

CRUISE REPORT

Cruise Number: MF-08-10
FOCI Number: FOCI 3MF08
Ship: *Miller Freeman*

Area of Operations: Southeast Bering Sea

Itinerary:

Departed Dutch Harbor, Alaska, at 900 on Tuesday, September 10, 2008.
Arrived Dutch Harbor, Alaska, at 0800 on Saturday, September 20, 2008.

Participating Organizations:

NOAA – Alaska Fisheries Science Center (AFSC)
7600 Sand Point Way N.E.
Seattle, Washington 98115-0070

Chief Scientist:

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Other Participating Scientists:

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Ashlee Maust	Female	UW	Ashlee.Maust@noaa.gov	USA

Objectives of Cruise:

FOCI conducted an ichthyoplankton and juvenile fish survey in the Eastern Bering Sea in the waters contiguous to the Alaska Peninsula and Unimak Island, Alaska. This work was needed to describe larval fish and zooplankton assemblages in the Bering Sea – basin, slope, outer shelf, middle shelf – in autumn. In particular, this area is a known nursery area for walleye pollock, northern rocksole, Greenland halibut, and Alaska plaice, and abundances of juveniles at this time of year are high. Zooplankton data, infaunal sampling, and data on physical characteristics of the water column and benthos were also collected. Beam trawling activities were conducted to study settlement and nursery areas for age-0 flatfishes.

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We also used the SIMRAD EK 5 Scientific Echosounder Monitoring system to collect ancillary data on adult fish aggregations during the entire cruise in support of AFSC/MACE monitoring activities.

Summary of Operations:

Tows

20cm bongo (20Bon)	50
60cm bongo (60Bon)	50
3m Beam Trawl (Beam)	55
Seabird SeaCAT CTD (CAT)	49
van Veen benthic grab (Grab)	68

Samples Collected

misc species in EtOH (AMGEN)	16
SBE-39 bathythermograph (BT)	52
SeaBird SeaCat CTD (CAT)	48
juvenile crabs for CY (CYCRB)	4
Furuno attached to net (Furuno)	53
van Veen benthic grab infaunal sample (GrabInfa)	50
van Veen benthic grab sediment sample (GrabSed)	50
Quantitative tow preserved in formalin (QTowF)	99

Summary of Cruise:

Grid survey:

Departure from Dutch Harbor, AK occurred at 900 hrs on September 10, 2008. This was one day later than scheduled due to a delayed arrival of the ship in Dutch Harbor. At most stations, a Marine Assessment Monitoring and Prediction (MARMAP) Bongo tow was conducted first. The SBE 19 SEACAT, the 20-cm Bongo (20BON) net with 0.150-mm mesh netting and the 60-cm Bongo (60BON) net mounted with 0.505-mm mesh (Nets 1 and 2) were all mounted together for this tow. Tows were to a maximum depth of 300 m, or to 10 m off-bottom, whichever was shallowest. For most of the cruise, bongo tow operations occurred on the port side due to an operational problem with the A-frame on the starboard side.

Following the bongo tow, a modified plumb-staff 3 m beam trawl was deployed. Trawl depth was monitored continuously using a Furuno depth sounder. Tows were generally 10 minutes in duration, though tow times were modified occasionally to accommodate spatial and temporal difference in faunal abundances. Ichthyofauna for all trawls were weighed and measured, and age-0 flatfishes, age-0 Pacific cod, and age-0 pollock were saved (frozen) for later analyses.

Benthic sampling occurred using a van Veen benthic grab. The grab was determined to be on bottom when winch wire became slack. Sediments from the grab were collected for two purposes. First, a small punch of fixed quantity was collected for quantitative analyses of infauna. Second, a larger, non-quantitative sample was collected to determine grain size and substrate composition. All samples were frozen and will be examined in the laboratory.

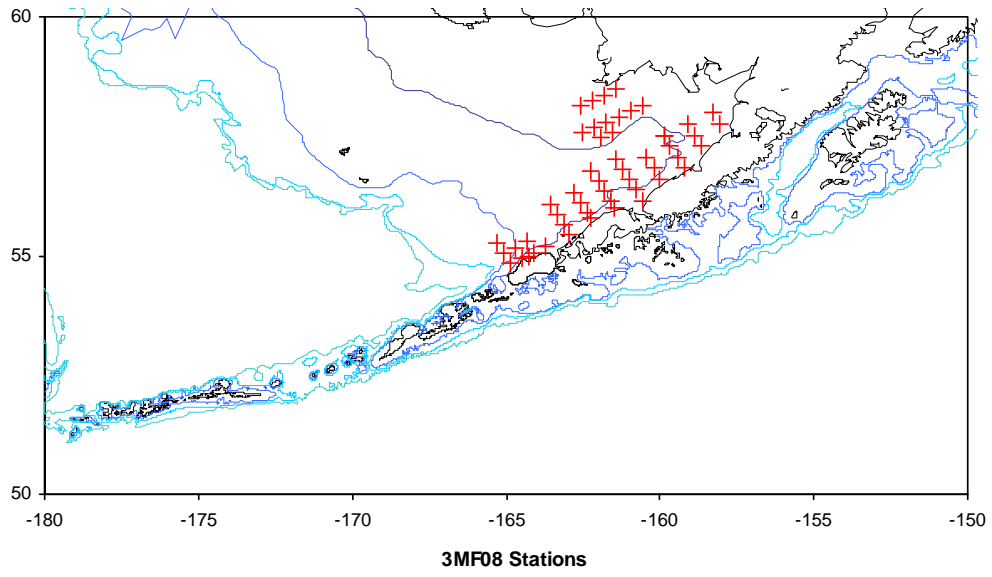
Time lost:

Departure occurred 19 hours late due to a delayed arrival of the ship to Dutch Harbor, AK.

An electrical problem on the bridge resulted in a loss of 49 hours of sampling time. During this period, the ship returned to Dutch Harbor, AK to isolate and fix the problem, and then return to the sampling grid to resume cruise sampling.

Acknowledgments: The FOCI program extends thanks to the officers and crew of the *R/V Miller Freeman*. All crew members performed their duties professionally and the success of the cruise was dependent on their efforts.

Figure 1. Sampling area over Eastern Bering Sea shelf.



Cruise Summary For FOCI Cruise 3MF08 (MF08-10)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
11-Sep-08	17:39	1	1	Q31	BEAM001	39	58 07.52 N	162 34.74 W	Beam	BT, Furuno	
11-Sep-08	18:23	1	2	Q31	GRAB001	39	58 07.28 N	162 34.44 W	Grab	GrabInfra, GrabSed	
11-Sep-08	18:45	1	3	Q31	BON001	39	58 06.90 N	162 34.03 W	20Bon	QTowF	
11-Sep-08	18:45	1	3	Q31	BON001	39	58 06.90 N	162 34.03 W	60Bon	QTowF	
11-Sep-08	18:45	1	3	Q31	BON001	39	58 06.90 N	162 34.03 W	CAT	CAT	
11-Sep-08	20:15	2	1	N31	BON002	40	58 15.17 N	162 11.28 W	20Bon	QTowF	
11-Sep-08	20:15	2	1	N31	BON002	40	58 15.17 N	162 11.28 W	60Bon	QTowF	
11-Sep-08	20:15	2	1	N31	BON002	40	58 15.17 N	162 11.28 W	CAT	CAT	
11-Sep-08	20:40	2	2	N31	BEAM002	40	58 14.44 N	162 10.76 W	Beam	BT, Furuno	
11-Sep-08	21:26	2	3	N31	GRAB002	39	58 14.15 N	162 10.67 W	Grab	GrabInfra, GrabSed	
11-Sep-08	22:57	3	1	K31	BON003	40	58 21.82 N	161 48.71 W	20Bon	QTowF	
11-Sep-08	22:57	3	1	K31	BON003	40	58 21.82 N	161 48.71 W	60Bon	QTowF	
11-Sep-08	22:57	3	1	K31	BON003	40	58 21.82 N	161 48.71 W	CAT	CAT	
11-Sep-08	23:24	3	2	K31	BEAM003	39	58 21.29 N	161 47.57 W	Beam	BT, Furuno	Weak link failed on port side. Bag was full and on bottom. Tow deemed OK.
12-Sep-08	0:13	3	3	K31	GRAB003	39	58 20.89 N	161 47.97 W	Grab	GrabInfra, GrabSed	
12-Sep-08	1:46	4	1	H31	BON004	23	58 28.80 N	161 24.60 W	20Bon	QTowF	
12-Sep-08	1:46	4	1	H31	BON004	23	58 28.80 N	161 24.60 W	60Bon	AMGEN, QTowF	
12-Sep-08	1:46	4	1	H31	BON004	23	58 28.80 N	161 24.60 W	60Bon	AMGEN, QTowF	Wire out less then gear depth (at 60Bon) so out se equal to gear depth
12-Sep-08	1:46	4	1	H31	BON004	23	58 28.80 N	161 24.60 W	CAT	CAT	
12-Sep-08	2:09	4	2	H31	BEAM004	22	58 28.92 N	161 23.54 W	Beam	BT, Furuno	net caught rocks during tow. Broken bridle. Samples saved for non-quant. Studies
12-Sep-08	3:03	4	3	H31	GRAB004	23	58 29.11 N	161 22.72 W	Grab	GrabInfra, GrabSed	
12-Sep-08	7:55	5	1	Q25	BON005	47	57 40.53 N	162 09.06 W	20Bon	QTowF	
12-Sep-08	7:55	5	1	Q25	BON005	47	57 40.53 N	162 09.06 W	60Bon	AMGEN, QTowF	
12-Sep-08	7:55	5	1	Q25	BON005	47	57 40.53 N	162 09.06 W	CAT	CAT	
12-Sep-08	8:23	5	2	Q25	BEAM005	47	57 40.90 N	162 07.59 W	Beam	BT, Furuno	
12-Sep-08	9:09	5	3	Q25	GRAB005	48	57 41.91 N	162 06.74 W	Grab	GrabInfra, GrabSed	
12-Sep-08	10:38	6	1	N25	BON006	49	57 48.08 N	161 45.34 W	20Bon	QTowF	
12-Sep-08	10:38	6	1	N25	BON006	49	57 48.08 N	161 45.34 W	60Bon	AMGEN, QTowF	
12-Sep-08	10:38	6	1	N25	BON006	49	57 48.08 N	161 45.34 W	CAT	CAT	
12-Sep-08	11:03	6	2	N25	BEAM006	49	57 48.04 N	161 43.91 W	Beam	BT, Furuno	
12-Sep-08	11:49	6	3	N25	GRAB006	49	57 47.99 N	161 43.12 W	Grab	GrabInfra, GrabSed	
12-Sep-08	13:39	7	1	N22	BON007	50	57 34.66 N	161 31.42 W	20Bon	QTowF	
12-Sep-08	13:39	7	1	N22	BON007	50	57 34.66 N	161 31.42 W	60Bon	QTowF	
12-Sep-08	13:39	7	1	N22	BON007	50	57 34.66 N	161 31.42 W	CAT	CAT	
12-Sep-08	14:04	7	2	N22	BEAM007	51	57 35.10 N	161 30.48 W	Beam	BT, Furuno	
12-Sep-08	14:47	7	3	N22	GRAB007	51	57 35.33 N	161 30.21 W	Grab	GrabInfra, GrabSed	
12-Sep-08	16:34	8	1	Q22	BON008	54	57 27.67 N	161 54.83 W	20Bon	Discard	SeaCat failure, repeat tow

Monday, September 29, 2008

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Cruise Summary For FOCI Cruise 3MF08 (MF08-10)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	HaulComments
12-Sep-08	16:34	8	1	Q22	BON008	54	57 27.67 N	161 54.83 W	60Bon	Discard	SeaCat failure, repeat tow
12-Sep-08	16:34	8	1	Q22	BON008	54	57 27.67 N	161 54.83 W	CAT	Discard	SeaCat failure, repeat tow
12-Sep-08	16:54	8	2	Q22	BON009	53	57 27.70 N	161 54.95 W	20Bon	QTowF	Tow done by wire out, SeaCat not working
12-Sep-08	16:54	8	2	Q22	BON009	53	57 27.70 N	161 54.95 W	60Bon	QTowF	Tow done by wire out, SeaCat not working
12-Sep-08	17:22	8	3	Q22	BEAM008	54	57 27.75 N	161 54.48 W	Beam	BT	Pelagic catch (jellies and one Pcod). May not have been on bottom. Furuno stopped working after 4 minutes.
12-Sep-08	18:16	8	4	Q22	GRAB008	53	57 27.61 N	161 53.92 W	Grab	GrabInfra, GrabSed	
12-Sep-08	20:29	9	1	T25	BEAM009	45	57 34.03 N	162 31.37 W	Beam	BT, Furuno	
12-Sep-08	21:14	9	2	T25	GRAB009	45	57 34.26 N	162 30.57 W	Grab	GrabInfra, GrabSed	
12-Sep-08	21:49	9	3	T25	BON010	45	57 33.83 N	162 30.09 W	20Bon	QTowF	
12-Sep-08	21:49	9	3	T25	BON010	45	57 33.83 N	162 30.09 W	60Bon	QTowF	
12-Sep-08	21:49	9	3	T25	BON010	45	57 33.83 N	162 30.09 W	CAT	CAT	
13-Sep-08	1:43	10	1	K25	BON011	41	57 54.59 N	161 20.97 W	20Bon	QTowF	
13-Sep-08	1:43	10	1	K25	BON011	41	57 54.59 N	161 20.97 W	60Bon	QTowF	
13-Sep-08	1:43	10	1	K25	BON011	41	57 54.59 N	161 20.97 W	CAT	CAT	
13-Sep-08	2:06	10	2	K25	BEAM010	42	57 54.72 N	161 19.80 W	Beam	BT, Furuno	
13-Sep-08	2:47	10	3	K25	GRAB010	42	57 54.80 N	161 18.88 W	Grab	GrabInfra, GrabSed	
13-Sep-08	4:05	11	1	H25	BON012	45	58 01.87 N	160 57.81 W	20Bon	QTowF	
13-Sep-08	4:05	11	1	H25	BON012	45	58 01.87 N	160 57.81 W	60Bon	QTowF	
13-Sep-08	4:05	11	1	H25	BON012	45	58 01.87 N	160 57.81 W	CAT	CAT	
13-Sep-08	4:29	11	2	H25	BON011	45	58 02.16 N	160 56.68 W	Beam	BT, Furuno	BT file contains nonsense
13-Sep-08	5:28	11	3	H25	GRAB011	45	58 02.28 N	160 55.79 W	Grab	GrabInfra, GrabSed	first grab clamped on rock, sediment lost. Second grab successful, and logged as haul 3.
13-Sep-08	6:45	12	1	E25	BON013	43	58 09.37 N	160 33.95 W	20Bon	QTowF	
13-Sep-08	6:45	12	1	E25	BON013	43	58 09.37 N	160 33.95 W	60Bon	QTowF	
13-Sep-08	6:45	12	1	E25	BON013	43	58 09.37 N	160 33.95 W	CAT	CAT	
13-Sep-08	7:08	12	2	E25	BEAM012	43	58 09.62 N	160 32.54 W	Beam	BT, Furuno	
13-Sep-08	7:48	12	3	E25	GRAB012	43	58 09.85 N	160 31.18 W	Grab	GrabInfra, GrabSed	
13-Sep-08	12:29	13	1	BBA16	BON014	45	57 44.38 N	159 05.42 W	20Bon	QTowF	
13-Sep-08	12:29	13	1	BBA16	BON014	45	57 44.38 N	159 05.42 W	60Bon	QTowF	
13-Sep-08	12:29	13	1	BBA16	BON014	45	57 44.38 N	159 05.42 W	CAT	CAT	
13-Sep-08	12:58	13	2	BBA16	BEAM013	46	57 44.54 N	159 04.30 W	Beam	Furuno	
13-Sep-08	13:45	13	3	BBA16	GRAB013	45	57 44.64 N	159 03.69 W	Grab	GrabInfra, GrabSed	
13-Sep-08	15:35	14	1	BBA13	BON015	45	57 30.99 N	158 51.42 W	20Bon	QTowF	
13-Sep-08	15:35	14	1	BBA13	BON015	45	57 30.99 N	158 51.42 W	60Bon	QTowF	
13-Sep-08	15:35	14	1	BBA13	BON015	45	57 30.99 N	158 51.42 W	CAT	CAT	
13-Sep-08	16:00	14	2	BBA13	BEAM014	45	57 31.18 N	158 50.38 W	Beam	BT, Furuno	
13-Sep-08	16:38	14	3	BBA13	GRAB014	43	57 31.16 N	158 49.98 W	Grab	GrabInfra, GrabSed	

Cruise Summary For FOCI Cruise 3MF08 (MF08-10)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
13-Sep-08	19:25	15	1	BBC16	BON016	38	57 59.22 N	158 16.58 W	20Bon	QTowF	
13-Sep-08	19:25	15	1	BBC16	BON016	38	57 59.22 N	158 16.58 W	60Bon	QTowF	
13-Sep-08	19:25	15	1	BBC16	BON016	38	57 59.22 N	158 16.58 W	CAT	CAT	
13-Sep-08	19:48	15	2	BBC16	BEAM015	40	57 59.04 N	158 15.91 W	Beam	BT, Furuno	Net not tending bottom well over unven surface. No fish caught. Tow repeated as 15-3
Beam016.											
13-Sep-08	20:31	15	3	BBC16	BEAM016	40	57 58.79 N	158 15.89 W	Beam	BT, Furuno	REDO OF 15-2 Beam 005
13-Sep-08	20:55	15	4	BBC16	GRAB015	40	57 58.71 N	158 16.06 W	Grab	GrabInfra, GrabSed	
13-Sep-08	22:20	16	1	BBC13	BON17	28	57 45.27 N	158 03.44 W	20Bon	QTowF	
13-Sep-08	22:20	16	1	BBC13	BON17	28	57 45.27 N	158 03.44 W	60Bon	QTowF	
13-Sep-08	22:20	16	1	BBC13	BON17	28	57 45.27 N	158 03.44 W	CAT	CAT	
13-Sep-08	22:42	16	2	BBC13	BEAM017	26	57 45.21 N	158 02.29 W	Beam		
13-Sep-08	23:10	16	3	BBC13	GRAB016	23	57 45.00 N	158 02.26 W	Grab	GrabInfra, GrabSed	
14-Sep-08	1:54	17	1	BBA10	BON018	36	57 17.80 N	158 38.59 W	20Bon	QTowF	
14-Sep-08	1:54	17	1	BBA10	BON018	36	57 17.80 N	158 38.59 W	60Bon	AMGEN, QTowF	
14-Sep-08	1:54	17	1	BBA10	BON018	36	57 17.80 N	158 38.59 W	CAT	CAT	
14-Sep-08	2:16	17	2	BBA10	BEAM018	35	57 17.44 N	158 37.65 W	Beam	BT, Furuno	
14-Sep-08	2:48	17	3	BBA10	GRAB017	36	57 17.23 N	158 37.54 W	Grab	GrabInfra, GrabSed	
14-Sep-08	5:58	18	1	E7	BON019	27	56 50.60 N	159 13.50 W	20Bon	QTowF	
14-Sep-08	5:58	18	1	E7	BON019	27	56 50.60 N	159 13.50 W	60Bon	AMGEN, QTowF	
14-Sep-08	5:58	18	1	E7	BON019	27	56 50.60 N	159 13.50 W	CAT	CAT	
14-Sep-08	6:26	18	2	E7	BEAM019	26	56 50.85 N	159 12.32 W	Beam	BT, Furuno	
14-Sep-08	7:26	18	3	E7	GRAB018	25	56 50.85 N	159 11.07 W	Grab	Discard	Grab brought up a rock. Too rocky for grab.
14-Sep-08	9:05	19	1	E10	BON020	53	57 03.87 N	159 26.61 W	20Bon	QTowF	
14-Sep-08	9:05	19	1	E10	BON020	53	57 03.87 N	159 26.61 W	60Bon	AMGEN, QTowF	
14-Sep-08	9:05	19	1	E10	BON020	53	57 03.87 N	159 26.61 W	CAT	CAT	
14-Sep-08	9:30	19	2	E10	BEAM020	54	57 03.51 N	159 25.28 W	Beam	BT, Furuno	
14-Sep-08	10:07	19	3	E10	GRAB019	52	57 03.41 N	159 24.85 W	Grab	GrabInfra, GrabSed	
14-Sep-08	11:39	20	1	E13	BON021	57	57 16.92 N	159 39.95 W	20Bon	QTowF	
14-Sep-08	11:39	20	1	E13	BON021	57	57 16.92 N	159 39.95 W	60Bon	AMGEN, QTowF	
14-Sep-08	11:39	20	1	E13	BON021	57	57 16.92 N	159 39.95 W	CAT	CAT	
14-Sep-08	12:23	20	2	E13	BEAM021	57	57 16.26 N	159 39.19 W	Beam	BT, Furuno	
14-Sep-08	12:43	20	3	E13	GRAB020	57	57 16.04 N	159 39.30 W	Grab	GrabInfra, GrabSed	
14-Sep-08	14:18	21	1	E16	BON022	54	57 30.51 N	159 52.67 W	20Bon	QTowF	
14-Sep-08	14:18	21	1	E16	BON022	54	57 30.51 N	159 52.67 W	60Bon	QTowF	
14-Sep-08	14:18	21	1	E16	BON022	54	57 30.51 N	159 52.67 W	CAT	CAT	
14-Sep-08	14:41	21	2	E16	BEAM022	54	57 29.83 N	159 52.70 W	Beam	BT, Furuno	
14-Sep-08	15:16	21	3	E16	GRAB021	55	57 29.62 N	159 52.83 W	Grab	GrabInfra, GrabSed	
14-Sep-08	14:18	22	1	K16	BON023	65	57 30.51 N	159 52.67 W	20Bon	QTowF	

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Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
14-Sep-08	14:18	22	1	K16	BON023	65	57 30.51 N	159 52.67 W	60Bon	QTowF	
14-Sep-08	14:18	22	1	K16	BON023	65	57 30.51 N	159 52.67 W	CAT	CAT	
14-Sep-08	18:22	22	2	K16	BEAM023	67	57 15.80 N	160 39.52 W	Beam	BT, Furuno	
14-Sep-08	18:59	22	3	K16	GRAB022	66	57 15.75 N	160 39.37 W	Grab	GrabInfra, GrabSed	
14-Sep-08	20:25	23	1	K13	BON024	65	57 03.15 N	160 26.06 W	20Bon	QTowF	
14-Sep-08	20:25	23	1	K13	BON024	65	57 03.15 N	160 26.06 W	60Bon	QTowF	
14-Sep-08	20:25	23	1	K13	BON024	65	57 03.15 N	160 26.06 W	CAT	CAT	
14-Sep-08	20:49	23	2	K13	BEAM024	66	57 02.39 N	160 25.86 W	Beam	BT, Furuno	
14-Sep-08	21:29	23	3	K13	GRAB023	65	57 02.07 N	160 25.85 W	Grab	GrabInfra, GrabSed	
14-Sep-08	22:48	24	1	K10	BON025	59	56 49.64 N	160 12.40 W	20Bon	QTowF	
14-Sep-08	22:48	24	1	K10	BON025	59	56 49.64 N	160 12.40 W	60Bon	QTowF	
14-Sep-08	22:48	24	1	K10	BON025	59	56 49.64 N	160 12.40 W	CAT	CAT	
14-Sep-08	23:09	24	2	K10	BEAM025	59	56 49.05 N	160 13.06 W	Beam	BT, Furuno	
14-Sep-08	23:34	24	3	K10	GRAB024	59	56 48.84 N	160 13.29 W	Grab	Discard	chains caught up, did not close fully, sample lost. No samples collected. Redone as GRAB025.
14-Sep-08	23:40	24	4	K10	GRAB025	59	56 48.87 N	160 13.33 W	Grab	GrabInfra, GrabSed	Redo of GRAB024 which failed.
15-Sep-08	1:02	25	1	K7	BON026	39	56 36.50 N	160 00.02 W	20Bon	QTowF	
15-Sep-08	1:02	25	1	K7	BON026	39	56 36.50 N	160 00.02 W	60Bon	QTowF	
15-Sep-08	1:02	25	1	K7	BON026	39	56 36.50 N	160 00.02 W	CAT	CAT	
15-Sep-08	1:18	25	2	K7	BEAM026	39	56 36.08 N	160 00.60 W	Beam	BT, Furuno	
15-Sep-08	1:47	25	3	K7	GRAB026	37	56 35.80 N	160 00.96 W	Grab	GrabInfra, GrabSed	
15-Sep-08	4:59	26	1	Q4	BON027	22	56 07.87 N	160 34.47 W	20Bon	QTowF	
15-Sep-08	4:59	26	1	Q4	BON027	22	56 07.87 N	160 34.47 W	60Bon	QTowF	
15-Sep-08	4:59	26	1	Q4	BON027	22	56 07.87 N	160 34.47 W	CAT	CAT	
15-Sep-08	5:22	26	2	Q4	BEAM027	22	56 07.91 N	160 35.01 W	Beam	BT, Furuno	
15-Sep-08	5:59	26	3	Q4	GRAB027	22	56 08.01 N	160 34.73 W	Grab	GrabInfra, GrabSed	
15-Sep-08	7:42	27	1	Q7	BON028	50	56 22.42 N	160 48.05 W	20Bon	QTowF	
15-Sep-08	7:42	27	1	Q7	BON028	50	56 22.42 N	160 48.05 W	60Bon	QTowF	
15-Sep-08	7:42	27	1	Q7	BON028	50	56 22.42 N	160 48.05 W	CAT	CAT	
15-Sep-08	8:15	27	2	Q7	BEAM028	48	56 22.08 N	160 48.20 W	Beam	BT, Furuno	
15-Sep-08	5:59	27	3	Q7	GRAB028	48	56 08.01 N	160 34.73 W	Grab	GrabInfra, GrabSed	
15-Sep-08	10:27	28	1	Q10	BEAM029	70	56 35.30 N	161 00.68 W	Beam	BT, Furuno	
15-Sep-08	11:04	28	2	Q10	GRAB029	70	56 35.08 N	161 00.74 W	Grab	GrabInfra, GrabSed	
15-Sep-08	12:41	29	1	Q13	BEAM030	61	56 48.27 N	161 14.01 W	Beam	BT, Furuno	
15-Sep-08	13:16	29	2	Q13	GRAB030	63	56 48.10 N	161 14.09 W	Grab	GrabInfra, GrabSed	
15-Sep-08	15:05	30	1	Q16	BEAM031	71	57 01.24 N	161 27.13 W	Beam	BT, Furuno	
15-Sep-08	15:48	30	2	Q16	GRAB031	72	57 00.99 N	161 27.01 W	Grab	GrabInfra, GrabSed	
15-Sep-08	18:50	31	1	W16	BEAM032	70	56 47.25 N	162 14.81 W	Beam	BT, Furuno	

Cruise Summary For FOCI Cruise 3MF08 (MF08-10)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
15-Sep-08	19:38	31	2	W16	GRAB032	70	56 47.10 N	162 14.99 W	Grab	Discard	Grab failed. Redo as 31-3, grab033.
15-Sep-08	19:47	31	3	W16	GRAB033	70	56 47.07 N	162 15.12 W	Grab	Discard	grab failed, redo as 31-4
15-Sep-08	19:56	31	4	W16	GRAB034	70	56 47.09 N	162 15.17 W	Grab	GrabInfa, GrabSed	
15-Sep-08	20:31	31	5	W16	BON029	71	56 46.43 N	162 16.19 W	20Bon	QTowF	
15-Sep-08	20:31	31	5	W16	BON029	71	56 46.43 N	162 16.19 W	60Bon	QTowF	
15-Sep-08	20:31	31	5	W16	BON029	71	56 46.43 N	162 16.19 W	CAT	CAT	
15-Sep-08	10:01	32	1	W13	BON030	70	56 34.20 N	162 00.24 W	20Bon	QTowF	
15-Sep-08	10:01	32	1	W13	BON030	70	56 34.20 N	162 00.24 W	60Bon	QTowF	
15-Sep-08	10:01	32	1	W13	BON030	70	56 34.20 N	162 00.24 W	CAT	CAT	
15-Sep-08	22:28	32	2	W13	BEAM033	69	56 53.45 N	162 01.15 W	Beam	Furuno	Temp logger did not record
15-Sep-08	23:05	32	3	W13	GRAB035	69	56 33.18 N	162 01.45 W	Grab	Discard	Grab failed.
15-Sep-08	23:14	32	4	W13	GRAB036	68	56 33.07 N	162 01.46 W	Grab	GrabInfa, GrabSed	
16-Sep-08	0:28	33	1	W10	BON031	79	56 21.04 N	161 48.71 W	20Bon	QTowF	
16-Sep-08	0:28	33	1	W10	BON031	79	56 21.04 N	161 48.71 W	60Bon	QTowF	
16-Sep-08	0:28	33	1	W10	BON031	79	56 21.04 N	161 48.71 W	CAT	CAT	
16-Sep-08	0:57	33	2	W10	BEAM034	80	56 20.35 N	161 49.56 W	Beam	BT, Furuno	tow partially outside of 1nm radius around grid point.
16-Sep-08	1:37	33	3	W10	GRAB037	81	56 20.07 N	161 49.95 W	Grab	GrabInfa, GrabSed	
16-Sep-08	3:06	34	1	W7	BON032	52	56 07.93 N	161 35.20 W	20Bon	QTowF	
16-Sep-08	3:06	34	1	W7	BON032	52	56 07.93 N	161 35.20 W	60Bon	AMGEN, QTowF	
16-Sep-08	3:06	34	1	W7	BON032	52	56 07.93 N	161 35.20 W	CAT	CAT	
16-Sep-08	3:34	34	2	W7	BEAM035	53	56 07.56 N	161 34.19 W	Beam	BT, Furuno	
16-Sep-08	4:16	34	3	W7	GRAB038	52	56 04.47 N	161 36.32 W	Grab	Discard	grab failed.
16-Sep-08	4:24	34	4	W7	GRAB039	52	56 07.42 N	161 36.41 W	Grab	GrabInfa, GrabSed	
16-Sep-08	5:28	35	1	W4	BON033	30	56 00.58 N	161 27.90 W	20Bon	QTowF	
16-Sep-08	5:28	35	1	W4	BON033	30	56 00.58 N	161 27.90 W	60Bon	AMGEN, QTowF	
16-Sep-08	5:28	35	1	W4	BON033	30	56 00.58 N	161 27.90 W	CAT	CAT	
16-Sep-08	5:50	35	2	W4	BEAM036	35	56 00.65 N	161 28.74 W	Beam	BT, Furuno	
16-Sep-08	6:37	35	3	W4	GRAB040	31	56 00.64 N	161 29.00 W	Grab	Discard	grab failed
16-Sep-08	6:43	35	4	W4	GRAB041	31	56 00.61 N	161 29.11 W	Grab	Discard	grab failed
16-Sep-08	7:00	35	5	W4	GRAB042	31	56 00.68 N	161 29.12 W	Grab	GrabInfa, GrabSed	
16-Sep-08	10:14	36	1	AC4	BON034	36	55 47.00 N	162 14.98 W	20Bon	QTowF	
16-Sep-08	10:14	36	1	AC4	BON034	36	55 47.00 N	162 14.98 W	60Bon	QTowF	
16-Sep-08	10:14	36	1	AC4	BON034	36	55 47.00 N	162 14.98 W	CAT	CAT	
16-Sep-08	10:38	36	2	AC4	BEAM037	38	55 46.37 N	162 15.84 W	Beam	BT, Furuno	gravel in catch
16-Sep-08	11:23	36	3	AC4	GRAB043	33	55 46.15 N	162 16.10 W	Grab	Discard	failed grab. Redo follows. Rocky and gravel bottom.
16-Sep-08	11:35	36	4	AC4	GRAB044	32	55 45.82 N	162 16.25 W	Grab	GrabSed	No grabinfauna because substrate was gravel.
16-Sep-08	12:38	37	1	AC7	BON035	61	55 53.40 N	162 21.54 W	20Bon	QTowF	SeaCat upcast salinity data is questionable

Cruise Summary For FOCI Cruise 3MF08 (MF08-10)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
16-Sep-08	12:38	37	1	AC7	BON035	61	55 53.40 N	162 21.54 W	60Bon	AMGEN, QTowF	SeaCat upcast salinity data is questionable
16-Sep-08	12:38	37	1	AC7	BON035	61	55 53.40 N	162 21.54 W	CAT	CAT	SeaCat upcast salinity data is questionable
16-Sep-08	13:07	37	2	AC7	BEAM038	56	55 52.59 N	162 22.11 W	Beam	BT, Furuno	
16-Sep-08	13:52	37	3	AC7	GRAB045	54	55 52.37 N	162 22.26 W	Grab	GrabInfa, GrabSed	
16-Sep-08	15:28	38	1	AC10	BON036	78	56 06.33 N	162 34.30 W	20Bon	QTowF	
16-Sep-08	15:28	38	1	AC10	BON036	78	56 06.33 N	162 34.30 W	60Bon	AMGEN, QTowF	
16-Sep-08	15:28	38	1	AC10	BON036	78	56 06.33 N	162 34.30 W	CAT	CAT	
16-Sep-08	15:59	38	2	AC10	BEAM039	78	56 06.28 N	162 35.53 W	Beam	BT, Furuno	
16-Sep-08	16:46	38	3	AC10	GRAB046	78	56 06.29 N	162 35.93 W	Grab	GrabInfa, GrabSed	
16-Sep-08	18:20	39	1	AC13	BON037	78	56 19.37 N	162 47.16 W	20Bon	QTowF	
16-Sep-08	18:20	39	1	AC13	BON037	78	56 19.37 N	162 47.16 W	60Bon	QTowF	
16-Sep-08	18:20	39	1	AC13	BON037	78	56 19.37 N	162 47.16 W	CAT	CAT	
16-Sep-08	18:49	39	2	AC13	BEAM040	79	56 19.37 N	162 48.40 W	Beam	BT, Furuno	BT not reset after Beam 039. Orig. file has 2 tows. Beam 040 BT record only in 39-2-corrected.csv.
16-Sep-08	19:33	39	3	AC13	GRAB047	78	56 19.36 N	162 49.05 W	Grab	GrabInfa, GrabSed	
16-Sep-08	22:11	40	1	AI13	BON038	89	56 05.11 N	163 34.09 W	20Bon	QTowF	
16-Sep-08	22:11	40	1	AI13	BON038	89	56 05.11 N	163 34.09 W	60Bon	QTowF	
16-Sep-08	22:11	40	1	AI13	BON038	89	56 05.11 N	163 34.09 W	CAT	CAT	
16-Sep-08	22:34	40	2	AI13	BEAM041	90	56 05.10 N	163 34.32 W	Beam	BT, Furuno	
16-Sep-08	23:10	40	3	AI13	GRAB048	90	56 05.13 N	163 35.59 W	Grab	Discard	grab failed
16-Sep-08	23:18	40	4	AI13	GRAB049	90	56 05.12 N	163 35.63 W	Grab	GrabInfa, GrabSed	
17-Sep-08	0:49	41	1	AI10	BON039	88	55 51.73 N	163 21.40 W	20Bon	QTowF	
17-Sep-08	0:49	41	1	AI10	BON039	88	55 51.73 N	163 21.40 W	60Bon	AMGEN, QTowF	
17-Sep-08	0:49	41	1	AI10	BON039	88	55 51.73 N	163 21.40 W	CAT	CAT	
17-Sep-08	1:16	41	2	AI10	BEAM042	90	55 51.73 N	163 23.26 W	Beam	BT, Furuno	
17-Sep-08	1:53	41	3	AI10	GRAB050	89	55 51.72 N	163 23.11 W	Grab	GrabInfa, GrabSed	
17-Sep-08	3:21	42	1	AI7	BON040	65	55 39.13 N	163 08.89 W	20Bon	QTowF	
17-Sep-08	3:21	42	1	AI7	BON040	65	55 39.13 N	163 08.89 W	60Bon	QTowF	
17-Sep-08	3:21	42	1	AI7	BON040	65	55 39.13 N	163 08.89 W	CAT	CAT	
17-Sep-08	3:42	42	2	AI7	BEAM043	67	55 38.78 N	163 09.49 W	Beam	BT, Furuno	
17-Sep-08	4:28	42	3	AI7	GRAB051	67	55 38.76 N	163 09.44 W	Grab	Discard	Grab failed.
17-Sep-08	4:34	42	4	AI7	GRAB052	67	53 43.42 N	163 09.31 W	Grab	GrabInfa, GrabSed	
17-Sep-08	6:06	43	1	A14	BON041	37	55 26.39 N	162 57.13 W	20Bon	QTowF	
17-Sep-08	6:06	43	1	A14	BON041	37	55 26.39 N	162 57.13 W	60Bon	QTowF	
17-Sep-08	6:06	43	1	A14	BON041	37	55 26.39 N	162 57.13 W	CAT	CAT	
17-Sep-08	6:26	43	2	AI4	BEAM044	38	55 25.76 N	162 56.70 W	Beam	BT, CYCRB, Furuno	
17-Sep-08	7:05	43	3	AI4	GRAB053	33	55 25.52 N	162 57.05 W	Grab	GrabInfa, GrabSed	
19-Sep-08	8:26	44	1	AO4	BON042	45	55 11.29 N	163 42.41 W	20Bon	QTowF	

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Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
19-Sep-08	8:26	44	1	AO4	BON042	45	55 11.29 N	163 42.41 W	60Bon	AMGEN, QTowF	
19-Sep-08	8:26	44	1	AO4	BON042	45	55 11.29 N	163 42.41 W	CAT	CAT	
19-Sep-08	8:43	44	2	AO4	BEAM045	46	55 11.53 N	163 43.46 W	Beam	BT, Furuno	
19-Sep-08	9:20	44	3	AO4	GRAB054	46	55 11.58 N	163 44.06 W	Grab	GrabInfra, GrabSed	
19-Sep-08	11:25	45	1	AR7	BON043	93	55 16.89 N	164 18.50 W	20Bon	QTowF	
19-Sep-08	11:25	45	1	AR7	BON043	93	55 16.89 N	164 18.50 W	60Bon	AMGEN, QTowF	
19-Sep-08	11:25	45	1	AR7	BON043	93	55 16.89 N	164 18.50 W	CAT	CAT	
19-Sep-08	11:58	45	2	AR7	BEAM046	94	55 17.09 N	164 20.57 W	Beam	BT, CYCRB, Furuno	
19-Sep-08	12:45	45	3	AR7	GRAB055	95	55 17.09 N	164 20.92 W	Grab	Discard	Grab Flipped. Fail.
19-Sep-08	12:53	45	4	AR7	GRAB056	96	55 17.06 N	164 21.11 W	Grab	Discard	Grab did not close
19-Sep-08	13:03	45	5	AR7	GRAB057	94	55 17.09 N	164 21.37 W	Grab	GrabInfra, GrabSed	
19-Sep-08	14:43	46	1	AR4	BON044	33	55 03.81 N	164 05.43 W	20Bon	QTowF	
19-Sep-08	14:43	46	1	AR4	BON044	33	55 03.81 N	164 05.43 W	60Bon	AMGEN, QTowF	
19-Sep-08	14:43	46	1	AR4	BON044	33	55 03.81 N	164 05.43 W	CAT	CAT	
19-Sep-08	15:05	46	2	AR4	BEAM047	33	55 03.91 N	164 06.60 W	Beam	BT, Furuno	Net may not have been on bottom
19-Sep-08	15:42	46	3	AR4	BEAM048	35	55 03.96 N	164 08.29 W	Beam	BT, CYCRB, Furuno	
19-Sep-08	16:12	46	4	AR4	GRAB058	36	55 03.96 N	164 08.37 W	Grab	Discard	grab flipped
19-Sep-08	16:21	46	5	AR4	GRAB059	36	55 03.95 N	164 08.37 W	Grab	Discard	grab flipped over
19-Sep-08	16:28	46	6	AR4	GRAB060	36	55 03.93 N	164 08.39 W	Grab	GrabInfra, GrabSed	
19-Sep-08	17:36	47	1	AT4	BON045	35	54 58.20 N	164 16.44 W	20Bon	QTowF	
19-Sep-08	17:36	47	1	AT4	BON045	35	54 58.20 N	164 16.44 W	60Bon	AMGEN, QTowF	
19-Sep-08	17:36	47	1	AT4	BON045	35	54 58.20 N	164 16.44 W	CAT	CAT	
19-Sep-08	17:59	47	2	AT4	BEAM049	35	54 58.33 N	164 17.35 W	Beam	BT, CYCRB, Furuno	
19-Sep-08	18:28	47	3	AT4	GRAB061	36	54 58.34 N	164 17.55 W	Grab	GrabInfra	
19-Sep-08	19:17	48	1	AU4	BON046	40	54 57.03 N	164 28.41 W	20Bon	QTowF	
19-Sep-08	19:17	48	1	AU4	BON046	40	54 57.03 N	164 28.41 W	60Bon	QTowF	
19-Sep-08	19:17	48	1	AU4	BON046	40	54 57.03 N	164 28.41 W	CAT	CAT	
19-Sep-08	19:42	48	2	AU4	BEAM050	43	54 57.12 N	164 29.55 W	Beam	BT, Furuno	Large rock caught, beam bent, net torn. Some fish recovered.
19-Sep-08	20:18	48	3	AU4	GRAB062	44	54 57.12 N	164 29.69 W	Grab	Discard	Grab failed, did not trigger.
19-Sep-08	20:23	48	4	AU4	GRAB063	44	54 57.14 N	164 29.65 W	Grab	GrabInfra, GrabSed	
19-Sep-08	22:06	49	1	AU7	BON047	99	55 09.98 N	164 41.69 W	20Bon	QTowF	
19-Sep-08	22:06	49	1	AU7	BON047	99	55 09.98 N	164 41.69 W	60Bon	QTowF	
19-Sep-08	22:06	49	1	AU7	BON047	99	55 09.98 N	164 41.69 W	CAT	CAT	
19-Sep-08	22:41	49	2	AU7	BEAM051	103	55 10.43 N	164 42.81 W	Beam	BT, Furuno	
19-Sep-08	23:26	49	3	AU7	GRAB064	103	55 10.57 N	164 43.11 W	Grab	GrabInfra, GrabSed	
20-Sep-08	1:26	50	1	AX10	BON048	113	55 15.95 N	165 16.95 W	20Bon	QTowF	
20-Sep-08	1:26	50	1	AX10	BON048	113	55 15.95 N	165 16.95 W	60Bon	QTowF	
20-Sep-08	1:26	50	1	AX10	BON048	113	55 15.95 N	165 16.95 W	CAT	CAT	

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Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	HaulComments
20-Sep-08	1:51	50	2	AX10	BEAM052	113	55 16.18 N	165 18.28 W	Beam	BT, Furuno	
20-Sep-08	2:33	50	3	AX10	GRAB065	114	55 16.28 N	165 18.83 W	Grab	GrabInfra, GrabSed	
20-Sep-08	4:16	51	1	AX7	BON049	110	55 02.97 N	165 04.53 W	20Bon	QTowF	
20-Sep-08	4:16	51	1	AX7	BON049	110	55 02.97 N	165 04.53 W	60Bon	QTowF	
20-Sep-08	4:16	51	1	AX7	BON049	110	55 02.97 N	165 04.53 W	CAT	CAT	
20-Sep-08	4:47	51	2	AX7	BEAM053	111	55 02.29 N	165 05.57 W	Beam	BT, Furuno	
20-Sep-08	5:39	51	3	AX7	GRAB066	111	55 02.04 N	165 05.82 W	Grab	GrabInfra, GrabSed	
20-Sep-08	7:07	52	1	AX4	BON050	74	54 50.46 N	164 52.44 W	20Bon	QTowF	
20-Sep-08	7:07	52	1	AX4	BON050	74	54 50.46 N	164 52.44 W	60Bon	QTowF	
20-Sep-08	7:07	52	1	AX4	BON050	74	54 50.46 N	164 52.44 W	CAT	CAT	
20-Sep-08	7:22	52	2	AX4	BEAM54	73	54 50.14 N	164 52.85 W	Beam	Discard	Foruno battery bad. The beamtrawl was hauled back at 180 m wire out.
20-Sep-08	7:44	52	3	AX4	BEAM055	76	54 49.60 N	164 53.58 W	Beam	BT, Furuno	
20-Sep-08	8:32	52	4	AX4	GRAB067	74	54 49.41 N	164 53.96 W	Grab	Discard	
20-Sep-08	8:39	52	5	AX4	GRAB068	73	54 49.37 N	164 53.87 W	Grab	GrabInfra, GrabSed	