CRUISE REPORT

Cruise Number: MF-08-02
FOCI Number: FOCI 1MF08
Ship: *Miller Freeman*

Area of Operations: Bering Canyon

Itinerary:

Departed Dutch Harbor, Alaska, at 1500 hours on February 17, 1700, 2008.
Arrived Dutch Harbor, Alaska, at 0900 hours on February 27, 2008.

Participating Organizations:

NOAA – Alaska Fisheries Science Center (AFSC)
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Objectives of Cruise:

A primary objective of the cruise was to conduct bottom trawl sampling in Bering Canyon to collect ripe adult Greenland halibut (*Reinharditus hippoglossides*). Trawling was to be conducted with a Poly Nor'eastern Bottom Trawl (PNE) with Fishbuster doors. We were able to successfully execute 4 trawls out of 16 attempts. This poor return was due, in part, to a malfunctioning Furuno unit, and ship's personnel were not able to resolve the position of the net in the water column. The doors were crossed twice; the second time required re-terminating the warps. Trawling by using scope tables (wire out:gear depth ratio) was

deemed unfeasible by the command, and trawling activities were eventually canceled. We were not successful in meeting our primary objective of collecting spawning condition male and female Greenland halibut, or of obtaining fertilized eggs from strip-spawning activities for use in on-board experiments or for rearing at the AFSC in Seattle, WA.

A secondary objective was to conduct an ichthyoplankton survey in the Bering Canyon area. Bongo tows were successfully completed that were used to describe the distribution of Greenland halibut eggs over the slope and in Bering Canyon in winter. Limited numbers of field-collected eggs were used for on board buoyancy experiments, and were frozen for preliminary studies of GH lipid content.

Data on physical characteristics of the water column were also successfully collected. We deployed 2 oceanographic instrumentation moorings, one in Bering Canyon (75 kHz, 400 m depth) and one on the EBS shelf (300 kHz, 75 m depth) in the vicinity to Unimak Island. We deployed 3 satellite-tracked drifters. We deployed the CTD and made collections for nutrient, microzooplankton, and chrlorphyll analyses. Finally, we used the SIMRAD EK 60 Scientific Echosounder Monitoring system to collect ancillary data on adult fish aggregations during the entire cruise.

Summary of Operations:

Gears Used	**Tows**
20cm bongo (20Bon)	43
60cm bongo (60Bon)	45
Seabird SeaCAT CTD (CAT)	45
CTD w/o bottle samples (CTD)	2
CTD w/ bottle samples (CTDB)	7
1m² MOCNESS (MOC1)	9
Mooring deployment (Moor)	2
Nor'Eastern bottom trawl (Nor)	16
Satellite buoy (SatBuoy)	3

Summary of Cruise:

Trawling: Trawling was conducted with a Poly Nor'eastern Bottom Trawl (PNE) with Fishbuster doors. We were able to successfully execute 4 trawls out of 16 attempts. This poor return was due, in part, to a malfunctioning Furuno unit, and ship's personnel were not able to resolve the position of the net in the water column. The doors were crossed twice. Trawling by using scope tables (wire out:gear depth ratio) was deemed unfeasible, and trawling activities were eventually canceled.

Ichthyoplankton Sampling: Ichthyoplankton sampling was conducted using a 20cm/60cm Bongo net array. Sampling for eggs and larvae occurred at approximately 40 stations in the Bering Canyon vicinity. Sampling was conducted to localize areas of high egg density. Higher egg densities would indicate areas of spawning which would be appropriate for bottom trawling.

Ichthyoplankton vertical sampling:
Nine (9) MOCNESS tows were conducted at selected stations over the continental slope to determine depth-discrete distributions of Greenland halibut eggs. After most MOCNESS tows, CTD casts were conducted to collect data on nutrients, chlorophyll, and microzooplankton. MOCNESS tows were to approximately 500m maximum depth.

At one point the MOCNESS wire became twisted and the ship's ET re-terminated the wire.

Mooring Deployment: A 300 kHz oceanographic mooring equipped with a microcat and ADCP was deployed at 75 m depth at 55° 01.94" N, 164° 43.22" W. A 75kHz oceanographic mooring equipped with a microcat and ADCP was deployed at 400 m depth at 54° 32.62" N, 166° 38.74" W. For the bongo tow, the 60BON was fitted with 505:m mesh on both sides. The sample from 60BON Net 2 was sorted for Greenland turbot, arrowtooth flounder, Pacific halibut, myctophidae, and rock sole larvae. Species of interest were preserved in 70% EtOH and the remainder of the sample was discarded. The 20BON array was fitted with 153:m mesh on both sides. The SeaCat profiler was attached in line during all bongo tows. CTD casts were conducted at selected stations. MOCNESS sampling occurred at 3 stations.

Drifters:
Three satellite-tracked drifters were deployed to examine current trajectories at 40 m depth. Drifters were released at:

Serial # 57886:	55	02.19	N	164	42.44	W
Serial # 72431:	54	19.32	N	167	23.23	W
Serial # 57884:	54	45.47	N	165	57.47	W

Time lost:
Weather: 24 hrs
Furuno malfunctions: 12 hours
Crossed doors: 18 hours
Rudder jammed: 2 hours

Acknowledgments: The Eco-FOCI program extends thanks to the officers and crew of the *R/V Miller Freeman*.

Cruise Summary For FOCI Cruise 1MF08 (MF-08-02)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
18-Feb-08	8:16	1	1	AX07	BON001	111	55 02.80 N	165 04.59 W	20Bon	QTowF	
18-Feb-08	8:16	1	1	AX07	BON001	111	55 02.80 N	165 04.59 W	60Bon	QTowF, RCountE, RCountL	
18-Feb-08	8:16	1	1	AX07	BON001	111	55 02.80 N	165 04.59 W	60Bon	QTowF, RCountE, RCountL	No fish larvae.
18-Feb-08	8:16	1	1	AX07	BON001	111	55 02.80 N	165 04.59 W	CAT	CAT	
18-Feb-08	9:53	1	2	AX07		74	55 01.94 N	164 43.22 W	Moor	ADCP, CAT	Gear depth is depth of microcat. ADCP is 1m above microcat.
18-Feb-08	10:14	1	3	AX07	CTD001	73	55 02.12 N	164 42.68 W	CTD	CTD, Fluor, PAR	
18-Feb-08	10:34	1	4	AX07	DRIFT01	73	55 02.19 N	164 42.44 W	SatBuoy	Deploy	Serial # 57886
18-Feb-08	12:08	2	1	AX04	BON002	75	54 49.69 N	164 52.79 W	20Bon	QTowF	
18-Feb-08	12:08	2	1	AX04	BON002	75	54 49.69 N	164 52.79 W	60Bon	QTowF, RCountE, RCountL	
18-Feb-08	12:08	2	1	AX04	BON002	75	54 49.69 N	164 52.79 W	CAT	CAT	
18-Feb-08	13:55	3	1	BA04	BON003	138	54 42.70 N	165 15.98 W	20Bon	QTowF	
18-Feb-08	13:55	3	1	BA04	BON003	138	54 42.70 N	165 15.98 W	60Bon	QTowF, RCountE, RCountL	
18-Feb-08	13:55	3	1	BA04	BON003	138	54 42.70 N	165 15.98 W	CAT	CAT	
18-Feb-08	15:43	4	1	BD04	BON004	345	54 35.79 N	165 38.95 W	20Bon	QTowF	
18-Feb-08	15:43	4	1	BD04	BON004	345	54 35.79 N	165 38.95 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
18-Feb-08	15:43	4	1	BD04	BON004	345	54 35.79 N	165 38.95 W	CAT	CAT	
18-Feb-08	16:36	4	2	BD04	CTD002	348	54 35.41 N	165 39.37 W	CTDB	CTD, Fluor, PAR	
18-Feb-08	18:36	5	1	BG04	BON005	541	54 28.20 N	166 01.28 W	20Bon	QTowF	
18-Feb-08	18:36	5	1	BG04	BON005	541	54 28.20 N	166 01.28 W	60Bon	QTowF, RCountE, RCountL	
18-Feb-08	18:36	5	1	BG04	BON005	541	54 28.20 N	166 01.28 W	CAT	CAT	
18-Feb-08	22:03	6	1	BJ04	BON006	661	54 21.31 N	166 24.17 W	20Bon	QTowF	
18-Feb-08	22:03	6	1	BJ04	BON006	661	54 21.31 N	166 24.17 W	60Bon	QTowF, RCountE, RCountL	
18-Feb-08	22:03	6	1	BJ04	BON006	661	54 21.31 N	166 24.17 W	CAT	CAT	
19-Feb-08	1:26	7	1	BM04	BON007	977	54 13.85 N	166 45.22 W	20Bon	QTowF	
19-Feb-08	1:26	7	1	BM04	BON007	977	54 13.85 N	166 45.22 W	60Bon	QTowF, RCountE, RCountL	
19-Feb-08	1:26	7	1	BM04	BON007	977	54 13.85 N	166 45.22 W	CAT	CAT	
19-Feb-08	3:37	8	1	BP04	BON008	1400	54 06.26 N	167 08.67 W	20Bon	QTowF	
19-Feb-08	3:37	8	1	BP04	BON008	1400	54 06.26 N	167 08.67 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
19-Feb-08	3:37	8	1	BP04	BON008	1400	54 06.26 N	167 08.67 W	CAT	CAT	
19-Feb-08	8:56	9	1	BG04	PNE001	527	54 28.50 N	166 02.30 W	Nor	Furuno	Problem w/ Furuno. Tow failed.
19-Feb-08	8:32	9	2	BG04	PNE002	513	54 29.72 N	162 02.61 W	Nor	Furuno	Furuno failed; aborted tow
19-Feb-08	11:22	9	3	BG04	PNE003	558	54 27.89 N	165 59.99 W	Nor	Furuno	Distance fished .828 miles Total time 58:21:65 HB 54 27.890 166 59.232 No greeenland halibut found. 15 minute tow.
19-Feb-08	14:37	10	1	BD07	BON009	167	54 49.00 N	165 51.80 W	20Bon	QTowF	
19-Feb-08	14:37	10	1	BD07	BON009	167	54 49.00 N	165 51.80 W	60Bon	QTowF, RCountE, RCountL	
19-Feb-08	14:37	10	1	BD07	BON009	167	54 49.00 N	165 51.80 W	CAT	CAT	
19-Feb-08	16:22	11	1	BG07	BON010	293	54 41.44 N	166 15.04 W	20Bon	QTowF	
19-Feb-08	16:22	11	1	BG07	BON010	293	54 41.44 N	166 15.04 W	60Bon	QTowF, RCountE, RCountL	

Cruise Summary For FOCI Cruise 1MF08 (MF-08-02)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Depth Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
19-Feb-08	16:22	11	1	BG07	BON010	293	54 41.44 N	166 15.04 W	CAT	CAT	
19-Feb-08	18:39	12	1	BJ07	BON011	423	54 34.08 N	166 37.74 W	20Bon	QTowF	
19-Feb-08	18:39	12	1	BJ07	BON011	423	54 34.08 N	166 37.74 W	60Bon	QTowF, RCountE, RCountL	
19-Feb-08	18:39	12	1	BJ07	BON011	423	54 34.08 N	166 37.74 W	CAT	CAT	
19-Feb-08	19:44	12	2	BJ07	CTD003	413	54 34.41 N	166 38.03 W	CTDB	Discard	Seawater collection for D. Blood
19-Feb-08	21:42	12	3	BJ07	MOC001	408	54 35.22 N	166 35.47 W	MOC1	QTowF	Volume of net 9 estimated as 2 times net 8.
19-Feb-08	23:51	12	4	BJ07	CTD004	416	54 34.18 N	166 37.53 W	CTDB	Chlor, MZ, Nut	
20-Feb-08	1:58	13	1	BM07	BON012	506	54 27.00 N	167 00.30 W	20Bon	QTowF	
20-Feb-08	1:58	13	1	BM07	BON012	506	54 27.00 N	167 00.30 W	60Bon	QTowF, RCountE	
20-Feb-08	1:58	13	1	BM07	BON012	506	54 27.00 N	167 00.30 W	60Bon	QTowF, RCountE	bm07
20-Feb-08	1:58	13	1	BM07	BON012	506	54 27.00 N	167 00.30 W	CAT	CAT	
20-Feb-08	3:51	14	1	BP07	BON013	798	54 20.00 N	167 22.30 W	20Bon	QTowF	
20-Feb-08	3:51	14	1	BP07	BON013	798	54 20.00 N	167 22.30 W	60Bon	QTowF, RCountE, RCountL	
20-Feb-08	3:51	14	1	BP07	BON013	798	54 20.00 N	167 22.30 W	CAT	CAT	
20-Feb-08	6:58	15	1	BS04	BON014	1698	53 59.40 N	167 33.10 W	20Bon	QTowF	
20-Feb-08	6:58	15	1	BS04	BON014	1698	53 59.40 N	167 33.10 W	60Bon	AMGEN, QTowF, RCountE, RCountL	Bottom Depth in MOA; 509.65 m; is incorrect. Net 2 accidentally preserved instead of net 1.
20-Feb-08	6:58	15	1	BS04	BON014	1698	53 59.40 N	167 33.10 W	60Bon	AMGEN, QTowF, RCountE, RCountL	Bottom depth in MOA; 509.65; is incorrect.
20-Feb-08	6:58	15	1	BS04	BON014	1698	53 59.40 N	167 33.10 W	CAT	CAT	
20-Feb-08	9:17	16	1	BV04	BON015	1447	53 52.67 N	167 54.85 W	20Bon	QTowF	
20-Feb-08	9:17	16	1	BV04	BON015	1447	53 52.67 N	167 54.85 W	60Bon	QTowF, RCountE, RCountL	
20-Feb-08	9:17	16	1	BV04	BON015	1447	53 52.67 N	167 54.85 W	CAT	CAT	
20-Feb-08	11:40	17	1	BV07	BON016	2150	54 05.51 N	168 07.78 W	20Bon	QTowF	
20-Feb-08	11:40	17	1	BV07	BON016	2150	54 05.51 N	168 07.78 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
20-Feb-08	11:40	17	1	BV07	BON016	2150	54 05.51 N	168 07.78 W	CAT	CAT	
20-Feb-08	13:57	18	1	BS07	BON017	1486	54 12.82 N	167 44.93 W	20Bon	QTowF	
20-Feb-08	13:57	18	1	BS07	BON017	1486	54 12.82 N	167 44.93 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
20-Feb-08	13:57	18	1	BS07	BON017	1486	54 12.82 N	167 44.93 W	CAT	CAT	
20-Feb-08	15:57	19	1	BS10	BON018	1000	54 25.90 N	167 57.54 W	20Bon	QTowF	
20-Feb-08	15:57	19	1	BS10	BON018	1000	54 25.90 N	167 57.54 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
20-Feb-08	15:57	19	1	BS10	BON018	1000	54 25.90 N	167 57.54 W	CAT	CAT	
20-Feb-08	18:14	20	1	BP10	BON019	724	54 32.85 N	167 35.25 W	20Bon	QTowF	
20-Feb-08	18:14	20	1	BP10	BON019	724	54 32.85 N	167 35.25 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
20-Feb-08	18:14	20	1	BP10	BON019	724	54 32.85 N	167 35.25 W	CAT	CAT	
20-Feb-08	20:29	21	1	BM10	BON020	458	54 48.20 N	167 12.02 W	20Bon	QTowF	
20-Feb-08	20:29	21	1	BM10	BON020	458	54 48.20 N	167 12.02 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
20-Feb-08	20:29	21	1	BM10	BON020	458	54 48.20 N	167 12.02 W	CAT	CAT	
20-Feb-08	22:44	22	1	BJ10	BON021	296	54 47.18 N	166 49.85 W	20Bon	QTowF	

Cruise Summary For FOCI Cruise 1MF08 (MF-08-02)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
20-Feb-08	22:44	22	1	BJ10	BON021	296	54 47.18 N	166 49.85 W	60Bon	QTowF, RCountE, RCountL	
20-Feb-08	22:44	22	1	BJ10	BON021	296	54 47.18 N	166 49.85 W	CAT	CAT	
21-Feb-08	2:42	23	1	BP07	PNE004	839	54 19.00 N	167 21.60 W	Nor	Furuno	Furuno failed; tow aborted. Depth estimated.
21-Feb-08	3:22	23	2	BP07	PNE005	827	54 19.20 N	167 21.50 W	Nor	Furuno	Furuno failed; tow aborted. Depth estimated.
21-Feb-08	4:21	23	3	BP07	BON022	801	54 20.19 N	167 24.65 W	20Bon	QTowF	
21-Feb-08	4:21	23	3	BP07	BON022	801	54 20.19 N	167 24.65 W	60Bon	QTowF, RCountE, RCountL	
21-Feb-08	4:21	23	3	BP07	BON022	801	54 20.19 N	167 24.65 W	CAT	CAT	
21-Feb-08	5:41	23	4	BP07	PNE006	844	54 18.90 N	167 29.00 W	Nor	Furuno	FURUNO failed; tow aborted. Depth estimated
21-Feb-08	8:02	23	5	BP07	MOC002	827	54 19.31 N	167 22.99 W	MOC1	QTowF	Net 2 quest; flowmeter not working at depth est vol filt using net 3. Net 9 lost; codend fell off during tow. Had to increment net 2; 4; 5 ; 6 ; 9. Cable got twisted during tow; have to reterminate.
21-Feb-08	10:25	23	6	BP07	CTD005	838	54 19.21 N	167 22.25 W	CTDB	Chlor, CTD, Fluor, MZ, Nut, PAR	Did not pop surface bottle because surface net on mocness failed. All mzs have 9.5 L volume filtered.
21-Feb-08	11:06	23	7	BP07	DRIFT02	830	54 19.32 N	167 23.23 W	SatBuoy	Deploy	Drifter # 72431242
21-Feb-08	14:42	24	1	BS01	BON023	416	53 46.10 N	167 20.92 W	20Bon	Discard	Hit bottom. On steep slope; dropped off fast. Was more shallow behind the depth sensor where the bongo was. Thought we were 65m off bottom when we hit bottom.
21-Feb-08	14:42	24	1	BS01	BON023	416	53 46.10 N	167 20.92 W	60Bon	Discard	Hit bottom. On steep slope; dropped off fast. Was more shallow behind the depth sensor where the bongo was. Thought we were 65m off bottom when we hit bottom.
21-Feb-08	14:42	24	1	BS01	BON023	416	53 46.10 N	167 20.92 W	CAT	CAT	Hit bottom. On steep slope; dropped off fast. Was more shallow behind the depth sensor where the bongo was. Thought we were 65m off bottom when we hit bottom.
21-Feb-08	15:37	24	2	BS01	BON024	377	53 46.22 N	167 20.69 W	20Bon	QTowF	Was ultra conservative with gear depth; this is a redo of the tow where we hit bottom
21-Feb-08	15:37	24	2	BS01	BON024	377	53 46.22 N	167 20.69 W	60Bon	QTowF, RCountE, RCountL	Was ultra conservative with gear depth; this is a redo of the tow where we hit bottom to the steep slope we were towing on.
21-Feb-08	15:37	24	2	BS01	BON024	377	53 46.22 N	167 20.69 W	CAT	CAT	Was ultra conservative with gear depth; this is a redo of the tow where we hit bottom to the steep slope we were towing on.
21-Feb-08	17:54	25	1	BV01	BON025	1068	53 39.00 N	167 43.94 W	20Bon	QTowF	
21-Feb-08	17:54	25	1	BV01	BON025	1068	53 39.00 N	167 43.94 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
21-Feb-08	17:54	25	1	BV01	BON025	1068	53 39.00 N	167 43.94 W	CAT	CAT	

Cruise Summary For FOCI Cruise 1MF08 (MF-08-02)

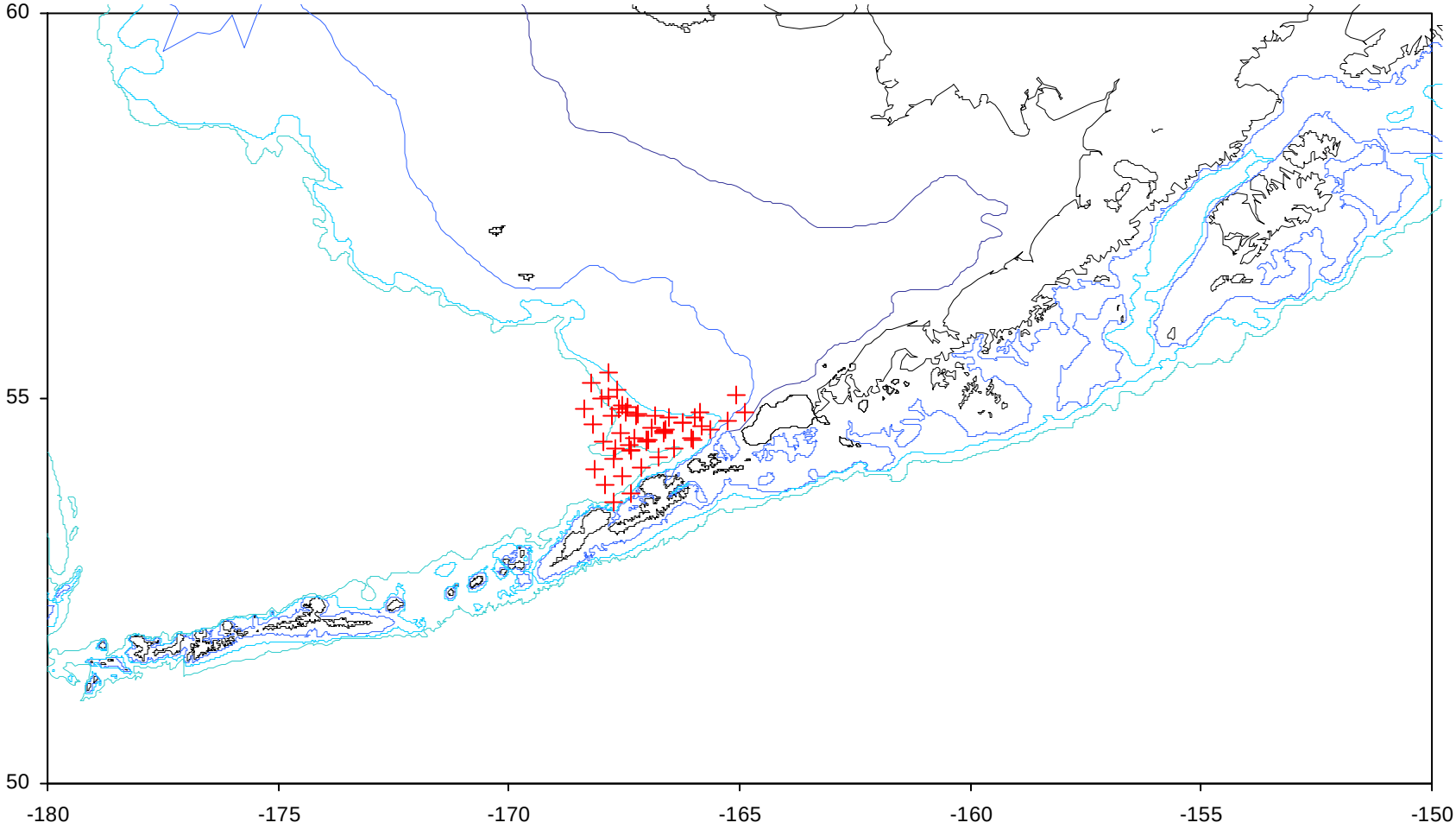
Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
22-Feb-08	1:02	26	1	BP07	PNE007	697	54 24.14 N	167 24.48 W	Nor	Furuno	Crossed doors. HB: 54 24.14N; 167 24.76W. Tow time = 15 minutes
22-Feb-08	6:56	27	1	BM10	PNE008	428	54 46.00 N	167 14.27 W	Nor	Furuno	Tow time = 15 minutes. HB: 54 46.0 N 167 11.70 W. 1 male GH
22-Feb-08	10:18	28	1		PNE009	567	54 48.88 N	167 29.02 W	Nor	Discard	HB 54 49.26 N 167 30.23 W Distance fished: No greenland halibut found. 15 minute tow.
22-Feb-08	13:32	29	1		PNE010	685	54 52.24 N	167 36.67 W	Nor	Furuno, Strip	About 5 minutes into the tow had to let more wire out because it got deeper. HB 54 52.84 N 167 37.49 W. 4 Male Greenland Halibut found. 15 minute tow.
22-Feb-08	17:31	30	1		PNE011	640	55 01.79 N	167 51.13 W	Nor	Furuno	No Furruno signal. Haul aborted 22 minutes after doors were shot. Doors were crossed. Max gear depth is a guess. Net never reached bottom; so don't know exact gear depth.
23-Feb-08	5:44	31	1	BP19	BON026	1414	55 12.64 N	168 13.52 W	20Bon	QTowF	
23-Feb-08	5:44	31	1	BP19	BON026	1414	55 12.64 N	168 13.52 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
23-Feb-08	5:44	31	1	BP19	BON026	1414	55 12.64 N	168 13.52 W	CAT	CAT	
23-Feb-08	9:44	32	1	BM16	BON027	285	55 07.03 N	167 38.55 W	20Bon	QTowF	
23-Feb-08	9:44	32	1	BM16	BON027	285	55 07.03 N	167 38.55 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
23-Feb-08	9:44	32	1	BM16	BON027	285	55 07.03 N	167 38.55 W	CAT	CAT	
23-Feb-08	11:51	33	1	BP16	BON028	1201	54 59.58 N	168 00.31 W	20Bon	QTowF	
23-Feb-08	11:51	33	1	BP16	BON028	1201	54 59.58 N	168 00.31 W	60Bon	QTowF, RCountE, RCountL	
23-Feb-08	11:51	33	1	BP16	BON028	1201	54 59.58 N	168 00.31 W	CAT	CAT	
23-Feb-08	15:12	34	1	BM19	BON029	204	55 19.70 N	167 49.82 W	20Bon	QTowF	
23-Feb-08	15:12	34	1	BM19	BON029	204	55 19.70 N	167 49.82 W	60Bon	QTowF, RCountE, RCountL	
23-Feb-08	15:12	34	1	BM19	BON029	204	55 19.70 N	167 49.82 W	CAT	CAT	
23-Feb-08	19:02	35	1	BS16	BON030	2133	54 52.14 N	168 22.46 W	20Bon	QTowF	Revs seem too low.
23-Feb-08	19:02	35	1	BS16	BON030	2133	54 52.14 N	168 22.46 W	20Bon	QTowF	salnity sensor failed on SeaCat. 20BON flowmeter seemed low for both nets.
23-Feb-08	19:02	35	1	BS16	BON030	2133	54 52.14 N	168 22.46 W	60Bon	AMGEN, QTowF, RCountE, RCountL	salnity sensor failed on SeaCat. 20BON flowmeter seemed low for both nets.
23-Feb-08	19:02	35	1	BS16	BON030	2133	54 52.14 N	168 22.46 W	CAT	CAT	salnity sensor failed on SeaCat. 20BON flowmeter seemed low for both nets.
23-Feb-08	21:32	36	1	BS13	BON031	1646	54 40.24 N	168 10.17 W	20Bon	QTowF	
23-Feb-08	21:32	36	1	BS13	BON031	1646	54 40.24 N	168 10.17 W	60Bon	QTowF, RCountE, RCountL	
23-Feb-08	21:32	36	1	BS13	BON031	1646	54 40.24 N	168 10.17 W	CAT	CAT	
24-Feb-08	0:02	37	1	BP13	BON032	1300	54 46.70 N	167 47.00 W	20Bon	QTowF	
24-Feb-08	0:02	37	1	BP13	BON032	1300	54 46.70 N	167 47.00 W	20Bon	QTowF	tow to 600 m depth

24-Feb-08	0:02	37	1	BP13	BON032	1300	54 46.70 N	167 47.00 W	60Bon	QTowF, RCountE, RCountL	tow to 600 m depth
24-Feb-08	0:02	37	1	BP13	BON032	1300	54 46.70 N	167 47.00 W	CAT	CAT	tow to 600 m depth
24-Feb-08	2:22	38	1	BM13	BON033	430	54	53.50	N	167	25.20 W 20Bon QTowF
24-Feb-08	2:22	38	1	BM13	BON033	430	54 53.50 N	167 25.20 W	60Bon	QTowF, RCountE, RCountL	
24-Feb-08	2:22	38	1	BM13	BON033	430	54 53.50 N	167 25.20 W	CAT	CAT	
24-Feb-08	4:03	38	2	BM13	PNE012	391	54 55.75 N	167 27.30 W	Nor	Furuno	HB: DLat 54 Mlat 55.75 Dlong 167 Mlong 27.3. Distance fished = 1.9 nautical miles.
24-Feb-08	8:08	39	1		PNE013	487	54 54.00 N	167 32.60 W	Nor	Furuno	FURUNO malfunctioned, tow aborted. Depth estimated.
24-Feb-08	9:16	39	2		PNE014	468	54 55.03 N	167 32.36 W	Nor	Furuno	No furuno signal. Tow aborted. Gear depth is a guess; do not really know where the net was/
24-Feb-08	14:19	40	1	BM07	BON034	500	54 27.25 N	166 59.49 W	20Bon	QTowF	
24-Feb-08	14:19	40	1	BM07	BON034	500	54 27.25 N	166 59.49 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
24-Feb-08	14:19	40	1	BM07	BON034	500	54 27.25 N	166 59.49 W	CAT	CAT	
24-Feb-08	16:21	41	1	BJ07	BON035	417	54 34.52 N	166 37.67 W	20Bon	QTowF	
24-Feb-08	16:21	41	1	BJ07	BON035	417	54 34.52 N	166 37.67 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
24-Feb-08	16:21	41	1	BJ07	BON035	417	54 34.52 N	166 37.67 W	CAT	CAT	
24-Feb-08	18:21	42	1			437	54 32.62 N	166 38.74 W	Moor	ADCP, CAT	75 khz Mooring 08-MS-9A
24-Feb-08	19:05	42	2		CTD006	434	54 33.25 N	166 38.66 W	CTD	CTD, Fluor, PAR	
24-Feb-08	20:38	43	1		BON036	250	54 45.80 N	166 31.60 W	20Bon	QTowF	
24-Feb-08	20:38	43	1		BON036	250	54 45.80 N	166 31.60 W	60Bon	QTowF, RCountE, RCountL	
24-Feb-08	20:38	43	1		BON036	250	54 45.80 N	166 31.60 W	CAT	CAT	
24-Feb-08	22:38	44	1		BON037	399	54 37.80 N	166 53.67 W	20Bon	QTowF	
24-Feb-08	22:38	44	1		BON037	399	54 37.80 N	166 53.67 W	60Bon	QTowF, RCountE, RCountL	
24-Feb-08	22:38	44	1		BON037	399	54 37.80 N	166 53.67 W	CAT	CAT	
24-Feb-08	0:47	44	2	BM710	MOC003	386	54 39.47 N	166 53.99 W	MOC1	QTowF	
25-Feb-08	19:05	44	3		CTD007	425	54 33.20 N	166 38.70 W	CTDB	Chlor, CTD, Fluor, MZ, Nut, PAR	First bottle likely tripped on the way down. 20m chlorophyll manifold leaked about 5 ml during filtration.
25-Feb-08	15:10	45	1		BON038	580	54 29.20 N	167 16.39 W	20Bon	QTowF	
25-Feb-08	15:10	45	1		BON038	580	54 29.20 N	167 16.39 W	60Bon	QTowS, RCountE, RCountL	
25-Feb-08	15:10	45	1		BON038	580	54 29.20 N	167 16.39 W	CAT	CAT	
25-Feb-08	9:21	45	2		MOC004	518	54 30.92 N	167 13.20 W	MOC1	QTowF	Flowmeter on net 2 only worked at the very end. Flow questionable for net 2. Est vol filt for net 2 by multipling net 3 vol by 1.5.
25-Feb-08	11:46	45	3		CTD008	513	54 30.70 N	167 12.35 W	CTDB	Chlor, Fluor, MZ, Nut, PAR	200 m bottle leaked. All mzs hav 9.5 L for volume filtered.
25-Feb-08	14:26	46	1		BON039	856	54 20.41 N	167 41.64 W	20Bon	QTowF	
25-Feb-08	14:26	46	1		BON039	856	54 20.41 N	167 41.64 W	60Bon	AMGEN, QTowF, RCountE, RCountL	
25-Feb-08	14:26	46	1		BON039	856	54 20.41 N	167 41.64 W	CAT	CAT	
25-Feb-08	16:31	46	2		MOC005	835	54 21.43 N	167 39.95 W	MOC1	QTowF	Vol filt quest on net 2; flowmeter not working at depth. Volume filtered estimated by doubling net 3 vol. Net 9 quest. Did not see net bar fall at surface; but think ok.

Cruise Summary For FOCI Cruise 1MF08 (MF-08-02)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
25-Feb-08	18:42	46	3		CTD009	817	54 21.86 N	167 39.92 W	CTDB	Chlor, CTD, Fluor, MZ, Nut, PAR	
25-Feb-08	23:57	47	1	BP07	BON040	805	54 19.68 N	167 22.50 W	20Bon	QTowF	
25-Feb-08	23:57	47	1	BP07	BON040	805	54 19.68 N	167 22.50 W	60Bon	QTowF, RCountE, RCountL	
25-Feb-08	23:57	47	1	BP07	BON040	805	54 19.68 N	167 22.50 W	CAT	CAT	
26-Feb-08	1:18	47	2	BP07	MOC006	778	54 20.21 N	167 22.33 W	MOC1	QTowF	
26-Feb-08	1:18	47	2	BP07	MOC006	778	54 20.21 N	167 22.33 W	MOC1	QTowF	Flowmeter did not work during net 2. Averaged 1.5xflowmeter readings of nets 3 and 4.
26-Feb-08	4:39	48	1	BM7	BON041	505	54 27.05 N	167 00.23 W	20Bon	QTowF	
26-Feb-08	4:39	48	1	BM7	BON041	505	54 27.05 N	167 00.23 W	60Bon	QTowF, RCountE, RCountL	
26-Feb-08	4:39	48	1	BM7	BON041	505	54 27.05 N	167 00.23 W	CAT	CAT	
26-Feb-08	6:33	48	2	BM07	MOC007	514	54 26.69 N	166 59.17 W	MOC1	QTowF	
26-Feb-08	6:33	48	2	BM07	MOC007	514	54 26.69 N	166 59.17 W	MOC1	QTowF	Flowmeter stopped on descent. Did not restart until mid net 2. Net 2 volume filtered estimated as 1.5 x the average of nets 3 and 4.
26-Feb-08	9:23	49	1	BJ07	BON042	413	54 34.97 N	166 38.21 W	20Bon	QTowS	
26-Feb-08	9:23	49	1	BJ07	BON042	413	54 34.97 N	166 38.21 W	20Bon	QTowS	Initially, launched and in water for 39sec. Then retrieved because it's twisted. Then relaunched; tow total time does not include initial 39sec. drop.
26-Feb-08	9:23	49	1	BJ07	BON042	413	54 34.97 N	166 38.21 W	60Bon	QTowF, RCountE, RCountL	Initially, launched and in water for 39 sec. Then retrieved because it was twisted. Then relaunched; tow total time does not include initial 39sec. drop.
26-Feb-08	9:23	49	1	BJ07	BON042	413	54 34.97 N	166 38.21 W	60Bon	QTowF, RCountE, RCountL	Initially, launched and in water for 39sec. Then retrieved because it's twisted. Then relaunched; tow total time does not include initial 39sec. drop.
26-Feb-08	9:23	49	1	BJ07	BON042	413	54 34.97 N	166 38.21 W	CAT	CAT	Initially, launched and in water for 39sec. Then retrieved because it's twisted. Then relaunched; tow total time does not include initial 39sec. drop.
26-Feb-08	11:34	49	2	BJ07	MOC008	410	54 35.25 N	166 39.81 W	MOC1	Discard	Failed tow. Motor was offset and nets did not trip correctly. Frame came up with two net bars still open. No way to know what depths the nets really sampled.
26-Feb-08	13:57	49	3	BJ07	MOC009	410	54 34.99 N	166 37.98 W	MOC1	QTowF	
26-Feb-08	15:53	49	4	BJ07	BON043	416	54 34.58 N	166 38.35 W	20Bon	QTowF	
26-Feb-08	15:53	49	4	BJ07	BON043	416	54 34.58 N	166 38.35 W	20Bon	QTowF	this tow to obtain GH eggs for EDGAR work
26-Feb-08	15:53	49	4	BJ07	BON043	416	54 34.58 N	166 38.35 W	60Bon	QTowF, RCountE, RCountL	this tow to obtain GH eggs for EDGAR work
26-Feb-08	15:53	49	4	BJ07	BON043	416	54 34.58 N	166 38.35 W	60Bon	QTowF, RCountE, RCountL	This tow to obtain GH eggs for EDGAR work (net

26-Feb-08	15:53	49	4	BJ07	BON043	416	54	34.58	N	166	38.35	W	CAT	CAT	2) obtain GH eggs for EDGAR work		
26-Feb-08	18:02	50	1	BG07	BON044	291	54	41.32	N	166	14.39	W	60Bon	QTowF, RCountE, RCountL			
26-Feb-08	18:02	50	1	BG07	BON044	291	54	41.32	N	166	14.39	W	CAT	CAT			
26-Feb-08	21:00	51	1	BJ7	BON045	375	54	36.14	N	166	36.98	W	60Bon	QTowF, RCountE, RCountL			
26-Feb-08	21:00	51	1	BJ7	BON045	375	54	36.14	N	166	36.98	W	CAT	CAT			
26-Feb-08	21:50	51	2	BJ07	DRIFT03	377	54	36.92	N	166	39.78	W	SatBuoy	Deploy			
27-Feb-08	1:28	52	1		PNE15	206	54	45.47	N	165	57.47	W	Nor	Furuno	HB DLat 54 MLat 43.69 DLong 165 MLong 56.17 Distance fished = 1.932 nautical miles.		
27-Feb-08	4:11	53	1		PNE16	359	54	38.81	N	165	48.38	W	Nor	Furuno	Net retreived early due to FURUNO malfunction, tow aborted. Gear depth estimated.		



1MF08 Stations