Cascadia

What makes this GeoPRISMS (vs core)?

Cascadia is unique:

- **platewide datasets (Juan de Fuca)**
- **opportunity to expand on this**

  ➔ focused studies can be placed in a much larger context

Focused site(s) within Cascadia? – no!

seismic/geodetic will be all along the margin

various science questions are best answered in different locations

Opportunity for GeoPRISMS to guide the construction of community models that integrate the diverse data and models

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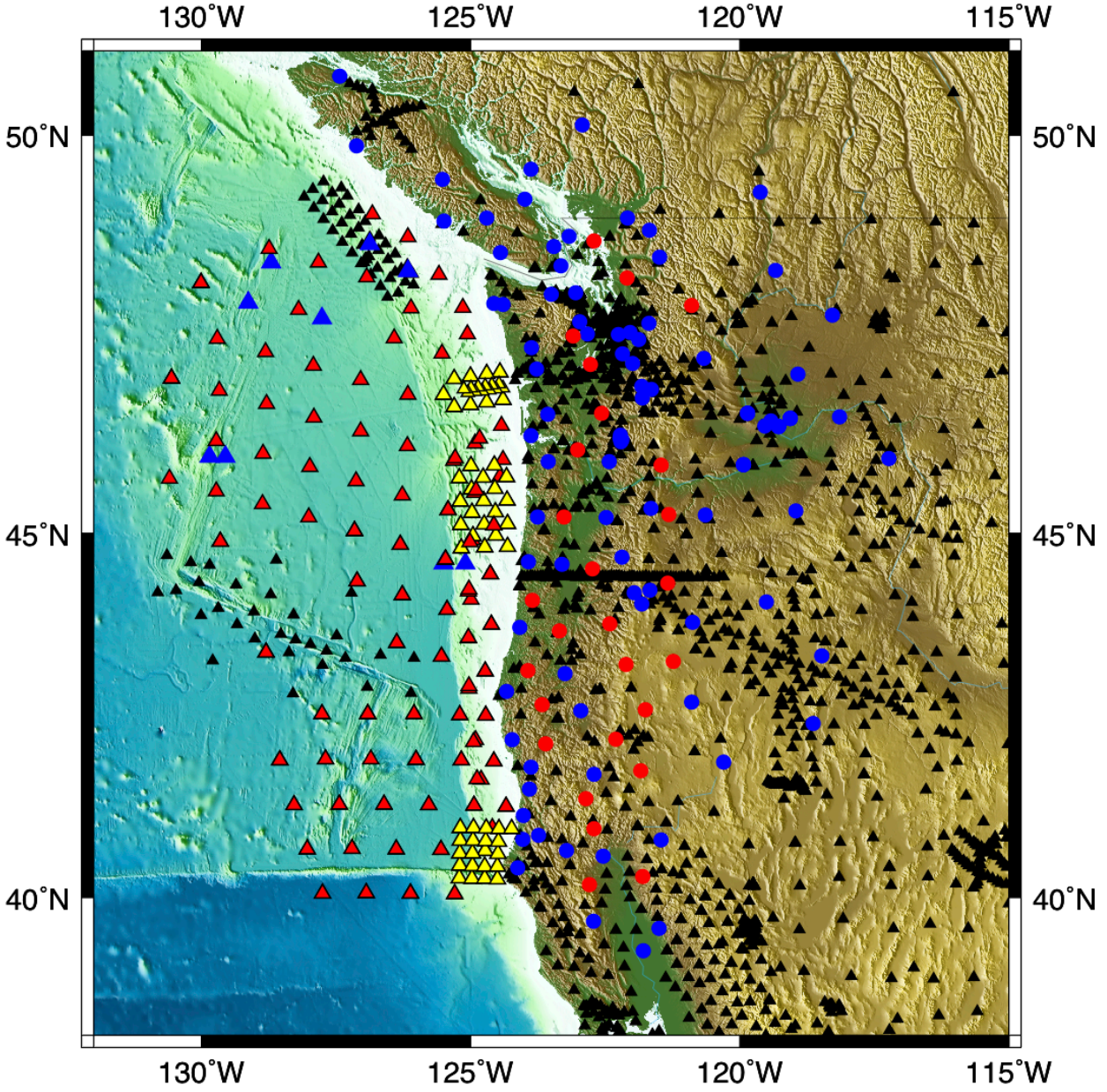
What baseline datasets exist or are planned and where?



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What baseline datasets exist or are planned and where?

- **paleoseismic records of large earthquakes (10 kyr),**
- **excellent GPS observations;**
- **multiple tremor catalogs;**
- **numerous cycles of tremor and slow-slip events.**
- **The arc is exceptionally well characterized with baseline observations.**
- **Exceptional volcanic records (eruption dates, volumes, magma production rates, eruption patterns)**
- **good heat flow observations on land**
- **geochemical variations in isotopic and water chemistry has a good foundation at specific places.**
- **MT coverage is very good onshore.**

➔ Onshore is good, offshore in wanting

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What baseline datasets are needed and where?

What other data acquisition, experimental, and modeling efforts are needed and in what order?

- **Offshore heat flow**
- **A better image of the slab geometry**
- **Aeromagnetic observations from the Cascades**
- **Finer shear-wave imaging of local features (such as volcanoes)**
- **Better seafloor geodesy to explore along strike variations in geodetic deformations. Acoustic/GPS to measure horizontal motions; move some of the sample points onto the continental slope region. The largest expense with these types of deployment is ship time. Potential for new technologies to improve accuracy.**

"transformative"

- **Active source work both onshore and offshore**
- **Improved laboratory characterization of the physical properties of rocks in subduction-related environments (upper mantle beneath the arc, within the arc crust, etc).**

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What infrastructure will be leveraged?

What are the potential international collaborations?

Canada

Other countries that have worked in the region

Japan

Germany