

The Alaska Amphibious Community Seismic Experiment (AACSE)

G.A. Abers¹, A. Adams², P. Haeussler³, E. Roland⁴, P. Shore⁵, S. Schwartz⁶, A. Sheehan⁷, D. Shillington⁸, S. Webb⁸, D. Wiens⁵ and L. Worthington⁹

¹Cornell Univ.; ²Colgate Univ.; ³USGS Anchorage; ⁴Univ. Washington; ⁵Washington Univ. St. Louis; ⁶U.C. Santa Cruz; ⁷Univ. Colorado Boulder; ⁸Lamont-Doherty Earth Obs. Columbia Univ.; ⁹Univ. New Mexico

The Alaska subduction zone generates North America's largest earthquakes and most powerful volcanic eruptions. Despite broad continuity in structure along strike, strong variations exist between places that have generated $M > 9$ earthquakes and segments that are creeping, and between silicic and mafic segments of the arc. To better understand this critical system, the Alaska Amphibious Community Seismic Experiment (AACSE) is deploying an array of 75 broad-band ocean bottom seismometers and 30 broad-band seismometers for 15 months, starting May 2018. The array covers a ~650 km along-strike segment of the subduction zone, including the Alaska Peninsula and Kodiak Island, and reaches ~250 km seaward of the trench, densifying and extending offshore the EarthScope TA in the region. Data from the array can be used to evaluate along-strike variations in incoming plate structure, densely sample the megathrust, and extend across the arc to allow imaging of the deep volcanic system. The experiment was designed through open community forums and workshops, and all data will be freely and openly available as soon as logistically feasible. Several ancillary and complementary projects are also planned concurrently, including a dense nodal array across a portion of the Kodiak megathrust planned for 2019 (also a community experiment), sea-floor geodetic instrumentation, marine electromagnetic imaging, and a variety of offshore mapping. Deployment of both onshore and offshore instruments will commence May 2018; this poster will provide an update and overview immediately following the initial array deployment.

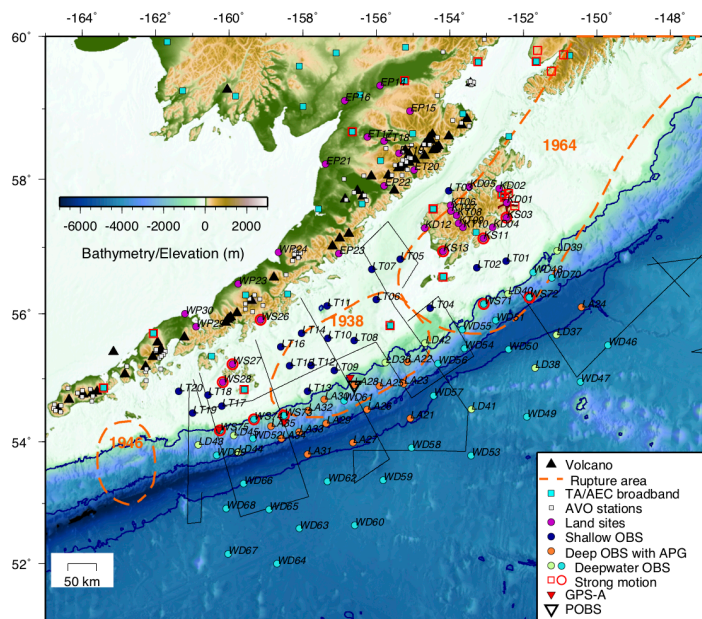


Figure: Planned amphibious array showing 75 OBSs, 30 portable land stations, TA sites and existing seismometers along with prototype geodetic experiments (GPS-A, POBS) and regional features. Stations with accelerometers outlined in red. Bathymetry is contoured at 1000 and 5000 m water depth; thin lines show existing recent seismic reflection data; other symbols described in key.