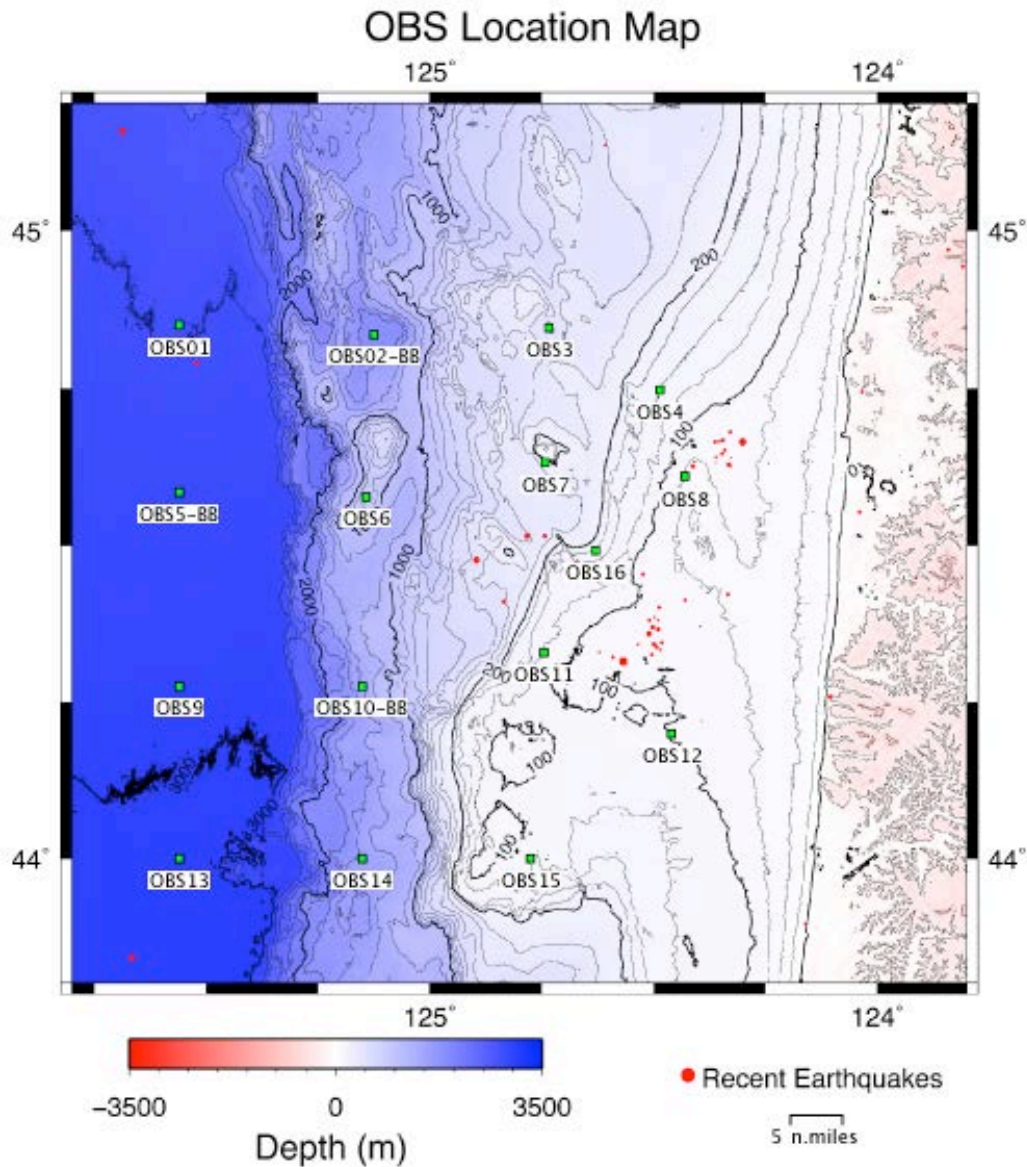


2007 OBSIP Field Programs

Oregon Cascadia, Pacific Northwest Coast (*Trehu et al.*). This project involves two one-year deployments of 13 short-period and 3 long-period instruments on the continental margin offshore central Oregon to document the microseismicity of this portion of the forearc and thus obtain insights into processes loading the megathrust.



During a cruise from September 5-11 aboard the *R/V Wecoma* instruments were deployed in a grid with ~50 km spacing and an aperture of 150 km. The cruise was split between OBS operations and a few days of active-source shooting using SIO's portable airgun array. With a team of 4 OBSIP personnel OBS deployments were fairly routine, except for one incident. In datalogger checkout of one unit when the run-plug was inserted the wiring started to smoke. The run-plug was immediately pulled, but it was too late, the wire shielding had melted and the twisted wires fused to create a continuous burn. Martin and Paul scrambled to get the logger out

of the lab, it was then observed that the wires were glowing and everyone immediately moved toward the rail to throw it over. It was not an ideal scenario, but with the exception of a few singed fingers, no one was injured. The problem discovered was that there were two different drawings for the run-plug VSK wiring. Unfortunately the incorrect drawing was the one we used to set the pins for all of the Oregon run-plug VSK's. Repair is a simple fix that requires reversing two of the three wires at the Molex connector. Unfortunately the end result was that a datalogger had to be scuttled; consequently only 15 units were deployed (3 BBOBS, 12 SP-micro).

OBS drop sites. Cruise W0709A			
Name	Latitude	Longitude	Depth (m)
OBS01D	44°51.009'	-125°33.654'	2808
OBS02-BBD	44°50.096'	-125°07.488'	1849
OBS03D	44°50.732'	-124°43.972'	542
OBS04D	44°44.818'	-124°29.135'	147
OBS05-BBD	44°35.119'	-125°33.549'	2881
OBS06D	44°34.619'	-125°08.528'	836
OBS07D	44°37.906'	-124°44.447'	270
OBS08D	44°36.596'	-124°25.814'	75
OBS09D	44°16.496'	-125°33.627'	2984
OBS10-BBD	44°16.852'	-125°08.503'	1323
OBS11D	44°19.800'	-124°44.712'	122
OBS12D	44°12.000'	-124°27.582'	97
OBS14D	43°59.995'	-125°08.996'	1530*
OBS15D	43°59.986'	-124°46.501'	123
OBS16D	44°29.499'	-124°37.733'	163

The table above lists drop locations and depths for the OBS array. From the initial examination of cruise logistics and planned deployment depths there was considerable apprehension about long-term OBS deployment in "risky" locations. Shallow sites (e.g. <500m) are more prone to corrosion (more oxygenated environment) and the close proximity of the coast means there would be considerable fishing pressure in the area. Half the sites were less than 500 m, a few less than 100 meters in depth, and all these shallow locations were in common fishing areas. There was considerable discussion about "type" cruises like this during the 2007 OBSIP meeting in WHOI, and what is the appropriate guideline for these "risky" deployments. The conundrum is quite clear: how to minimize risks to OBS instruments while simultaneously not compromising overall science objectives. Some of the solutions discussed included "hazard fees" for these risky deployment sites, or minimum deployment depth limitation for OBS units. Nonetheless, a clear solution was not reached. Anne Trehu went through considerable effort via discussions with regional fishing authorities to assess the inherent fishing risks in the area, and to post/warn fishermen of deployment locations to be avoided. A few of the sites were moved slightly based on recommendations of fishermen, but for the most part the instruments were deployed in the original grid positions.

On December 27 of 2007 a lone OBS from this project was found by Park Rangers washed ashore at Ocean City State Park, Washington. Apparently the unit was found on the beach and was subsequently brought back the Ranger station. We were very fortunate that the unit washed up on such a "friendly" beach. The Rangers had a tractor, and a small pickup that was used to transport the OBS back to their headquarters. Park Ranger Darrel Hopkins subsequently contacted Jeff Babcock, and it was arranged for one of Anne Trehu's technicians to retrieve the instrument from State Park Headquarters and bring it back to their lab at Oregon State University. Photos taken of the unit helped identified it as OBS site 08, which was the shallowest deployment location at a depth of 75 meters. On February 13, 2008 Martin Rapa went up to OSU to pack up the OBS and arrange for shipment back down to SIO. Initial inspection revealed some corrosion issues as well as instrument trauma, but it is not clear if this possibly occurred while the unit was washed through the surf zone. Analysis of the data will hopefully give clues to the timing and nature of the event that caused premature release from the bottom. It is also hoped that this is truly the "sole" unit that released prematurely and was luckily found, a recovery cruise in July 2008 will reveal the ultimate fate of all instruments.