

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
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Pascagoula, MS 39567

Cruise Report

Date Submitted:

Platform:

Cruise Number:

Project Title:

Cruise Dates: -

Submitted by:
Field Party Chief

Date:

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Date:

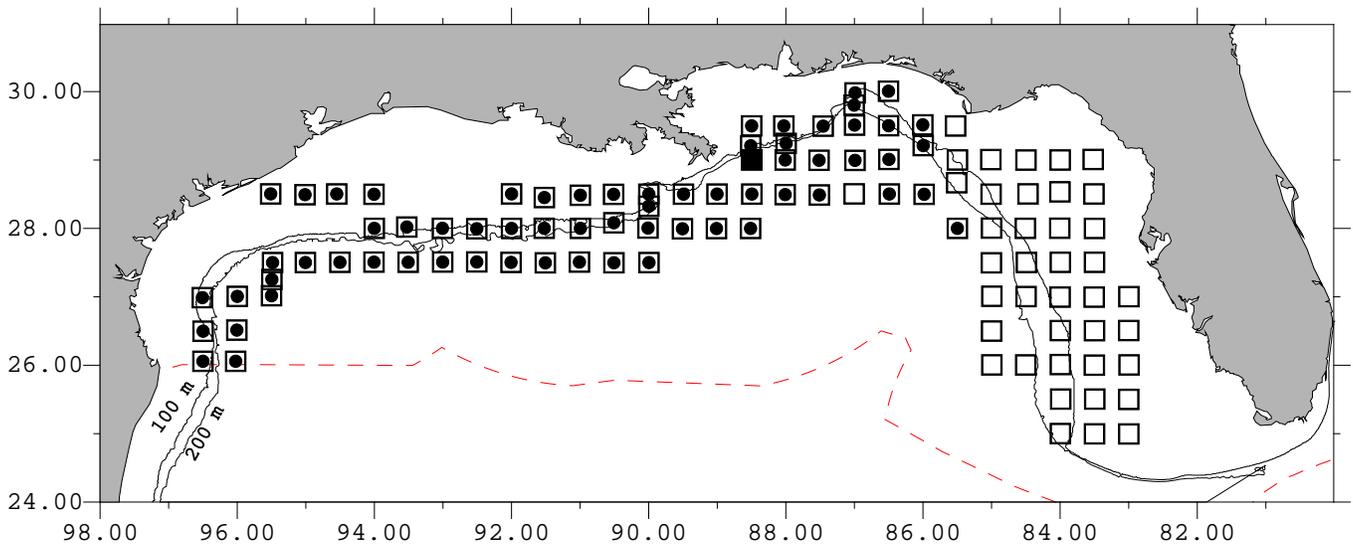
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Date:

CRUISE RESULTS

Southeast Area Monitoring and Assessment Program
(SEAMAP) 2012 Winter Plankton Survey

NOAA Ship *Oregon II* Cruise R2-12-01 (298)
28 January – 28 February 2012



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

The National Oceanic and Atmospheric Administration (NOAA) Ship *Oregon II* departed Pascagoula, MS on 28 January 2012 to initiate the Southeast Area Monitoring and Assessment Program (SEAMAP) Winter Plankton Survey in the northern Gulf of Mexico (GOM). The SEAMAP Program is a cooperative State/Federal/University program designed to collect biological and environmental data from waters of the U.S. Gulf of Mexico. During the winter survey, plankton samples were collected from a systematic grid of stations to assess distribution, occurrence and abundance of the early life stages of a variety of species of fishes and invertebrates. The survey specifically targeted larvae of grouper, tilefish and other winter spawning species. A total of 107 stations were sampled in the northern GOM from Texas over to Florida during the 29 days at sea (Leg 1, 28 January - 10 February and Leg 2, 14 February – 28 February 2012).

On 2 February, the ship's gyro went down and an overnight port call in Galveston, TX was made for repairs. The repair was made to one of the repeaters and the ship left Galveston on 4 February. The second leg of the survey had been scheduled to depart on 13 February, but was postponed until 14 February due to a flight delay for an augmenting engineer. A total of 4 days were lost on both legs due to severe weather (30+ kt winds).

The SBE-19 SeaCat malfunctioned on the last 2 stations during the first leg, so depth was calculated using wire out and wire angle. The issue was repaired by the ship's ET between legs in Pascagoula. On the second leg, the CTD winch controller box was not responding properly during some of the CTD casts. The ship's ET and engineers worked on it for a few days before it broke down. The CTD could not be deployed on the winch, but the problem was remedied by running the CTD and bongo from the bongo winch. The CTD and SeaCat cables were switched at every station so that biological and environmental data could be collected. During one of the stations, the cable was plugged into the wrong port on the CTD and caused an electrical short. A second CTD package (supplied by the Mississippi Laboratories at Stennis Space Center) was installed and used until a leak in one of the sensors made it inoperable. A total of 14 CTD casts were made on the second leg. Due to weather and transit time, the FPC decided to continue the survey without returning to port to fix the CTD. In order to collect environmental data during the second leg, temperature and salinity were recorded from the SeaCat during the bongo tows. This data will be processed later and recorded in the database.

The underwater unit on the Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS) was installed backwards in order to remove strain on the cables connecting the instruments. However, this caused the inclinometer to record faulty angles resulting in a miscalculation of volume filtered within the program. This was the case for the first 3 MOCNESS tows. The problem was remedied and the calculations for the remaining 14 MOCNESS tows are correct. On the last tow, the motor froze and only released the first net, so no samples were collected on the final tow.

PRIMARY OBJECTIVES

1. Assess the occurrence, abundance and geographical distribution of the early life stages of winter spawning fishes; especially grouper and tilefish species, from the continental shelf, the shelf edge, and deep Gulf waters using a bongo frame fitted with 335 μm nets and a neuston frame fitted with a 950 μm net at selected SEAMAP stations. Mesh sizes reported here do not represent actual changes in standard SEAMAP gear (i.e. 333 μm and 947 μm mesh) but only a change in the accuracy at which mesh aperture size can be measured by the manufacturer.
2. Measure the vertical distribution of fish larvae by sampling at discrete depths in the water column at selected locations along the SEAMAP plankton survey grid using a 1 m MOCNESS with 505 μm nets.
3. Describe the pelagic habitat of fish larvae 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 CTD at SEAMAP stations.
 - b) Measure chlorophyll *a* in replicate water samples taken at surface, maximum chlorophyll layer and near bottom (to a maximum of 200 m) depths using bench top fluorometry.
 - c) Detect and measure frontal features along the survey cruise track using data from the ship's Fluoro-thermosalinograph flow-through system (TSG).
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.

SURVEY RESULTS

Ichthyoplankton Data

Survey Design

A predefined cruise track of 127 stations, approximately 30 nm apart in a systematic grid, were targeted for this survey. There were 53 planned MOCNESS stations throughout the trackline focused over the continental shelf break.

Sampling Methodology

Sample and data collection were implemented in accordance with procedures outlined in the SEAMAP data collections manual. Plankton samples were taken with the

standard SEAMAP 61 cm bongo frame outfitted with two 0.335 mm mesh nets and towed in an oblique path from near bottom or 200 m maximum depth to the surface. A SBE19 SeaCat Profiler was attached on the towing wire above the frame to provide real time depth readings along with temperature and salinity. A flowmeter mounted inside each side of the bongo frame measured the volume filtered during the tow. Plankton samples were also taken using a 0.950 mm mesh neuston net attached to a 1 x 2 m metal frame that was towed for 10 min at a vessel speed sufficient to keep the net opening half submerged in the water maintaining a sampling depth of 0.5 m. Preservation protocol called for the left bongo samples to be preserved in 10% formalin and then transferred to fresh 95% ETOH after 36 h. The original standard SEAMAP method of initial preservation in 10% formalin for 48 h was changed to 36 h in order to improve long term storage for genetic analysis. The right bongo and neuston samples were initially preserved in 95% ETOH and then transferred to fresh 95% ETOH after 24 h.

Additional plankton samples were taken using a 1 m MOCNESS at stations during both legs. The MOCNESS carried nine 0.505 mm nets to collect samples at discrete depths. One net was used in an oblique tow (Net 0) from the surface to the bottom or a maximum depth of 130 m. Net 1 sampled a 30 m depth bin (130 to 100 m) and Nets 2-6 sampled 20 m depth bins. Winch and ship speeds were maintained at rates that would result in filtered water volumes of 250 - 350 m³ per depth bin. In order to ensure enough volume was filtered for each depth bin, a 'bounce' method was used during the retrieval. The MOCNESS was brought up to the top of the depth bin, lowered back down to the bottom of the bin, and then brought back up to the top. This method allowed for consistency in sampling each of the depth bins during the tow. Oblique samples (Net 0) were initially preserved in 10% formalin and transferred to fresh 95% ETOH after 36 h. The remaining samples (Nets 1-6) were initially preserved in 95% ETOH and transferred to fresh 95% ETOH after 24 h.

Collection Summary

Ichthyoplankton samples were collected at 107 stations by the NOAA Ship *Oregon II* during this survey (Figures 1 - 2). A total of 53 stations were sampled during Leg 1 resulting in 5 MOCNESS, 53 right bongo, 52 left bongo and 52 neuston samples (Table 1). A total of 54 stations were sampled on Leg 2 resulting in 54 right bongo, 54 left bongo, 54 neuston, and 12 MOCNESS samples (Table 1). One neuston tow was cancelled on the first leg due to high winds and rough seas. One left bongo sample was accidentally rinsed down with fresh water so the sample was discarded. On the second leg, one MOCNESS tow was discarded due to the fact that the motor froze up and would not increment nets. No further MOCNESS tows were done after that station. A majority of the MOCNESS tows were canceled due to high winds and rough seas, but some were canceled on the first leg in order to make up for lost time due to gyro repair and weather.

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 SEAMAP numbers at sea on the NOAA Ship *Oregon II* (Table 2). Right bongo samples and neuston samples were shipped to ZSIOP Gdynia, Poland for sorting. One left bongo sample was also shipped to ZSIOP Gdynia, Poland replacing a compromised right bongo sample. All other left bongo samples will be deposited in the SEAMAP Invertebrate Archive at Gulf Coast Research Laboratory, University of Southern Mississippi, Ocean Springs, MS for storage. The samples from the first 3 MOCNESS tows will remain at the NOAA NMFS Laboratory in Pascagoula, Mississippi until correct volume filtered can be calculated for the samples. At that time, the samples will be sent to ZSIOP Gdynia, Poland for sorting.

Environmental Data

Environmental data were collected with a Seabird SBE 9/11 Plus CTD at a total of 67 stations from the NOAA Ship *Oregon II* during the survey. Due to CTD winch problems and inoperable CTDs, only 14 CTD casts were made during the second leg. Temperature and salinity data were collected at the remaining 40 stations from the SeaCat. At all stations sampled with the SBE 9/11 Plus CTD, a 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. Continuous temperature and salinity data were recorded during each bongo tow at the last 40 stations. The data will have to be processed separately and ingested later into the master database at the NOAA Laboratory in Pascagoula, Mississippi.

Salinity (PSU), sea temperature (° C), and dissolved oxygen (mg/L) were recorded from the sensors on the CTD at the surface, 200m or maximum bottom depth, and the chlorophyll maximum. Near surface (≤ 5 m depth) values of salinity, sea temperature, and dissolved oxygen for stations are presented in Figures 3 - 5.

No chlorophyll data was collected during this survey. An error in calibration of the Turner 10-AU Fluorometer prior to the survey caused the instrument to malfunction. Samples could not be saved for processing after the survey.

Throughout the cruise, an SBE TSG equipped with a Turner Designs 10-AU fluorometer continuously measured surface salinity, temperature, and fluorescence. These data were recorded on a dedicated computer and backed up daily to the ship's server.

CRUISE PARTICIPANTS

Leg 1 (28 January – 10 February 2012)

Name / Title / Organization

Glenn Zapfe / Field Party Chief / NMFS, Pascagoula, MS
Andy Millet / Fishery Biologist / IAP¹, Pascagoula, MS
Taniya Wallace / Fishery Biologist / IAP¹, Pascagoula, MS
Brittany Palm / Fishery Biologist / IAP¹, Pascagoula, MS
Holland McCandless / Fishery Biologist / IAP¹, Pascagoula, MS
Alex Fogg / Fishery Biologist / IAP¹, Pascagoula, MS
Justin Goggins / Fishery Biologist / IAP¹, Pascagoula, MS

¹ – IAP World Services

Leg 2 (14 February - 28 February 2012)

Name / Title / Organization

Glenn Zapfe / Field Party Chief / NMFS, Pascagoula, MS
Alonzo Hamilton / Fishery Biologist / NMFS, Pascagoula, MS
Amy Schmitt / Fishery Biologist / IAP¹, Pascagoula, MS
Michael Felts / Fishery Biologist / IAP¹, Pascagoula, MS
Jennifer Provaznik / Fishery Biologist / IAP¹, Pascagoula, MS
Kim Johnson / Fishery Biologist / NMFS, Pascagoula, MS
Denice Drass / Fishery Biologist / NMFS, Pascagoula, MS

¹ – IAP World Services

Table 1. Summary of valid ichthyoplankton collections taken during the 2012 Winter SEAMAP Plankton survey aboard the NOAA Ship *Oregon II*.

Leg	Right Bongo (0.335 mm)	Left Bongo (0.335 mm)	Neuston (0.950 mm)	MOCNESS (0.505 mm)	CTD Casts
I	53	52	52	5	53
II	54	54	54	12	14
Total	107	106	106	17	67

Table 2. Summary of plankton sampling effort during the Winter SEAMAP Plankton Survey conducted from the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012. PASC = Pascagoula station number; SEAMAP = SEAMAP station number; SAMPLE = SEAMAP sample number; RB = Right Bongo; LB = Left Bongo; NN = Neuston; MOC# = MOCNESS Net#; Preservative = Initial preservative; FORM = Formalin; ETOH = Ethyl alcohol; DATE = Date in GMT; Lat = Latitude of sample in decimal degrees; Lon = Longitude of sample in decimal degrees.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
001	B179	42618	RB	95% ETOH	1/29/2012	29.49893	-88.4985
001	B179	42619	LB	10% Form	1/29/2012	29.49893	-88.4985
001	B179	42620	NN	95% ETOH	1/29/2012	29.49893	-88.4985
002	B323	42621	RB	95% ETOH	1/29/2012	29.20751	-88.51152
002	B323	42622	NN	95% ETOH	1/29/2012	29.20751	-88.51152
003	B180	42623	RB	95% ETOH	1/29/2012	29.00284	-88.4967
003	B180	42624	LB	10% Form	1/29/2012	29.00284	-88.4967
004	B250	42625	RB	95% ETOH	1/29/2012	28.50204	-88.49581
004	B250	42626	LB	10% Form	1/29/2012	28.50204	-88.49581
004	B250	42627	NN	95% ETOH	1/29/2012	28.50204	-88.49581
005	B184	42628	RB	95% ETOH	1/29/2012	28.50199	-89.00357
005	B184	42629	LB	10% Form	1/29/2012	28.50199	-89.00357
005	B184	42630	NN	95% ETOH	1/29/2012	28.50199	-89.00357
006	B186	42631	RB	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42632	LB	10% Form	1/30/2012	28.50096	-89.49234
006	B186	42633	NN	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42634	MOC 0	10% Form	1/30/2012	28.50096	-89.49234
006	B186	42635	MOC 1	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42636	MOC 2	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42637	MOC 3	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42638	MOC 4	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42639	MOC 5	95% ETOH	1/30/2012	28.50096	-89.49234
006	B186	42640	MOC 6	95% ETOH	1/30/2012	28.50096	-89.49234
007	B189	42641	RB	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42642	LB	10% Form	1/30/2012	28.50031	-89.998
007	B189	42643	NN	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42644	MOC 0	10% Form	1/30/2012	28.50031	-89.998
007	B189	42645	MOC 1	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42646	MOC 2	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42647	MOC 3	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42648	MOC 4	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42649	MOC 5	95% ETOH	1/30/2012	28.50031	-89.998
007	B189	42650	MOC 6	95% ETOH	1/30/2012	28.50031	-89.998
008	B325	42651	RB	95% ETOH	1/30/2012	28.32478	-89.99791
008	B325	42652	LB	10% Form	1/30/2012	28.32478	-89.99791
008	B325	42653	NN	95% ETOH	1/30/2012	28.32478	-89.99791
008	B325	42654	MOC 0	10% Form	1/30/2012	28.32478	-89.99791
008	B325	42655	MOC 1	95% ETOH	1/30/2012	28.32478	-89.99791
008	B325	42656	MOC 2	95% ETOH	1/30/2012	28.32478	-89.99791

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
008	B325	42657	MOC 3	95% ETOH	1/30/2012	28.32478	-89.99791
008	B325	42658	MOC 4	95% ETOH	1/30/2012	28.32478	-89.99791
008	B325	42659	MOC 5	95% ETOH	1/30/2012	28.32478	-89.99791
009	B016	42660	RB	95% ETOH	1/30/2012	28.00527	-90.00998
009	B016	42661	LB	10% Form	1/30/2012	28.00527	-90.00998
009	B016	42662	NN	95% ETOH	1/30/2012	28.00527	-90.00998
010	B061	42663	RB	95% ETOH	1/30/2012	27.50105	-89.99603
010	B061	42664	LB	10% Form	1/30/2012	27.50105	-89.99603
010	B061	42665	NN	95% ETOH	1/30/2012	27.50105	-89.99603
011	B247	42666	RB	10% Form	1/30/2012	27.49832	-90.50689
011	B247	42667	LB	95% ETOH	1/30/2012	27.49832	-90.50689
011	B247	42668	NN	95% ETOH	1/30/2012	27.49832	-90.50689
012	B060	42669	RB	95% ETOH	1/31/2012	27.50786	-91.00997
012	B060	42670	LB	10% Form	1/31/2012	27.50786	-91.00997
012	B060	42671	NN	95% ETOH	1/31/2012	27.50786	-91.00997
013	B246	42672	RB	95% ETOH	1/31/2012	27.49704	-91.50723
013	B246	42673	LB	10% Form	1/31/2012	27.49704	-91.50723
013	B246	42674	NN	95% ETOH	1/31/2012	27.49704	-91.50723
014	B057	42675	RB	95% ETOH	1/31/2012	27.50378	-92.00719
014	B057	42676	LB	10% Form	1/31/2012	27.50378	-92.00719
014	B057	42677	NN	95% ETOH	1/31/2012	27.50378	-92.00719
015	B245	42678	RB	95% ETOH	1/31/2012	27.51029	-92.50711
015	B245	42679	LB	10% Form	1/31/2012	27.51029	-92.50711
015	B245	42680	NN	95% ETOH	1/31/2012	27.51029	-92.50711
016	B056	42681	RB	95% ETOH	1/31/2012	27.50842	-93.00445
016	B056	42682	LB	10% Form	1/31/2012	27.50842	-93.00445
016	B056	42683	NN	95% ETOH	1/31/2012	27.50842	-93.00445
017	B244	42684	RB	95% ETOH	1/31/2012	27.50573	-93.50726
017	B244	42685	LB	10% Form	1/31/2012	27.50573	-93.50726
017	B244	42686	NN	95% ETOH	1/31/2012	27.50573	-93.50726
018	B053	42687	RB	95% ETOH	2/1/2012	27.50723	-94.00576
018	B053	42688	LB	10% Form	2/1/2012	27.50723	-94.00576
018	B053	42689	NN	95% ETOH	2/1/2012	27.50723	-94.00576
019	B243	42690	RB	95% ETOH	2/1/2012	27.50473	-94.50254
019	B243	42691	LB	10% Form	2/1/2012	27.50473	-94.50254
019	B243	42692	NN	95% ETOH	2/1/2012	27.50473	-94.50254
020	B224	42693	RB	95% ETOH	2/1/2012	27.50141	-95.00584
020	B224	42694	LB	10% Form	2/1/2012	27.50141	-95.00584
020	B224	42695	NN	95% ETOH	2/1/2012	27.50141	-95.00584
021	B225	42696	RB	95% ETOH	2/1/2012	27.50083	-95.48462
021	B225	42697	LB	10% Form	2/1/2012	27.50083	-95.48462
021	B225	42698	NN	95% ETOH	2/1/2012	27.50083	-95.48462
022	B227	42699	RB	95% ETOH	2/1/2012	27.25336	-95.49541
022	B227	42700	LB	10% Form	2/1/2012	27.25336	-95.49541
022	B227	42701	NN	95% ETOH	2/1/2012	27.25336	-95.49541
023	B242	42702	RB	95% ETOH	2/1/2012	27.01658	-95.50032
023	B242	42703	LB	10% Form	2/1/2012	27.01658	-95.50032
023	B242	42704	NN	95% ETOH	2/1/2012	27.01658	-95.50032
024	B031	42705	RB	95% ETOH	2/1/2012	27.00683	-95.99913

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
024	B031	42706	LB	10% Form	2/1/2012	27.00683	-95.99913
024	B031	42707	NN	95% ETOH	2/1/2012	27.00683	-95.99913
025	B240	42708	RB	95% ETOH	2/2/2012	26.51401	-96.00579
025	B240	42709	LB	10% Form	2/2/2012	26.51401	-96.00579
025	B240	42710	NN	95% ETOH	2/2/2012	26.51401	-96.00579
026	B030	42711	RB	95% ETOH	2/2/2012	26.05803	-96.02281
026	B030	42712	LB	10% Form	2/2/2012	26.05803	-96.02281
026	B030	42713	NN	95% ETOH	2/2/2012	26.05803	-96.02281
027	B316	42714	RB	95% ETOH	2/2/2012	26.05792	-96.5
027	B316	42715	LB	10% Form	2/2/2012	26.05792	-96.5
027	B316	42716	NN	95% ETOH	2/2/2012	26.05792	-96.5
028	B239	42717	RB	95% ETOH	2/2/2012	26.49779	-96.49797
028	B239	42718	LB	10% Form	2/2/2012	26.49779	-96.49797
028	B239	42719	NN	95% ETOH	2/2/2012	26.49779	-96.49797
028	B239	42720	MOC 0	10% Form	2/2/2012	26.49779	-96.49797
028	B239	42721	MOC 1	95% ETOH	2/2/2012	26.49779	-96.49797
028	B239	42722	MOC 2	95% ETOH	2/2/2012	26.49779	-96.49797
028	B239	42723	MOC 3	95% ETOH	2/2/2012	26.49779	-96.49797
028	B239	42724	MOC 4	95% ETOH	2/2/2012	26.49779	-96.49797
029	B237	42725	RB	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42726	LB	10% Form	2/2/2012	26.98865	-96.5084
029	B237	42727	NN	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42728	MOC 0	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42729	MOC 1	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42730	MOC 2	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42731	MOC 3	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42732	MOC 4	95% ETOH	2/2/2012	26.98865	-96.5084
029	B237	42733	MOC 5	95% ETOH	2/2/2012	26.98865	-96.5084
030	B228	42734	RB	95% ETOH	2/5/2012	28.5047	-95.51233
030	B228	42735	LB	95% ETOH	2/5/2012	28.5047	-95.51233
030	B228	42736	NN	95% ETOH	2/5/2012	28.5047	-95.51233
031	B222	42737	RB	95% ETOH	2/6/2012	28.49303	-95.01158
031	B222	42738	LB	10% Form	2/6/2012	28.49303	-95.01158
031	B222	42739	NN	95% ETOH	2/6/2012	28.49303	-95.01158
032	B218	42740	RB	95% ETOH	2/6/2012	28.50381	-94.54915
032	B218	42741	LB	95% ETOH	2/6/2012	28.50381	-94.54915
032	B218	42742	NN	95% ETOH	2/6/2012	28.50381	-94.54915
033	B215	42743	RB	95% ETOH	2/6/2012	28.49929	-94.0058
033	B215	42744	LB	10% Form	2/6/2012	28.49929	-94.0058
033	B215	42745	NN	95% ETOH	2/6/2012	28.49929	-94.0058
034	B216	42746	RB	95% ETOH	2/7/2012	28.00066	-94.00191
034	B216	42747	LB	10% Form	2/7/2012	28.00066	-94.00191
034	B216	42748	NN	95% ETOH	2/7/2012	28.00066	-94.00191
035	B209	42749	RB	95% ETOH	2/7/2012	28.02039	-93.52715
035	B209	42750	LB	10% Form	2/7/2012	28.02039	-93.52715
035	B209	42751	NN	95% ETOH	2/7/2012	28.02039	-93.52715
036	B023	42752	RB	95% ETOH	2/7/2012	28.00145	-93.00768
036	B023	42753	LB	10% Form	2/7/2012	28.00145	-93.00768
036	B023	42754	NN	95% ETOH	2/7/2012	28.00145	-93.00768

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
037	B202	42755	RB	95% ETOH	2/7/2012	27.99577	-92.50689
037	B202	42756	LB	10% Form	2/7/2012	27.99577	-92.50689
037	B202	42757	NN	95% ETOH	2/7/2012	27.99577	-92.50689
038	B022	42758	RB	95% ETOH	2/7/2012	27.99964	-91.99992
038	B022	42759	LB	10% Form	2/7/2012	27.99964	-91.99992
038	B022	42760	NN	95% ETOH	2/7/2012	27.99964	-91.99992
039	B201	42761	RB	10% Form	2/7/2012	28.50452	-91.99972
039	B201	42762	LB	95% ETOH	2/7/2012	28.50452	-91.99972
039	B201	42763	NN	95% ETOH	2/7/2012	28.50452	-91.99972
040	B196	42764	RB	95% ETOH	2/7/2012	28.45116	-91.52148
040	B196	42765	LB	10% Form	2/7/2012	28.45116	-91.52148
040	B196	42766	NN	95% ETOH	2/7/2012	28.45116	-91.52148
041	B195	42767	RB	95% ETOH	2/8/2012	28.00203	-91.52354
041	B195	42768	LB	10% Form	2/8/2012	28.00203	-91.52354
041	B195	42769	NN	95% ETOH	2/8/2012	28.00203	-91.52354
042	B017	42770	RB	95% ETOH	2/8/2012	28.00078	-90.99589
042	B017	42771	LB	10% Form	2/8/2012	28.00078	-90.99589
042	B017	42772	NN	95% ETOH	2/8/2012	28.00078	-90.99589
043	B194	42773	RB	95% ETOH	2/8/2012	28.48507	-90.99691
043	B194	42774	LB	10% Form	2/8/2012	28.48507	-90.99691
043	B194	42775	NN	95% ETOH	2/8/2012	28.48507	-90.99691
044	B191	42776	RB	95% ETOH	2/8/2012	28.49844	-90.51166
044	B191	42777	LB	10% Form	2/8/2012	28.49844	-90.51166
044	B191	42778	NN	95% ETOH	2/8/2012	28.49844	-90.51166
045	B190	42779	RB	95% ETOH	2/8/2012	28.08262	-90.50832
045	B190	42780	LB	10% Form	2/8/2012	28.08262	-90.50832
045	B190	42781	NN	95% ETOH	2/8/2012	28.08262	-90.50832
046	B185	42782	RB	95% ETOH	2/9/2012	27.99512	-89.5077
046	B185	42783	LB	10% Form	2/9/2012	27.99512	-89.5077
046	B185	42784	NN	95% ETOH	2/9/2012	27.99512	-89.5077
047	B083	42785	RB	95% ETOH	2/9/2012	27.99826	-89.01129
047	B083	42786	LB	10% Form	2/9/2012	27.99826	-89.01129
047	B083	42787	NN	95% ETOH	2/9/2012	27.99826	-89.01129
048	B250	42788	RB	95% ETOH	2/9/2012	27.99973	-88.51408
048	B250	42789	LB	10% Form	2/9/2012	27.99973	-88.51408
048	B250	42790	NN	95% ETOH	2/9/2012	27.99973	-88.51408
049	B081	42791	RB	95% ETOH	2/9/2012	28.49437	-88.00987
049	B081	42792	LB	10% Form	2/9/2012	28.49437	-88.00987
049	B081	42793	NN	95% ETOH	2/9/2012	28.49437	-88.00987
050	B001	42794	RB	95% ETOH	2/9/2012	29.00052	-88.00916
050	B001	42795	LB	10% Form	2/9/2012	29.00052	-88.00916
050	B001	42796	NN	95% ETOH	2/9/2012	29.00052	-88.00916
051	B322	42797	RB	95% ETOH	2/9/2012	29.24316	-87.99488
051	B322	42798	LB	10% Form	2/9/2012	29.24316	-87.99488
051	B322	42799	NN	95% ETOH	2/9/2012	29.24316	-87.99488
052	B174	42800	RB	95% ETOH	2/10/2012	29.49528	-87.45554
052	B174	42801	LB	10% Form	2/10/2012	29.49528	-87.45554
052	B174	42802	NN	95% ETOH	2/10/2012	29.49528	-87.45554
053	B176	42803	RB	95% ETOH	2/10/2012	29.49802	-88.0292

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
053	B176	42804	LB	10% Form	2/10/2012	29.49802	-88.0292
053	B176	42805	NN	95% ETOH	2/10/2012	29.49802	-88.0292
054	B172	42806	RB	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42807	LB	10% Form	2/15/2012	29.98134	-86.98935
054	B172	42808	NN	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42809	MOC 0	10% Form	2/15/2012	29.98134	-86.98935
054	B172	42810	MOC 1	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42811	MOC 2	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42812	MOC 3	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42813	MOC 4	95% ETOH	2/15/2012	29.98134	-86.98935
054	B172	42814	MOC 5	95% ETOH	2/15/2012	29.98134	-86.98935
055	B320	42815	RB	95% ETOH	2/15/2012	29.8022	-87.00392
055	B320	42816	LB	10% Form	2/15/2012	29.8022	-87.00392
055	B320	42817	NN	95% ETOH	2/15/2012	29.8022	-87.00392
056	B171	42818	RB	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42819	LB	10% Form	2/15/2012	29.5105	-86.99753
056	B171	42820	NN	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42821	MOC 0	10% Form	2/15/2012	29.5105	-86.99753
056	B171	42822	MOC 1	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42823	MOC 2	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42824	MOC 3	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42825	MOC 4	95% ETOH	2/15/2012	29.5105	-86.99753
056	B171	42826	MOC 5	95% ETOH	2/15/2012	29.5105	-86.99753
057	B002	42827	RB	95% ETOH	2/15/2012	28.99486	-86.9912
057	B002	42828	LB	10% Form	2/15/2012	28.99486	-86.9912
057	B002	42829	NN	95% ETOH	2/15/2012	28.99486	-86.9912
058	B175	42830	RB	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42831	LB	10% Form	2/16/2012	28.99646	-87.51557
058	B175	42832	NN	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42833	MOC 0	10% Form	2/16/2012	28.99646	-87.51557
058	B175	42834	MOC 1	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42835	MOC 2	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42836	MOC 3	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42837	MOC 4	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42838	MOC 5	95% ETOH	2/16/2012	28.99646	-87.51557
058	B175	42839	MOC 6	95% ETOH	2/16/2012	28.99646	-87.51557
059	B252	42840	RB	95% ETOH	2/16/2012	28.48906	-87.51116
059	B252	42841	LB	10% Form	2/16/2012	28.48906	-87.51116
059	B252	42842	NN	95% ETOH	2/16/2012	28.48906	-87.51116
060	B080	42843	RB	95% ETOH	2/16/2012	28.50545	-87.00383
060	B080	42844	LB	10% Form	2/16/2012	28.50545	-87.00383
060	B080	42845	NN	95% ETOH	2/16/2012	28.50545	-87.00383
061	B253	42846	RB	95% ETOH	2/16/2012	28.50341	-86.49072
061	B253	42847	LB	10% Form	2/16/2012	28.50341	-86.49072
061	B253	42848	NN	95% ETOH	2/16/2012	28.50341	-86.49072
062	B170	42849	RB	95% ETOH	2/16/2012	29.00915	-86.49689
062	B170	42850	LB	10% Form	2/16/2012	29.00915	-86.49689
062	B170	42851	NN	95% ETOH	2/16/2012	29.00915	-86.49689
063	B169	42852	RB	95% ETOH	2/17/2012	29.50152	-86.50129

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
063	B169	42853	LB	10% Form	2/17/2012	29.50152	-86.50129
063	B169	42854	NN	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42855	MOC 0	10% Form	2/17/2012	29.50152	-86.50129
063	B169	42856	MOC 1	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42857	MOC 2	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42858	MOC 3	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42859	MOC 4	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42860	MOC 5	95% ETOH	2/17/2012	29.50152	-86.50129
063	B169	42861	MOC 6	95% ETOH	2/17/2012	29.50152	-86.50129
064	B168	42862	RB	95% ETOH	2/17/2012	30.00582	-86.50307
064	B168	42863	LB	10% Form	2/17/2012	30.00582	-86.50307
064	B168	42864	NN	95% ETOH	2/17/2012	30.00582	-86.50307
065	B166	42865	RB	95% ETOH	2/17/2012	29.5142	-86.00298
065	B166	42866	LB	10% Form	2/17/2012	29.5142	-86.00298
065	B166	42867	NN	95% ETOH	2/17/2012	29.5142	-86.00298
066	B165	42868	RB	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42869	LB	10% Form	2/17/2012	29.21099	-85.99644
066	B165	42870	NN	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42871	MOC 0	10% Form	2/17/2012	29.21099	-85.99644
066	B165	42872	MOC 1	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42873	MOC 2	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42874	MOC 3	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42875	MOC 4	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42876	MOC 5	95% ETOH	2/17/2012	29.21099	-85.99644
066	B165	42877	MOC 6	95% ETOH	2/17/2012	29.21099	-85.99644
067	B164	42878	RB	95% ETOH	2/17/2012	28.49882	-85.9832
067	B164	42879	LB	10% Form	2/17/2012	28.49882	-85.9832
067	B164	42880	NN	95% ETOH	2/17/2012	28.49882	-85.9832
068	B161	42881	RB	95% ETOH	2/18/2012	28.0008	-85.49832
068	B161	42882	LB	10% Form	2/18/2012	28.0008	-85.49832
068	B161	42883	NN	95% ETOH	2/18/2012	28.0008	-85.49832
069	B160	42884	RB	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42885	LB	10% Form	2/18/2012	28.66824	-85.50845
069	B160	42886	NN	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42887	MOC 0	10% Form	2/18/2012	28.66824	-85.50845
069	B160	42888	MOC 1	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42889	MOC 2	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42890	MOC 3	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42891	MOC 4	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42892	MOC 5	95% ETOH	2/18/2012	28.66824	-85.50845
069	B160	42893	MOC 6	95% ETOH	2/18/2012	28.66824	-85.50845
070	B159	42894	RB	95% ETOH	2/18/2012	29.00093	-85.49756
070	B159	42895	LB	10% Form	2/18/2012	29.00093	-85.49756
070	B159	42896	NN	95% ETOH	2/18/2012	29.00093	-85.49756
071	B158	42897	RB	95% ETOH	2/18/2012	29.49752	-85.52436
071	B158	42898	LB	10% Form	2/18/2012	29.49752	-85.52436
071	B158	42899	NN	95% ETOH	2/18/2012	29.49752	-85.52436
072	B155	42900	RB	95% ETOH	2/18/2012	29.00633	-85.0108
072	B155	42901	LB	10% Form	2/18/2012	29.00633	-85.0108

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
072	B155	42902	NN	95% ETOH	2/18/2012	29.00633	-85.0108
073	B141	42903	RB	95% ETOH	2/18/2012	28.99981	-84.4982
073	B141	42904	LB	10% Form	2/18/2012	28.99981	-84.4982
073	B141	42905	NN	95% ETOH	2/18/2012	28.99981	-84.4982
074	B137	42906	RB	95% ETOH	2/19/2012	29.00028	-83.99949
074	B137	42907	LB	10% Form	2/19/2012	29.00028	-83.99949
074	B137	42908	NN	95% ETOH	2/19/2012	29.00028	-83.99949
075	B116	42909	RB	95% ETOH	2/20/2012	29.00837	-83.51783
075	B116	42910	LB	10% Form	2/20/2012	29.00837	-83.51783
075	B116	42911	NN	95% ETOH	2/20/2012	29.00837	-83.51783
076	B117	42912	RB	95% ETOH	2/20/2012	28.50424	-83.50674
076	B117	42913	LB	10% Form	2/20/2012	28.50424	-83.50674
076	B117	42914	NN	95% ETOH	2/20/2012	28.50424	-83.50674
077	B136	42915	RB	95% ETOH	2/20/2012	28.53496	-84.00291
077	B136	42916	LB	10% Form	2/20/2012	28.53496	-84.00291
077	B136	42917	NN	95% ETOH	2/20/2012	28.53496	-84.00291
078	B142	42918	RB	95% ETOH	2/21/2012	28.50489	-84.468
078	B142	42919	LB	10% Form	2/21/2012	28.50489	-84.468
078	B142	42920	NN	95% ETOH	2/21/2012	28.50489	-84.468
079	B154	42921	RB	95% ETOH	2/21/2012	28.50107	-85.00664
079	B154	42922	LB	10% Form	2/21/2012	28.50107	-85.00664
079	B154	42923	NN	95% ETOH	2/21/2012	28.50107	-85.00664
079	B154	42924	MOC 0	10% Form	2/21/2012	28.50107	-85.00664
079	B154	42925	MOC 1	95% ETOH	2/21/2012	28.50107	-85.00664
079	B154	42926	MOC 2	95% ETOH	2/21/2012	28.50107	-85.00664
079	B154	42927	MOC 3	95% ETOH	2/21/2012	28.50107	-85.00664
079	B154	42928	MOC 4	95% ETOH	2/21/2012	28.50107	-85.00664
080	B153	42929	RB	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42930	LB	10% Form	2/21/2012	28.0053	-85.00021
080	B153	42931	NN	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42932	MOC 0	10% Form	2/21/2012	28.0053	-85.00021
080	B153	42933	MOC 1	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42934	MOC 2	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42935	MOC 3	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42936	MOC 4	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42937	MOC 5	95% ETOH	2/21/2012	28.0053	-85.00021
080	B153	42938	MOC 6	95% ETOH	2/21/2012	28.0053	-85.00021
081	B143	42939	RB	95% ETOH	2/21/2012	28.0015	-84.50676
081	B143	42940	LB	10% Form	2/21/2012	28.0015	-84.50676
081	B143	42941	NN	95% ETOH	2/21/2012	28.0015	-84.50676
082	B135	42942	RB	95% ETOH	2/21/2012	28.00347	-84.00544
082	B135	42943	LB	10% Form	2/21/2012	28.00347	-84.00544
082	B135	42944	NN	95% ETOH	2/21/2012	28.00347	-84.00544
083	B118	42945	RB	95% ETOH	2/21/2012	28	-83.4986
083	B118	42946	LB	10% Form	2/21/2012	28	-83.4986
083	B118	42947	NN	95% ETOH	2/21/2012	28	-83.4986
084	B119	42948	RB	95% ETOH	2/22/2012	27.50492	-83.49899
084	B119	42949	LB	10% Form	2/22/2012	27.50492	-83.49899
084	B119	42950	NN	95% ETOH	2/22/2012	27.50492	-83.49899

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
085	B134	42951	RB	95% ETOH	2/22/2012	27.50471	-83.99698
085	B134	42952	LB	10% Form	2/22/2012	27.50471	-83.99698
085	B134	42953	NN	95% ETOH	2/22/2012	27.50471	-83.99698
086	B144	42954	RB	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42955	LB	10% Form	2/22/2012	27.50263	-84.49135
086	B144	42956	NN	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42957	MOC 0	10% Form	2/22/2012	27.50263	-84.49135
086	B144	42958	MOC 1	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42959	MOC 2	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42960	MOC 3	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42961	MOC 4	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42962	MOC 5	95% ETOH	2/22/2012	27.50263	-84.49135
086	B144	42963	MOC 6	95% ETOH	2/22/2012	27.50263	-84.49135
087	B152	42964	RB	95% ETOH	2/22/2012	27.49774	-85.00224
087	B152	42965	LB	10% Form	2/22/2012	27.49774	-85.00224
087	B152	42966	NN	95% ETOH	2/22/2012	27.49774	-85.00224
088	B151	42967	RB	95% ETOH	2/22/2012	27.00898	-84.99574
088	B151	42968	LB	10% Form	2/22/2012	27.00898	-84.99574
088	B151	42969	NN	95% ETOH	2/22/2012	27.00898	-84.99574
089	B145	42970	RB	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42971	LB	10% Form	2/22/2012	27.00448	-84.49666
089	B145	42972	NN	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42973	MOC 0	10% Form	2/22/2012	27.00448	-84.49666
089	B145	42974	MOC 1	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42975	MOC 2	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42976	MOC 3	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42977	MOC 4	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42978	MOC 5	95% ETOH	2/22/2012	27.00448	-84.49666
089	B145	42979	MOC 6	95% ETOH	2/22/2012	27.00448	-84.49666
090	B133	42980	RB	95% ETOH	2/23/2012	26.99629	-84.00071
090	B133	42981	LB	10% Form	2/23/2012	26.99629	-84.00071
090	B133	42982	NN	95% ETOH	2/23/2012	26.99629	-84.00071
091	B120	42983	RB	95% ETOH	2/23/2012	26.99612	-83.50367
091	B120	42984	LB	10% Form	2/23/2012	26.99612	-83.50367
091	B120	42985	NN	95% ETOH	2/23/2012	26.99612	-83.50367
092	B110	42986	RB	95% ETOH	2/23/2012	27.00312	-82.99732
092	B110	42987	LB	10% Form	2/23/2012	27.00312	-82.99732
092	B110	42988	NN	95% ETOH	2/23/2012	27.00312	-82.99732
093	B109	42989	RB	95% ETOH	2/23/2012	26.50806	-83.00011
093	B109	42990	LB	10% Form	2/23/2012	26.50806	-83.00011
093	B109	42991	NN	95% ETOH	2/23/2012	26.50806	-83.00011
094	B121	42992	RB	95% ETOH	2/23/2012	26.50513	-83.49899
094	B121	42993	LB	10% Form	2/23/2012	26.50513	-83.49899
094	B121	42994	NN	95% ETOH	2/23/2012	26.50513	-83.49899
095	B132	42995	RB	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	42996	LB	10% Form	2/23/2012	26.50696	-83.99626
095	B132	42997	NN	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	42998	MOC 0	10% Form	2/23/2012	26.50696	-83.99626
095	B132	42999	MOC 1	95% ETOH	2/23/2012	26.50696	-83.99626

Table 2 continued.

PASC	SEAMAP	SAMPLE	GEAR	PRESERVATIVE	DATE	LAT	LON
095	B132	43000	MOC 2	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	43001	MOC 3	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	43002	MOC 4	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	43003	MOC 5	95% ETOH	2/23/2012	26.50696	-83.99626
095	B132	43004	MOC 6	95% ETOH	2/23/2012	26.50696	-83.99626
096	B131	43005	RB	95% ETOH	2/23/2012	26.01002	-83.99675
096	B131	43006	LB	10% Form	2/23/2012	26.01002	-83.99675
096	B131	43007	NN	95% ETOH	2/23/2012	26.01002	-83.99675
096	B131	43008	MOC 0	10% Form	2/24/2012	26.01002	-83.99675
096	B131	43009	MOC 1	95% ETOH	2/24/2012	26.01002	-83.99675
096	B131	43010	MOC 2	95% ETOH	2/24/2012	26.01002	-83.99675
096	B131	43011	MOC 3	95% ETOH	2/24/2012	26.01002	-83.99675
096	B131	43012	MOC 4	95% ETOH	2/24/2012	26.01002	-83.99675
096	B131	43013	MOC 5	95% ETOH	2/24/2012	26.01002	-83.99675
096	B131	43014	MOC 6	95% ETOH	2/24/2012	26.01002	-83.99675
097	B122	43015	RB	95% ETOH	2/24/2012	26.00156	-83.50105
097	B122	43016	LB	10% Form	2/24/2012	26.00156	-83.50105
097	B122	43017	NN	95% ETOH	2/24/2012	26.00156	-83.50105
098	B108	43018	RB	95% ETOH	2/24/2012	26.00504	-82.99473
098	B108	43019	LB	10% Form	2/24/2012	26.00504	-82.99473
098	B108	43020	NN	95% ETOH	2/24/2012	26.00504	-82.99473
099	B107	43021	RB	95% ETOH	2/24/2012	25.50113	-82.9999
099	B107	43022	LB	10% Form	2/24/2012	25.50113	-82.9999
099	B107	43023	NN	95% ETOH	2/24/2012	25.50113	-82.9999
100	B123	43024	RB	95% ETOH	2/24/2012	25.50573	-83.49513
100	B123	43025	LB	10% Form	2/24/2012	25.50573	-83.49513
100	B123	43026	NN	95% ETOH	2/24/2012	25.50573	-83.49513
101	B130	43027	RB	95% ETOH	2/24/2012	25.50571	-83.99169
101	B130	43028	LB	10% Form	2/24/2012	25.50571	-83.99169
101	B130	43029	NN	95% ETOH	2/24/2012	25.50571	-83.99169
102	B129	43030	RB	95% ETOH	2/24/2012	25.00168	-83.99608
102	B129	43031	LB	10% Form	2/24/2012	25.00168	-83.99608
102	B129	43032	NN	95% ETOH	2/24/2012	25.00168	-83.99608
103	B124	43033	RB	95% ETOH	2/25/2012	24.99759	-83.49838
103	B124	43034	LB	10% Form	2/25/2012	24.99759	-83.49838
103	B124	43035	NN	95% ETOH	2/25/2012	24.99759	-83.49838
104	B106	43036	RB	95% ETOH	2/25/2012	24.99604	-82.99891
104	B106	43037	LB	10% Form	2/25/2012	24.99604	-82.99891
104	B106	43038	NN	95% ETOH	2/25/2012	24.99604	-82.99891
105	B147	43039	RB	95% ETOH	2/27/2012	26.00486	-84.50166
105	B147	43040	LB	10% Form	2/27/2012	26.00486	-84.50166
105	B147	43041	NN	95% ETOH	2/27/2012	26.00486	-84.50166
106	B149	43042	RB	95% ETOH	2/27/2012	26.00565	-84.99587
106	B149	43043	LB	10% Form	2/27/2012	26.00565	-84.99587
106	B149	43044	NN	95% ETOH	2/27/2012	26.00565	-84.99587
107	B150	43045	RB	95% ETOH	2/27/2012	26.49994	-84.99942
107	B150	43046	LB	10% Form	2/27/2012	26.49994	-84.99942
107	B150	43047	NN	95% ETOH	2/27/2012	26.49994	-84.99942

Figure 1. Plankton stations completed during the SEAMAP Winter Plankton Survey aboard the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012. An open box with a closed circle represents stations where a bongo, neuston, and CTD were completed. Stations represented by an open square were sampled with a bongo and neuston only. A closed square represents the station where only a bongo and CTD were completed.

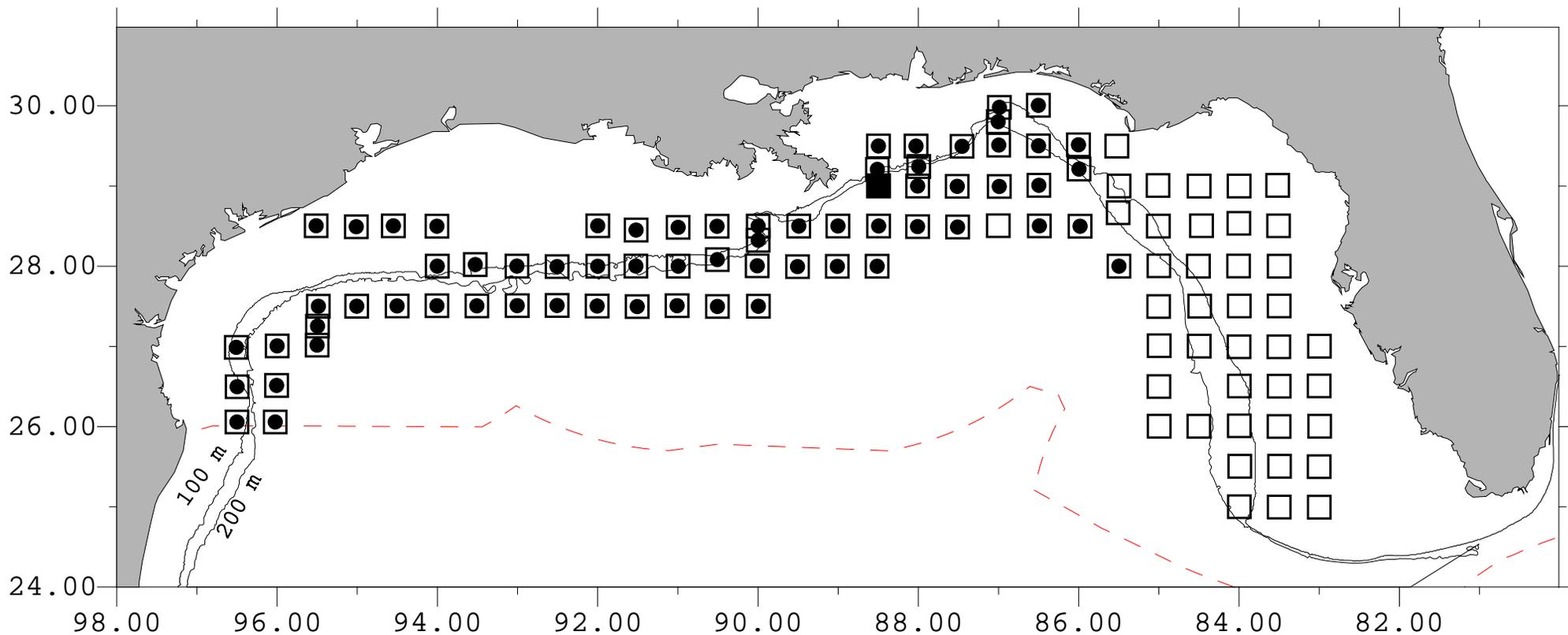


Figure 2. Locations of stations where MOCNESS samples were collected during the SEAMAP Winter Plankton Survey aboard the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012.

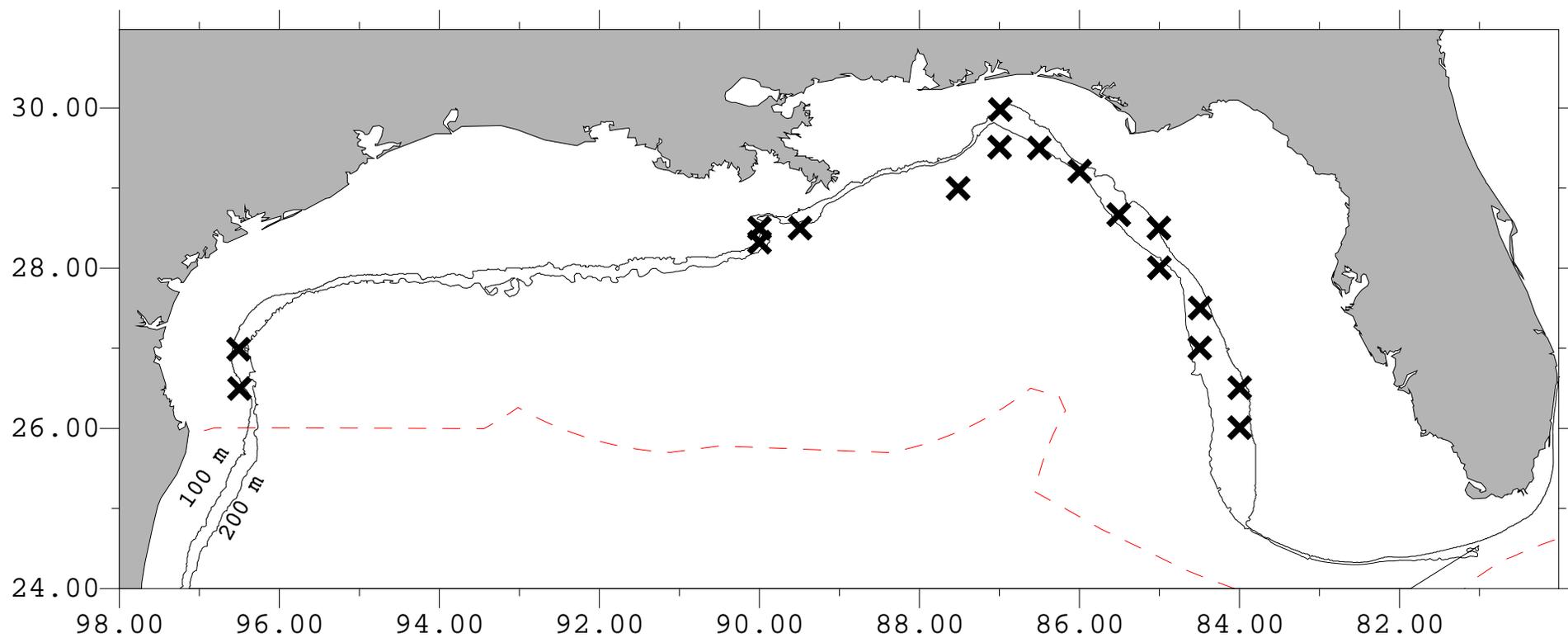


Figure 3. Sea temperature ($^{\circ}$ C) near the surface (≤ 5 m depth) at plankton stations during the SEAMAP Winter Plankton Survey aboard the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012.

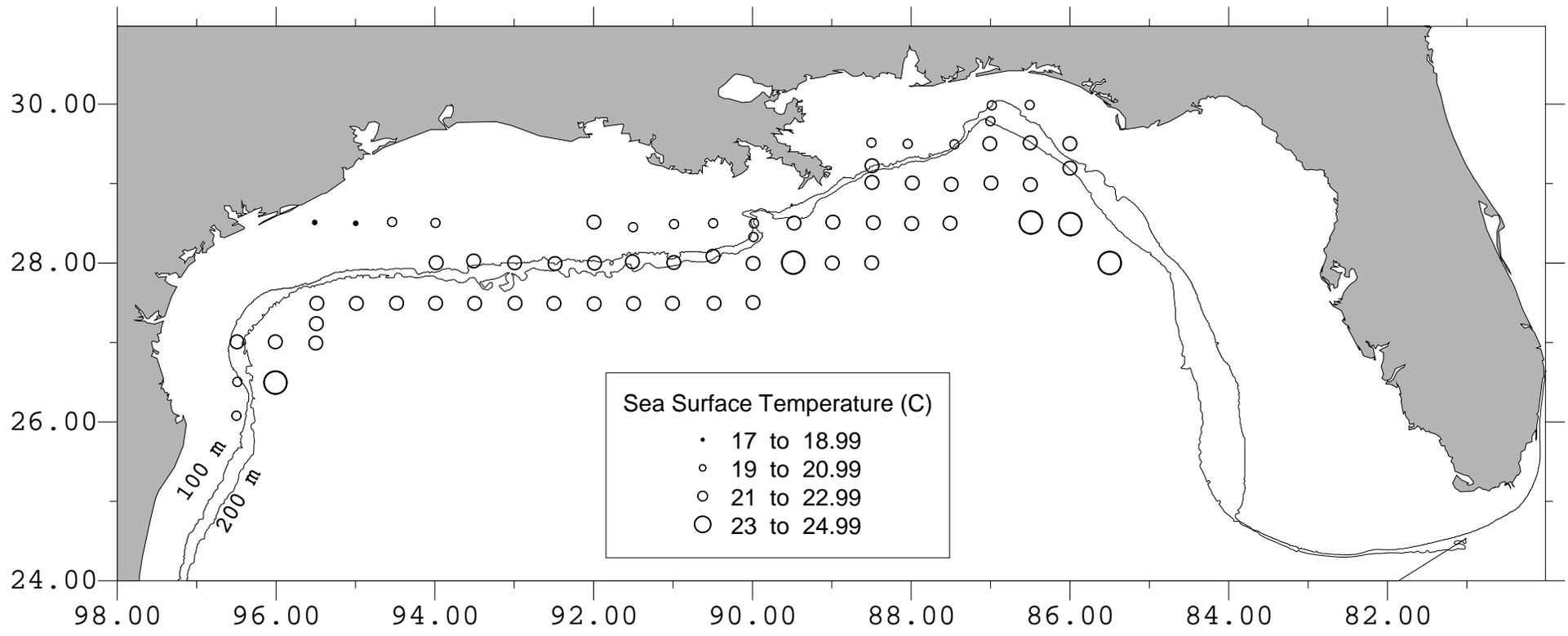


Figure 4. Dissolved oxygen (mg/L) near the surface (≤ 5 m depth) at plankton stations during the SEAMAP Winter Plankton Survey aboard the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012.

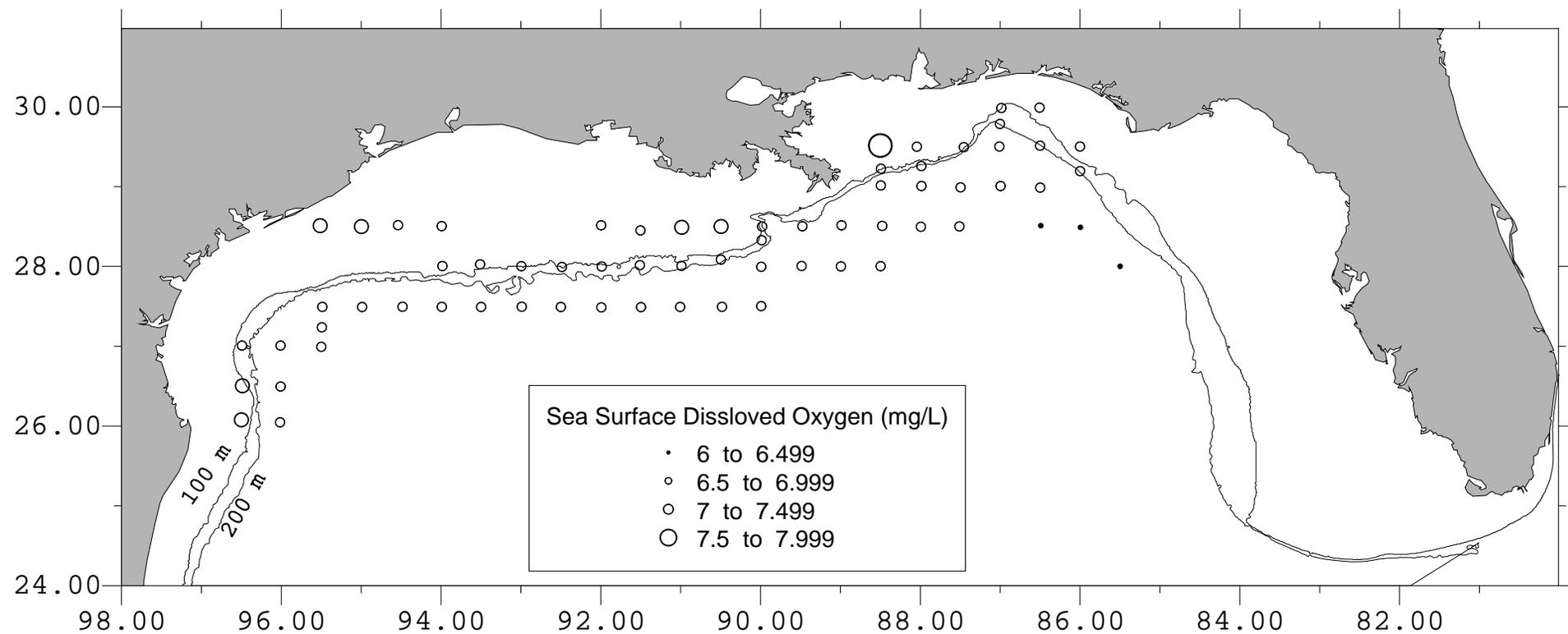


Figure 5. Salinity (PSU) near the surface (≤ 5 m depth) at plankton stations during the SEAMAP Winter Plankton Survey aboard the NOAA Ship *Oregon II*, cruise R2-12-01 (298) 28 January – 28 February 2012

