Form: 2
Prepared By: Kasey Aderhold

Status: ☐ In progress ☒ Completed

Question from the Community

Name	Emma Myers		
Date of Contact	6/20/16		
Date of Response	6/22/16, 6/27/16	Completion date	8/24/16
Experiment	Cascadia		
IIC Affected & Contact	SIO – Jeff Babcock		
Stations Affected	J09B		
Contact Information	Emma Myers, University of Washington, ekmyers@uw.edu		

Summary:

I received an inquiry from a student on the location of Y2 Cascadia Initiative SIO station J09B and investigated further:

On the DMC currently (with metadata last loaded on 2014/12/04) J09B has a latitude of 40.2011º.

On the Horizontal Report (2014/05/02) J09B has a latitude of 43.15º in both the GMT map and the table of locations.

On the Recovery Cruise report (2013/10/07) J09B has a latitude of ~43º in both the map and the description of the recovery.

The upload on 2014/12/04 was for updating the filtered responses on Y1-3 of the SIO stations. There does not appear to be any changes to the latitude reported by the DMC Metadata Change Service.

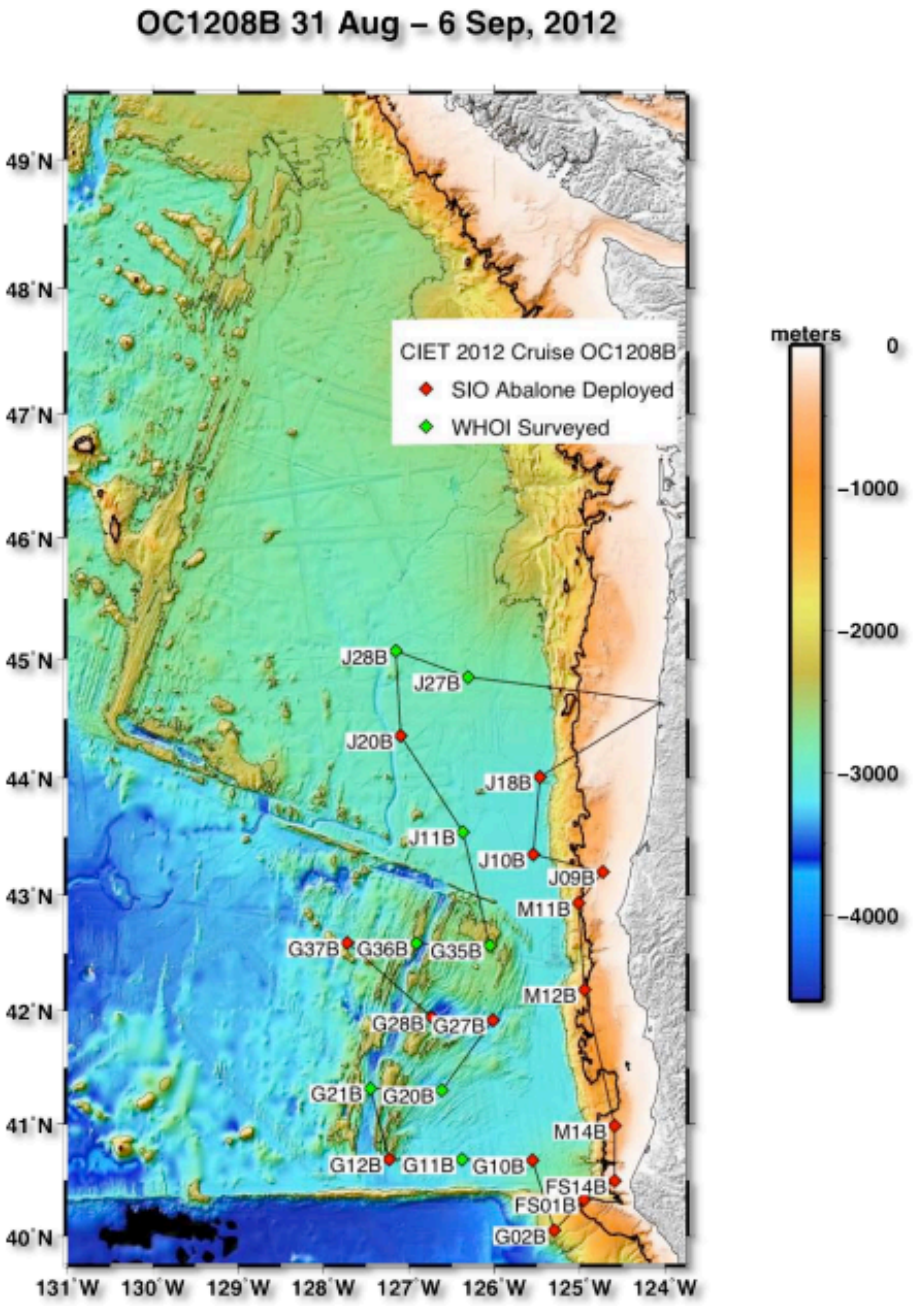
On the Deployment Cruise report (2013/09/24) J09B has a latitude of 40.2011º listed in Table 1. In Cruise Narrative, deployed position latitude is listed at 43º 09.0865' N, and in the map in Figure 1 it is plotted at ~43º.

Steps Taken:

Date	Action
6/20	E-mail sent by Emma Myers
6/22	Responded to Emma Myers
6/27	Investigated and located discrepancy between attributed latitudes, responded to Emma again, brought up to Jeff Babcock during call, e-mailed Mea at DMC to determine if there were other changes to latitude
7/1	Located Deployment Cruise Report (2013/09/24) with incorrect latitude, sent CQ form to Jeff with recommendation to change latitude from 40.2011º to 43.2011º and reupload to the DMC

7/7	Sent another e-mail to Jeff, received response dated 7/7.
7/8	Requested scan of deployment checklist to confirm location correction.
7/11	Discussed station J09B during call with Jeff, paperwork for checklist may take 3+ weeks to locate
7/15	E-mail from Jeff with the deployment sheet for J09B on 7/15.
7/22	Sent announcement via OBSIPtec with J09B location error.
8/9	Metadata reuploaded for station J09B, latitude now 43.151º.
8/23	Location checked, confirmed.
8/24	E-mail to OBSIPtec sent.

From Deployment Cruise Report (2013/09/24):



From Deployment Cruise Report (2013/09/24):

Saturday, September 1.

3) Station J09B

On Station:	9/1/2012 11:44 UTC (9/1/2012 4:44 local)
OBS Type:	SIO Abalone , No. 5, S/N 164
Deploy Time:	9/1/2012 11:58 UTC
Deployed Position:	43° 09.0865' N, 124° 43.6436' W
Water Depth:	252 m
Range to which tracked	Tracked to bottom
OBS on Seafloor:	9/1/2012 12:02
OBS Fall Speed:	62m/min
Start Acoustic Survey:	9/1/2012 12:15
Disable Acoustic Release:	9/1/2012 12:29 UTC
Depart Station:	9/1/2012 12:31 UTC
Time on Station:	0 hr 47 min

Heading south with winds at ~20 knots and seas ~4 feet. We modified M11's location about 2300 m to the southeast of the original station to be in a flatter area.

4) Station M11B

On Station:	9/1/2012 13:57 UTC (9/1/2012 06:57 local)
OBS Type:	SIO Abalone No. 12, S/N 154
Deploy Time:	9/1/2012 14:06 UTC
Deployed Position:	42° 55.9851'N, 125° 01.0130'W
Water Depth:	1108 m
Range to which tracked	Tracked to bottom
OBS on Seafloor:	9/1/2012 14:25 UTC
OBS Fall Speed:	58.9 m/min
Start Acoustic Survey:	9/1/2012 14:27
Disable Acoustic Release:	9/1/2012 14: 50 UTC
Depart Station:	9/1/2012 14: 51 UTC
Time on Station:	0 hr 54 min

SIO group rested for ~7 hours. Ship steamed to next site at 8 kts, speed preferred for MMOs. We reached site before 7 hours had passed, consequently steam past site and return. Wind out of the NW ~23 knots, seas of ~4 ft.

From Deployment Cruise Report (2013/09/24):

Table 1. SIO OBS Configuration and Surveyed Site Positions

Site Name	Logger	Trillium	Acoustic	Frame	Lat		Lon		Water Depth	Num Chn.	SPS
J18	8	10	152	5	44	0.498	44.0083	-125	27.9588	-125.46598	3047	4	50
J10	12	11	157	10	43	20.9637	43.349395	-125	32.6119	-125.543532	3093	4	50
J9	5	13	164	15	40	12.0688	40.20114667	-124	43.6281	-124.727135	252	4	50
M11	7	?	154	12	42	55.9222	42.93203667	-125	1.0273	-125.017122	1109	4	50
M12	2	?	158	11	42	11.0396	42.18399333	-124	56.7662	-124.946103	1045	4	50
M14	9	4	160	3	40	59.1026	40.98504333	-124	35.3849	-124.589748	638	4	50
FS14	4	8	161	1	40	29.7303	40.495505	-124	35.5049	-124.591748	107	4	50
FS01	10	7	153	8	40	19.6063	40.32677167	-124	56.9501	-124.949168	940	4	50
G02	1	14	156	2	40	2.9164	40.04860667	-125	17.8155	-125.296925	1920	4	50
G10	3	12	151	9	40	40.6723	40.67787167	-125	33.2004	-125.55334	2936	4	50
G12B	1001	4	165	6	40	41.2162	40.68693667	-127	13.7315	-127.228858	3080	4	50
G27	1000	5	162	4	41	54.9946	41.91657667	-126	1.0016	-126.016693	3480	4	50
G28	6	3	163	14	41	56.5654	41.94275667	-126	44.0311	-126.733852	3327	4	50
G37	11	1	159	13	42	35.4778	42.59129667	-127	43.2803	-127.721338	3004	4	50
J20B	13	15	155	7	44	21.2511	44.354185	-127	5.71	-127.095167	2934	4	50

From DMC (2016/07/01):

Network	7D :: Cascadia Initiative Community Experiment-OBS component :: 7D Network Map :: DOI
Station	J09B :: SIO OBS ID J09B :: 2013-CASCADIA_YR2 :: J09B Station Map :: RESP :: SAC PZs :: XML
Latitude	40.201100
Longitude	-124.727000
Elevation	-252
Start	2012/09/02 (246) 00:00:00
End	2013/06/21 (172) 23:59:59
Epoch	**2012/09/02 (246) 02:19:00 - 2013/06/21 (172) 22:07:00**
Instrument	trillium_compact_OBS_SIO/ABALONES-4x4
Channels (Hz)	Location --: BH1 (50)A, BH2 (50)A, BHZ (50)A
Instrument	Differential Pressure Gauge OBSIP-SIO/ABALONES-4x4
Channels (Hz)	Location --: BDH (50)A
MetaData Load	2014/12/04 (338) 16:57:47

From Recovery Cruise Report (not dated, Cruise Report_OC1306A.pdf):

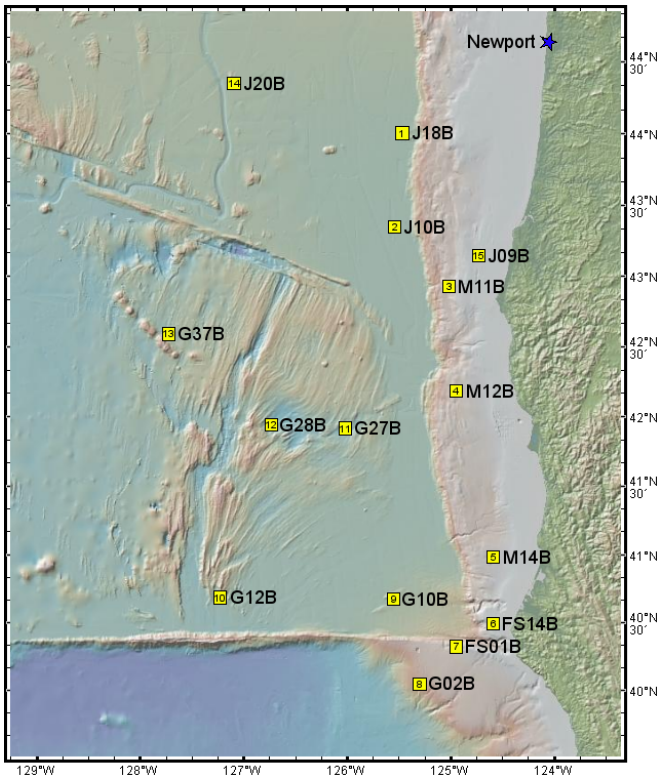


Fig 1: Map of OBS locations. All instruments recovered during this cruise were the Scripps Institute of Oceanography Abalones (picture of Abalones below). Icon lists position in recovery sequence, mooring site name listed next to icon.

From Recovery Cruise Report (not dated):

J20B recorded data for the duration of the deployment (18.5 Gbytes).
J20 data embargoed by Navy. Data will be reviewed and held by the Navy using established NSF-Navy protocols. Data will be released back to the CIET after 90 days.
J20B recovered position: 44 21.251'N 127 05.710'W depth=2654 m

Begin transit to next site J09 ETA PDT. Arrived at site **J09** at 14:12 PDT (JD:172, 21:12Z). Winds out of the north 2 kns, swell 3-6 feet. Instrument released at 14:15 PDT, at surface at 1 PDT, on deck at 14:43 PDT. This is SIO OBS instrument number 16.

J09 all data (18.6 Gbytes) was recorded for the duration of the deployment.
J09 data embargoed by Navy. Data will be reviewed and held by the Navy using established NSF-Navy protocols.
J09 surveyed position: 43 09.087 N 124 43.644'W, depth = 252 m

This is final mooring. Begin transit to Newport at 18:30 PDT.

Day 6: Saturday June 22

Arrive Newport at NOAA dock at 08:00 PDT.

From Recovery Cruise Report (not dated):

Table 1: SIO OBS Abalone Location and Instrument Identification

* = FILTERED DATA ONLY (Navy Approved). We are not allowed any type of unfiltered data.

Number	Site Name	Data Logger	Frame	Trillium	Lat			Lon			Water Depth
1	J18 (*)	8	10	10	44	0.498	44.0083	-125	27.9588	-125.46598	3047
2	J10 (*)	12	5	11	43	20.9637	43.349395	-125	32.6119	-125.5435317	3093
3	M11	7	14	9	42	55.9222	42.93203667	-125	1.0273	-125.0171217	1109
4	M12	2	7	2	42	11.0396	42.18399333	-124	56.7662	-124.9461033	1045
5	M14	9	11	4 (Dup?)	40	59.1026	40.98504333	-124	35.3849	-124.5897483	638
6	FS14	4	4	8	40	29.7303	40.495505	-124	35.5049	-124.5917483	107
7	FS01	10	3	7	40	19.6063	40.32677167	-124	56.9501	-124.9491683	940
8	G02	1	8	14	40	2.9164	40.04860667	-125	17.8155	-125.296925	1920
9	G10	3	15	12	40	40.6723	40.67787167	-125	33.2004	-125.55334	2936
10	G12B (*)	1001	2	4	40	41.2162	40.68693667	-127	13.7315	-127.2288583	3080
11	G27 (*)	1000	9	5	41	54.9946	41.91657667	-126	1.0016	-126.0166933	3480
12	G28 (*)	6	6	3	41	56.5654	41.94275667	-126	44.0311	-126.7338517	3327
13	G37 (*)	11	13	1	42	35.4778	42.59129667	-127	43.2803	-127.7213383	3004
14	J20 (*)	13	1	15	44	21.2511	44.354185	-127	5.71	-127.0951667	2934
15	J09	5	5	13	43	09.067	43.15.1117	-124	43.644	-124.7270183	252

Response from Jeff Babcock on 7/7/16 6:06 PM EST:

[redacted] *I have attached Bob Dziak's cruise report for the recovery cruise, even here there is a slight discrepancy between the position Bob describes in the narrative vs what is listed in Table 1. I believe the decimal lat/lon positions in Table 1 list the correct "relocation" position:*

J09B:
Lat 43.1511° OBSIPtec sent.
Lon 124.7270

This is different than the position you assign below, but it is a more accurate location [redacted]

-jeff

Response from Jeff Babcock on 7/15/16 6:18 PM EST:

I tracked down the OBS deployment sheet for site J09B — included. The lat/long in the for the "drop" position are a bit faded, but seem to be somewhat consistent with the position that Bob Dziak has in his cruise report. In his report, I believe that Bob may only reported the "drop" location as measured from watch-standers in the lab. There is a slight discrepancy of ~0.02 mins between the deployment sheet and his report position, which is about 20 meters, and likely represents the physical separation of individual GPS antennas on the ship between the two GPS navigation systems. This is common for seagoing operations. On the bottom left corner of the J09B Deployment sheet is the relocated position from the acoustic survey. This is the most accurate position of the instrument on the seafloor. However, it does appear as if there was a transcription error when writing the latitude on the checklist (should be 43°, not 40°). The correct position should read:

Relocated J09B:
43° 12.0688' N
-124° 43.6281 E

I found an e-mail from Martin sent during the cruise stating:

Begin forwarded message: From: Martin Rapa <mrapa@ucsd.edu> Subject: cascadia surveys Date: July 22, 2013 at 7:13:04 AM PDT To: jeff babcock <jbabcock@ucsd.edu>

Jeff, I took a look at the survey files and most of them have double digit residuals, which is what we normally expect to see. [redacted]

Based on these, I'm confident that the surveyed positions we have published are fine, with exception to J09, which had a transcription error and was off by 3 degrees. [redacted]

[redacted]

Abalones Deployment Checklist

Date/Time: 08/31/2012/7:20PDT
Checkout By: RK/PT

Cruise: Cascadia-~~Oct-2011~~ SEP-2012
Site: J09

Equipment SN:

Data Logger: 005
Acoustic: 164
Frame: ~~2011-FRAME#5~~ 16
Light Strobe: 00-0016
Radio: 2008-098
Trillium: 40013
DPG:

Data Logger Boards (SN):

CPU: 00006
Clock:
Seascan:
A2D:
A2D Daughter:
Power:
Power Distrib:

Compact Flash Cards (SN):

Card: 0 size: 64 GB
OBS12 # CF0039

Main Battery Info

Voltage: 28.0 / 15.?
Type: 7P7S/DD/Li+

Clock Battery Info

Voltage: 3.6 /
Type: 2P/C/Li+

Comments:

Relocated
40 · 12.0688
-124 43.6781

Configuration:

Sync with GPS: 2012:245:07:19:00

OBS Time OK: ☑ (From Terminal) TFOM: 4
Time Tag OK: ☑
Wakeup Time: ~~TAG~~ S PC 2012:245:07:19:59.9999948
S PS 2012:245:07:21:00.0000037

Channel Configuration:
# of Channels: 4
Sampling Rate: 50 SPS

0 (L28X) Gain: 1
1 (L28Y) Gain: 1
2 (L28Z) Gain: 1
3 (HYD) Gain: 64

Header Comment:
Start Experiment: ☐ Clock Battery: ☑
Time Tag OK: ☑ Dessicant: ☑
Purge: ☑

CONNECT SENSOR CABLE TO LOGGER

Deployment:

Time (GMT): 2012:245:11:58:00
Latitude: 44 09.0989N
Longitude: 124 42.6374W
Water Depth (m): 252

Acoustics Disabled: ☐
Ranging Survey: ☐
Filename:

Recovery:

Time (GMT): 2013:172:22:07:00
OBS TimeTag:
OBS Drift: 0.918040983
OBS Time OK: ☐ (From Terminal) TFOM: 4

Filename:

2013:172:22:07:00
↳ 0x2F4937AB Bφ53F

Last Modified: Sat Oct 15 2011

172

- enable [redacted] 21:12 7/7

329, 324, 319

- Rel 1 21:13 7/7

still on bottom 21:25

end burn 21:25

- Rel 2 21:26 7/7

off bottom 21:31

PC → 2013:172:22:09:59.0819484

PS → 2013:172:22:10:59.0819488