

CRUISE REPORT

Cruise Number: MF-10-05

FOCI Number: 1MF10

Ship:

NOAA Ship Miller Freeman

Area of Operations:

Eastern Bering Sea: Unimak Island, Alaska Peninsula, Cape Newenham to Nunivak Island

Itinerary:

Date depart / port: September 7, 2000 / Dutch Harbor, AK

Date arrive / port: September 19, 2000 / Dutch Harbor, AK

Participating organizations:

NOAA – Alaska Fisheries Science Center (AFSC)

NOAA Teacher at Sea Program

Oregon State University

USF&WS

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Cruise Objectives:

To conduct an ichthyoplankton and juvenile fish survey in the Eastern Bering Sea. This work is needed to describe larval fish and zooplankton assemblages in the Bering Sea in Autumn. In particular, this area is a known nursery area for northern rock sole, yellowfin sole, walleye pollock, and Pacific cod, and abundances of larvae and juveniles at this time of year are high. Zooplankton data and data on physical characteristics of the water column will also be collected. Beam trawling activities will be conducted to study settlement and nursery areas for age-0 flatfishes. Benthic samples will be collected to determine settlement substratum and prey resources for age-0 flatfishes.

Summary of Operations:

Operation	Tows
20cm bongo (20BON)	1
60cm bongo (60BON)	2
3-meter beam trawl (BEAM)	61
Seabird SeaCAT CTD (CAT)	1
CTD without bottle samples (CTD)	1

Modified Tucker sled (EPISLED)	64
Van veen benthic grab (GRAB)	54

Samples Collected	Tows Number	
SeaBird SeaCat CTD (CAT)	1	
Frozen <i>Chionoceotes</i> spp juvenile crabs from beam trawl (crabs)	19	
SeaBird CTD (CTD)	1	
Furuno attached to net (Furuno)	128	
Juvenile flatfish (Juv-Flat)	46	1961
Quantitative tow preserved in formalin (QTowF)	64	133
Sediment for grain size analysis (Sedgrain)	48	
Sediment for infauna prey resources (SedInf)	48	
Pacific cod for Ron Heinz (ABL)	29	422
Walleye Pollock for Ron Heinz (ABL)	23	78

Summary of Cruise:

Narrative:

The cruise departed five days late because of mechanical problems with the vessel in Seattle and during the steam to Dutch Harbor, which necessitated repairs in Kodiak, AK. The end date of the cruise was moved back by four days: Three days due to the mechanical problems, and one day was transferred from the later PMEL mooring cruise. We began the cruise with a steam to the first station North of Unimak Island. After completion of the first station, a medical emergency forced us to steam back to Dutch Harbor. Following resolution of the medical emergency, we resumed operations North of Unimak Island. We eliminated bongo sampling to save time, and began our survey of juvenile flatfish, flatfish prey, and gadoid fish. We worked our way east along the Alaska Peninsula. High densities of juvenile northern rock sole, Pacific halibut, and Pacific cod were surveyed, and additional stations were added in the vicinity of high age-0 northern rock sole densities.

We then transited to begin a grid of stations near Cape Newenham. High densities of juvenile yellowfin sole were encountered. Additional stations in a shallow area near Nunivak Island were added to collect additional juvenile flatfish and samples of flatfish prey resources. Loss of regulated power forced us to end the cruise and return to Dutch Harbor one day early.

Days Lost to Weather:

None

Days Lost to Equipment Failure:

1

Recommendations:

None

Acknowledgments:

We would especially like to thank Chris Mackie, Reni Rydlewicz, and Amy Jordan for providing excellent care during a medical emergency. Our data was greatly improved because Kevin Veitch designed and fabricated a mounting bracket for the Furuno unit so we could determine when the benthic sled was on bottom, and several members of the crew helped add extra flotation and weights to enable the benthic sled to fish properly with the new bracket. Kirk Perry, Matt Faber, and others in the deck crew mended our beam trawls as quickly as we could tear them up. Matt Faber, Gary Cooper, Kirk Perry and the Officers in the trawl house and on the bridge did an excellent job of fishing our beam trawls and benthic sled, and ensuring the Furuno unit functioned well. The ship drivers, winch operators, and survey technicians also did a wonderful job of fishing the benthic sled in high winds. Last but not least, Phil White and Manuel Cruz did an outstanding job of deploying gear and helping with all aspects of our operations. We were well fed, as usual.

Attachments:

Table 1. Cruise Summary

Figure 1. Station Map

Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
09-Sep-10	15:08	1	1	AX7	CTD001	113	55 03.63 N	165 03.77 W	CTD	CTD	For SBE-39 calibration
09-Sep-10	16:13	1	2	AX7	BON001	110	55 03.51 N	165 04.01 W	60BON	QTowF	
10-Sep-10	16:57	1	3	AX7	EPI001	111	55 03.10 N	165 03.08 W	EPISLED	QTowF	Used flowmeter#376 for flowmeter data, but we didn't have a meter on this net. Flowmeter data need to be removed.
09-Sep-10	17:47	1	4	AX7	BEAM001	112	55 02.57 N	165 06.82 W	BEAM	crabs	Trace shows net on bottom 9:00 only 3 sculpin caught.
09-Sep-10	19:01	1	5	AX7	GRAB001	110	55 02.43 N	165 06.61 W	GRAB	Sedgrain	
09-Sep-10	20:58	2	1	AX4	BON002	71	54 49.75 N	164 52.56 W	20BON	QTowF	
09-Sep-10	20:58	2	1	AX4	BON002	71	54 49.75 N	164 52.56 W	60BON	QTowF	
09-Sep-10	20:58	2	1	AX4	BON002	71	54 49.75 N	164 52.56 W	CAT	CAT	
09-Sep-10	21:41	2	2	AX4	EPI002	72	54 49.03 N	164 54.01 W	EPISLED	Discard	unsure how much time the sled was on bottom. Sample discarded. Dummy flowmeter and tow time info - no flowmeter in net
11-Sep-10 and	1:30	3	1		EPI003	550	54 11.19 N	160 05.96 W	EPISLED	Discard	for building scope table. Flow revs for haul 1
11-Sep-10 Flow named	2:11	3	2		EPI004	638	54 11.99 N	166 04.61 W	EPISLED	Discard	2. Tucker 003 test upside down. For building tucker scope table. No codend. revs for haul 1 and 2. SBE file saved and as S_2.asc, which has data for hauls 1 and 2.
11-Sep-10	7:31	4	1	AX04	EPI005	73	54 49.39 N	164 52.47 W	EPISLED	QTowF	
11-Sep-10	8:13	4	2	AX04	BEAM002	75	54 49.52 N	164 55.64 W	BEAM	crabs, Juv-Flat	
11-Sep-10	9:09	4	3	AX4	GRAB002	75	54 49.36 N	164 54.77 W	GRAB	Sedgrain, SedInf	
11-Sep-10 during	10:37	5	1	AXO	EPI006	39	54 44.74 N	164 44.71 W	EPISLED	Discard	Net never on bottom, flipped upside down
11-Sep-10	11:16	5	2	AXO	EPI007	34	54 41.71 N	164 44.74 W	EPISLED	Discard	tow. Unit flipped during tow.
11-Sep-10	11:52	5	3	AXO	EPI008	35	54 41.68 N	164 44.38 W	EPISLED	Discard	Never touched bottom.
11-Sep-10	12:26	5	4	AXO	EPI009	38	54 41.69 N	164 44.39 W	EPISLED	QTowF	
11-Sep-10	12:56	5	5	AXO	BEAM003	39	54 41.92 N	164 46.13 W	BEAM	Discard	Never reached bottom.
11-Sep-10	13:28	5	6	AXO	GRAB003	42	54 42.18 N	164 46.67 W	GRAB	QTowF, Sedgrain, SedInf	
11-Sep-10	16:47	5	7	AXO	BEAM004	39	54 42.23 N	164 45.68 W	BEAM	Juv-Flat	
11-Sep-10	16:15	6	1	AU4	EPI010	43	54 57.25 N	164 28.66 W	EPISLED	QTowF	
11-Sep-10	16:47	6	2	AU4	BEAM005	44	54 57.27 N	164 29.45 W	BEAM	THPCOD	Net ripped, large hole.
11-Sep-10	17:34	6	3	AU04	GRAB004	40	54 57.04 N	164 30.60 W	GRAB	Sedgrain, SedInf	
11-Sep-10	19:10	7	1	AU7	EPI011	100	55 10.22 N	164 41.98 W	EPISLED	QTowF	3 jellies removed from cod-end.
11-Sep-10	19:56	7	2	AU7	BEAM006	102	55 09.60 N	164 43.60 W	BEAM	Discard	unsure if tending bottom.
11-Sep-10	20:50	7	3	AU7	GRAB005	91	55 09.99 N	164 42.46 W	GRAB	Sedgrain, SedInf	
11-Sep-10	21:04	7	4	AU7	GRAB006	99	55 10.00 N	164 42.46 W	GRAB	Discard	
11-Sep-10	19:56	7	5	AU7	BEAM007	100	55 09.60 N	164 43.60 W	BEAM	crabs	
11-Sep-10	23:53	8	1	AU10	EPI012	107	55 23.10 N	164 56.26 W	EPISLED	QTowF	1 jelly removed from cod. There are 3 sample jars for this haul.

Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
12-Sep-10	0:24	8	2	AU10	GRAB006	105	55 23.01 N	164 55.56 W	GRAB	Sedgrain, SedInf	
12-Sep-10	0:55	8	3	AU10	BEAM008	106	55 22.83 N	164 54.60 W	BEAM	crabs	
12-Sep-10	3:37	9	1	AR10	EPI013	100	55 30.64 N	164 33.13 W	EPISLED	QTowF	
12-Sep-10	3:54	9	2	AR10	GRAB007	99	55 30.90 N	164 32.67 W	GRAB	Sedgrain, SedInf	
12-Sep-10	4:23	9	3	AR10	BEAM009	100	55 30.96 N	164 31.56 W	BEAM	crabs	
12-Sep-10	6:48	10	1	AR7	EPI014	95	55 17.14 N	164 20.09 W	EPISLED	QTowF	
12-Sep-10	7:10	10	2	AR7	GRAB008	95	55 17.27 N	164 19.25 W	GRAB	QTowF, Sedgrain, SedInf	
12-Sep-10	7:41	10	3	AR7	BEAM010	96	55 17.14 N	164 18.06 W	BEAM	crabs, Juv-Flat	
12-Sep-10	9:49	11	1	AR4	EPI015	35	55 03.80 N	164 07.43 W	EPISLED	QTowF	3 large Chrysaora and several smaller jellies discarded. 1.5 minutes on bottom SBE not started, no time/depth data
12-Sep-10	10:11	11	2	AR4	GRAB009	33	55 03.58 N	164 07.26 W	GRAB	Sedgrain, SedInf	
12-Sep-10	10:39	11	3	AR4	BEAM011	33	55 03.72 N	164 06.82 W	BEAM	crabs, Furuno, Juv-Flat	
12-Sep-10	13:33	12	1	AO0	EPI016	33	55 06.80 N	163 38.60 W	EPISLED	QTowF	
12-Sep-10	13:50	12	2	AO0	GRAB010	33	55 06.93 N	163 39.05 W	GRAB	Sedgrain, SedInf	
12-Sep-10	14:31	12	3	AO0	BEAM012	33	55 06.65 N	163 37.90 W	BEAM	Furuno, Juv-Flat	
12-Sep-10	17:00	13	1	AO4	EPI017	44	55 10.92 N	163 42.70 W	EPISLED	QTowF	
12-Sep-10	17:21	13	2	AO4	GRAB011	44	55 10.92 N	163 43.08 W	GRAB	Sedgrain, SedInf	
12-Sep-10	17:44	13	3	A04	BEAM013	48	55 10.73 N	163 43.82 W	BEAM	Furuno, Juv-Flat	
12-Sep-10	19:14	14	1		EPI018	32	55 07.82 N	163 54.11 W	EPISLED	QTowF	
12-Sep-10	19:32	14	2		GRAB012	31	55 07.72 N	163 54.35 W	GRAB	Sedgrain, SedInf	
12-Sep-10	20:03	14	3		BEAM014	35	55 07.45 N	163 55.26 W	BEAM	Juv-Flat	
12-Sep-10	21:46	15	1	AR0	EPI019	36	55 02.95 N	164 04.65 W	EPISLED	QTowF	
12-Sep-10	22:13	15	2	AR0	GRAB013	32	55 02.69 N	164 05.94 W	GRAB	Sedgrain, SedInf	
12-Sep-10	22:34	15	3	AR0	BEAM015	32	55 02.74 N	164 05.19 W	BEAM	crabs, Juv-Flat	
12-Sep-10	23:22	16	1	AR4	EPI020	40	55 03.52 N	164 07.49 W	EPISLED	QTowF	
19-Sep-10	23:40	16	2	AR4	GRAB014	36	55 03.80 N	164 07.34 W	GRAB	Sedgrain, SedInf	
13-Sep-10	0:10	16	3	AR4	BEAM016	35	55 04.32 N	164 06.94 W	BEAM	crabs, Juv-Flat	
13-Sep-10	1:35	17	1		EPI021	51	55 07.55 N	164 11.77 W	EPISLED	QTowF	
13-Sep-10	1:52	17	2		GRAB015	50	55 07.80 N	164 11.51 W	GRAB	Sedgrain, SedInf	
13-Sep-10	2:15	17	3		BEAM017	49	55 08.15 N	164 11.06 W	BEAM	crabs, Juv-Flat	
13-Sep-10	4:19	18	1		EPI022	55	55 13.67 N	163 46.55 W	EPISLED	QTowF	
13-Sep-10	4:43	18	2		BEAM018	52	55 13.12 N	163 45.63 W	BEAM	crabs, Juv-Flat	SBE file contains hauls 1 and 2.
13-Sep-10	6:58	19	1	AO7	EPI023	90	55 24.24 N	163 57.28 W	EPISLED	QTowF	jellyfish rinsed and discarded
13-Sep-10	8:00	19	2	AO7	BEAM019	89	55 24.74 N	163 55.90 W	BEAM	Furuno, Juv-Flat	
13-Sep-10	10:18	20	1	AO10	EPI024	90	55 38.01 N	164 08.52 W	EPISLED	QTowF	
13-Sep-10	11:06	20	2	AO10	BEAM020	90	55 37.49 N	164 08.86 W	BEAM	Furuno, Juv-Flat	
13-Sep-10	13:19	21	1	AL10	EPI025	90	55 45.26 N	163 45.80 W	EPISLED	QTowF	
13-Sep-10	14:15	21	2	AL10	BEAM021	90	55 44.81 N	163 45.72 W	BEAM	crabs, Juv-Flat	SBE39 for haul 1 and 2 battery went dead. No data.

Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
13-Sep-10	17:50	22	1	AL7	EPI026	70	55 31.48 N	163 33.57 W	EPISLED	QTowF	
13-Sep-10	18:42	22	2	AL7	BEAM022	71	55 31.44 N	163 32.87 W	BEAM	crabs, Juv-Flat	Codend blew out upon landing, catch lost.
13-Sep-10	19:34	22	3	AL7	BEAM23	73	55 31.24 N	163 33.32 W	BEAM	crabs, Juv-Flat	
13-Sep-10	22:46	23	1	AL4	EPI027	50	55 18.67 N	163 20.50 W	EPISLED	QTowF	
13-Sep-10	23:08	23	2	AL4	GRAB016	45	55 18.21 N	163 20.29 W	GRAB	Sedgrain, SedInf	
13-Sep-10	23:28	23	3	AL4	BEAM024	48	55 17.92 N	163 19.98 W	BEAM	crabs, Juv-Flat	
14-Sep-10	1:17	24	1	AL0	EPI028	27	55 13.86 N	163 15.94 W	EPISLED	QTowF	wire out estimated as depth * 3 (assuming a 3:1 wireout:depth ratio)
14-Sep-10	1:43	24	2	AL0	GRAB018	26	55 13.64 N	163 15.66 W	GRAB	Sedgrain, SedInf	
14-Sep-10	2:10	24	3	AL0	BEAM025	33	55 13.04 N	163 14.95 W	BEAM	Juv-Flat	
14-Sep-10	3:12	25	1	AI4	EPI029	35	55 26.03 N	162 57.71 W	EPISLED	QTowF	
14-Sep-10	5:29	25	2	AI4	GRAB019	36	55 25.69 N	162 57.34 W	GRAB	Sedgrain, SedInf	
14-Sep-10	5:49	25	3	AI4	BEAM026	32	55 25.27 N	162 56.85 W	BEAM	crabs, Juv-Flat	
14-Sep-10	7:50	26	1	AI7	EPI030	60	55 39.26 N	163 10.10 W	EPISLED	QTowF	
14-Sep-10	8:14	26	2	AI7	GRAB020	65	55 38.83 N	163 09.68 W	GRAB	QTowF, Sedgrain, SedInf	
14-Sep-10	8:46	26	3	AI7	BEAM027	65	55 38.24 N	163 09.72 W	BEAM	Furuno, Juv-Flat	
14-Sep-10	10:58	27	1	AI10	EPI031	88	55 52.22 N	163 23.03 W	EPISLED	QTowF	hole in net discovered.
14-Sep-10	11:28	27	2	AI10	GRAB021	81	51 51.74 N	163 22.85 W	GRAB	Sedgrain, SedInf	
14-Sep-10	12:08	27	3	AI10	BEAM031	88	55 51.62 N	163 22.42 W	BEAM	crabs, Furuno, Juv-Flat	
14-Sep-10	14:24	28	1	AF10	EPI032	81	55 59.41 N	162 58.79 W	EPISLED	QTowF	
14-Sep-10	14:54	28	2	AF10	GRAB022	81	55 59.08 N	162 57.60 W	GRAB	Sedgrain, SedInf	
14-Sep-10	15:37	28	3	AF10	BEAM029	81	55 58.98 N	162 58.89 W	BEAM	crabs, Furuno, Juv-Flat	
14-Sep-10	17:35	29	1	AF7	EPI033	59	55 46.09 N	162 47.28 W	EPISLED	QTowF	Jellyfish tentacles wrapped around flowmeter prop.
14-Sep-10	17:55	29	2	AF7	GRAB023	58	55 46.08 N	162 46.59 W	GRAB	Sedgrain, SedInf	
14-Sep-10	18:17	29	3	AF7	BEAM30	55	55 45.91 N	162 45.80 W	BEAM	crabs, Juv-Flat	
14-Sep-10	20:05	30	1	AF4	EPI034	32	55 33.15 N	162 32.65 W	EPISLED	QTowF	
14-Sep-10	20:25	30	2	AF4	GRAB024	29	55 33.01 N	162 33.04 W	GRAB	Sedgrain, SedInf	
14-Sep-10	22:42	31	1	AC0	EPI035	37	55 46.78 N	162 15.04 W	EPISLED	QTowF	Subsample from cod-end. Kept 1L. For preservation and threw 6.75 L. overboard. Total sample was 7.75 L.
14-Sep-10	23:06	31	2	AC0	GRAB025	35	55 46.56 N	162 14.96 W	GRAB	Sedgrain, SedInf	Small amt material in grab. Got full sample amt for sed-grain, but only 500 mL for infauna sample.
14-Sep-10	23:39	31	3	AC0	BEAM032	35	55 46.00 N	162 15.94 W	BEAM	Other	No fish or crabs, nothing saved from this haul. Lots of tunicates present.
15-Sep-10	1:03	32	1	AC7	EPI036	64	55 53.29 N	162 22.52 W	EPISLED	QTowF	
15-Sep-10	1:23	32	2	AC7	GRAB026	53	55 52.91 N	162 22.87 W	GRAB	Sedgrain, SedInf	
15-Sep-10	1:44	32	3	AC7	BEAM033	51	55 52.55 N	162 23.19 W	BEAM	Discard	not on bottom
15-Sep-10	2:54	32	4	AC7	BEAM034	58	55 52.46 N	162 23.36 W	BEAM	Juv-Flat	
15-Sep-10	4:49	33	1	AC10	EPI037	79	56 05.68 N	162 35.31 W	EPISLED	QTowF	

Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
15-Sep-10	5:13	33	2	AC10	GRAB027	76	56 06.02 N	162 35.87 W	GRAB	Sedgrain, SedInf	
15-Sep-10	5:45	33	3	AC10	BEAM034	77	56 06.69 N	162 35.81 W	BEAM	Juv-Flat	
15-Sep-10	17:23	34	1	Q34	EPI038	30	58 19.95 N	162 47.92 W	EPISLED	QTowF	
15-Sep-10	17:39	34	2	Q34	GRAB028	30	58 20.21 N	162 47.58 W	GRAB	QTowF, Sedgrain, SedInf	
15-Sep-10	17:57	34	3	Q34	BEAM036	30	58 20.29 N	162 46.83 W	BEAM	crabs, Furuno, Juv-Flat	
15-Sep-10	19:39	35	1	T34	EPI039	36	58 13.48 N	163 10.16 W	EPISLED	QTowF	
13-Sep-10	20:04	35	2	T34	GRAB029	36	58 13.53 N	163 11.01 W	GRAB	Sedgrain, SedInf	
15-Sep-10	20:25	35	3	T34	BEAM037	39	58 13.42 N	163 10.32 W	BEAM	Juv-Flat	
15-Sep-10	22:12	36	1	W34	EPI040	43	58 06.34 N	163 32.77 W	EPISLED	QTowF	
15-Sep-10	22:29	36	2	W34	GRAB030	40	58 06.49 N	163 33.18 W	GRAB	Sedgrain, SedInf	
15-Sep-10	22:46	36	3	W34	BEAM038	43	58 06.26 N	163 33.55 W	BEAM	Juv-Flat	
16-Sep-10	0:33	37	1	Z34	EPI041	47	57 59.30 N	163 56.59 W	EPISLED	QTowF	
16-Sep-10	0:50	37	2	Z34	GRAB031	44	57 58.98 N	163 56.91 W	GRAB	Sedgrain, SedInf	
16-Sep-10	1:12	37	3	Z34	BEAM039	47	57 58.75 N	163 57.64 W	BEAM	Juv-Flat	
16-Sep-10	2:54	38	1	AC34	EPI042	47	57 52.08 N	164 19.81 W	EPISLED	QTowF	
16-Sep-10	3:13	38	2	AC34	GRAB032	44	57 52.00 N	164 20.44 W	GRAB	Sedgrain, SedInf	
16-Sep-10	3:31	38	3	AC34	BEAM040	47	57 51.99 N	164 21.14 W	BEAM	Other	no juvenile flatfish or chionoecetes spp
16-Sep-10	5:11	39	1	AF34	EPI043	51	57 44.80 N	164 42.61 W	EPISLED	QTowF	
16-Sep-10	5:32	39	2	AF34	GRAB033	48	57 44.45 N	164 43.62 W	GRAB	Sedgrain, SedInf	
16-Sep-10	5:51	39	3	AF34	BEAM041	51	57 44.02 N	164 44.42 W	BEAM	Juv-Flat	
16-Sep-10	7:32	40	1	AI34	EPI044	59	57 37.79 N	165 06.51 W	EPISLED	QTowF	
16-Sep-10	7:53	40	2	AI34	GRAB034	59	57 37.67 N	165 07.43 W	GRAB	Sedgrain, SedInf	
16-Sep-10	18:15	40	3	AI34	BEAM042	59	57 37.24 N	165 06.96 W	BEAM	Furuno	No samples saved.
16-Sep-10	12:25	41	1	AO40	EPI045	62	57 49.04 N	166 20.15 W	EPISLED	QTowF	
16-Sep-10	12:50	41	2	AO40	GRAB035	62	57 49.36 N	166 19.34 W	GRAB	Sedgrain, SedInf	
16-Sep-10	13:19	41	3	AO40	BEAM043	62	57 50.12 N	166 18.63 W	BEAM	Furuno	No samples taken.
16-Sep-10	15:16	42	1	AL40	EPI046	58	57 56.31 N	165 57.49 W	EPISLED	QTowF	
16-Sep-10	15:42	42	2	AL40	GRAB036	57	57 56.83 N	165 56.97 W	GRAB	Sedgrain, SedInf	
16-Sep-10	16:05	42	3	AL40	BEAM044	60	57 56.72 N	165 56.06 W	BEAM	crabs, J-Length, Juv-Flat	
16-Sep-10	17:57	43	1	AI40	EPI047	47	58 03.69 N	165 34.96 W	EPISLED	QTowF	
16-Sep-10	18:18	43	2	AI40	GRAB037	47	58 03.66 N	165 34.35 W	GRAB	Sedgrain, SedInf	
16-Sep-10	18:41	43	3	AI40	BEAM045	45	58 03.59 N	165 33.42 W	BEAM	Other	
16-Sep-10	21:08	44	1	AF40	EPI048	40	58 03.69 N	165 34.96 W	EPISLED	QTowF	
16-Sep-10	18:18	44	2	AF40	GRAB038	47	58 03.67 N	165 35.35 W	GRAB	Sedgrain, SedInf	
16-Sep-10	21:08	44	3	AF40	BEAM046	44	58 03.59 N	165 33.43 W	BEAM	Juv-Flat	
16-Sep-10	22:49	45	1	AC40	EPI049	45	58 18.45 N	164 48.71 W	EPISLED	QTowF	
16-Sep-10	23:06	45	2	AC40	GRAB039	35	58 18.40 N	164 47.82 W	GRAB	Sedgrain, SedInf	
16-Sep-10	23:25	45	3	AC40	BEAM047	45	58 17.92 N	164 47.34 W	BEAM	Juv-Flat	
17-Sep-10	1:19	46	1	Z40	EPI050	38	58 25.58 N	164 25.56 W	EPISLED	QTowF	

Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
17-Sep-10	1:32	46	2	Z40	GRAB040	38	58 25.44 N	164 24.83 W	GRAB	Sedgrain, SedInf	
17-Sep-10	1:51	46	3	Z40	BEAM048	41	58 25.44 N	164 23.94 W	BEAM	Other	P.cod and Pollock, both age '0', collected at this station.
17-Sep-10	3:34	47	1	W40	EPI051	40	58 31.98 N	164 02.34 W	EPISLED	QTowF	
17-Sep-10	3:50	47	2	W40	GRAB041	35	58 31.77 N	164 01.71 W	GRAB	Sedgrain, SedInf	
17-Sep-10	4:09	47	3	W40	BEAM049	40	58 32.11 N	164 02.10 W	BEAM	Juv-Flat	
17-Sep-10	5:58	48	1	T40	EPI052	31	58 38.98 N	163 37.90 W	EPISLED	QTowF	
17-Sep-10	6:17	48	2	T40	GRAB042	30	58 39.39 N	163 38.39 W	GRAB	Sedgrain, SedInf	
17-Sep-10	6:35	48	3	T40	BEAM050	30	58 39.83 N	163 38.88 W	BEAM	Juv-Flat	
17-Sep-10	8:25	49	1	Q40	EPI053	26	58 46.27 N	163 14.62 W	EPISLED	QTowF	
17-Sep-10	8:42	49	2	Q40	GRAB043	26	58 46.62 N	163 15.05 W	GRAB	Sedgrain, SedInf	
17-Sep-10	8:59	49	3	Q40	BEAM051	26	58 47.19 N	163 15.57 W	BEAM	Furuno, Juv-Flat	
17-Sep-10	11:48	50	1	Q46	EPI054	22	59 10.90 N	163 48.44 W	EPISLED	QTowF	Removed two sea stars from sample (Asterias). Limanda aspera 111, 98,162 mm discarded, 66, 63 mm frozen
17-Sep-10	12:04	50	2	Q46	GRAB044	22	59 11.35 N	163 48.71 W	GRAB	Sedgrain, SedInf	
17-Sep-10	12:43	50	3	Q46	BEAM052	23	59 11.84 N	163 49.18 W	BEAM	Juv-Flat	
17-Sep-10	14:30	51	1	T46	EPI055	28	59 05.40 N	164 05.98 W	EPISLED	QTowF	5 YFS 5-10 cm in sled tossed
17-Sep-10	14:46	51	2	T46	GRAB045	23	59 05.78 N	164 06.20 W	GRAB	Sedgrain, SedInf	
17-Sep-10	15:10	51	3	T46	BEAM053	23	59 06.41 N	164 06.72 W	BEAM	Juv-Flat	
17-Sep-10	17:08	52	1	W46	EPI056	27	58 59.42 N	164 30.35 W	EPISLED	QTowF	
17-Sep-10	17:23	52	2	W46	GRAB046	27	58 59.46 N	164 29.56 W	GRAB	Sedgrain, SedInf	
17-Sep-10	17:42	52	3	W46	BEAM054	26	58 59.51 N	164 29.15 W	BEAM	Furuno, Juv-Flat	
17-Sep-10	19:25	53	1	W49	EPI057	23	59 11.80 N	164 45.02 W	EPISLED	QTowF	
17-Sep-10	19:37	53	2	W49	GRAB047	23	59 11.84 N	164 44.71 W	GRAB	Sedgrain, SedInf	
17-Sep-10	19:51	53	3	W49	BEAM055	23	59 11.89 N	164 44.24 W	BEAM	Juv-Flat	
17-Sep-10	21:25	54	1	W52	EPI058	19	59 21.71 N	164 55.70 W	EPISLED	QTowF	
17-Sep-10	21:39	54	2	W52	GRAB048	18	59 21.80 N	164 55.21 W	GRAB	Sedgrain, SedInf	
17-Sep-10	21:53	54	3	W52	BEAM056	19	59 21.73 N	164 54.69 W	BEAM	Juv-Flat	
17-Sep-10	23:37	55	1	Z52	EPI059	22	59 15.30 N	165 18.23 W	EPISLED	QTowF	
17-Sep-10	23:56	55	2	Z52	GRAB049	21	59 15.28 N	165 17.66 W	GRAB	Sedgrain, SedInf	
18-Sep-10	0:13	55	3	Z52	BEAM057	22	59 15.05 N	165 17.39 W	BEAM	Juv-Flat	
18-Sep-10	1:37	56	1	Z49	EPI060	25	59 05.26 N	165 07.36 W	EPISLED	QTowF	
18-Sep-10	1:54	56	2	Z49	GRAB050	25	59 04.90 N	165 07.14 W	GRAB	Sedgrain, SedInf	
18-Sep-10	2:10	56	3	Z49	BEAM058	30	59 04.64 N	165 06.90 W	BEAM	Juv-Flat	
18-Sep-10	3:47	57	1	Z46	EPI061	34	58 52.15 N	164 52.46 W	EPISLED	QTowF	
18-Sep-10	4:04	57	2	Z46	GRAB051	30	58 51.64 N	164 52.38 W	GRAB	Sedgrain, SedInf	
18-Sep-10	4:19	57	3	Z46	BEAM059	31	58 51.29 N	164 52.27 W	BEAM	Juv-Flat	
18-Sep-10	6:01	58	1	AC46	EPI062	34	58 43.98 N	165 16.24 W	EPISLED	QTowF	
18-Sep-10	6:21	58	2	AC46	GRAB052	33	58 44.31 N	165 15.53 W	GRAB	Sedgrain, SedInf	

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Cruise Summary For FOCI Cruise 1MF10 (MF-10-05)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
18-Sep-10	6:38	58	3	AC46	BEAM060	33	58 44.54 N	165 15.18 W	BEAM	Juv-Flat	
18-Sep-10	8:26	59	1	AC49	EPI063	27	58 57.02 N	165 29.99 W	EPISLED	QTowF	Adult yellowfin sole discarded
18-Sep-10	8:40	59	2	AC49	GRAB053	27	58 57.13 N	165 28.64 W	GRAB	Sedgrain, SedInf	
18-Sep-10	8:58	59	3	AC49	BEAM061	27	58 57.26 N	165 28.64 W	BEAM	Furuno, Juv-Flat	
18-Sep-10	10:58	60	1	AC52	EPI064	24	59 11.24 N	165 42.52 W	EPISLED	QTowF	
18-Sep-10	11:26	60	2	AC52	GRAB054	24	59 11.37 N	165 43.21 W	GRAB	Sedgrain, SedInf	
18-Sep-10	11:44	60	3	AC52	BEAM062	24	59 11.18 N	165 42.62 W	BEAM	Juv-Flat	

