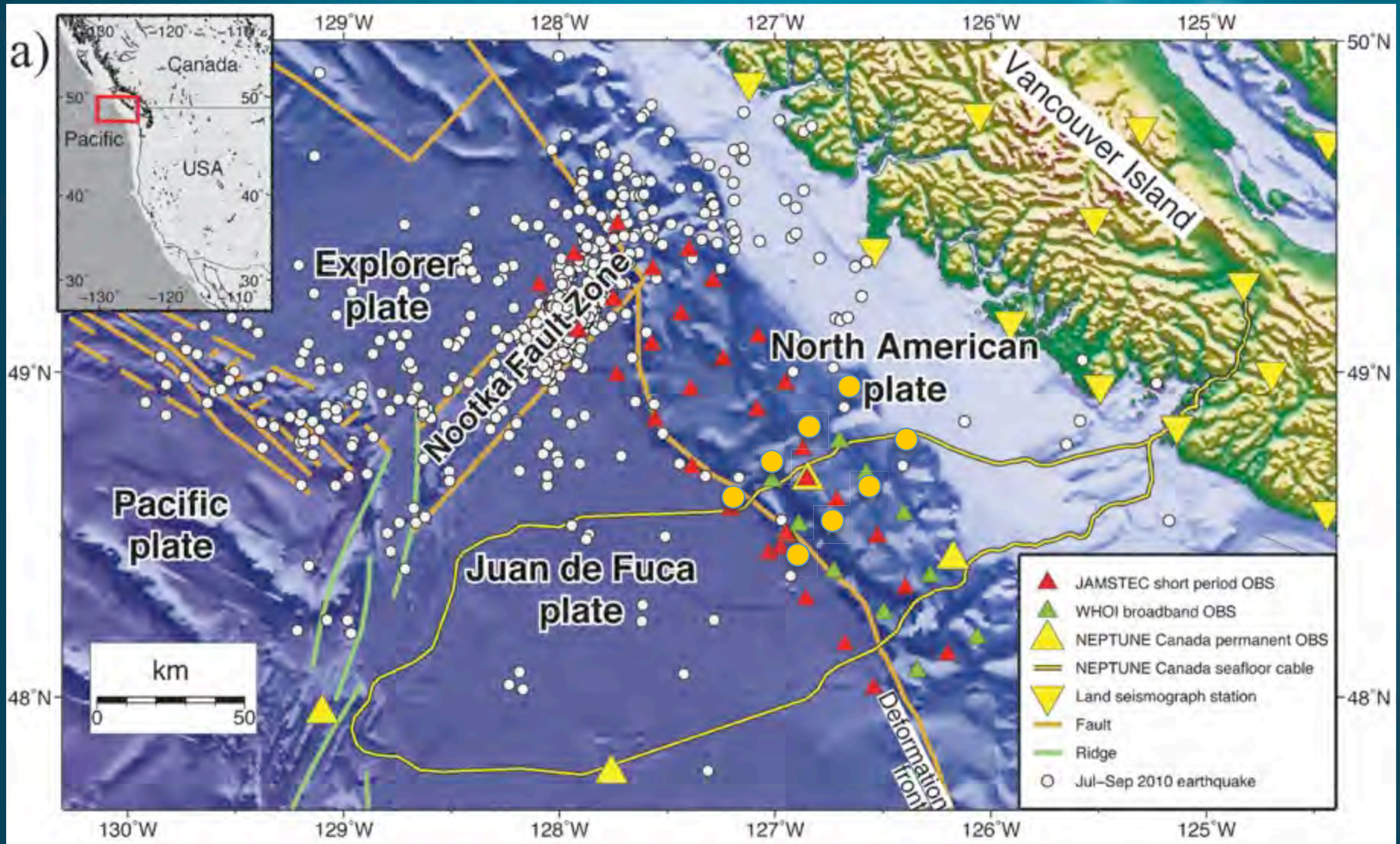


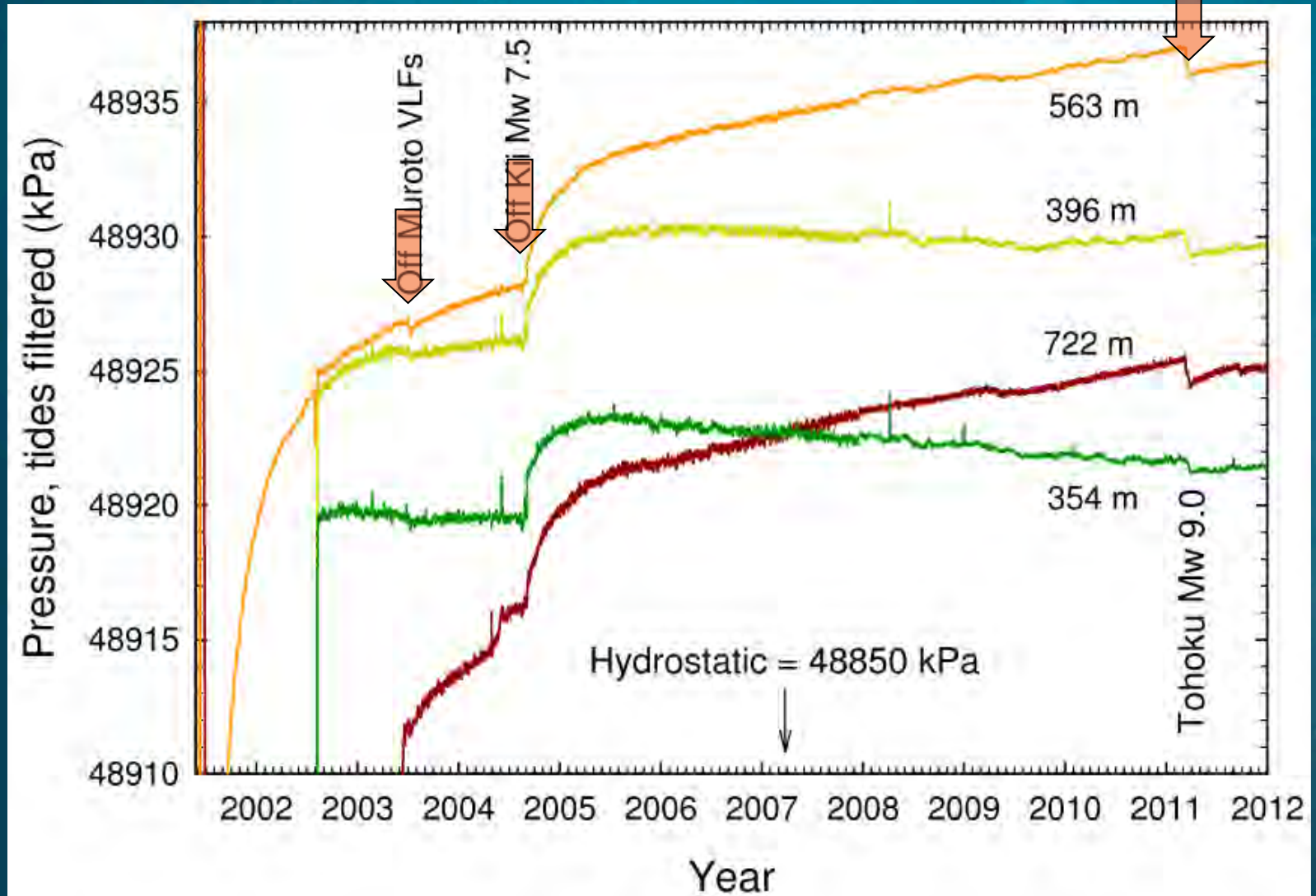
Marine mammal

Broadband seismometer – Station NC27 – Channel HHZ



SeaJade: GSC, JAMSTEC, UVic, WHOI joint project
Deployment 1, 2010; Deployment 2: 2013-2014





ACORK just seaward of Nankai trench (Davis et al., 2013)

Abridged cable routes at present

- : submarine cable
- : repeater
- : tsunami buoy
- ★ : ocean observatory

