

## 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:

Janet Duffy-Anderson  
NOAA/AFSC/FOCI  
206-526-6465  
[Janet.Duffy-Anderson@noaa.gov](mailto:Janet.Duffy-Anderson@noaa.gov)

### Other Participating Scientists:

| Name           | Gender | Affiliation        | E-mail Address                                                       | Citizenship                          |
|----------------|--------|--------------------|----------------------------------------------------------------------|--------------------------------------|
| Daniel Cooper  | Male   | AFSC               | <a href="mailto:Dan.Cooper@noaa.gov">Dan.Cooper@noaa.gov</a>         | <a href="#">USA</a>                  |
| Matthew Wilson | Male   | AFSC               | <a href="mailto:Matt.Wilson@noaa.gov">Matt.Wilson@noaa.gov</a>       | <a href="#">USA</a>                  |
| Thomas Hurst   | Male   | AFSC               | <a href="mailto:Thomas.Hurst@noaa.gov">Thomas.Hurst@noaa.gov</a>     | <a href="#">USA</a>                  |
| Steve Porter   | Male   | AFSC               | <a href="mailto:Steve.Porter@noaa.gov">Steve.Porter@noaa.gov</a>     | <a href="#">USA</a>                  |
| Knut Vollset * | Male   | Univ. of<br>Bergen | <a href="mailto:Knut.Vollset@bio.uib.no">Knut.Vollset@bio.uib.no</a> | <a href="#">Norway, FNV approved</a> |
| Marty Reedy    | Male   | USFWS              | <a href="mailto:mtreedy@verizon.net">mtreedy@verizon.net</a>         | <a href="#">USA</a>                  |
| Ashlee Maust   | Female | UW                 | <a href="mailto:Ashlee.Maust@noaa.gov">Ashlee.Maust@noaa.gov</a>     | <a href="#">USA</a>                  |

### 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.

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 a 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.

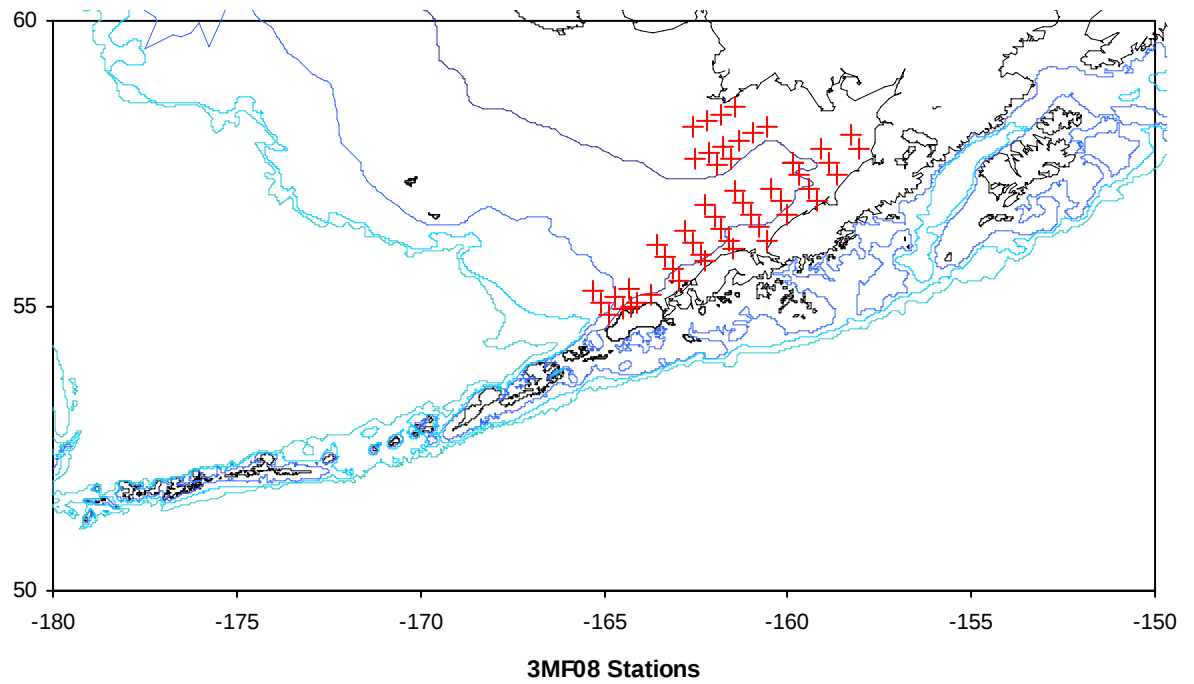
### Time lost:

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<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear  | SamplesCollected  | HaulComments                                                                     |
|---------------|---------------|---------|-----|--------------|----------------------|--------------|------------|-------------|-------|-------------------|----------------------------------------------------------------------------------|
| 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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                                      |
| wire          |               |         |     |              |                      |              |            |             |       |                   |                                                                                  |
| 12-Sep-08     | 1:46          | 4       | 1   | H31          | BON004               | 23           | 58 28.80 N | 161 24.60 W | CAT   | CAT               | out se equal to gear depth                                                       |
| 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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                                                       |

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

| Date<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear  | SamplesCollected  | 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, GrabSed | first grab clamped on rock, sediment lost.<br>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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, GrabSed |                                                                                                            |

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  | 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.<br>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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, GrabSed |                                                                                         |
| 14-Sep-08  | 14:18      | 22      | 1   | K16       | BON023            | 65        | 57 30.51 N | 159 52.67 W | 20Bon | QTowF             |                                                                                         |

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

| Date<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(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  | GrabInfa, 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  | GrabInfa, 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 colelcted. Redone as GRAB025. |
| 14-Sep-08     | 23:40         | 24      | 4   | K10          | GRAB025              | 59           | 56 48.87 N | 160 13.33 W | Grab  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | SamplesCollected  | HaulComments                                                                                                           |
|------------|------------|---------|-----|-----------|-------------------|-----------|------------|-------------|-------|-------------------|------------------------------------------------------------------------------------------------------------------------|
| 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.<br>grab failed, redo as 31-4                                                       |
| 15-Sep-08  | 19:47      | 31      | 3   | W16       | GRAB033           | 70        | 56 47.07 N | 162 15.12 W | Grab  | Discard           |                                                                                                                        |
| 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             | Temp logger did not record<br>Grab failed.                                                                             |
| 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               | tow partially outside of 1nm radius around grid point.                                                                 |
| 15-Sep-08  | 22:28      | 32      | 2   | W13       | BEAM033           | 69        | 56 53.45 N | 162 01.15 W | Beam  | Furuno            |                                                                                                                        |
| 15-Sep-08  | 23:05      | 32      | 3   | W13       | GRAB035           | 69        | 56 33.18 N | 162 01.45 W | Grab  | Discard           |                                                                                                                        |
| 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             | grab failed.                                                                                                           |
| 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        |                                                                                                                        |
| 16-Sep-08  | 1:37       | 33      | 3   | W10       | GRAB037           | 81        | 56 20.07 N | 161 49.95 W | Grab  | GrabInfa, GrabSed | grab failed.                                                                                                           |
| 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        | grab failed.                                                                                                           |
| 16-Sep-08  | 4:16       | 34      | 3   | W7        | GRAB038           | 52        | 56 04.47 N | 161 36.32 W | Grab  | Discard           |                                                                                                                        |
| 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      | grab failed<br>grab failed                                                                                             |
| 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           |                                                                                                                        |
| 16-Sep-08  | 6:43       | 35      | 4   | W4        | GRAB041           | 31        | 56 00.61 N | 161 29.11 W | Grab  | Discard           | gravel in catch<br>failed grab. Redo follows. Rocky and gravel bottom.<br>No grabinfauna because substrate was gravel. |
| 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               | gravel in catch<br>failed grab. Redo follows. Rocky and gravel bottom.<br>No grabinfauna because substrate was gravel. |
| 16-Sep-08  | 10:38      | 36      | 2   | AC4       | BEAM037           | 38        | 55 46.37 N | 162 15.84 W | Beam  | BT, Furuno        |                                                                                                                        |
| 16-Sep-08  | 11:23      | 36      | 3   | AC4       | GRAB043           | 33        | 55 46.15 N | 162 16.10 W | Grab  | Discard           |                                                                                                                        |
| 16-Sep-08  | 11:35      | 36      | 4   | AC4       | GRAB044           | 32        | 55 45.82 N | 162 16.25 W | Grab  | GrabSed           |                                                                                                                        |
| 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<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(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<br>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               |                                                                                                           |
| 16-Sep-08     | 13:07         | 37      | 2   | AC7          | BEAM038              | 56           | 55 52.59 N | 162 22.11 W | Beam  | BT, Furuno        | BT not reset after Beam 039. Orig. file has 2<br>tows. Beam 040 BT record only in 39-2<br>-corrected.csv. |
| 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        |                                                                                                           |
| 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        | grab failed                                                                                               |
| 16-Sep-08     | 23:10         | 40      | 3   | AI13         | GRAB048              | 90           | 56 05.13 N | 163 35.59 W | Grab  | Discard           |                                                                                                           |
| 16-Sep-08     | 23:18         | 40      | 4   | AI13         | GRAB049              | 90           | 56 05.12 N | 163 35.63 W | Grab  | GrabInfa, GrabSed | Grab failed.                                                                                              |
| 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           |                                                                                                           |
| 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             |                                                                                                           |

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

| Date<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa          |                                                              |
| 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  | GrabInfa, 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  | GrabInfa, 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               |                                                              |

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

| Date<br>(GMT) | Time<br>(GMT) | Station | Hau | FOCI<br>Grid | Alternate<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear  | SamplesCollected  | 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  | GrabInfa, 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  | GrabInfa, 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  | GrabInfa, GrabSed |                                                                      |