

Cascadia Initiative Offshore deployment update - September 19, 2011

In July 2011 the first cruise to deploy ocean bottom seismometers (OBS) built for the Cascadia Initiative was completed on the R/V *Wecoma*. Fifteen new instruments from the Lamont Doherty Earth Observatory were deployed; these were designed for shallow water with shielding to protect them from trawlers and currents. This was the first of three deployment legs scheduled for 2011 and was focused on deploying a linear array of instruments that extends across the accretionary prism perpendicular to the coast. The remainder of the ~60 OBS instruments dedicated to this community experiment across the northern half of the Juan de Fuca plate, with densification of instrumentation above the subduction interface, will be deployed in October and November, 2011.

The original cruise plan was for 20 instruments; however only 15 instruments could be fabricated in time for the cruise. To accommodate uncertainty in the total number of instruments that would be available, a prioritized list of 20 sites was developed prior to the cruise in consultation with the community. This prioritized sequence was further modified to accommodate recommendations from the Oregon Fishermen's Cable Committee (OFCC), which represents the various fishing communities on the Oregon and Washington continental margins fishing community; these continued to arrive as we went to sea. Figure 1 and Table 1 show the originally planned and actual sites. Only one of the top 10 priority sites (CFN11) had to be eliminated because of fishing concerns and was replaced by a site (CFN12) that maintained the desired aperture of the array. A second top 10 site (J57) was not deployed because the total number of available instruments decreased from 16 to 15 near the end of the cruise. An instrument may be deployed at this site later this year.

Of the 15 instruments deployed, one instrument overturned and was later recovered (CFN4), two additional instruments may also not be properly coupled to the seafloor, possibly compromising the data quality (CFN3 and CFN8). The other stations will remain on the seafloor until summer 2012. The complete cruise report prepared by the cruise co-chief scientists Anne Trehu and Maya Tolstoy is available at [XXX-HERE-LINK-XXX](#).

Additional information about the community experiment and details of the ongoing planning for the 2011 and 2012 cruises is available of the Cascadia Initiative Expedition Team website: [XXX-URL-XXX](#)

Prepared by the Cascadia Initiative Expedition Team.

Table 1: Planned and actual OBS deployment sites.

Priority	Planned Station Name	Latitude (decimal degrees)	Longitude (decimal degrees)	Depth (m)	Actual Station Name	Actual Latitude	Actual Longitude	Actual Depth	Distance from planned site (km)
1	J41 *	45.7447	-124.4585	-175	J41B	45.8119	-124.5372	-175	9.1
2	J49 ^	46.4026	-124.4297	-116	J49B	46.4378	-124.4275	-120	3.7
3	CFN1	46.8830	-124.3950	-64	CFN1B	46.882	-124.3337	-54	4.6
4	CFN3 ^	46.8705	-124.5252	-92	CFN3B	46.8868	-124.5251	-90	1.8
5	CFN5	46.8580	-124.6554	-125	CFN5	46.8578	-124.6553	-124	0
6	CFN7 ^	46.8454	-124.7856	-160	CFN7B	46.8555	-124.7865	-154	4.6
7	CFN9 *	46.8329	-124.9157	-366	CFN9D	46.8401	-124.8877	-198	2.2
8	CFN11 #	46.8203	-125.0458	-640	not deployed	replaced by CFN12			
9	J57	47.0800	-124.4500	-59	not deployed	see comment			
10	CFN19 ^	46.7300	-124.4000	-82	CFN19B	46.7298	-124.3671	-75	2.4
11	CFN17 #	46.6700	-125.0000	-1031	not deployed	replaced by CFN18			
12	CFN14 ^	47.0300	-125.0000	-745	CFN14C	47.0248	-124.9647	-173	2.7
13	CFN2	46.9302	-124.4711	-80	not deployed				
14	CFN4 +	46.9176	-124.6013	-104	CFN4	46.9178	-124.6015	-104	0
15	CFN6 ^	46.9051	-124.7315	-137	CFN6B	46.9223	-124.7316	-134	1.8
16	CFN8 *	46.8925	-124.8616	-222	CFN8C	46.8888	-124.8769	-177	1.3
17	CFN10 *	46.8800	-124.9917	-777	CFN10D	46.8978	-124.9936	-795	1.9
18	CFN12 ^	46.8674	-125.1218	-710	CFN12C	46.8885	-125.1192	-650	1.9
19	CFN15	47.0600	-124.7000	-110	not deployed				
20	CFN18 ^	46.7000	-124.7000	-155	CFN18C	46.6998	-124.7248	-163	2.1

* Moved into the Nehalem Bank or Grays Canyon Essential Fish Habitat (EFH), where this is no trawling activity.

^ Moved to less heavily fished site.

+ Deployed upside-down in heavily fished area, creating a serious fishing hazard. Recovered by the ROPOS ROV on August xx, 2011.

Fishing hazard. Replacement site found.

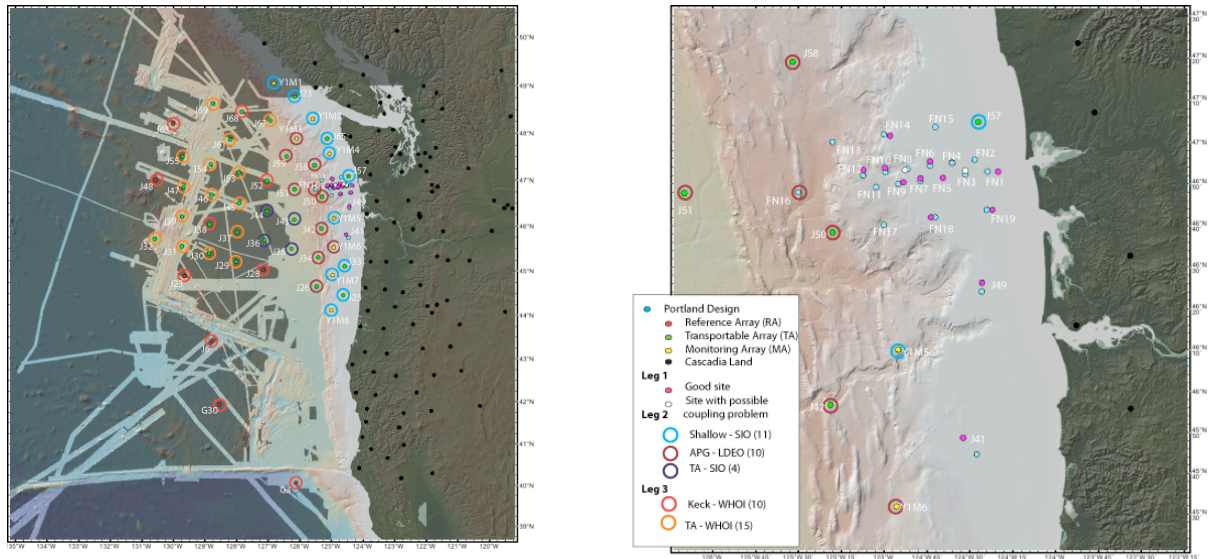


Figure 1. (left) Leg 1 deployment and plans for Leg 2 and 3. (right) Detailed view of the planned and actual sites deployed during Leg 1. Legend is the same for both maps.