

CRUISE REPORT

Cruise Number: DY-08-06
NOAA Ship Oscar Dyson

Area of Operation:

Bering Sea – Dutch Harbor

Itinerary:

Depart Dutch Harbor, AK 1 May (Scheduled)
Depart Dutch Harbor 4 May, 2008 (Actual)
Arrive Dutch Harbor, AK 10 May

Participating Organizations:

NOAA-Pacific Marine Environmental Laboratory (PMEL)
7600 Sand Point Way N.E., Seattle, WA. 98115

NOAA-Alaska Fisheries Science Center (AFSC)
7600 Sand Point Way N.E., Seattle, WA. 98115

University of Alaska Fairbanks (UAF)
Institute of Marine Science
200 O'Neill, Fairbanks, AK 99775-1080

Chief Scientist:

William Floering
NOAA/PMEL/OERD-2
206-526-6480
william.floering@noaa.gov

Participating Scientists:

Stephen A. Smith (PMEL)
Carol DeWitt (PMEL)
Antonio Jenkins (PMEL)
Erin Bachynski (PMEL)
Bern Megrey (AFSC)
Daniel Naber (UAF)

Cruise Objectives:

To recover and deploy several oceanographic instrumentation moorings in the southern Bering Sea. To complete CTD casts collecting chlorophyll and nutrient samples. To collect plankton samples using bongo and CalVet nets. To monitor physical and biological ocean parameters using an underway sampling system.

Summary of Operations and Samples Collected:

Surface mooring deployment	1	
Subsurface mooring deployments	4	
Subsurface mooring recoveries	4	
Haruphones deployed	2	
Haruphones recovered	2	
CTD casts	20	
Chlorophyll Samples	86	
Nutrient Samples	31	
60/20 cm Bongo Tows	11	
CalVet Tows	9	
Salinity Samples	20	
Underway Sampling	1054	miles

Cruise Summary:

Two 40 foot containers were loaded with mooring equipment and shipped to Dutch Harbor via Horizon Lines Shipping. Due to mechanical problems on the Oscar Dyson prior to our cruise a day was cut from the in port loading time. I would like to thank everyone for their efforts in getting our equipment loaded, set up and secured for sailing during a one night in port. As we were making preparations to sail at 1500 hours on May 1st one of the two ship's radars failed. We were in a holding pattern for a few hours until it was determined that problem with the radar was not a minor one and would require replacements parts that were not available on the ship or in Dutch Harbor.

Without going into extensive detail the problem was a failed motor and broken coupling. A part was located in Holland and was shipped to Dutch Harbor. The failed motor was shipped to Anchorage for repair and a suitable coupling was machined in Dutch Harbor. The repaired motor was the first to arrive in Dutch Harbor. It was installed along with the new coupling and we were on our way around 1300 hours on Sunday May 4th.

With a loss of approximately 70 hours of cruise time we were forced to scale back our expectations and prioritize operations for the best use of the remaining time.

We steamed from Dutch Harbor to mooring site BS-4. After picking our way through some lighter ice flows we ran into a solid wall of ice some 5 miles or so from the BS-4 mooring site. With site 4 inaccessible we traveled southeast 170 miles to mooring site BS-2. Upon arrival at site 2 we completed 2 CTD casts and recovered 07-BSP-2B and 07-BS-2C, the two subsurface moorings at this location. While setting up for mooring deployments we completed a bongo tow and a series of 3 CalVet tows at the center station. The surface mooring was deployed first, followed by the Tapps and the ADCP subsurface moorings. Two additional calibration CTD casts were completed near the

center station. From the center we worked our way around the BS-2 mooring site completing the 4 corner sampling stations with a CTD and bongo tow at each corner. The forecast had called for 30-40 knot winds, we were hoping there had been enough activity near site BS-4 to now allow access to the site. It took some time to pick our way through the ice flows but we were able to reach mooring site BS-4. A pre-recovery calibration CTD was completed and the 07-BSP-4B mooring was recovered. There was no signal from the 07-BS-4B release and no evidence of the mooring on the drop site as we drove over watching the sounders. It appears that either the ice or a fishing boat has moved the mooring well off station. Because the ice was surrounding this station we could not conduct a reasonable search for this mooring at this time. I hope to have an opportunity to search for this mooring during the Dyson MACE cruise in June and the Healy cruise in July. The two subsurface moorings, 08-BSP-4A and 08-BS-4A were successfully deployed and followed by a calibration CTD cast. A single bongo tow and a series of 3 Calvet tows were completed between recovery and deployment operations. Due to ice coverage we could not access the standard corner stations around mooring site BS-4. We were able to complete bongo and CTD sampling at the center of mooring site BS-4 and at two revised "corner stations". On our steam south from Site BS-4 we had time to pick up 5 CTD/Bongo stations along the Cape Newenham line.

From site BS-4 we had hoped to reach the two KC moorings along the southern Bering Sea area referred to as slime bank. Looking at the schedule we were about 8 hours short of having the time to visit this site and still hold to our arrival schedule of 0800 May 10th in Dutch Harbor. Arrangements had been made with Dutch Harbor N.C. Marine to begin work on one of the generators as soon as we arrived at the dock so a delay in arrival was not possible.

At approximately 0800 Alaska time on May 10th we arrived at the city pier in Dutch Harbor. All mooring equipment was offloaded and transferred to FTS in Dutch Harbor for shipment to Seattle. The instruments and hardware for mooring deployment KC-08-2A were left aboard the Dyson for possible deployment during Leg 1 of the MACE Pollock survey early June.

Observations:

The 70 plus hours lost due to a radar motor problem was unfortunate and severely limited what we could accomplish on this cruise. It's my understanding that this radar system will be in use on all of the new NOAA fisheries vessels. A supply of spare parts in stock at one of the marine centers may save valuable time when the next one fails. The Dutch Harbor Technician mentioned that the commercial fishing boats run with 3 systems so if one fails they still can still safely operate with two radar systems.

Navigating in and around the extensive sea ice also ate up a lot of our available time. We had to pick our way in and around ice flows often going east and west to find an opening north and traveling at 2-3 knots.

Maintaining an accurate electronic MOA continues to be a challenge. Station marks for CTDs and Bongos are now logged in the lab instead of by the bridge. Not all marks for the mooring deployments were made in a timely manner so position and depth information had to be edited from the SCS data based on the time stamp.

Looking at the current underway salt water pump and piping it is evident that this system will not support the proposed installation of CO₂ and Oxygen measurement instruments.

The solution is not a simple one and will require some engineering in port and shipyard scale modifications.

The installation of the conveyor belt system and fish sampling stations limits the interior lab working spaces for non fisheries related cruises.

Deployed Mooring Locations:

08-BSM-2A

56.86380 N 164.05077 W

08-BST-2A

56.86347 N 164.05032 W

08-BSP-2A

56.86546 N 164.05309 W

08-BS-4A

57.85697 N 168.87603 W

08-BSP-4A

57.86108 N 168.87799 W

Missing 07-BS-4B deployed at

57 51.427 N 168 52.440 W

Insufficient cruise time to locate:

07-KC-1A

56 25.608 N 160 13.124 W

07-KC-2A

56 29.924 N 161 00.071 W

CTD , Bongo and CalVet Locations:

CTD001 56 51.95N 164 04.87W

CTD002 56 51.92N 164 03.37W

CTD003 56 51.89N 164 03.63W

CTD004 56 51.79N 164 03.02W

CTD005 56 51.81N 164 03.44W

CTD006 56 51.77N 164 03.46W

CTD007 56 39.86N 163 52.28W

CTD008 56.4595N 164.19197W

CTD009 56 56.53N 163 49.97W

CTD010 57 01.20N 164 13.19W

CTD011 57 51.07N 168 53.12W

CTD012 57 51.09N 168 53.35W
CTD013 57 51.89N 168 54.15W
CTD014 57 52.70N 168 59.89W
CTD015 57 39.33N 169 00.16W

CTD016 55 33.43N 167 42.12W
CTD017 55 32.70N 167 42.24W
CTD018 55 28.33N 167 57.20W
CTD019 55 23.36N 168 11.52W
CTD020 55 19.35N 168 25.26W

