

NODD accession: 0071849

INTRODUCTION

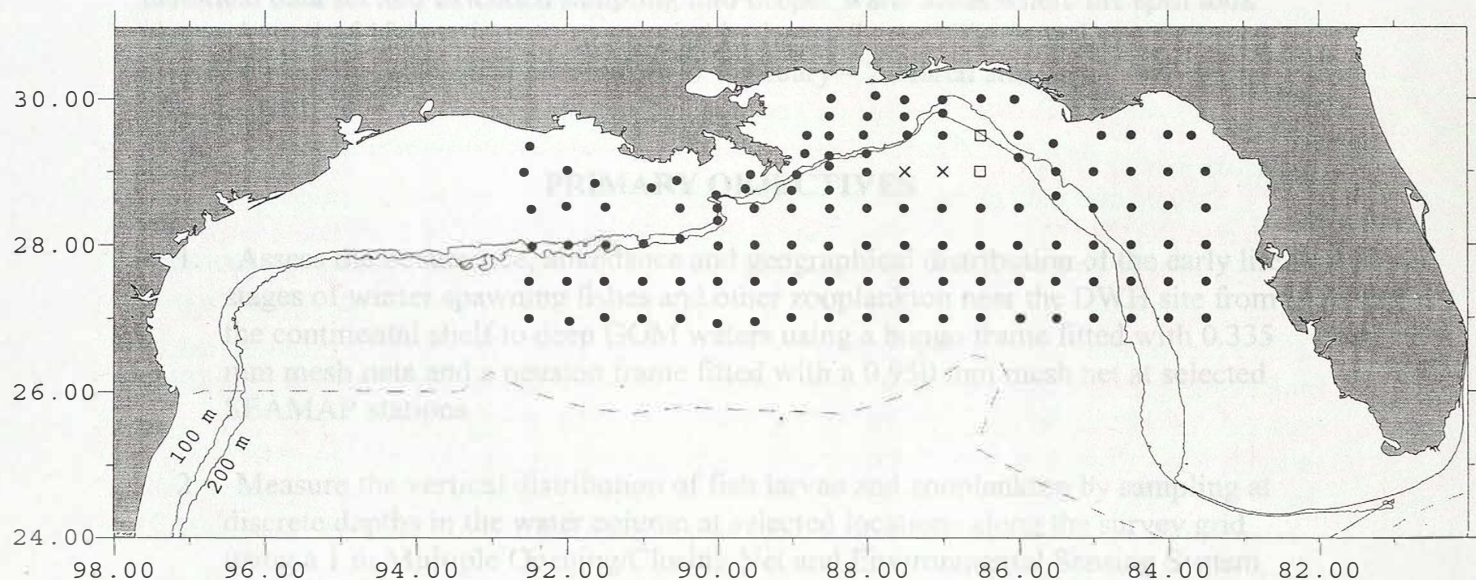
CRUISE RESULTS

Natural Resource Damage Assessment (NRDA) 2011

Winter Plankton Survey

NOAA Ship *Oregon II* Cruise R2-11-01 (293)

17 February – 22 March 2011



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
Mississippi Laboratories
Pascagoula Facility
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INTRODUCTION

The NOAA Ship *Oregon II* departed Pascagoula, MS on 17 February 2011 to initiate the Natural Resource Damage Assessment (NRDA) Winter Plankton Survey in the northern Gulf of Mexico (GOM). This survey is historically a Southeast Area Monitoring and Assessment Program (SEAMAP), but since it was canceled due to reduction in DAS for SEFSC, NRDA funded this plankton project for their assessment. Plankton samples were collected from a systematic grid of stations to evaluate the distribution and densities of ichthyoplankton, other zooplankton, and phytoplankton in the north central GOM waters potentially affected by the Deepwater Horizon Oil Spill (DWH). The winter SEAMAP surveys have sporadically sampled plankton on and off the continental shelf from Texas to Florida over the past 25 years. The NRDA sampling plan took advantage of this historical data set and extended sampling into deeper water areas where the spill took place. A total of 124 stations were sampled in the northern GOM from Louisiana over to Florida during the 27 days at sea (Leg 1, 17 February – 2 March and Leg 2, 10 – 22 March 2011).

PRIMARY OBJECTIVES

1. Assess the occurrence, abundance and geographical distribution of the early life stages of winter spawning fishes and other zooplankton near the DWH site from the continental shelf to deep GOM waters using a bongo frame fitted with 0.335 mm mesh nets and a neuston frame fitted with a 0.950 mm mesh net at selected SEAMAP stations.
2. Measure the vertical distribution of fish larvae and zooplankton by sampling at discrete depths in the water column at selected locations along the survey grid using a 1 m Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS) outfitted with 0.505 mm mesh nets.
3. Describe the pelagic habitat of fish larvae and zooplankton through measurements of various physical and biological parameters:
 - a. Record profiles through the water column of temperature, salinity, fluorescence, dissolved oxygen, and turbidity using a conductivity-temperature-depth sensor (CTD) at SEAMAP stations.
4. Collect detailed observations (i.e., identification, number, volume, bell diameter) on net caught jellyfish and ctenophores.
5. Collect volumetric measurements of net caught *Sargassum* spp.

within standard 10 min strip transects of width 300 m abeam of the ship. In addition, point counts were used for seabird observations when the ship was on station at a more-or-less fixed location while other chemical, physical, and biological properties were being sampled in the study areas.

Collection Summary

Ichthyoplankton samples were collected at 124 stations by the NOAA Ship *Oregon II* during this survey (Figures 1 - 2). A total of 69 stations were sampled during Leg 1 resulting in 25 MOCNESS, 69 right bongo, 69 left bongo and 67 neuston samples (Tables 1 - 2). A total of 59 stations were sampled on Leg 2 resulting in 59 right bongo, 59 left bongo, 59 neuston, and 23 MOCNESS samples (Tables 1 - 2). Two neuston tows were cancelled on the first leg due to high winds and rough seas. Four MOCNESS tows were canceled on the first leg, but bongo and neuston tows were still completed at those stations. On the second leg, there was time to pick up the 4 missed MOCNESS tows along with another set of bongo and neuston tows at each station. Two of those stations are where the neuston tows were cancelled on the first leg, so the neuston tows for those stations were completed on the second leg along with another bongo tow.

Jellyfish and ctenophores collected in bongo, neuston, and MOCNESS nets were thoroughly rinsed, removed from the plankton samples, and noted in the database. These organisms were identified, counted, and measured using graduated containers. Data were also recorded on data sheets for each station.

Sample Processing/Archival Storage:

Plankton samples were assigned unique NRDA numbers at sea on the NOAA Ship *Oregon II* (Table 2). All samples were turned over to NRDA representatives at the dock and sent to Louisiana State University for processing and archival. Chain of Custody (COC) procedures were followed for all samples.

Environmental Data

Environmental data were collected with a Seabird SBE 9/11 Plus CTD at a total of 128 stations from the NOAA Ship *Oregon II* during the survey. An error during processing of the CTD cast from station 44 corrupted the data and could not be processed. At all stations sampled, a CTD cast to near bottom or a maximum depth of 200 m was made. The Seabird SBE 9/11 Plus CTD was used with a dual suite of the following sensors: SBE 03 temperature sensor, SBE digiquartz pressure sensor, and SBE 43 dissolved oxygen sensor. Only a single Wetlabs Wetstar fluorometer and Wetlabs C-Star transmissometer were used because of space limitations on the CTD. Additional environmental and station information was accessed from shipboard sensors via the Scientific Computer System (SCS), which continuously displayed and recorded the ship's position, heading, speed, wind direction, wind speed, barometric pressure, sea surface temperature, air temperature and water depth. Each sampling event was conducted through the SCS and data (environmental and biological) were ingested into a Microsoft Access database.

Throughout the cruise, an SBE TSG equipped with a Turner Designs 10-AU fluorometer continuously measured surface salinity, temperature, and fluorescence. The pump was not working the first day (17 Feb 2011), but was fixed the next day and ran during the remainder of the survey. These data were recorded on a dedicated computer and backed up daily to the ship's server.

CRUISE PARTICIPANTS

Leg 1 (17 February – 2 March 2011)

Name / Title / Organization

Glenn Zapfe / Field Party Chief / NMFS, Pascagoula, MS
Alonzo Hamilton / Fishery Biologist / NMFS, Pascagoula, MS
Andy Millet / Fishery Biologist / IAP¹, Pascagoula, MS
Jennifer Ford / Fishery Biologist / IAP¹, Pascagoula, MS
David Lee / Bird Observer / Defenders of Wildlife
Lauren Jackson / Fishery Biologist / IAP¹, Pascagoula, MS
Taniya Wallace / Fishery Biologist / IAP¹, Pascagoula, MS
Paul Wagner / Data Manager / NRDA
John Nugent / Data Manager / NRDA
Katie Cowen / Research Scientist / ENTRIX

¹ – IAP World Services

Leg 2 (10 - 22 March 2011)

Name / Title / Organization

Glenn Zapfe / Field Party Chief / NMFS, Pascagoula, MS
Alonzo Hamilton / Fishery Biologist / NMFS, Pascagoula, MS
Lauren Jackson / Fishery Biologist / IAP¹, Pascagoula, MS
Michael Felts / Fishery Biologist / IAP¹, Pascagoula, MS
Jennifer Ford / Fishery Biologist / IAP¹, Pascagoula, MS
Lindsey Godlove / Research Scientist / ENTRIX
Paul Wagner / Data Manager / NRDA
John Nugent / Data Manager / NRDA
Lisa Hug / Bird Observer / Defenders of Wildlife
Renee Collini / Graduate Student / Dauphin Island Sea Lab, AL

¹ – IAP World Services

Submitted by:

Approved by:

Glenn A. Zapfe

Glenn A. Zapfe
Field Party Chief

4/14/11

Date

Dr. Lisa Desfosse

Dr. Lisa Desfosse, Director
Mississippi Laboratories

5/2/11

Date

Theo R. Brained

Dr. Bonnie Ponwith, Center Director
Southeast Fisheries Science Center

05/06/2011

Date

Table 1. Summary of valid ichthyoplankton collections taken during the 2011 Winter NRDA Plankton survey.

Leg	Right Bongo (0.335 mm)	Left Bongo (0.335 mm)	Neuston (0.950 mm)	MOCNESS (0.505 mm)	CTD Casts
I	69	69	67	25	69
II	59	59	59	23	59
Total	128	128	126	48	128

Table 2. Summary of plankton sampling effort during the Winter NRDA Plankton Survey conducted from the NOAA Ship *Oregon II*, cruise R2-11-01 (293) 17 February – 22 March 2011. P-Sta # = Pascagoula station number; S-Sta # = SEAMAP station number or NRDA station identifier; Smp # = NRDA sample number; RB = Right Bongo; LB = Left Bongo; NN = Neuston; MOC# = MOCNESS Net#; Preservative = Initial preservative; FORM = Formalin; ETOH = Ethyl alcohol; Lat = Latitude of sample in decimal degrees; Lon = Longitude of sample in decimal degrees.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
001	B178	B0217OR001	RB	10% FORM	-88.471	30.002
001	B178	B0217OR002	LB	10% FORM	-88.471	30.002
001	B178	B0217OR003	NN	95% ETOH	-88.471	30.002
002	B179	B0218OR004	RB	95% ETOH	-88.498	29.491
002	B179	B0218OR005	LB	10% FORM	-88.498	29.491
002	B179	B0218OR006	NN	95% ETOH	-88.498	29.491
003	B323	B0218OR007	RB	95% ETOH	-88.498	29.221
003	B323	B0218OR008	LB	10% FORM	-88.498	29.221
003	B323	B0218OR009	NN	95% ETOH	-88.498	29.221
004	B180	B0218OR010	RB	10% FORM	-88.498	29.077
004	B180	B0218OR011	LB	95% ETOH	-88.498	29.077
004	B180	B0218OR012	NN	95% ETOH	-88.498	29.077
005	B251	B0218OR013	RB	95% ETOH	-88.492	28.496
005	B251	B0218OR014	LB	10% FORM	-88.492	28.496
005	B251	B0218OR015	NN	95% ETOH	-88.492	28.496
005	B251	B0218OR016	MOC 0	70% ETOH	-88.492	28.496
005	B251	B0218OR017	MOC 1	10% FORM	-88.492	28.496
005	B251	B0218OR018	MOC 2	10% FORM	-88.492	28.496
005	B251	B0218OR019	MOC 3	10% FORM	-88.492	28.496
005	B251	B0218OR020	MOC 4	10% FORM	-88.492	28.496
005	B251	B0218OR021	MOC 5	10% FORM	-88.492	28.496
005	B251	B0218OR022	MOC 6	10% FORM	-88.492	28.496
006	B250	B0218OR023	RB	95% ETOH	-88.506	27.983
006	B250	B0218OR024	LB	10% FORM	-88.506	27.983
006	B250	B0218OR025	NN	95% ETOH	-88.506	27.983
006	B250	B0218OR026	MOC 0	70% ETOH	-88.506	27.983

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
006	B250	B0218OR027	MOC 1	10% FORM	-88.506	27.983
006	B250	B0218OR028	MOC 2	10% FORM	-88.506	27.983
006	B250	B0218OR029	MOC 3	10% FORM	-88.506	27.983
006	B250	B0218OR030	MOC 4	10% FORM	-88.506	27.983
006	B250	B0218OR031	MOC 5	10% FORM	-88.506	27.983
006	B250	B0218OR032	MOC 6	10% FORM	-88.506	27.983
007	B249	B0218OR033	RB	95% ETOH	-88.501	27.499
007	B249	B0218OR034	LB	10% FORM	-88.501	27.499
007	B249	B0219OR035	NN	95% ETOH	-88.501	27.499
007	B249	B0219OR036	MOC 0	70% ETOH	-88.501	27.499
007	B249	B0219OR037	MOC 1	10% FORM	-88.501	27.499
007	B249	B0219OR038	MOC 2	10% FORM	-88.501	27.499
007	B249	B0219OR039	MOC 3	10% FORM	-88.501	27.499
007	B249	B0219OR040	MOC 4	10% FORM	-88.501	27.499
007	B249	B0219OR041	MOC 5	10% FORM	-88.501	27.499
007	B249	B0219OR042	MOC 6	10% FORM	-88.501	27.499
008	B288	B0219OR043	RB	95% ETOH	-88.499	27.003
008	B288	B0219OR044	LB	10% FORM	-88.499	27.003
008	B288	B0219OR045	NN	95% ETOH	-88.499	27.003
008	B288	B0219OR046	MOC 0	70% ETOH	-88.499	27.003
008	B288	B0219OR047	MOC 1	10% FORM	-88.499	27.003
008	B288	B0219OR048	MOC 2	10% FORM	-88.499	27.003
008	B288	B0219OR049	MOC 3	10% FORM	-88.499	27.003
008	B288	B0219OR050	MOC 4	10% FORM	-88.499	27.003
008	B288	B0219OR051	MOC 5	10% FORM	-88.499	27.003
008	B288	B0219OR052	MOC 6	10% FORM	-88.499	27.003
009	B012	B0219OR053	RB	95% ETOH	-88.998	27.002
009	B012	B0219OR054	LB	10% FORM	-88.998	27.002
009	B012	B0219OR055	NN	95% ETOH	-88.998	27.002
009	B012	B0219OR056	MOC 0	70% ETOH	-88.998	27.002
009	B012	B0219OR057	MOC 1	10% FORM	-88.998	27.002
009	B012	B0219OR058	MOC 2	10% FORM	-88.998	27.002
009	B012	B0219OR059	MOC 3	10% FORM	-88.998	27.002
009	B012	B0219OR060	MOC 4	10% FORM	-88.998	27.002

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
009	B012	B0219OR061	MOC 5	10% FORM	-88.998	27.002
009	B012	B0219OR062	MOC 6	10% FORM	-88.998	27.002
010	B289	B0219OR063	RB	95% ETOH	-89.490	26.954
010	B289	B0219OR064	LB	10% FORM	-89.490	26.954
010	B289	B0219OR065	NN	95% ETOH	-89.490	26.954
010	B289	B0219OR066	MOC 0	70% ETOH	-89.490	26.954
010	B289	B0219OR067	MOC 1	10% FORM	-89.490	26.954
010	B289	B0219OR068	MOC 2	10% FORM	-89.490	26.954
010	B289	B0219OR069	MOC 3	10% FORM	-89.490	26.954
010	B289	B0219OR070	MOC 4	10% FORM	-89.490	26.954
010	B289	B0219OR071	MOC 5	10% FORM	-89.490	26.954
010	B289	B0219OR072	MOC 6	10% FORM	-89.490	26.954
011	B015	B0219OR073	RB	95% ETOH	-90.000	26.933
011	B015	B0219OR074	LB	10% FORM	-90.000	26.933
011	B015	B0220OR075	NN	95% ETOH	-90.000	26.933
011	B015	B0220OR076	MOC 0	70% ETOH	-90.000	26.933
011	B015	B0220OR077	MOC 1	10% FORM	-90.000	26.933
011	B015	B0220OR078	MOC 2	10% FORM	-90.000	26.933
011	B015	B0220OR079	MOC 3	10% FORM	-90.000	26.933
011	B015	B0220OR080	MOC 4	10% FORM	-90.000	26.933
011	B015	B0220OR081	MOC 5	10% FORM	-90.000	26.933
011	B015	B0220OR082	MOC 6	10% FORM	-90.000	26.933
012	B296	B0220OR083	RB	95% ETOH	-90.495	26.998
012	B296	B0220OR084	LB	10% FORM	-90.495	26.998
012	B296	B0220OR085	NN	95% ETOH	-90.495	26.998
012	B296	B0220OR086	MOC 0	70% ETOH	-90.495	26.998
012	B296	B0220OR087	MOC 1	10% FORM	-90.495	26.998
012	B296	B0220OR088	MOC 2	10% FORM	-90.495	26.998
012	B296	B0220OR089	MOC 3	10% FORM	-90.495	26.998
012	B296	B0220OR090	MOC 4	10% FORM	-90.495	26.998
012	B296	B0220OR091	MOC 5	10% FORM	-90.495	26.998
012	B296	B0220OR092	MOC 6	10% FORM	-90.495	26.998
013	B018	B0220OR093	RB	95% ETOH	-91.002	27.000
013	B018	B0220OR094	LB	10% FORM	-91.002	27.000

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
013	B018	B0220OR095	NN	95% ETOH	-91.002	27.000
013	B018	B0220OR096	MOC 0	70% ETOH	-91.002	27.000
013	B018	B0220OR097	MOC 1	10% FORM	-91.002	27.000
013	B018	B0220OR098	MOC 2	10% FORM	-91.002	27.000
013	B018	B0220OR099	MOC 3	10% FORM	-91.002	27.000
013	B018	B0220OR100	MOC 4	10% FORM	-91.002	27.000
013	B018	B0220OR101	MOC 5	10% FORM	-91.002	27.000
013	B018	B0220OR102	MOC 6	10% FORM	-91.002	27.000
014	B297	B0220OR103	RB	95% ETOH	-91.501	27.001
014	B297	B0220OR104	LB	10% FORM	-91.501	27.001
014	B297	B0220OR105	NN	95% ETOH	-91.501	27.001
014	B297	B0220OR106	MOC 0	70% ETOH	-91.501	27.001
014	B297	B0220OR107	MOC 1	10% FORM	-91.501	27.001
014	B297	B0220OR108	MOC 2	10% FORM	-91.501	27.001
014	B297	B0220OR109	MOC 3	10% FORM	-91.501	27.001
014	B297	B0220OR110	MOC 4	10% FORM	-91.501	27.001
014	B297	B0220OR111	MOC 5	10% FORM	-91.501	27.001
014	B297	B0220OR112	MOC 6	10% FORM	-91.501	27.001
015	B021	B0220OR113	RB	95% ETOH	-91.967	26.960
015	B021	B0220OR114	LB	10% FORM	-91.967	26.960
015	B021	B0220OR115	NN	95% ETOH	-91.967	26.960
015	B021	B0220OR116	MOC 0	70% ETOH	-91.967	26.960
015	B021	B0220OR117	MOC 1	10% FORM	-91.967	26.960
015	B021	B0220OR118	MOC 2	10% FORM	-91.967	26.960
015	B021	B0220OR119	MOC 3	10% FORM	-91.967	26.960
015	B021	B0220OR120	MOC 4	10% FORM	-91.967	26.960
015	B021	B0220OR121	MOC 5	10% FORM	-91.967	26.960
015	B021	B0220OR122	MOC 6	10% FORM	-91.967	26.960
016	B304	B0221OR123	RB	95% ETOH	-92.501	26.998
016	B304	B0221OR124	LB	10% FORM	-92.501	26.998
016	B304	B0221OR125	NN	95% ETOH	-92.501	26.998
016	B304	B0221OR126	MOC 0	70% ETOH	-92.501	26.998
016	B304	B0221OR127	MOC 1	10% FORM	-92.501	26.998
016	B304	B0221OR128	MOC 2	10% FORM	-92.501	26.998

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Tar	Lon
016	B304	B0221OR129	MOC 3	10% FORM	-92.501	26.998
016	B304	B0221OR130	MOC 4	10% FORM	-92.501	26.998
016	B304	B0221OR131	MOC 5	10% FORM	-92.501	26.998
016	B304	B0221OR132	MOC 6	10% FORM	-92.501	26.998
017	B245	B0221OR133	RB	95% ETOH	-92.500	27.497
017	B245	B0221OR134	LB	10% FORM	-92.500	27.497
017	B245	B0221OR135	NN	95% ETOH	-92.500	27.497
017	B245	B0221OR136	MOC 0	70% ETOH	-92.500	27.497
017	B245	B0221OR137	MOC 1	10% FORM	-92.500	27.497
017	B245	B0221OR138	MOC 2	10% FORM	-92.500	27.497
017	B245	B0221OR139	MOC 3	10% FORM	-92.500	27.497
017	B245	B0221OR140	MOC 4	10% FORM	-92.500	27.497
017	B245	B0221OR141	MOC 5	10% FORM	-92.500	27.497
017	B245	B0221OR142	MOC 6	10% FORM	-92.500	27.497
018	B057	B0221OR143	RB	95% ETOH	-92.000	27.496
018	B057	B0221OR144	LB	10% FORM	-92.000	27.496
018	B057	B0221OR145	NN	95% ETOH	-92.000	27.496
018	B057	B0221OR146	MOC 0	70% ETOH	-92.000	27.496
018	B057	B0221OR147	MOC 1	10% FORM	-92.000	27.496
018	B057	B0221OR148	MOC 2	10% FORM	-92.000	27.496
018	B057	B0221OR149	MOC 3	10% FORM	-92.000	27.496
018	B057	B0221OR150	MOC 4	10% FORM	-92.000	27.496
018	B057	B0221OR151	MOC 5	10% FORM	-92.000	27.496
018	B057	B0221OR152	MOC 6	10% FORM	-92.000	27.496
019	B246	B0221OR153	RB	95% ETOH	-91.505	27.495
019	B246	B0221OR154	LB	10% FORM	-91.505	27.495
019	B246	B0221OR155	NN	95% ETOH	-91.505	27.495
019	B246	B0221OR156	MOC 0	70% ETOH	-91.505	27.495
019	B246	B0221OR157	MOC 1	10% FORM	-91.505	27.495
019	B246	B0221OR158	MOC 2	10% FORM	-91.505	27.495
019	B246	B0221OR159	MOC 3	10% FORM	-91.505	27.495
019	B246	B0221OR160	MOC 4	10% FORM	-91.505	27.495
019	B246	B0221OR161	MOC 5	10% FORM	-91.505	27.495
019	B246	B0221OR162	MOC 6	10% FORM	-91.505	27.495

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
020	B060	B0221OR163	RB	95% ETOH	-90.996	27.495
020	B060	B0221OR164	LB	10% FORM	-90.996	27.495
020	B060	B0221OR165	NN	95% ETOH	-90.996	27.495
020	B060	B0221OR166	MOC 0	70% ETOH	-90.996	27.495
020	B060	B0221OR167	MOC 1	10% FORM	-90.996	27.495
020	B060	B0221OR168	MOC 2	10% FORM	-90.996	27.495
020	B060	B0221OR169	MOC 3	10% FORM	-90.996	27.495
020	B060	B0221OR170	MOC 4	10% FORM	-90.996	27.495
020	B060	B0221OR171	MOC 5	10% FORM	-90.996	27.495
020	B060	B0221OR172	MOC 6	10% FORM	-90.996	27.495
021	B247	B0222OR173	RB	95% ETOH	-90.499	27.495
021	B247	B0222OR174	LB	10% FORM	-90.499	27.495
021	B247	B0222OR175	NN	95% ETOH	-90.499	27.495
021	B247	B0222OR176	MOC 0	70% ETOH	-90.499	27.495
021	B247	B0222OR177	MOC 1	10% FORM	-90.499	27.495
021	B247	B0222OR178	MOC 2	10% FORM	-90.499	27.495
021	B247	B0222OR179	MOC 3	10% FORM	-90.499	27.495
021	B247	B0222OR180	MOC 4	10% FORM	-90.499	27.495
021	B247	B0222OR181	MOC 5	10% FORM	-90.499	27.495
021	B247	B0222OR182	MOC 6	10% FORM	-90.499	27.495
022	B061	B0222OR183	RB	95% ETOH	-89.999	27.494
022	B061	B0222OR184	LB	10% FORM	-89.999	27.494
022	B061	B0222OR185	NN	95% ETOH	-89.999	27.494
022	B061	B0222OR186	MOC 0	70% ETOH	-89.999	27.494
022	B061	B0222OR187	MOC 1	10% FORM	-89.999	27.494
022	B061	B0222OR188	MOC 2	10% FORM	-89.999	27.494
022	B061	B0222OR189	MOC 3	10% FORM	-89.999	27.494
022	B061	B0222OR190	MOC 4	10% FORM	-89.999	27.494
022	B061	B0222OR191	MOC 5	10% FORM	-89.999	27.494
022	B061	B0222OR192	MOC 6	10% FORM	-89.999	27.494
023	B248	B0222OR193	RB	95% ETOH	-89.496	27.497
023	B248	B0222OR194	LB	10% FORM	-89.496	27.497
023	B248	B0222OR195	NN	95% ETOH	-89.496	27.497
023	B248	B0222OR196	MOC 0 and MOC 1	70% ETOH	-89.496	27.497

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
023	B248	B0222OR197	MOC 2	10% FORM	-89.496	27.497
023	B248	B0222OR198	MOC 3	10% FORM	-89.496	27.497
023	B248	B0222OR199	MOC 4	10% FORM	-89.496	27.497
023	B248	B0222OR200	MOC 5	10% FORM	-89.496	27.497
024	B064	B0222OR201	RB	95% ETOH	-88.997	27.491
024	B064	B0222OR202	LB	10% FORM	-88.997	27.491
024	B064	B0222OR203	NN	95% ETOH	-88.997	27.491
024	B064	B0222OR204	MOC 0	70% ETOH	-88.997	27.491
024	B064	B0222OR205	MOC 1	10% FORM	-88.997	27.491
024	B064	B0222OR206	MOC 2	10% FORM	-88.997	27.491
024	B064	B0222OR207	MOC 3	10% FORM	-88.997	27.491
024	B064	B0222OR208	MOC 4	10% FORM	-88.997	27.491
024	B064	B0222OR209	MOC 5	10% FORM	-88.997	27.491
024	B064	B0222OR210	MOC 6	10% FORM	-88.997	27.491
025	B083	B0222OR211	RB	95% ETOH	-88.998	27.997
025	B083	B0222OR212	LB	10% FORM	-88.998	27.997
025	B083	B0222OR213	NN	95% ETOH	-88.998	27.997
025	B083	B0222OR214	MOC 0	70% ETOH	-88.998	27.997
025	B083	B0222OR215	MOC 1	10% FORM	-88.998	27.997
025	B083	B0222OR216	MOC 2	10% FORM	-88.998	27.997
025	B083	B0222OR217	MOC 3	10% FORM	-88.998	27.997
025	B083	B0222OR218	MOC 4	10% FORM	-88.998	27.997
025	B083	B0222OR219	MOC 5	10% FORM	-88.998	27.997
025	B083	B0222OR220	MOC 6	10% FORM	-88.998	27.997
026	B185	B0223OR221	RB	95% ETOH	-89.496	27.996
026	B185	B0223OR222	LB	10% FORM	-89.496	27.996
026	B185	B0223OR223	NN	95% ETOH	-89.496	27.996
026	B185	B0223OR224	MOC 0	70% ETOH	-89.496	27.996
026	B185	B0223OR225	MOC 1	10% FORM	-89.496	27.996
026	B185	B0223OR226	MOC 2	10% FORM	-89.496	27.996
026	B185	B0223OR227	MOC 3	10% FORM	-89.496	27.996
026	B185	B0223OR228	MOC 4	10% FORM	-89.496	27.996
026	B185	B0223OR229	MOC 5	10% FORM	-89.496	27.996
026	B185	B0223OR230	MOC 6	10% FORM	-89.496	27.996

Table 2 continued.

P-Sta #	S-Sta #	Smp #	Gear	Preservative	Lat	Lon
027	B016	B0223OR231	RB	95% ETOH	-89.988	27.985
027	B016	B0223OR232	LB	10% FORM	-89.988	27.985
027	B016	B0223OR233	NN	95% ETOH	-89.988	27.985
027	B016	B0223OR234	MOC 0	70% ETOH	-89.988	27.985
027	B016	B0223OR235	MOC 1	10% FORM	-89.988	27.985
027	B016	B0223OR236	MOC 2	10% FORM	-89.988	27.985
027	B016	B0223OR237	MOC 3	10% FORM	-89.988	27.985
027	B016	B0223OR238	MOC 4	10% FORM	-89.988	27.985
027	B016	B0223OR239	MOC 5	10% FORM	-89.988	27.985
027	B016	B0223OR240	MOC 6	10% FORM	-89.988	27.985
028	B190	B0223OR241	RB	95% ETOH	-90.499	28.080
028	B190	B0223OR242	LB	10% FORM	-90.499	28.080
028	B190	B0223OR243	NN	95% ETOH	-90.499	28.080
029	B017	B0223OR244	RB	95% ETOH	-90.990	28.013
029	B017	B0223OR245	LB	10% FORM	-90.990	28.013
029	B017	B0223OR246	NN	95% ETOH	-90.990	28.013
030	B195	B0223OR247	RB	95% ETOH	-91.500	27.998
030	B195	B0223OR248	LB	10% FORM	-91.500	27.998
030	B195	B0223OR249	NN	95% ETOH	-91.500	27.998
031	B022	B0224OR250	RB	95% ETOH	-91.997	27.997
031	B022	B0224OR251	LB	10% FORM	-91.997	27.997
031	B022	B0224OR252	NN	95% ETOH	-91.997	27.997
032	B202	B0224OR253	RB	95% ETOH	-92.474	27.980
032	B202	B0224OR254	LB	10% FORM	-92.474	27.980
032	B202	B0224OR255	NN	95% ETOH	-92.474	27.980
033	B203	B0224OR256	RB	95% ETOH	-92.469	28.489
033	B203	B0224OR257	LB	10% FORM	-92.469	28.489
033	B203	B0224OR258	NN	95% ETOH	-92.469	28.489
034	B204	B0224OR259	RB	95% ETOH	-92.571	28.995
034	B204	B0224OR260	LB	10% FORM	-92.571	28.995
034	B204	B0224OR261	NN	95% ETOH	-92.571	28.995
035	B205	B0224OR262	RB	95% ETOH	-92.492	29.347
035	B205	B0224OR263	LB	10% FORM	-92.492	29.347
035	B205	B0224OR264	NN	95% ETOH	-92.492	29.347