CRUISE REPORT

Cruise Number: DY-10-03
FOCI Number: ECO-FOCI
Ship: NOAA Ship OSCAR DYSON

Area of Operations:
Bering Sea

Itinerary:
Departure - April 23, 2010, 1800, Kodiak, AK
Arrival – May 3, 2010, 1000, Dutch Harbor, AK

Participating Organizations:
NOAA - Pacific Marine Environmental Laboratory (PMEL)
7600 Sand Point Way N.E., Seattle, Washington 98115-6439

NOAA - Alaska Fisheries Science Center (AFSC)
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Chief Scientist:
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Dan Naber, UAF
David Strausz, NOAA/PMEL

Objectives of Cruise:
To recover and deploy surface and subsurface oceanographic instrumentation moorings. To complete conductivity, temperature and depth (CTD) profiler casts. To complete bongo and CalVET tows.

Summary of Operations:

CTD casts	32
Mooring deployments	4
Mooring recoveries	4
Bongo tows, 20 cm	8
Bongo tows, 60 cm	11
CalVET tows	3

Samples Collected:

Chlorophyll samples	123
Nutrient samples	78
Nutrient samples, UAF	6
Oxygen samples	4
Salinity samples	27

Summary of Cruise:

Pavlof Bay - A CTD was completed before the mooring recovery. The CTD sensor data was noisy. A subsurface mooring was recovered and deployed. A CTD was complete after the mooring deployment. Again the CTD sensor data was noisy. Two CTD cables were replaced during the transit to the drifter deployment site.

Drifters – Ten drifters were deployed in the Bering Sea. At each of five sites, a CTD was completed and then a 20 drogued drifter and a 40 m drogued drifter were deployed. The CTD data looked good (no longer noisy).

Bristol Bay - A CTD was completed before the mooring recovery. A subsurface mooring was recovered and deployed. We then searched for 07KC-1A but did not find it.

Bering Sea Site 2 - While transiting to site 2, we came across bands of ice. The air temperature was approximately -5.4 deg C; the water temperature was approximately -1.6 deg C; jellyfish were plentiful. Two CTDs with nutrients and chlorophylls were completed before the mooring recovery. We experienced problems with frozen sensors, frozen water sampler, and jellyfish fouling. The ADCP mooring - 09BSP-2B - was recovered. We did not receive a response from the second subsurface mooring - 09BS-2C. The ADCP mooring - 10BSP-2A - was deployed. We then completed three CalVET tows and two bongo tows (one for Miksis-Olds). We then proceeded to the site 2 box stations - where we completed a CTD and a bongo at each of four sites. During the transit between the box 2 stations, mooring personnel pinged for mooring 09BS-2C and successfully located the mooring. After the site 2 box stations were completed, we returned to 09BS-2C and attempted four drags for it. We were able to see the mooring on the sounder - it extended 10-15 meters above the bottom - but were not able to grapple the mooring.

Bering Sea Site 4 - We attempted to reach mooring site 4 but after making very little progress throughout the night - due to bands of ice - we abandoned our efforts.

Bering Sea Site 2 - The mooring - 09BS-2C - was recovered during the first drag. Only the instruments 50 meters and below were recovered, including one nitrate meter, two Microcats, two SBE-39s, one float and one release. One of the two SBE-39s had a bent thermistor, damaged thermistor guard and busted connector. Several of the cages were severely bent. We completed a CTD with chlorophyll and nitrate samples. We then did a bongo for the Mountain View Elementary fifth grade class.

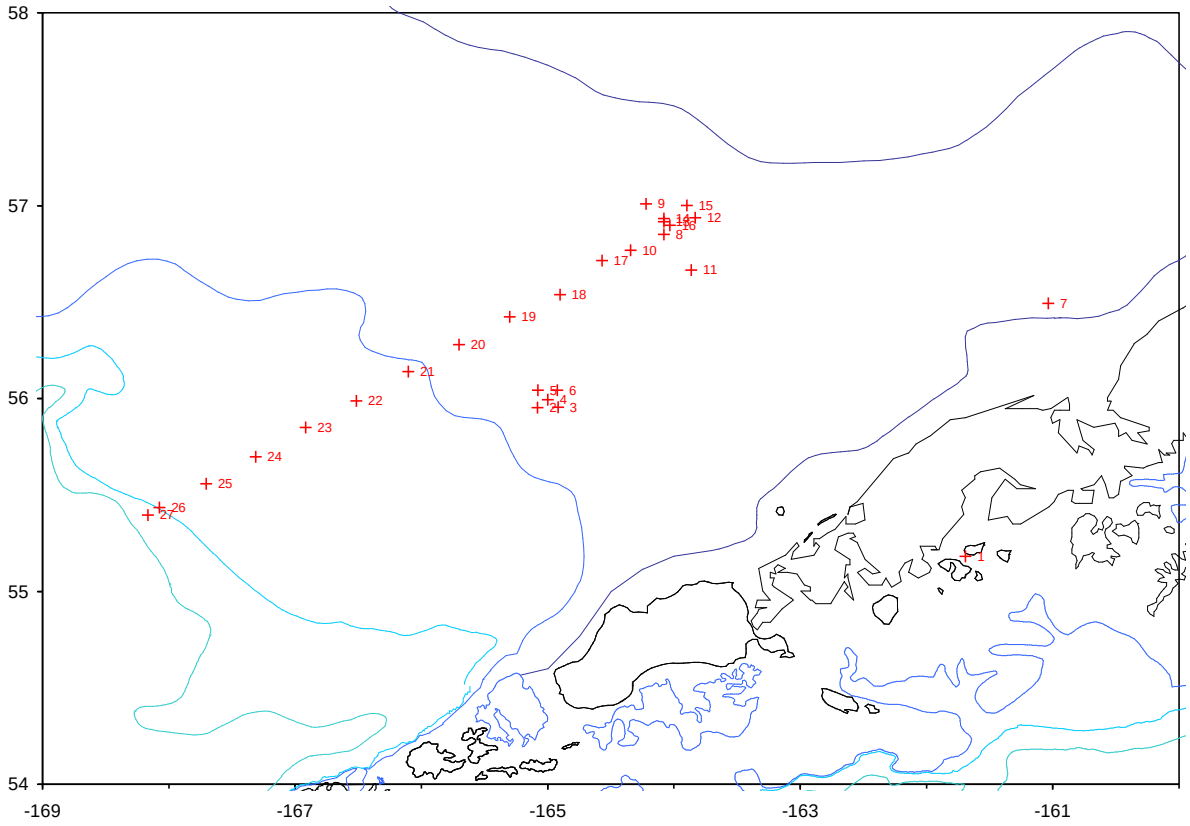
CTD and bongo "L" line – A line of seven CTDs starting at site 2 and working offshore was completed. Bongo tows were completed at 3 of the CTD sites. An additional bongo at ~300m depth was completed to collect squid samples for Elaina Jorgensen. After picking out the squid larvae, the rest of the bongo sample was saved as an additional sample for the Mountain View Elementary fifth grade class. A vertical tow to 1000 m was completed for the Mountain View Elementary fifth

grade class. They had sent styrofoam mannequin heads and cups

and were interested in the effect of water pressure on the styrofoam.

Acknowledgements: It was a pleasure to work with Captain Hoshlyk and his crew. Captain Hoshlyk was extremely supportive in all aspects of our cruise – which was made more challenging by freezing conditions that affected equipment performance, ice conditions that impeded our progress and mooring issues. His support of the public outreach to the elementary students was greatly appreciated.

Specifics of operations:



1DY10 Stations

Attachments:

Date (GMT)	Time (GMT)	FOCI Sta	FOCI Haul		Depth (m)	Latitude			Longitude			Comments
25-Apr	8:47	1	1	CTD001	94	55	10.96	N	161	41.54	W	CTD, Fluor, PAR, OX prior to mooring recovery 09PA-1A
25-Apr	9:04	1	2			55	10.88	N	161	41.18	W	Mooring recovery 09PA-1A
25-Apr	10:45	1	3			55	10.88	N	161	41.18	W	Mooring deployment 10PA-1A
25-Apr	11:13	1	4	CTD002	92	55	10.92	N	161	41.53	W	CTD, Fluor, PAR, OX after deployment of 10PA-1A
25-Apr	21:17			CTD003	109	54	27.91	N	164	9.02	W	CTD, Fluor, PAR, OX test cast to check cable replacement
26-Apr	7:28	2	1	CTD004	97	55	57.11	N	165	4.81	W	CTD, Fluor, PAR, OX - First drifter site
26-Apr	8:53	3	1	CTD005	96	55	57.3	N	164	55.09	W	CTD, Fluor, PAR, OX - Second drifter site
26-Apr	10:12	4	1	CTD006	96	55	59.65	N	164	59.88	W	CTD, Fluor, PAR, OX - Third drifter site
26-Apr	11:32	5	1	CTD007	96	56	2.59	N	165	4.6	W	CTD, Fluor, PAR, OX - Fourth drifter site
26-Apr	12:58	6	1	CTD008	96	56	2.54	N	164	55.4	W	CTD, Fluor, PAR, OX - Fifth drifter site
27-Apr	0:36	7	1	CTD009	67	56	29.56	N	161	2.07	W	CTD, Fluor, PAR, OX before recovery of 09KC-2A
27-Apr	1:29	7	2			56	29.72	N	160	59.56	W	Mooring recovery 09KC-2A
27-Apr	2:09	7	3			56	29.99	N	160	59.96	W	Mooring deployment 10KC-2A
27-Apr	2:31	7	4	CTD010	65	56	29.58	N	160	59.32	W	CTD, Fluor, PAR, OX after deployment of 10KC-2A Searched for missing mooring 07KC-1A – did not locate
27-Apr	22:05			CTD011	73	56	50.70	N	164	5.08	W	CTD, Fluor, PAR, OX – Several Nisken bottles didn't fire (rosette froze)
27-Apr	22:53			CTD012	72	56	51.09	N	164	4.50	W	CTD, Fluor, PAR, OX – No Nisken bottles fired (rosette froze)
27-Apr	23:50	8	1	CTD013	73	56	51.12	N	164	4.8	W	CTD, Chlor, Fluor, NutPMEL, PAR, OX before mooring recovery 09BS-2C and 09BS-2B. CTD011 and CTD012 failed- bottles not tripping due to freezing.
28-Apr	0:36	8	2	CTD014	72	56	51.72	N	164	4.38	W	CTD, Chlor, Fluor, NutPMEL, PAR, OX before recovery of 09BS-2C and 09 BS-2B
28-Apr	0:47	8	3			56	51.5	N	164	3.74	W	Mooring recovery 09BS-2B
28-Apr	4:35	8	4			56	51.55	N	164	3.8	W	Deployment of 10BSP-2A
28-Apr	5:08	8	5	CAL001	73	56	52.32	N	164	2.62	W	CalVET - nets 1 and 2 saved
28-Apr	5:30	8	6	CAL002	73	56	52.14	N	164	2.57	W	CalVET - Only net 2 saved - lots of algae
28-Apr	5:51	8	7	CAL003	73	56	52.49	N	164	2.85	W	CalVET - net 2 saved

Date (GMT)	Time (GMT)	FOCI Sta	FOCI Haul		Depth (m)	Latitude			Longitude			Comments

28-Apr	6:14	8	8	BON001	73	56	52.4	N	164	3.33	W	20/60 cm bongo
28-Apr	6:41	8	9	BON002	73	56	52.57	N	164	3.03	W	60 cm bongo - Extra tow for Jennifer - Penn State. No FOCI bongo samples.
28-Apr	9:02	9	1	CTD015	70	57	0.51	N	164	13.23	W	CTD, Chlor, Fluor, NutPMEL, PAR - NW corner
28-Apr	9:33	9	2	BON003	70	57	1	N	164	13.24	W	20/60 cm bongo - NW corner. Salinity not working on this seacat tow. Jellyfish discarded from net 1
28-Apr	12:33	10	1	CTD016	75	56	46.1	N	164	20.6	W	CTD, Chlor, Fluor, NutPMEL, PAR - SW corner
28-Apr	12:55	10	2	BON004	75	56	46.25	N	164	21.35	W	20/60 cm bongo - 60Bon 2 jellies discarded - net 2 also 2 jellies discarded
28-Apr	15:21	11	1	CTD017	78	56	39.91	N	163	51.73	W	CTD, Chlor, Fluor, NutPMEL, PAR - SE corner
28-Apr	15:45	11	2	BON005	77	56	40.07	N	163	51.85	W	20/60 cm bongo - 60Bon net 1 - 3 large jellies discarded net 2 - 7 large jellies discarded
28-Apr	17:33	12	1	CTD018	71	56	56.26	N	163	49.87	W	CTD, Chlor, Fluor, NutPMEL, PAR - NE corner
28-Apr	17:55	12	2	BON006	72	56	56.36	N	163	50.1	W	20/60 cm bongo
28-Apr	19:12	13	1	CTD019	72	56	55.02	N	164	4.81	W	CTD, Chlor, Fluor, PAR
30-Apr	1:17	14	1		67	56	56.05	N	164	4.71	W	Mooring recovery 09BS-2C. Had to drag for mooring - some instuments missing.
30-Apr	3:11	14	2		70	56	56.28	N	164	4.55	W	Mooring deployment 10BST-2A
30-Apr	3:38	14	3	CTD020	73	56	52.24	N	164	4.71	W	CTD, Chlor, Fluor, NutPMEL, PAR
30-Apr	4:07	14	4	BON007	73	56	52.47	N	164	5.81	W	60 cm bongo - For Mtn View Elem school kids. No FOCI bongo
1-May	7:01	15	1	CTD021	70	57	0.11	N	163	53.79	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	8:06	16	1	CTD022	73	56	53.94	N	164	2.03	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	8:21	16	2	BON008	72	56	53.91	N	164	2.32	W	20/60 cm bongo - 3 medium jellyfish discarded from 60bon net 2
1-May	11:02	17	1	CTD023	76	56	42.92	N	164	34.18	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	14:21	18	1	CTD024	79	56	32.34	N	164	54.17	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	16:05	19	1	CTD025	85	56	25.4	N	165	17.93	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	17:50	20	1	CTD026	93	56	16.76	N	165	42.14	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	19:41	21	1	CTD027	110	56	8.33	N	166	6.19	W	CTD, Chlor, Fluor, NutPMEL, PAR
1-May	20:10	21	2	BON009	110	56	8.56	N	166	7.16	W	20/60 cm bongo - 60Bon net 1 revs are low - maybe jellyfish fouling.
1-May	21:53	22	1	CTD028	128	55	59.28	N	166	30.91	W	CTD, Chlor, Fluor, NutPMEL, PAR

Date (GMT)	Time (GMT)	FOCI Sta	FOCI Haul		Depth (m)	Latitude			Longitude			Comments
1-May	23:48	23	1	CTD029	134	55	51.05	N	166	54.96	W	CTD, Chlor, Fluor, NutPMEL, PAR
2-May	1:35	24	1	CTD030	135	55	41.89	N	167	18.61	W	CTD, Chlor, Fluor, NutPMEL, PAR
2-May	3:27	25	1	CTD031	137	55	33.51	N	167	42.18	W	CTD, Chlor, Fluor, NutPMEL, PAR

2-May	5:21	26	1	CTD032	204	55	26.13	N	168	4.5	W	CTD, Chlor, Fluor, NutPMEL, PAR
2-May	5:45	26	2	BON010	208	55	26.1	N	168	4.87	W	20/60 cm bongo
2-May	6:36	27	1	BON011	375	55	23.72	N	168	9.88	W	60 cm bongo - Tow for Elaina Jorgensen and Mtn View Elem
2-May				tow								vertical tow for Mtn View Elem