

FINAL CRUISE REPORT

Cruise Number: DY0907

FOCI Number: 3DY09

Ship:

FRV *Oscar Dyson*

Area of Operations:

Eastern Bering Sea

Itinerary:

Date depart / port: May 7, 2009 / Dutch Harbor, AK

Date arrive / port: May 20, 2009 / Kodiak, AK

Participating organizations:

NOAA - Alaska Fisheries Science Center (AFSC)

Chief Scientist:

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Cruise Objectives:

We examined the interactions among climate, weather, and the recruitment of fishes in the eastern Bering Sea. We conducted ichthyoplankton and zooplankton surveys in the waters along the eastern Aleutian Island chain, the Alaska Peninsula, and the Pribilof Islands (Figure 1). This work is needed to describe larval fish assemblages and determine how physical and biological factors affect the transport and survival of fish larvae. The cruise was a collaboration between the North Pacific Research Board's Bering Sea Integrated Ecosystem Research Program (BSIERP) and NOAA's North Pacific Climate Regimes and Ecosystem Productivity (NPCREP) program. Fish species of particular interest during this cruise were: arrowtooth flounder (*Atheresthes stomias*), Pacific cod (*Gadus macrocephalus*) and walleye pollock (*Theragra chalcogramma*). We determined the horizontal and vertical distribution of these species as well as the abundance and distribution of their plankton prey. Near real-time discrimination of *Atheresthes* spp. larvae was made at sea using molecular techniques.

Summary of Operations:

Gears Used	Tows
20cm bongo (20Bon)	87
60cm bongo (60Bon)	87
Seabird SeaCAT CTD (CAT)	87
CTD with bottle samples (CTDB)	3
Continuous Underway Fish Egg Sampler (CUFES)	14
1m ² MOCNESS (MOC1)	3
Neuston (Neu)	80
Deployment of satellite buoy (SatBuoy)	3

Summary of Cruise:

Narrative:

Eighty-one stations were sampled for ichthyo- and zooplankton abundance using a bongo net array and a neuston net (505 μm mesh). The bongo net array consisted of two 60-cm diameter opening nets with a mesh size of 505 or 333 μm and two 20-cm diameter opening nets with a mesh size of 153 μm . Bongo nets were fished obliquely from the surface to 10 m off the bottom or to a maximum depth of 300 m. The neuston net was fished at the surface for 10 min. The contents of one of each of the 60-cm and 20-cm bongo nets and the neuston net were immediately preserved in sodium borate-buffered formalin to be sorted and identified at a later date.

At the beginning of the cruise, we sampled along the slope between Bering and Pribilof Canyons, catching about 2 dozen *Atheresthes* spp. larvae. After this, we moved northward to sample around the Pribilof Islands. Catches of walleye pollock eggs in this area were high, particularly in the surface neuston tows. Catches of larvae however, were relatively low. Water temperatures were very cold ($<1^{\circ}\text{C}$), which may have influenced the abundance of larvae, either by affecting the location or timing of spawning adults. In total, we caught only 25 walleye pollock larvae at 15 stations around the islands, and no Pacific cod. Two stations in the Pribilof Islands were sampled for vertical distribution of fish eggs and larvae with the MOCNESS (505 μm mesh).

On our way back toward the peninsula to continue the search for pollock and cod larvae, the ship had to navigate through a large field of sea ice. Sea ice over the middle shelf in mid-May is unusual for mid-May, and has not been documented in at least the last 10 years. Sea ice is further evidence of the very cold conditions over the middle and outer shelves. Plankton sampling along the Alaska Peninsula revealed that larvae of any fish species were relatively scarce at most stations and water temperatures remained low until we moved further west. For the peninsula and eastern Aleutian Islands, we again caught only 25 walleye pollock and 2 cod larvae at 46 stations. Typically catches are 1-2 orders of magnitudes higher in these geographic locations.

Within Unimak Pass and over Bering Canyon, we continued our efforts and were rewarded with more *Atheresthes* spp. larvae, 30 pollock larvae, one cod larva, and the highest larval diversity we had yet to see on this cruise (approximately 12 genera). It is most likely that these larvae were spawned in the Gulf of Alaska and were being transported through Unimak Pass into the Bering Sea. Previous years of sampling in Unimak Pass have demonstrated that larvae are routinely advected through this area from the Gulf to the Bering.

Three satellite-tracked drifters were released during this cruise, the first over the slope, the second between St. George and St. Paul Islands, and the third along the Alaska Peninsula. A cruise this summer led by our colleague, Dr. Nicola Hillgruber (UAF), will use the drifter data to locate the fish contained in the patches in the spring and conduct additional sampling for the NPRB/BSIERP.

Of the 47 *Atheresthes* spp. larvae collected, we were able to genetically identify 41 to species while at sea. Catches at the northern stations (between the canyons and in the Pribilof Islands) tended to have more Kamchatka flounder (*A. evermanni*) than arrowtooth flounder (*A. stomias*), while catches at the southern stations (Unimak Pass and Bering Canyon) tended to have more arrowtooth than Kamchatka flounder.

All work was completed through the combined support of NPRB and NOAA's Climate Regimes and Ecosystem Productivity programs.

Days Lost to Weather:

None

Days Lost to Equipment Failure:

None

Recommendations:

To make MOCNESS operations safer and more efficient, MOC-P and the NOAA – Fisheries should work together to obtain a conducting cable on the aft pointing traction winch. At present it is not possible to use the CTD, bongo / SeaCat, and MOCNESS in rapid succession. There are only two conducting cables to share among the various electronic sample gears and switching the cables between instruments takes additional time and has the associated risk of damaging the termination during the transfer. In addition, there is not room enough on the quarterdeck to use a cart to hold the MOCNESS while using the other pieces of sampling equipment. If scientists need to use all three pieces of equipment then the best solution is to add conducting cable to the only remaining winch (the aft pointing traction winch).

Acknowledgments:

The scientific party would like to acknowledge the hard work and support of the officers and crew of the FRV *Oscar Dyson*. We especially want to thank the Survey Department for their hard work on our behalf. CO Hoshlyk, XO Levine, and LT Jeff Shoup helped prepare us for a successful cruise, and the efforts of the Deck Department helped make our deck operations safe and successful. The EcoFOCI Program is grateful for their hard work and expertise.

Table 1. Cruise Summary

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
08-May-09	9:21	1	1	BS16	NEU001	606	54 52.57 N	168 22.41 W	Neu	QTowF	possible reader error on flowmeter. 89216 was read, corrected to 81216
08-May-09	9:53	1	2	BS16	BON001	594	54 52.16 N	168 21.12 W	20Bon	QTowF	
08-May-09	9:53	1	2	BS16	BON001	594	54 52.16 N	168 21.12 W	60Bon	AMGen, ATFGen, Porter, QTowF	Flowmeter numbers incorrect reading from previous neuston station haul (NEU001)
08-May-09	9:53	1	2	BS16	BON001	594	54 52.16 N	168 21.12 W	CAT	CAT	
08-May-09	12:08	2	1	BP19	NEU002	1397	55 12.39 N	168 13.20 W	Neu	Discard	
08-May-09	12:48	2	2	BP19	NEU003	1397	55 12.48 N	168 13.14 W	Neu	QTowF	
08-May-09	13:08	2	3	BP19	BON002	1384	55 12.74 N	168 12.18 W	20Bon	QTowF	
08-May-09	13:08	2	3	BP19	BON002	1384	55 12.74 N	168 12.18 W	60Bon	AMGen, ATFGen, Porter, QTowF	
08-May-09	13:08	2	3	BP19	BON002	1384	55 12.74 N	168 12.18 W	CAT	CAT	
08-May-09	15:29	3	1	BP22	NEU004	1029	55 25.78 N	168 25.96 W	Neu	QTowF	
08-May-09	15:53	3	2	BP22	BON003	927	55 25.82 N	168 24.64 W	20Bon	QTowF	
08-May-09	15:53	3	2	BP22	BON003	927	55 25.82 N	168 24.64 W	60Bon	AMGen, ATFGen, QTowF	
08-May-09	15:53	3	2	BP22	BON003	927	55 25.82 N	168 24.64 W	CAT	CAT	
08-May-09	20:12	4	1	BP31	DRIFT01	1197	56 05.39 N	169 03.05 W	SatBuoy	Deploy	Drifter # 91991
09-May-09	3:54	5	1	BM49	NEU005	71	57 31.61 N	169 59.10 W	Neu	QTowF	Radio communication failed at beginning and end of tow. Used stopwatch, however, time may be off give or take by estimated 20 seconds.
09-May-09	4:16	5	2	BM49	BON004	70	57 31.91 N	169 59.32 W	20Bon	QTowF	Removed 2 small jellyfish from 60BON, Net 1 and 1 small jellyfish from 20BON, Net 1
09-May-09	4:16	5	2	BM49	BON004	70	57 31.91 N	169 59.32 W	60Bon	QTowF	Removed 2 small jellyfish from 60BON, Net 1 and 1 small jellyfish from 20BON, Net 1
09-May-09	4:16	5	2	BM49	BON004	70	57 31.91 N	169 59.32 W	CAT	CAT	Removed 2 small jellyfish from 60BON, Net 1 and 1 small jellyfish from 20BON, Net 1
09-May-09	5:46	6	1	BP49	NEU006	70	57 25.04 N	170 21.56 W	Neu	QTowF	
09-May-09	6:06	6	2	BP49	BON005	70	57 24.65 N	170 21.14 W	20Bon	QTowF	
09-May-09	6:06	6	2	BP49	BON005	70	57 24.65 N	170 21.14 W	60Bon	Porter, QTowF	
09-May-09	6:06	6	2	BP49	BON005	70	57 24.65 N	170 21.14 W	CAT	CAT	
09-May-09	7:26	7	1	BS49	NEU007	78	57 17.63 N	170 42.65 W	Neu	QTowF	
09-May-09	7:44	7	2	BS49	BON006	79	57 17.38 N	170 43.53 W	20Bon	QTowF	
09-May-09	7:44	7	2	BS49	BON006	79	57 17.38 N	170 43.53 W	60Bon	Porter, QTowF	
09-May-09	7:44	7	2	BS49	BON006	79	57 17.38 N	170 43.53 W	CAT	CAT	
09-May-09	10:31	8	1	BS43	NEU008	94	56 51.21 N	170 17.34 W	Neu	QTowF	
09-May-09	10:51	8	2	BS43	BON007	94	56 51.25 N	170 16.81 W	20Bon	QTowF	
09-May-09	10:51	8	2	BS43	BON007	94	56 51.25 N	170 16.81 W	60Bon	Porter, QTowF	
09-May-09	10:51	8	2	BS43	BON007	94	56 51.25 N	170 16.81 W	CAT	CAT	
09-May-09	12:17	9	1	BP43	NEU009	69	56 57.89 N	169 55.62 W	Neu	QTowF	
09-May-09	12:31	9	2	BP43	BON008	68	56 58.16 N	169 55.01 W	20Bon	QTowF	
09-May-09	12:31	9	2	BP43	BON008	68	56 58.16 N	169 55.01 W	60Bon	AMGen, Porter, QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
09-May-09	12:31	9	2	BP43	BON008	68	56 58.16 N	169 55.01 W	CAT	CAT	
09-May-09	13:50	10	1	BM43	NEU010	63	57 05.10 N	169 33.36 W	Neu	QTowF	
09-May-09	14:05	10	2	BM43	BON009	64	57 05.38 N	169 32.48 W	20Bon	QTowF	
09-May-09	14:05	10	2	BM43	BON009	64	57 05.38 N	169 32.48 W	60Bon	QTowF	
09-May-09	14:05	10	2	BM43	BON009	64	57 05.38 N	169 32.48 W	CAT	CAT	
09-May-09	15:32	11	1	BM40	NEU011	78	56 52.55 N	169 20.11 W	Neu	QTowF	
09-May-09	15:47	11	2	BM40	BON010	79	56 52.19 N	169 19.62 W	20Bon	QTowF	
09-May-09	15:47	11	2	BM40	BON010	79	56 52.19 N	169 19.62 W	60Bon	QTowF	
09-May-09	15:47	11	2	BM40	BON010	79	56 52.19 N	169 19.62 W	CAT	CAT	
09-May-09	17:12	12	1	BP40	NEU012	77	56 45.16 N	169 41.12 W	Neu	QTowF	
09-May-09	17:29	12	2	BP40	BON011	78	56 44.90 N	169 41.78 W	20Bon	QTowF	
09-May-09	17:29	12	2	BP40	BON011	78	56 44.90 N	169 41.78 W	60Bon	ATFGen, Porter, QTowF	
09-May-09	17:29	12	2	BP40	BON011	78	56 44.90 N	169 41.78 W	CAT	CAT	
09-May-09	18:04	12	3	BP40	CUF001	78	56 42.22 N	169 50.88 W	CUFES	QTowF	Mesh 505
09-May-09	18:47	13	1	BS40	NEU013	97	56 38.09 N	170 03.93 W	Neu	QTowF	
09-May-09	19:05	13	2	BS40	BON012	98	56 37.81 N	170 04.35 W	20Bon	QTowF	
09-May-09	19:05	13	2	BS40	BON012	98	56 37.81 N	170 04.35 W	60Bon	AMGen, Porter, QTowF	
09-May-09	19:05	13	2	BS40	BON012	98	56 37.81 N	170 04.35 W	CAT	CAT	
09-May-09	19:14	13	3	BS40	CUF002	98	56 37.95 N	170 04.19 W	CUFES	QTowF	
09-May-09	20:35	14	1	BS37	NEU014	96	56 24.29 N	169 51.50 W	Neu	QTowF	
09-May-09	20:53	14	2	BS37	BON013	97	56 24.52 N	169 50.89 W	20Bon	QTowF	
09-May-09	20:53	14	2	BS37	BON013	97	56 24.52 N	169 50.89 W	60Bon	AMGen, Porter, QTowF	
09-May-09	20:53	14	2	BS37	BON013	97	56 24.52 N	169 50.89 W	CAT	CAT	
09-May-09	21:05	14	3	BS37	CUF003	97	56 31.07 N	169 31.12 W	CUFES	QTowF	
09-May-09	22:22	15	1	BP37	NEU015	73	56 31.59 N	169 29.67 W	Neu	QTowF	
09-May-09	22:38	15	2	BP37	BON014	69	56 31.70 N	169 29.92 W	20Bon	QTowF	
09-May-09	22:38	15	2	BP37	BON014	69	56 31.70 N	169 29.92 W	60Bon	AMGen, QTowF	Wire angle was high for part of tow
09-May-09	22:38	15	2	BP37	BON014	69	56 31.70 N	169 29.92 W	60Bon	AMGen, QTowF	Wire angle was high for part of tow
09-May-09	22:38	15	2	BP37	BON014	69	56 31.70 N	169 29.92 W	CAT	CAT	
10-May-09	22:48	15	3	BP37	CUF004	69	56 31.64 N	169 29.63 W	CUFES	QTowF	
10-May-09	0:19	16	1	BM37	NEU016	75	56 38.90 N	169 06.59 W	Neu	QTowF	
10-May-09	0:37	16	2	BM37	BON015	75	56 38.98 N	169 06.02 W	20Bon	QTowF	
10-May-09	0:37	16	2	BM37	BON015	75	56 38.98 N	169 06.02 W	60Bon	AMGen, QTowF	
10-May-09	0:37	16	2	BM37	BON015	75	56 38.98 N	169 06.02 W	CAT	CAT	
10-May-09	3:18	16	3	BM37	CTD001	76	56 39.08 N	169 06.39 W	CTDB	Chlor, CTD, Nut	
10-May-09	6:30	16	4	BM37	MOC001	76	56 39.08 N	169 06.39 W	MOC1	Discard	Wire angle sensor not operable. Replaced with back-up electric unit but pressure sensor inoperable.
10-May-09	8:02	17	1	BP40	MOC002	78	56 45.00 N	169 40.80 W	MOC1	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
10-May-09	8:02	17	1	BP40	MOC002	78	56 45.00 N	169 40.80 W	MOC1	QTowF	Time in MOC file is 1 hour later than recorded on
10-May-09	9:06	17	2	BP40	CTD002	78	56 44.95 N	169 41.87 W	CTDB	Chlor, CTD, Nut	COD (GMT on COD)
10-May-09	9:27	17	3	BP40	DRIFT02	78	56 45.12 N	169 41.58 W	SatBuoy	Deploy	Drifter 80091
10-May-09	11:41	18	1	BM43	CTD003	63	57 05.38 N	169 32.67 W	CTDB	Chlor, CTD, Nut	
10-May-09	12:38	18	2	BM43	MOC003	63	57 05.35 N	169 32.69 W	MOC1	QTowF	
10-May-09	12:38	18	2	BM43	MOC003	63	57 05.35 N	169 32.69 W	MOC1	QTowF	Removed one jelly fish from codend Time in MOC file is 1 hour later than time recorded in COD (GMT=COD).
10-May-09	12:38	18	2	BM43	MOC003	63	57 05.35 N	169 32.69 W	MOC1	QTowF	
10-May-09	14:07	19	1	BJ43	NEU017	77	57 12.28 N	169 11.24 W	Neu	QTowF	
10-May-09	14:26	19	2	BJ43	BON016	78	57 12.49 N	169 10.39 W	20Bon	QTowF	
10-May-09	14:26	19	2	BJ43	BON016	78	57 12.49 N	169 10.39 W	60Bon	AMGen, QTowF	
10-May-09	14:26	19	2	BJ43	BON016	78	57 12.49 N	169 10.39 W	CAT	CAT	
10-May-09	15:56	20	1	BJ40	NEU018	81	56 59.48 N	168 57.34 W	Neu	QTowF	
10-May-09	16:23	20	2	BJ40	BON017	81	56 59.16 N	168 57.96 W	20Bon	QTowF	
10-May-09	16:23	20	2	BJ40	BON017	81	56 59.16 N	168 57.96 W	60Bon	QTowF	
10-May-09	16:23	20	2	BJ40	BON017	81	56 59.16 N	168 57.96 W	CAT	CAT	
10-May-09	17:58	21	1	BJ37	NEU019	100	56 45.97 N	168 44.74 W	Neu	QTowF	
10-May-09	18:09	21	2	BJ37	BON018	101	56 46.19 N	168 44.16 W	20Bon	QTowF	
10-May-09	18:09	21	2	BJ37	BON018	101	56 46.19 N	168 44.16 W	60Bon	AMGen, QTowF	
10-May-09	18:09	21	2	BJ37	BON018	101	56 46.19 N	168 44.16 W	CAT	CAT	
11-May-09	17:19	22	1	N10	NEU020	69	56 42.21 N	160 36.81 W	Neu	QTowF	
11-May-09	17:35	22	2	N10	BON019	69	56 41.80 N	160 37.74 W	20Bon	QTowF	
11-May-09	17:35	22	2	N10	BON019	69	56 41.80 N	160 37.74 W	60Bon	QTowF	
11-May-09	17:35	22	2	N10	BON019	69	56 41.80 N	160 37.74 W	CAT	CAT	
11-May-09	18:27	23	1	N07	NEU021	37	56 29.00 N	160 23.66 W	Neu	QTowF	
11-May-09	21:08	24	1	Q07	NEU022	48	56 21.78 N	160 47.51 W	Neu	QTowF	
11-May-09	21:24	24	2	Q07	BON020	49	56 21.56 N	160 48.25 W	20Bon	QTowF	winch slipped on retrieval near surface.
11-May-09	21:24	24	2	Q07	BON020	49	56 21.56 N	160 48.25 W	60Bon	QTowF	winch slipped on retrieval near surface.
11-May-09	21:24	24	2	Q07	BON020	49	56 21.56 N	160 48.25 W	60Bon	QTowF	winch slipped on retrieval near surface. Fell about 7m.
11-May-09	21:24	24	2	Q07	BON020	49	56 21.56 N	160 48.25 W	CAT	CAT	winch slipped on retrieval near surface.
11-May-09	21:33	24	3	Q07	CUF005	48	56 21.52 N	160 48.73 W	CUFES	QTowF	
12-May-09	0:07	25	1	BON021	NEU023	68	56 47.59 N	161 14.15 W	Neu	QTowF	
12-May-09	0:25	25	2	Q13	BON021	63	56 48.02 N	161 14.44 W	20Bon	QTowF	
12-May-09	0:25	25	2	Q13	BON021	63	56 48.02 N	161 14.44 W	60Bon	QTowF	
12-May-09	0:25	25	2	Q13	BON021	63	56 48.02 N	161 14.44 W	CAT	CAT	
12-May-09	0:32	25	3	Q13	CUF006	63	58 49.00 N	161 15.43 W	CUFES	QTowF	
12-May-09	2:31	26	1	N16	NEU024	67	57 07.77 N	161 03.76 W	Neu	QTowF	
12-May-09	2:47	26	2	N16	BON022	64	57 08.11 N	161 04.05 W	20Bon	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
12-May-09	2:47	26	2	N16	BON022	64	57 08.11 N	161 04.05 W	60Bon	QTowF	
12-May-09	2:47	26	2	N16	BON022	64	57 08.11 N	161 04.05 W	CAT	CAT	
12-May-09	3:33	26	3	N16	CUF007	65	57 10.72 N	161 17.23 W	CUFES	QTowF	
12-May-09	4:38	27	1	Q19	NEU025	52	57 14.21 N	161 39.57 W	Neu	QTowF	
12-May-09	4:54	27	2	Q19	BON023	52	57 14.40 N	161 40.62 W	20Bon	QTowF	
12-May-09	4:54	27	2	Q19	BON023	52	57 14.40 N	161 40.62 W	60Bon	QTowF	
12-May-09	4:54	27	2	Q19	BON023	52	57 14.40 N	161 40.62 W	CAT	CAT	
12-May-09	7:40	28	1	W19	NEU026	63	56 59.80 N	162 26.95 W	Neu	QTowF	
12-May-09	7:54	28	2	W19	BON024	63	57 00.02 N	162 27.27 W	20Bon	QTowF	
12-May-09	7:54	28	2	W19	BON024	63	57 00.02 N	162 27.27 W	60Bon	QTowF	
12-May-09	7:54	28	2	W19	BON024	63	57 00.02 N	162 27.27 W	60Bon	QTowF	60 bon net 1 - removed 1 jelly
12-May-09	7:54	28	2	W19	BON024	63	57 00.02 N	162 27.27 W	CAT	CAT	
12-May-09	10:46	29	1	W13	NEU027	71	56 33.42 N	162 00.86 W	Neu	QTowF	revomed one jelly fish
12-May-09	11:02	29	2	W13	BON025	72	56 33.74 N	162 01.17 W	20Bon	QTowF	
12-May-09	11:02	29	2	W13	BON025	72	56 33.74 N	162 01.17 W	20Bon	QTowF	One jelly fish removed from 20Bon net #1
12-May-09	11:02	29	2	W13	BON025	72	56 33.74 N	162 01.17 W	60Bon	QTowF	
12-May-09	11:02	29	2	W13	BON025	72	56 33.74 N	162 01.17 W	60Bon	QTowF	4 jelly fish removed from 60Bon net #1. 1 jelly removed from 20 bon net 1
12-May-09	11:02	29	2	W13	BON025	72	56 33.74 N	162 01.17 W	CAT	CAT	
12-May-09	13:50	30	1	W07	NEU028	52	56 07.60 N	161 34.71 W	Neu	QTowF	
12-May-09	14:01	30	2	W07	BON026	53	56 07.35 N	161 35.42 W	20Bon	QTowF	
12-May-09	14:01	30	2	W07	BON026	53	56 07.35 N	161 35.42 W	60Bon	QTowF	
12-May-09	14:01	30	2	W07	BON026	53	56 07.35 N	161 35.42 W	CAT	CAT	
12-May-09	15:31	31	1	Z07	NEU029	55	56 00.35 N	161 58.42 W	Neu	QTowF	1 jelly tossed
12-May-09	15:43	31	2	Z07	BONO27	53	56 00.09 N	161 59.31 W	20Bon	QTowF	1 jelly tossed 60bon net 1
12-May-09	15:43	31	2	Z07	BONO27	53	56 00.09 N	161 59.31 W	60Bon	QTowF	1 jelly tossed 60bon net 1
12-May-09	15:43	31	2	Z07	BONO27	53	56 00.09 N	161 59.31 W	CAT	CAT	1 jelly tossed 60bon net 1
12-May-09	17:12	32	1	Z10	NEU030	78	56 12.95 N	162 12.44 W	Neu	QTowF	
12-May-09	17:24	32	2	Z10	BON028	78	56 13.32 N	162 12.26 W	20Bon	QTowF	60bon net 1 - 2 jellies rinsed and tossed
12-May-09	17:24	32	2	Z10	BON028	78	56 13.32 N	162 12.26 W	60Bon	QTowF	60bon net 1 - 2 jellies rinsed and tossed
12-May-09	17:24	32	2	Z10	BON028	78	56 13.32 N	162 12.26 W	CAT	CAT	60bon net 1 - 2 jellies rinsed and tossed
12-May-09	17:38	32	3	Z10	DRIFT03	78	56 13.68 N	162 12.13 W	SatBuoy	Deploy	Drifter No. 57864. Drogued at 16m
12-May-09	17:42	32	4	Z10	CUFES08	77	56 13.90 N	162 12.34 W	CUFES	QTowF	
12-May-09	18:54	33	1	Z13	NEU031	76	56 26.04 N	162 25.17 W	Neu	QTowF	
12-May-09	19:09	33	2	Z13	BON029	76	56 26.60 N	162 24.97 W	20Bon	QTowF	
12-May-09	19:09	33	2	Z13	BON029	76	56 26.60 N	162 24.97 W	60Bon	QTowF	
12-May-09	19:09	33	2	Z13	BON029	76	56 26.60 N	162 24.97 W	CAT	CAT	
12-May-09	21:52	34	1	AF13	NEU032	86	56 11.89 N	163 12.11 W	Neu	QTowF	
12-May-09	22:08	34	2	AF13	BON030	86	56 12.40 N	163 11.87 W	20Bon	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
12-May-09	22:08	34	2	AF13	BON030	86	56 12.40 N	163 11.87 W	60Bon	Porter, QTowF	
12-May-09	22:08	34	2	AF13	BON030	86	56 12.40 N	163 11.87 W	60Bon	Porter, QTowF	2 large jellyfish removed from 60 bon net 1
12-May-09	22:08	34	2	AF13	BON030	86	56 12.40 N	163 11.87 W	CAT	CAT	
12-May-09	22:19	34	3	AF13	CUF009	86	56 12.58 N	163 11.75 W	CUFES	QTowF	
12-May-09	23:43	35	1	AF10	NEU033	85	55 58.63 N	162 59.44 W	Neu	QTowF	
12-May-09	23:59	35	2	AF10	BON031	85	55 58.99 N	162 59.35 W	20Bon	QTowF	large jelly in 60 bon net 2
12-May-09	23:59	35	2	AF10	BON031	85	55 58.99 N	162 59.35 W	60Bon	AMGen, QTowF	large jelly in 60 bon net 2
12-May-09	23:59	35	2	AF10	BON031	85	55 58.99 N	162 59.35 W	CAT	CAT	large jelly in 60 bon net 2
12-May-09	23:00	35	3	AF10	CUF010	86	55 58.04 N	162 58.24 W	CUFES	QTowF	
13-May-09	1:43	36	1	AF07	NEU034	59	55 45.52 N	162 46.63 W	Neu	QTowF	
13-May-09	1:58	36	2	AF07	BON032	59	55 45.81 N	162 46.53 W	20Bon	QTowF	
13-May-09	1:58	36	2	AF07	BON032	59	55 45.81 N	162 46.53 W	60Bon	QTowF	
13-May-09	1:58	36	2	AF07	BON032	59	55 45.81 N	162 46.53 W	CAT	CAT	
13-May-09	2:38	36	3	AF7	CUF011	31	55 42.98 N	162 43.58 W	CUFES	QTowF	
13-May-09	3:59	37	1	AF04	NEU035	31	55 32.17 N	162 33.59 W	Neu	QTowF	
13-May-09	4:14	37	2	AF04	BON033	31	55 32.58 N	162 33.50 W	20Bon	QTowF	Switched out Net 2 of 60BON to 333 mesh net. Removed 1 large jellyfish from 60BON, Net 1.
13-May-09	4:14	37	2	AF04	BON033	31	55 32.58 N	162 33.50 W	60Bon	AMGen, QTowF	Switched out Net 2 of 60BON to 333 mesh net. Removed 1 large jellyfish from 60BON, Net 1.
13-May-09	4:14	37	2	AF04	BON033	31	55 32.58 N	162 33.50 W	CAT	CAT	Switched out Net 2 of 60BON to 333 mesh net. Removed 1 large jellyfish from 60BON, Net 1.
13-May-09	6:46	38	1	AI04	NEU036	36	55 25.05 N	162 57.02 W	Neu	QTowF	
13-May-09	7:02	38	2	AI04	BON034	39	55 25.74 N	162 56.99 W	20Bon	QTowF	
13-May-09	7:02	38	2	AI04	BON034	39	55 25.74 N	162 56.99 W	60Bon	QTowF	
13-May-09	7:02	38	2	AI04	BON034	39	55 25.74 N	162 56.99 W	CAT	CAT	
13-May-09	8:36	39	1	AI07	NEU037	67	55 38.25 N	163 09.33 W	Neu	QTowF	2 jelly removed from neuston
13-May-09	8:52	39	2	AI07	BON035	68	55 38.70 N	163 09.65 W	20Bon	QTowF	
13-May-09	8:52	39	2	AI07	BON035	68	55 38.70 N	163 09.65 W	60Bon	QTowF	
13-May-09	8:52	39	2	AI07	BON035	68	55 38.70 N	163 09.65 W	60Bon	QTowF	1 jelly removed from 60Bon net#1
13-May-09	8:52	39	2	AI07	BON035	68	55 38.70 N	163 09.65 W	CAT	CAT	
13-May-09	10:25	40	1	AI10	NEU038	91	55 51.42 N	163 22.02 W	Neu	QTowF	
13-May-09	10:38	40	2	AI10	BON036	91	55 51.67 N	163 22.31 W	20Bon	QTowF	
13-May-09	10:38	40	2	AI10	BON036	91	55 51.67 N	163 22.31 W	60Bon	QTowF	
13-May-09	10:38	40	2	AI10	BON036	91	55 51.67 N	163 22.31 W	CAT	CAT	
13-May-09	12:18	41	1	AI13	NEU039	91	56 04.49 N	163 35.44 W	Neu	QTowF	
13-May-09	12:34	41	2	AI13	BON037	92	56 05.00 N	163 35.21 W	20Bon	QTowF	
13-May-09	12:34	41	2	AI13	BON037	92	56 05.00 N	163 35.21 W	60Bon	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
13-May-09	12:34	41	2	AI13	BON037	92	56 05.00 N	163 35.21 W	60Bon	QTowF	4 jelly fish removed from 60BON net#1
13-May-09	12:34	41	2	AI13	BON037	92	56 05.00 N	163 35.21 W	CAT	CAT	
13-May-09	14:12	42	1	AI16	NEU040	86	56 18.14 N	163 47.92 W	Neu	Discard	No surface call
13-May-09	14:15	42	2	AI16	NEU041	86	56 18.14 N	163 47.92 W	Neu	QTowF	
13-May-09	14:28	42	3	AI16	BON038	86	56 18.47 N	163 48.31 W	20Bon	QTowF	
13-May-09	14:28	42	3	AI16	BON038	86	56 18.47 N	163 48.31 W	60Bon	AMGen, QTowF	
13-May-09	14:28	42	3	AI16	BON038	86	56 18.47 N	163 48.31 W	CAT	CAT	
13-May-09	16:49	43	1	AF13	BON039	86	56 11.80 N	163 12.20 W	20Bon	QTowF	
13-May-09	16:49	43	1	AF13	BON039	86	56 11.80 N	163 12.20 W	60Bon	AMGen, QTowF	
13-May-09	16:49	43	1	AF13	BON039	86	56 11.80 N	163 12.20 W	CAT	CAT	
13-May-09	20:03	44	1	AI19	NEU042	82	56 31.14 N	164 01.45 W	Neu	QTowF	
13-May-09	20:19	44	2	AI19	BON040	82	56 31.58 N	164 00.85 W	20Bon	QTowF	
13-May-09	20:19	44	2	AI19	BON040	82	56 31.58 N	164 00.85 W	60Bon	QTowF	
13-May-09	20:19	44	2	AI19	BON040	82	56 31.58 N	164 00.85 W	60Bon	QTowF	1 large and 2 small jellyfish removed from 60bon net1
13-May-09	20:19	44	2	AI19	BON040	82	56 31.58 N	164 00.85 W	CAT	CAT	
14-May-09	20:34	44	3	AI19	CUF012	82	56 31.54 N	164 01.63 W	CUFES	QTowF	
13-May-09	21:52	45	1	AL19	NEU043	85	56 23.94 N	164 24.82 W	Neu	QTowF	
13-May-09	22:07	45	2	AL19	BON041	85	56 24.51 N	164 24.51 W	20Bon	QTowF	60bon net 1 had 2 large and 2 small jellyfish
13-May-09	22:07	45	2	AL19	BON041	85	56 24.51 N	164 24.51 W	60Bon	QTowF	60bon net 1 had 2 large and 2 small jellyfish
13-May-09	22:07	45	2	AL19	BON041	85	56 24.51 N	164 24.51 W	CAT	CAT	60bon net 1 had 2 large and 2 small jellyfish
13-May-09	22:30	45	3	AL19	CUF013	85	56 24.15 N	164 23.91 W	CUFES	Discard	nothing in sample. Sample not preserved
13-May-09	23:51	46	1	AL16	NEU044	90	56 10.81 N	164 12.02 W	Neu	QTowF	
14-May-09	0:09	46	2	AL16	BON042	90	56 11.11 N	164 11.59 W	20Bon	QTowF	1 large and 1 small jellyfish removed from 60BON, Net 1.
14-May-09	0:09	46	2	AL16	BON042	90	56 11.11 N	164 11.59 W	60Bon	QTowF	1 large and 1 small jellyfish removed from 60BON, Net 1.
14-May-09	0:09	46	2	AL16	BON042	90	56 11.11 N	164 11.59 W	CAT	CAT	1 large and 1 small jellyfish removed from 60BON, Net 1.
14-May-09	0:29	46	3	AL16	CUFES14	90	56 10.42 N	164 10.34 W	CUFES	QTowF	
14-May-09	2:01	47	1	AL13	NEU045	92	55 57.64 N	163 59.03 W	Neu	QTowF	
14-May-09	2:17	47	2	AL13	BON043	92	55 57.93 N	163 58.81 W	20Bon	QTowF	Removed 2 small jellyfish from 60BON Net1.
14-May-09	2:17	47	2	AL13	BON043	92	55 57.93 N	163 58.81 W	60Bon	QTowF	Removed 2 small jellyfish from 60BON Net1.
14-May-09	2:17	47	2	AL13	BON043	92	55 57.93 N	163 58.81 W	CAT	CAT	Removed 2 small jellyfish from 60BON Net1.
14-May-09	4:07	48	1	AL10	NEU046	95	55 44.17 N	163 46.02 W	Neu	QTowF	
14-May-09	4:24	48	2	AL10	BON044	94	55 44.70 N	163 45.93 W	20Bon	QTowF	Removed 2 medium (6 in) and 1 small (3 in) jellyfish from 60BON Net 1.
14-May-09	4:24	48	2	AL10	BON044	94	55 44.70 N	163 45.93 W	60Bon	QTowF	Removed 2 medium (6 in) and 1 small (3 in) jellyfish from 60BON Net 1.
14-May-09	4:24	48	2	AL10	BON044	94	55 44.70 N	163 45.93 W	CAT	CAT	Removed 2 medium (6 in) and 1 small (3 in) jellyfish from 60BON Net 1.

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
14-May-09	6:27	49	1	AL07	NEU047	73	55 31.13 N	163 33.06 W	Neu	QTowF	
14-May-09	6:43	49	2	AL07	BON045	75	55 31.71 N	163 32.95 W	20Bon	QTowF	one 9" jellyfish removed from 60BON net 1.
14-May-09	6:43	49	2	AL07	BON045	75	55 31.71 N	163 32.95 W	60Bon	QTowF	one 9" jellyfish removed from 60BON net 1.
14-May-09	6:43	49	2	AL07	BON045	75	55 31.71 N	163 32.95 W	CAT	CAT	one 9" jellyfish removed from 60BON net 1.
14-May-09	8:42	50	1	AL04	NEU048	49	55 18.39 N	163 20.32 W	Neu	QTowF	
14-May-09	8:45	50	2	AL04	BON046	50	55 18.49 N	163 20.28 W	20Bon	QTowF	
14-May-09	8:45	50	2	AL04	BON046	50	55 18.49 N	163 20.28 W	60Bon	QTowF	
14-May-09	8:45	50	2	AL04	BON046	50	55 18.49 N	163 20.28 W	60Bon	QTowF	1 jellyfish removed from 60BON net#1. Flow meters in 60 bon net 2 are low.
14-May-09	8:45	50	2	AL04	BON046	50	55 18.49 N	163 20.28 W	CAT	CAT	
14-May-09	10:21	51	1	AO04	NEU049	46	55 10.73 N	163 43.03 W	Neu	QTowF	
14-May-09	10:34	51	2	AO04	BON047	46	55 10.98 N	163 43.21 W	20Bon	QTowF	
14-May-09	10:34	51	2	AO04	BON047	46	55 10.98 N	163 43.21 W	60Bon	QTowF	
14-May-09	10:34	51	2	AO04	BON047	46	55 10.98 N	163 43.21 W	CAT	CAT	
14-May-09	12:03	52	1	AO07	NEU050	90	55 23.77 N	163 56.28 W	Neu	QTowF	
14-May-09	12:19	52	2	AO07	BON048	90	55 24.24 N	163 56.29 W	20Bon	QTowF	
14-May-09	12:19	52	2	AO07	BON048	90	55 24.24 N	163 56.29 W	60Bon	QTowF	
14-May-09	12:19	52	2	AO07	BON048	90	55 24.24 N	163 56.29 W	60Bon	QTowF	4 jelly removed from 60Bon Net#1
14-May-09	12:19	52	2	AO07	BON048	90	55 24.24 N	163 56.29 W	CAT	CAT	
14-May-09	13:54	53	1	AO10	NEU051	96	55 37.02 N	164 08.93 W	Neu	QTowF	
14-May-09	13:54	53	2	AO10	BON49	96	55 37.52 N	164 09.07 W	20Bon	QTowF	
14-May-09	13:54	53	2	AO10	BON49	96	55 37.52 N	164 09.07 W	60Bon	QTowF	
14-May-09	13:54	53	2	AO10	BON49	96	55 37.52 N	164 09.07 W	60Bon	QTowF	4 jelly removed from 60Bon Net#1
14-May-09	13:54	53	2	AO10	BON49	96	55 37.52 N	164 09.07 W	CAT	CAT	
14-May-09	15:50	54	1	AO13	NEU052	95	55 50.28 N	164 21.63 W	Neu	QTowF	
14-May-09	16:06	54	2	AO13	BON05	95	55 50.83 N	164 21.67 W	20Bon	QTowF	1 jelly removed from 20Bon net #1
14-May-09	16:06	54	2	AO13	BON05	95	55 50.83 N	164 21.67 W	60Bon	QTowF	
14-May-09	16:06	54	2	AO13	BON05	95	55 50.83 N	164 21.67 W	60Bon	QTowF	4 jellyfish removed from 60Bon Net#1
14-May-09	16:06	54	2	AO13	BON05	95	55 50.83 N	164 21.67 W	CAT	CAT	
14-May-09	17:53	55	1	AR13	NEU053	98	55 43.19 N	164 44.73 W	Neu	QTowF	
14-May-09	18:05	55	2	AR13	BON051	98	55 43.66 N	164 44.88 W	20Bon	QTowF	5 jellies removed from net 1 60 bon. 1 jelly removed from net 1 20 bon
14-May-09	18:05	55	2	AR13	BON051	98	55 43.66 N	164 44.88 W	60Bon	QTowF	5 jellies removed from net 1 60 bon. 1 jelly removed from net 1 20 bon
14-May-09	18:05	55	2	AR13	BON051	98	55 43.66 N	164 44.88 W	CAT	CAT	5 jellies removed from net 1 60 bon. 1 jelly removed from net 1 20 bon
14-May-09	20:00	56	1	AR10	NEU054	101	55 29.97 N	164 31.92 W	Neu	QTowF	
14-May-09	20:15	56	2	AR10	BON052	101	55 30.50 N	164 32.05 W	20Bon	QTowF	1 10-in and 1-6 in jelly removed from 60 bon net 1
14-May-09	20:15	56	2	AR10	BON052	101	55 30.50 N	164 32.05 W	60Bon	QTowF	1 10-in and 1-6 in jelly removed from 60 bon net 1

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
14-May-09	20:15	56	2	AR10	BON052	101	55 30.50 N	164 32.05 W	CAT	CAT	1 10-in and 1-6 in jelly removed from 60 bon net 1
14-May-09	22:00	57	1	AR07	NEU055	96	55 16.85 N	164 19.30 W	Neu	QTowF	
14-May-09	22:16	57	2	AR07	BON053	97	55 17.33 N	164 19.52 W	20Bon	QTowF	
14-May-09	22:16	57	2	AR07	BON053	97	55 17.33 N	164 19.52 W	60Bon	QTowF	
14-May-09	22:16	57	2	AR07	BON053	97	55 17.33 N	164 19.52 W	CAT	CAT	
15-May-09	0:03	58	1	AR04	NEU056	36	55 03.62 N	164 07.42 W	Neu	QTowF	
15-May-09	0:18	58	2	AR04	BON054	35	55 04.06 N	164 07.71 W	20Bon	QTowF	used 60 bon net 2 as quantitative tow. Used 20 bon net 2 as quant tow
15-May-09	0:18	58	2	AR04	BON054	35	55 04.06 N	164 07.71 W	60Bon	QTowF	used 60 bon net 2 as quantitative tow
15-May-09	0:18	58	2	AR04	BON054	35	55 04.06 N	164 07.71 W	CAT	CAT	used 60 bon net 2 as quantitative tow. Used 20 bon net 2 as quant tow
15-May-09	1:59	59	1	AU04	NEU057	44	54 56.71 N	164 30.22 W	Neu	QTowF	
15-May-09	2:14	59	2	AU04	BON055	45	54 57.12 N	164 30.08 W	20Bon	QTowF	used 60 bon net 2 and 20 bon net 2 as quantitative tow
15-May-09	2:14	59	2	AU04	BON055	45	54 57.12 N	164 30.08 W	60Bon	QTowF	used 60 bon net 2 and 20 bon net 2 as quantitative tow
15-May-09	2:14	59	2	AU04	BON055	45	54 57.12 N	164 30.08 W	CAT	CAT	used 60 bon net 2 and 20 bon net 2 as quantitative tow
15-May-09	3:21	60	1	AU07	NEU058	101	55 09.77 N	164 42.28 W	Neu	QTowF	Delayed to start stopwatch because of radio communication. Added estimated 20 seconds to tow time.
15-May-09	3:58	60	2	AU07	BON056	102	55 10.30 N	164 42.85 W	20Bon	QTowF	
15-May-09	3:58	60	2	AU07	BON056	102	55 10.30 N	164 42.85 W	60Bon	QTowF	
15-May-09	3:58	60	2	AU07	BON056	102	55 10.30 N	164 42.85 W	CAT	CAT	
15-May-09	5:39	61	1	AU10	BON057	108	55 23.06 N	164 55.15 W	20Bon	QTowF	
15-May-09	5:39	61	1	AU10	BON057	108	55 23.06 N	164 55.15 W	60Bon	QTowF	
15-May-09	5:39	61	1	AU10	BON057	108	55 23.06 N	164 55.15 W	CAT	CAT	
15-May-09	5:59	61	2	AU10	NEU059	108	55 23.71 N	164 55.71 W	Neu	QTowF	
15-May-09	7:23	62	1	AU13	NEU060	110	55 35.95 N	165 07.54 W	Neu	QTowF	
15-May-09	7:42	62	2	AU13	BON058	110	55 36.58 N	165 07.92 W	20Bon	QTowF	USED 60BON AS DISCARD DUE TO AMOUNT OF JELLYS IN NET. SAVED 60BON NET 2
15-May-09	7:42	62	2	AU13	BON058	110	55 36.58 N	165 07.92 W	60Bon	QTowF	USED 60BON AS DISCARD DUE TO AMOUNT OF JELLYS IN NET. SAVED 60BON NET 2
15-May-09	7:42	62	2	AU13	BON058	110	55 36.58 N	165 07.92 W	CAT	CAT	USED 60BON AS DISCARD DUE TO AMOUNT OF JELLYS IN NET. SAVED 60BON NET 2
15-May-09	9:30	63	1	AU16	NEU061	105	55 49.19 N	165 20.18 W	Neu	QTowF	1 JELLYFISH REMOVED FROM NET
15-May-09	9:43	63	2	AU16	BON059	104	55 49.57 N	165 20.32 W	20Bon	QTowF	1 JELLY REMOVED FROM 60BON NET 1.
15-May-09	9:43	63	2	AU16	BON059	104	55 49.57 N	165 20.32 W	60Bon	QTowF	1 JELLY REMOVED FROM 60BON NET 1.
15-May-09	9:43	63	2	AU16	BON059	104	55 49.57 N	165 20.32 W	CAT	CAT	1 JELLY REMOVED FROM 60BON NET 1.

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
15-May-09	11:26	64	1	AR16	NEU062	97	55 56.33 N	164 57.60 W	Neu	QTowF	
15-May-09	11:39	64	2	AR16	BON060	97	55 56.69 N	164 57.48 W	20Bon	QTowF	1 jelly removed from 60BON net 1
15-May-09	11:39	64	2	AR16	BON060	97	55 56.69 N	164 57.48 W	60Bon	QTowF	1 jelly removed from 60BON net 1
15-May-09	11:39	64	2	AR16	BON060	97	55 56.69 N	164 57.48 W	CAT	CAT	1 jelly removed from 60BON net 1
15-May-09	13:21	65	1	AR19	NEU063	95	56 09.37 N	165 10.14 W	Neu	QTowF	
15-May-09	13:37	65	2	AR19	BON061	95	56 09.78 N	165 10.38 W	20Bon	QTowF	
15-May-09	13:37	65	2	AR19	BON061	95	56 09.78 N	165 10.38 W	60Bon	QTowF	
15-May-09	13:37	65	2	AR19	BON061	95	56 09.78 N	165 10.38 W	CAT	CAT	
15-May-09	15:31	66	1	AU19	NEU064	99	56 02.28 N	165 32.63 W	Neu	QTowF	
15-May-09	15:47	66	2	AU19	BON062	98	56 02.62 N	165 33.32 W	20Bon	QTowF	
15-May-09	15:47	66	2	AU19	BON062	98	56 02.62 N	165 33.32 W	60Bon	QTowF	
15-May-09	15:47	66	2	AU19	BON062	98	56 02.62 N	165 33.32 W	60Bon	QTowF	1 jelly removed from 60BON net 1
15-May-09	15:47	66	2	AU19	BON062	98	56 02.62 N	165 33.32 W	CAT	CAT	
15-May-09	17:20	67	1	AX19	NEU065	117	55 55.23 N	165 56.04 W	Neu	QTowF	
15-May-09	17:36	67	2	AX19	BON063	117	55 55.79 N	165 56.52 W	20Bon	QTowF	
15-May-09	17:36	67	2	AX19	BON063	117	55 55.79 N	165 56.52 W	60Bon	QTowF	
15-May-09	17:36	67	2	AX19	BON063	117	55 55.79 N	165 56.52 W	60Bon	QTowF	2 jellyfish removed from 60Bon net #1
15-May-09	17:36	67	2	AX19	BON063	117	55 55.79 N	165 56.52 W	CAT	CAT	
15-May-09	19:21	68	1	AX16	NEU066	117	55 55.79 N	165 56.51 W	Neu	QTowF	
15-May-09	19:38	68	2	AX16	BON064	117	55 42.62 N	165 43.76 W	20Bon	QTowF	Removed 1 small jellyfish from 60BON Net 1. Very thick algae.
15-May-09	19:38	68	2	AX16	BON064	117	55 42.62 N	165 43.76 W	60Bon	QTowF	Removed 1 small jellyfish from 60BON Net 1. Very thick algae.
15-May-09	19:38	68	2	AX16	BON064	117	55 42.62 N	165 43.76 W	CAT	CAT	Removed 1 small jellyfish from 60BON Net 1. Very thick algae.
15-May-09	21:58	69	1	BA13	NEU067	121	55 21.67 N	165 53.59 W	Neu	QTowF	
15-May-09	22:15	69	2	BA13	BON065	121	55 22.14 N	165 54.04 W	20Bon	QTowF	
15-May-09	22:15	69	2	BA13	BON065	121	55 22.14 N	165 54.04 W	60Bon	AMGen, QTowF	
15-May-09	22:15	69	2	BA13	BON065	121	55 22.14 N	165 54.04 W	CAT	CAT	
16-May-09	1:31	70	1	BA07	NEU068	126	54 55.34 N	165 28.57 W	Neu	QTowF	
16-May-09	1:49	70	2	BA07	BON066	125	54 55.77 N	165 29.37 W	20Bon	QTowF	
16-May-09	1:49	70	2	BA07	BON066	125	54 55.77 N	165 29.37 W	60Bon	AMGen, ATFGGen, QTowF	
16-May-09	1:49	70	2	BA07	BON066	125	54 55.77 N	165 29.37 W	CAT	CAT	
16-May-09	5:15	71	1	UPG	BON067	53	54 27.56 N	165 00.98 W	20Bon	QTowF	
16-May-09	5:15	71	1	UPG	BON067	53	54 27.56 N	165 00.98 W	60Bon	AMGen, QTowF	
16-May-09	5:15	71	1	UPG	BON067	53	54 27.56 N	165 00.98 W	CAT	CAT	
16-May-09	6:05	72	1	UPE	BON068	160	54 24.79 N	165 09.13 W	20Bon	QTowF	
16-May-09	6:05	72	1	UPE	BON068	160	54 24.79 N	165 09.13 W	60Bon	AMGen, ATFGGen, QTowF	
16-May-09	6:05	72	1	UPE	BON068	160	54 24.79 N	165 09.13 W	CAT	CAT	
16-May-09	7:12	73	1	UPC	BON069	171	54 22.33 N	165 16.79 W	20Bon	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
16-May-09	7:12	73	1	UPC	BON069	171	54 22.33 N	165 16.79 W	60Bon	QTowF	
16-May-09	7:12	73	1	UPC	BON069	171	54 22.33 N	165 16.79 W	CAT	CAT	
16-May-09	8:13	74	1	UPA	BON070	145	54 19.52 N	165 24.20 W	20Bon	QTowF	
16-May-09	8:13	74	1	UPA	BON070	145	54 19.52 N	165 24.20 W	60Bon	AMGen, ATFGGen, QTowF	
16-May-09	8:13	74	1	UPA	BON070	145	54 19.52 N	165 24.20 W	CAT	CAT	
16-May-09	11:17	75	1	BD07	NEU069	171	54 48.15 N	165 51.50 W	Neu	QTowF	
16-May-09	11:36	75	2	BD07	BON071	169	54 48.42 N	165 52.10 W	20Bon	QTowF	
16-May-09	11:36	75	2	BD07	BON071	169	54 48.42 N	165 52.10 W	60Bon	AMGen, ATFGGen, Porter, QTowF	
16-May-09	11:36	75	2	BD07	BON071	169	54 48.42 N	165 52.10 W	CAT	CAT	
16-May-09	13:11	76	1	BG07	NEU070	286	54 41.59 N	166 13.36 W	Neu	QTowF	
16-May-09	13:34	76	2	BG07	BON072	290	54 41.33 N	166 14.32 W	20Bon	QTowF	
16-May-09	13:34	76	2	BG07	BON072	290	54 41.33 N	166 14.32 W	60Bon	QTowF	
16-May-09	13:34	76	2	BG07	BON072	290	54 41.33 N	166 14.32 W	CAT	CAT	
16-May-09	15:44	77	1	BG10	NEU071	155	54 54.04 N	166 26.44 W	Neu	QTowF	
16-May-09	16:02	77	2	BG10	BON073	153	54 54.62 N	166 26.88 W	20Bon	QTowF	
16-May-09	16:02	77	2	BG10	BON073	153	54 54.62 N	166 26.88 W	60Bon	QTowF	
16-May-09	16:02	77	2	BG10	BON073	153	54 54.62 N	166 26.88 W	CAT	CAT	
16-May-09	18:04	78	1	BD13	NEU072	133	55 14.90 N	166 16.41 W	Neu	QTowF	
16-May-09	18:22	78	2	BD13	BON074	133	55 15.13 N	166 16.31 W	20Bon	QTowF	
16-May-09	18:22	78	2	BD13	BON074	133	55 15.13 N	166 16.31 W	60Bon	QTowF	
16-May-09	18:22	78	2	BD13	BON074	133	55 15.13 N	166 16.31 W	CAT	CAT	
16-May-09	21:21	79	1	BJ13	NEU073	159	55 00.86 N	167 02.44 W	Neu	QTowF	
16-May-09	21:39	79	2	BJ13	BON075	160	55 00.35 N	167 02.03 W	20Bon	QTowF	
16-May-09	21:39	79	2	BJ13	BON075	160	55 00.35 N	167 02.03 W	60Bon	AMGen, QTowF	
16-May-09	21:39	79	2	BJ13	BON075	160	55 00.35 N	167 02.03 W	CAT	CAT	
17-May-09	0:36	80	1	BP13	NEU074	1314	54 46.63 N	167 47.32 W	Neu	QTowF	
17-May-09	0:59	80	2	BP13	BON076	1250	54 46.04 N	167 47.08 W	20Bon	QTowF	
17-May-09	0:59	80	2	BP13	BON076	1250	54 46.04 N	167 47.08 W	60Bon	AMGen, Porter, QTowF	
17-May-09	0:59	80	2	BP13	BON076	1250	54 46.04 N	167 47.08 W	CAT	CAT	
17-May-09	3:39	81	1	BM16	NEU075	272	55 06.88 N	167 37.12 W	Neu	QTowF	
17-May-09	4:02	81	2	BM16	BON077	283	55 06.16 N	167 36.94 W	20Bon	QTowF	
17-May-09	4:02	81	2	BM16	BON077	283	55 06.16 N	167 36.94 W	60Bon	QTowF	
17-May-09	4:02	81	2	BM16	BON077	283	55 06.16 N	167 36.94 W	CAT	CAT	
17-May-09	7:04	82	1	BG16	NEU076	139	55 21.50 N	166 52.34 W	Neu	QTowF	
17-May-09	7:22	82	2	BG16	BON078	139	55 21.25 N	166 51.80 W	20Bon	QTowF	
17-May-09	7:22	82	2	BG16	BON078	139	55 21.25 N	166 51.80 W	60Bon	AMGen, QTowF	
17-May-09	7:22	82	2	BG16	BON078	139	55 21.25 N	166 51.80 W	CAT	CAT	
17-May-09	9:30	83	1	BD19	NEU077	133	55 41.65 N	166 41.84 W	Neu	QTowF	
17-May-09	9:47	83	2	BD19	BON079	133	55 41.12 N	166 41.58 W	20Bon	QTowF	

Cruise Summary For FOCI Cruise 3DY09 (DY0907)

Date (GMT)	Time (GMT)	Station	Hau	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
17-May-09	9:47	83	2	BD19	BON079	133	55 41.12 N	166 41.58 W	60Bon	ATFGen, QTowF	
17-May-09	9:47	83	2	BD19	BON079	133	55 41.12 N	166 41.58 W	CAT	CAT	
17-May-09	12:30	84	1	BJ19	NEU078	140	55 27.45 N	167 26.83 W	Neu	QTowF	
17-May-09	13:08	84	2	BJ19	BON080	140	55 26.74 N	167 26.94 W	20Bon	QTowF	
17-May-09	13:08	84	2	BJ19	BON080	140	55 26.74 N	167 26.94 W	60Bon	AMGen, QTowF	
17-May-09	13:08	84	2	BJ19	BON080	140	55 26.74 N	167 26.94 W	60Bon	AMGen, QTowF	Net lingered at 87m 2 min. due to dropping wire angle
17-May-09	13:08	84	2	BJ19	BON080	140	55 26.74 N	167 26.94 W	CAT	CAT	
17-May-09	14:42	85	1	BM19	NEU079	190	55 20.37 N	167 49.49 W	Neu	QTowF	
17-May-09	15:03	85	2	BM19	BON081	209	55 19.53 N	167 49.95 W	20Bon	QTowF	
17-May-09	15:03	85	2	BM19	BON081	209	55 19.53 N	167 49.95 W	60Bon	AMGen, ATFGen, Porter, QTowF	
17-May-09	15:03	85	2	BM19	BON081	209	55 19.53 N	167 49.95 W	CAT	CAT	
17-May-09	16:49	86	1	BM22	NEU080	140	55 33.10 N	168 01.74 W	Neu	QTowF	
17-May-09	17:06	86	2	BM22	BON082	140	55 32.84 N	168 02.86 W	20Bon	QTowF	
17-May-09	17:06	86	2	BM22	BON082	140	55 32.84 N	168 02.86 W	60Bon	Porter, QTowF	
17-May-09	17:06	86	2	BM22	BON082	140	55 32.84 N	168 02.86 W	CAT	CAT	
18-May-09	10:33	87	1	GD101	BON083	52	54 10.10 N	164 53.99 W	20Bon	QTowF	
18-May-09	10:33	87	1	GD101	BON083	52	54 10.10 N	164 53.99 W	60Bon	QTowF	
18-May-09	10:33	87	1	GD101	BON083	52	54 10.10 N	164 53.99 W	CAT	CAT	Seacat not working properly
18-May-09	11:49	88	1	GF101	BON084	98	54 03.04 N	164 39.09 W	20Bon	QTowF	
18-May-09	11:49	88	1	GF101	BON084	98	54 03.04 N	164 39.09 W	60Bon	AMGen, QTowF	
18-May-09	11:49	88	1	GF101	BON084	98	54 03.04 N	164 39.09 W	CAT	CAT	
18-May-09	13:31	89	1	GH103	BON085	79	54 02.96 N	164 12.63 W	20Bon	QTowF	
18-May-09	13:31	89	1	GH103	BON085	79	54 02.96 N	164 12.63 W	60Bon	AMGen, QTowF	
18-May-09	13:31	89	1	GH103	BON085	79	54 02.96 N	164 12.63 W	CAT	CAT	
18-May-09	14:50	90	1	GF103	BON086	80	54 09.87 N	164 27.47 W	20Bon	QTowF	
18-May-09	14:50	90	1	GF103	BON086	80	54 09.87 N	164 27.47 W	60Bon	QTowF	
18-May-09	14:50	90	1	GF103	BON086	80	54 09.87 N	164 27.47 W	CAT	CAT	
18-May-09	16:04	91	1	GD103	BON087	100	54 16.70 N	164 42.34 W	20Bon	QTowF	
18-May-09	16:04	91	1	GD103	BON087	100	54 16.70 N	164 42.34 W	60Bon	AMGen, QTowF	
18-May-09	16:04	91	1	GD103	BON087	100	54 16.70 N	164 42.34 W	CAT	CAT	

Figure 1. Station Map

