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Integrated Science Data Management

NAFO Report 2010

Integrated Science Data Management (ISDM)
Fisheries and Oceans Canada (DFO)
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Abstract

ISDM, as the Regional Environmental Data Center for NAFO, is required to provide an annual inventory of environmental data collected in the NAFO area to the NAFO subcommittee for the environment (STACFEN). Inventories and maps of physical oceanographic observations such as ocean profiles, surface thermosalinographs, drifting buoys, currents, waves, tides and water level measurements for the calendar year 2010 are included. This report will also provide an update on other ISDM activities during 2010 and beyond.

It is important for STACFEN to encourage members to send data and information to the designated data center in order to get significant return for NAFO member countries.

Introduction

ISDM, has been recognized since 1975 as the Regional Environmental Data Center for ICNAF and subsequently for NAFO. In order for ISDM to carry out its responsibility of reporting to the Scientific Council, the Designated National Representatives selected by STACFEN are requested to provide ISDM with all marine environmental data collected in the Northwest Atlantic for the preceding years.

Provision of a meaningful report to the Council for its meeting in June 2011 required the submission to ISDM of a completed oceanographic inventory form for data collected in 2010, and oceanographic data pertinent to the NAFO area, for all stations occupied in the year prior to 2010. The data of highest priority are those from the standard sections and stations, as described in NAFO SCR DOC., No. 1, Serial N 1432, 9p.

Data that have been formatted and archived at ISDM are available to all members on request. Requests can be made by telephone (613) 990-0243, by e-mail to isdm-gdsi@dfo-mpo.gc.ca, by completing an on-line order form on the ISDM web site at www.isdm.gc.ca/isdm-gdsi/request-commande/form-eng.asp or by writing to Services, Integrated

Science Data Management (ISDM), Dept. of Fisheries and Oceans, 12th Floor, 200 Kent St., Ottawa, Ont. Canada K1A 0E6.

Data Summaries for 2010

Subsurface profile data

For the NAFO area, subsurface vertical profiles as well as surface observations, sample a variety of parameters such as temperature, salinity, oxygen, nutrients and other chemical and biological variables. ISDM receives these data either in real-time (within one month of observation) via the Global Telecommunications System (GTS) reporting system or in delayed-mode directly from responsible institutions, and indirectly from national Cruise Summary Reports and other reports of marine activities.

The following inventories and corresponding maps summarize the ocean subsurface and surface data processing activities in 2010 for the NAFO area:

- **Table 1, Figure 1: Real-time temperature-salinity profile data collected and processed in 2010**
TOTAL: 333,809 profiles
- **Table 2, Figure 2: Delayed-mode profile data collected in 2010**
TOTAL: 1,961 profiles
- **Table 3, Figure 3: Profile data collected prior to 2009 and processed in 2010**
TOTAL: 4,254 profiles
- **Table 4, Figure 4: Surface thermosalinograph data collected in 2010**
TOTAL: 754 stations

Ocean subsurface data are processed at ISDM in much the same way for each of the data sets described above. Electronic files are converted from a wide range of formats, into a common format. Quality control is carried out by a combination of specially designed software and trained personnel. The quality control has four main functions. The first is to check and ensure that each data message is properly formatted, units are standardized, and parameter range checks are performed. The second is to identify any duplication, and select the best version based on data type, source of the data, and general qualities in analysis and reporting of the observations. The third check identifies and corrects date/time and geographical positioning errors using computer tests and visual inspection of the track for each cruise. The final quality control procedure uses a series of algorithms to find and flag common instrument failures found in profiles of subsurface measurements. Each subsurface profile of temperature, salinity and other subsurface variables, are also visually inspected using software to plot the data and allow a technician to set quality flags to individual points on a profile. www.isdm.gc.ca/isdm-gdsi/ocean/qc-cq-eng.htm

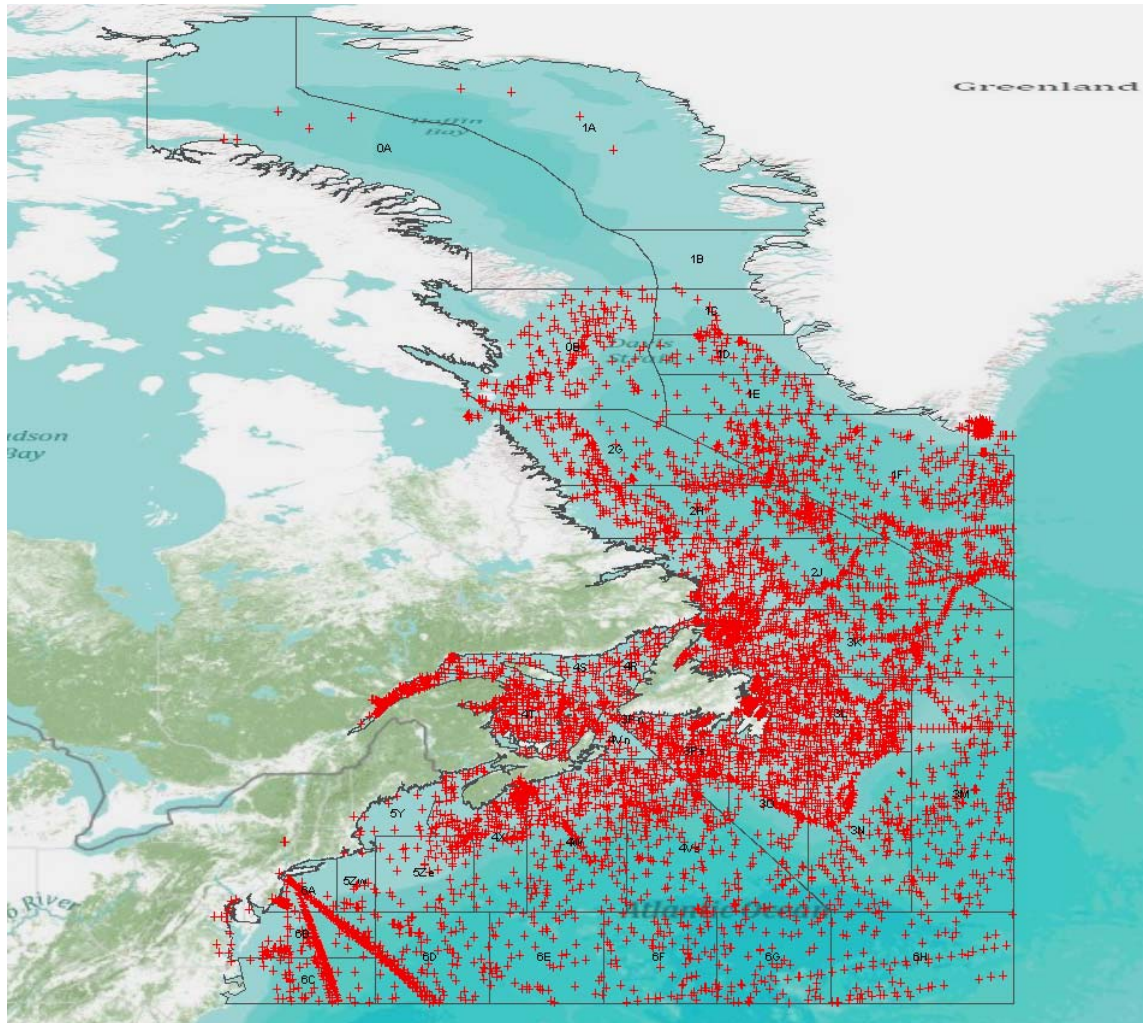


Figure 1: Real Time Temperature-Salinity Stations 2010

Total = 333,809 stations

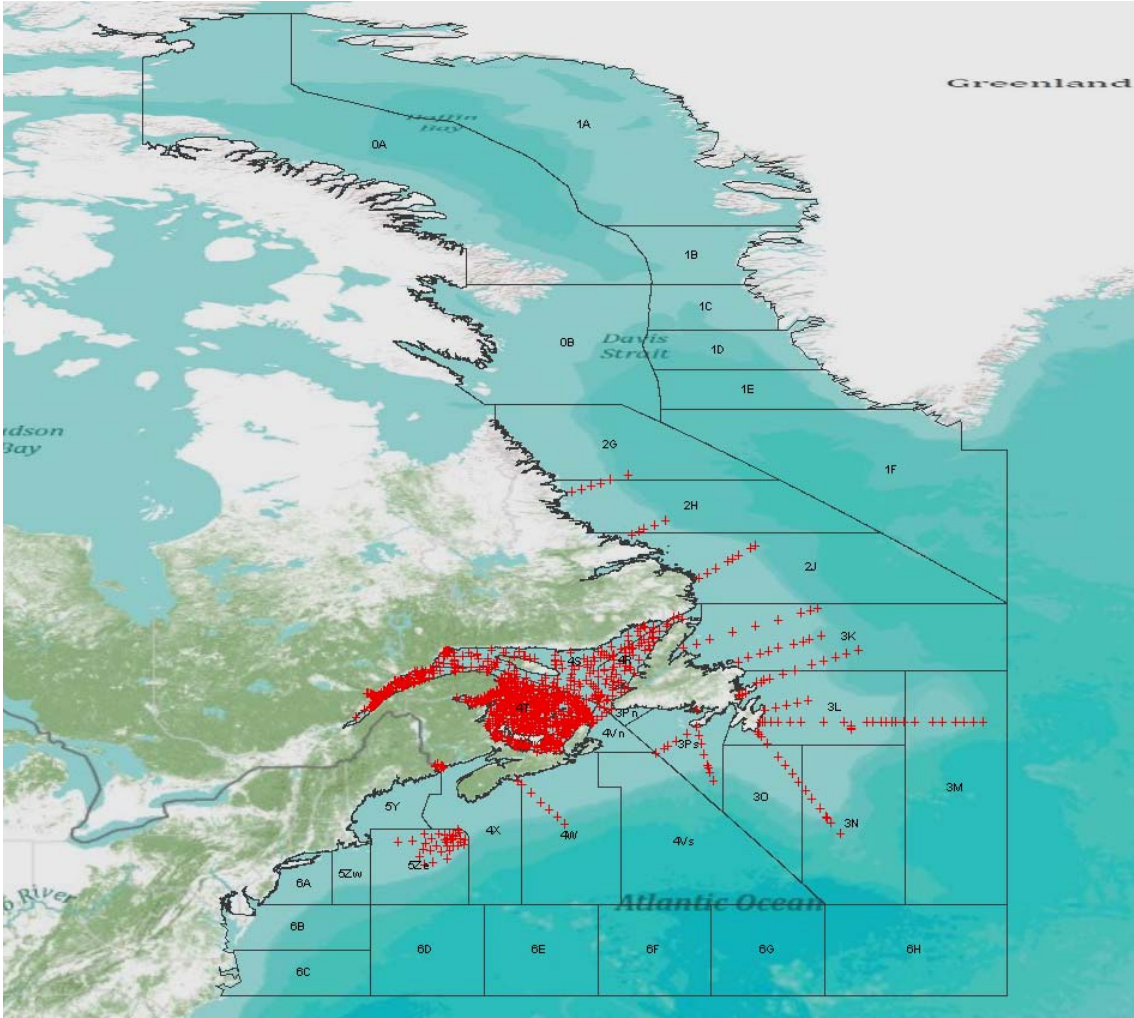


Figure 2: Delayed-mode profile data collected and processed in 2010
Total = 1,961 stations

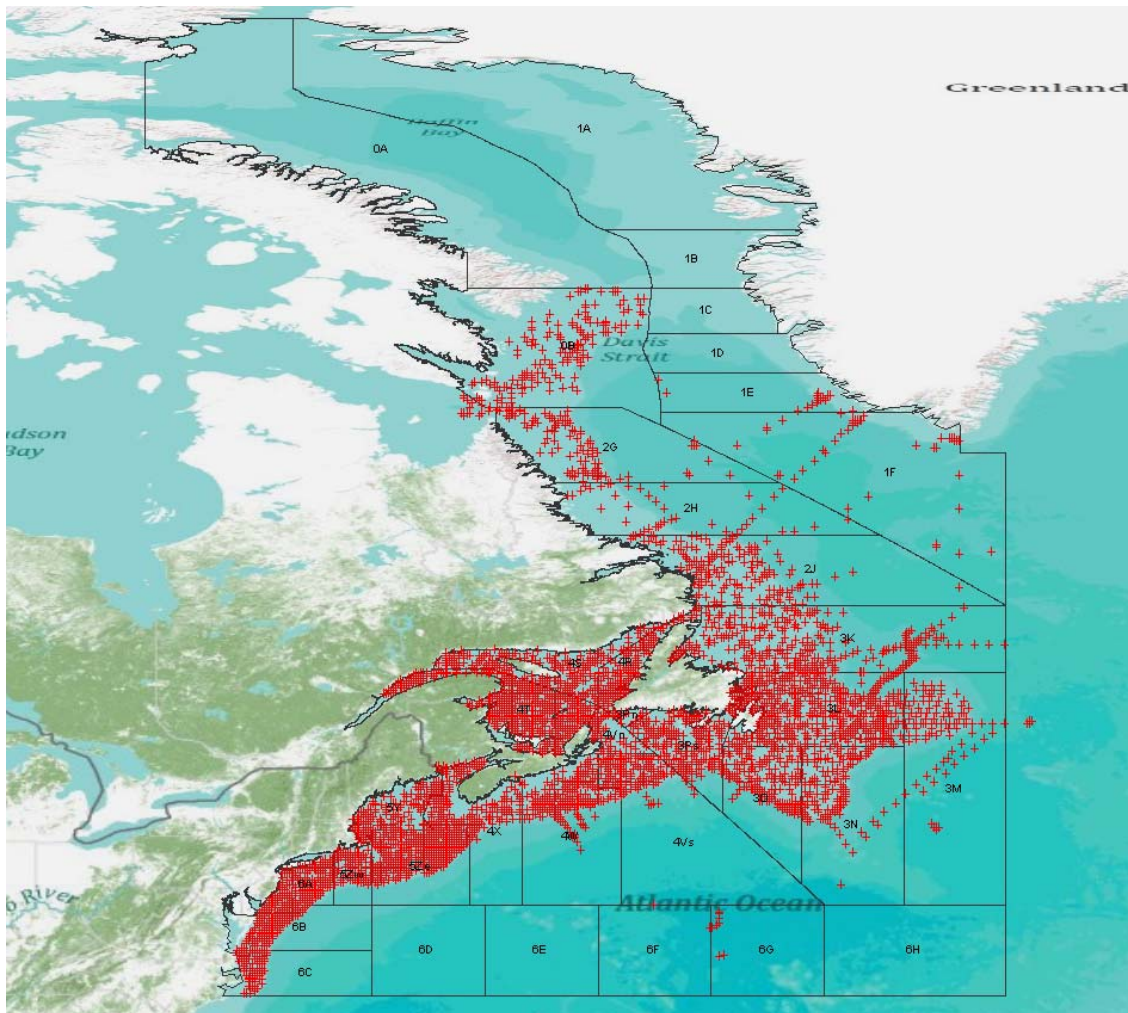


Figure 3: Delayed mode profile stations collected prior to 2010 and processed in 2010

Total = 4,254 Stations

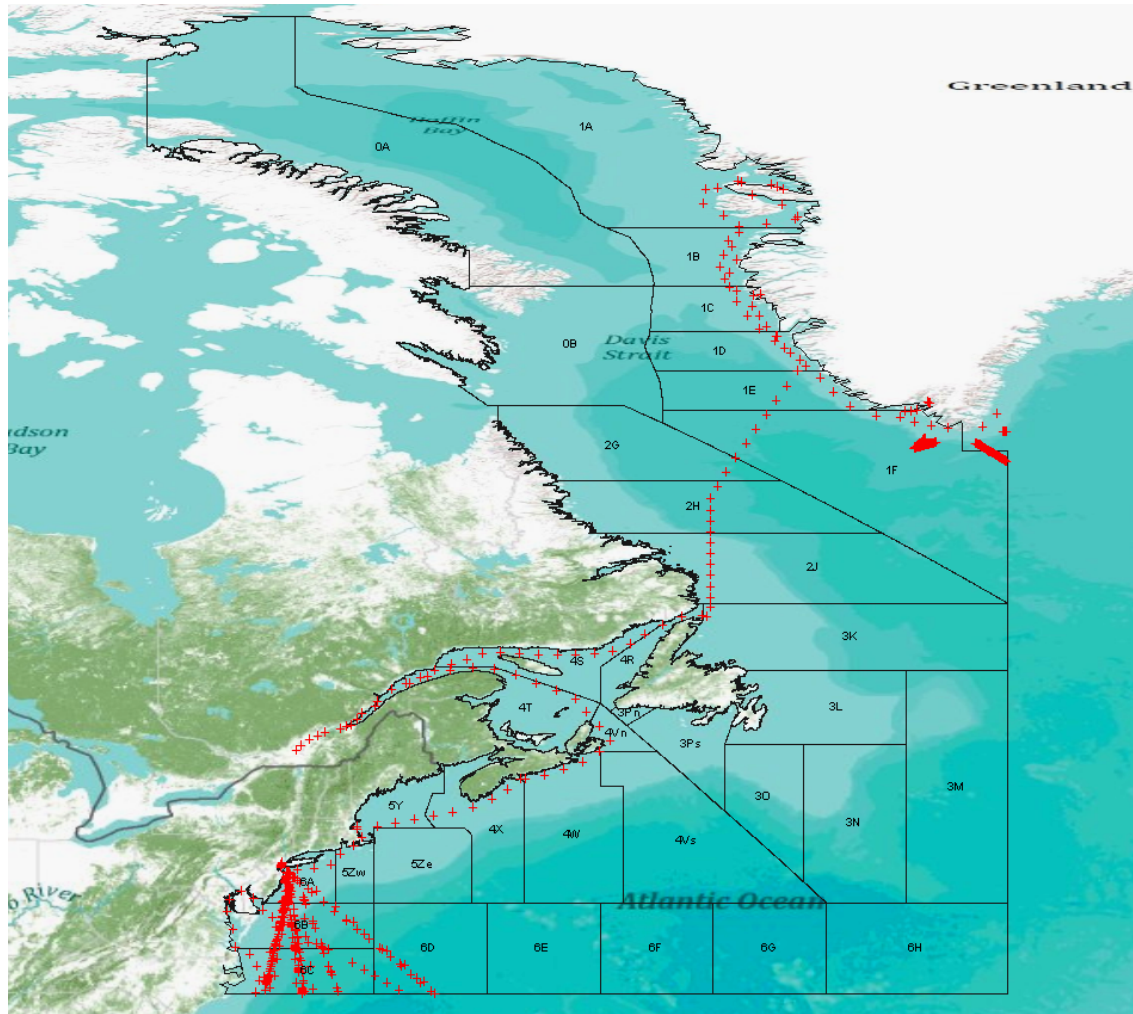


Figure 4: Surface Thermosalinograph data collected in 2010

Total = 754 Stations

Drifting Buoy Data

The following inventory and map summarize ISDM drifting buoy data collected and processed in 2010 for the NAFO area:

- **Table 5, Figure 5: Drifting Buoys in the NAFO Area in 2010**
TOTAL = 364,648 messages from 162 buoys

Drifting buoy data are received at ISDM via the GTS. Quality control techniques are much the same as those for the ocean profile data. Drifting buoys report via satellite, at rates of up to every 15 minutes. These messages are checked for format errors, and reformatted for quality control procedures and subsequent archival. Range checks, flags and possible corrections to the data are carried out by trained personnel, using a system of ISDM software, which organize, analyze and display plots of the data. Quality checks use algorithms which check drifting speed and position, and ranges of sea surface temperatures and sea level pressure. The range checks include a comparison to NOAA's Asheville SST Climatology (2.5x2.5 degrees and monthly). Duplicates are checked, which is important for discriminating between data received directly from buoys and messages routed through other data centers. Lower quality data (which are this type of duplicate) are flagged as such.

ISDM drifting buoy archive contains over 100 million records for the world's oceans, from 1978 to present, and is currently growing at a rate of one million messages per month. A drifting buoy message is comprised of the buoy position and one or more of the following parameters: surface and subsurface water temperature, air pressure and temperature, wind speed and direction.

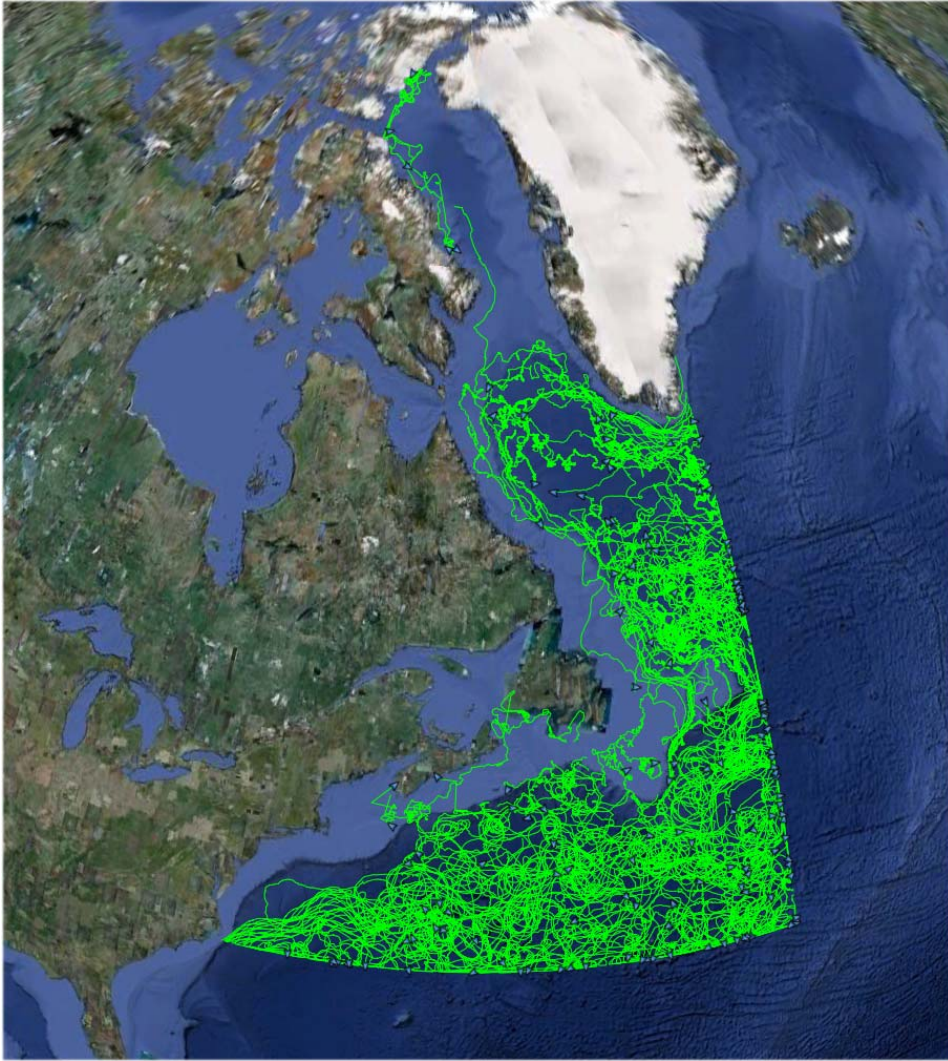


Figure 5: Drifting Buoy messages 2010

Total = 364,648 messages, 162 platforms

Current Meter Data

The following inventory summarizes current meter data collections in 2010 in the NAFO area:

Table 6a, Figure 6: Current meter data recovered and processed in 2010

Table 6b, Figure 7: Current meter data recovered in 2010, but not yet processed in 2010.

Table 6c: Current meters deployed and not yet recovered in 2010

Current meters have been deployed in the NAFO area for many years. These data are processed and archived at The Bedford Institute of Oceanography (BIO), Dartmouth, Nova Scotia and are available online at: http://www.mar.dfo-mpo.gc.ca/science/ocean/database/data_query.html

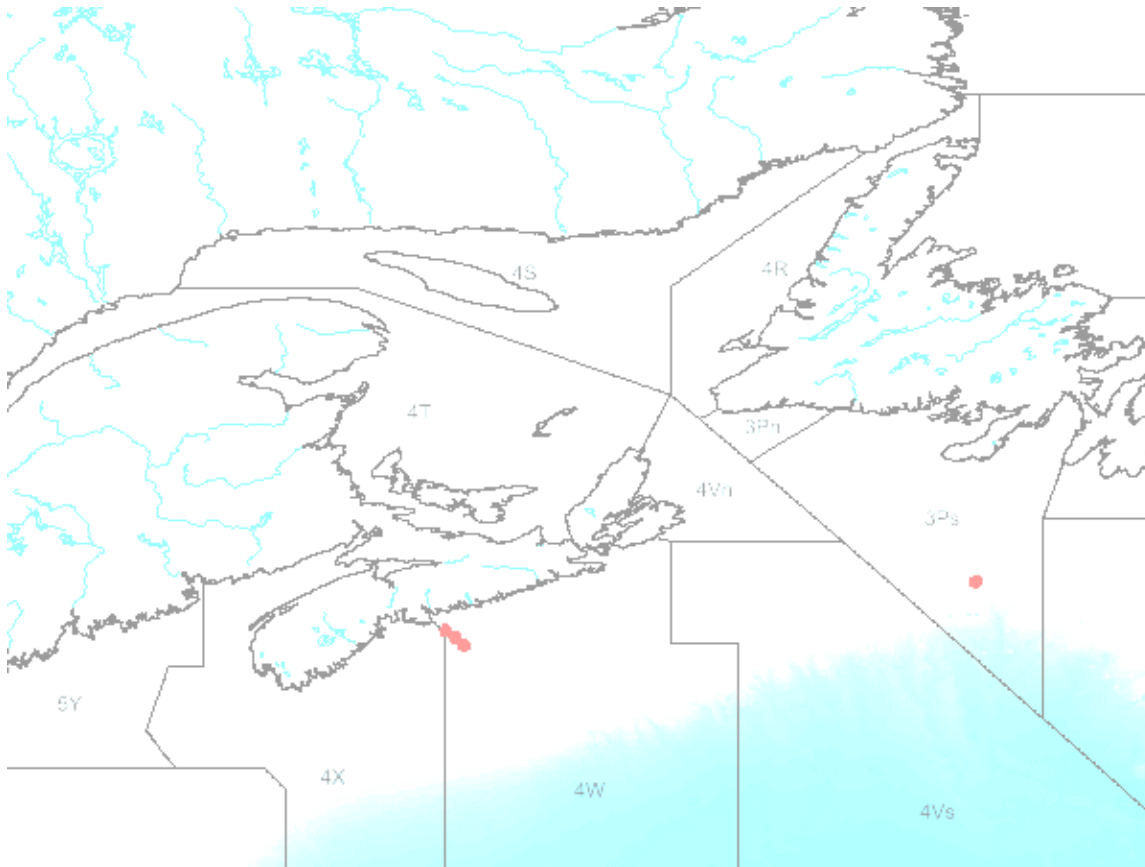


Figure 6: Current Meters Recovered and Processed in 2010

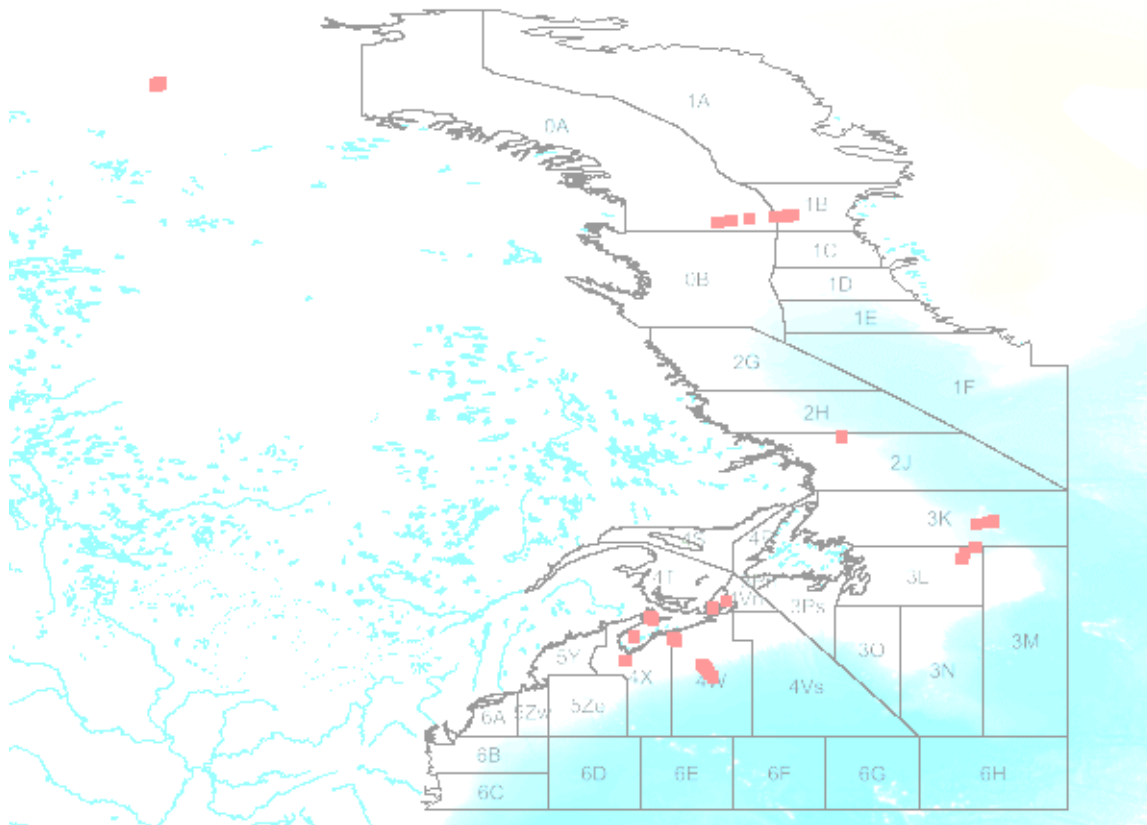


Figure 7: Current Meters recovered but not yet processed in 2010

Wave Data

The following map displays where ISDM wave data were collected in 2010:

- Figure 8: Wave Buoys in the NAFO Area in 2010**

13 Environment Canada meteorological buoys

6 Wave Instruments from the Oil and Gas industry

(Datawell and Triaxys buoys, MIROS RADAR and ADCP)

ISDM continued to process and archive operational surface wave data on a daily basis around Canada. Wave spectra, calculated variables such as the significant wave height and peak period, concurrent wind observations, and raw digital time series of water surface elevations are stored. Data are quality controlled with a visual inspection and with ISDM software to set flags on data showing instrument failures. During 2010, data was collected from 19 buoys in the NAFO area. All real-time and historical wave data are made available on-line from the ISDM web site:

www.isdm.gc.ca/isdm-gdsi/waves-vagues/index-eng.htm

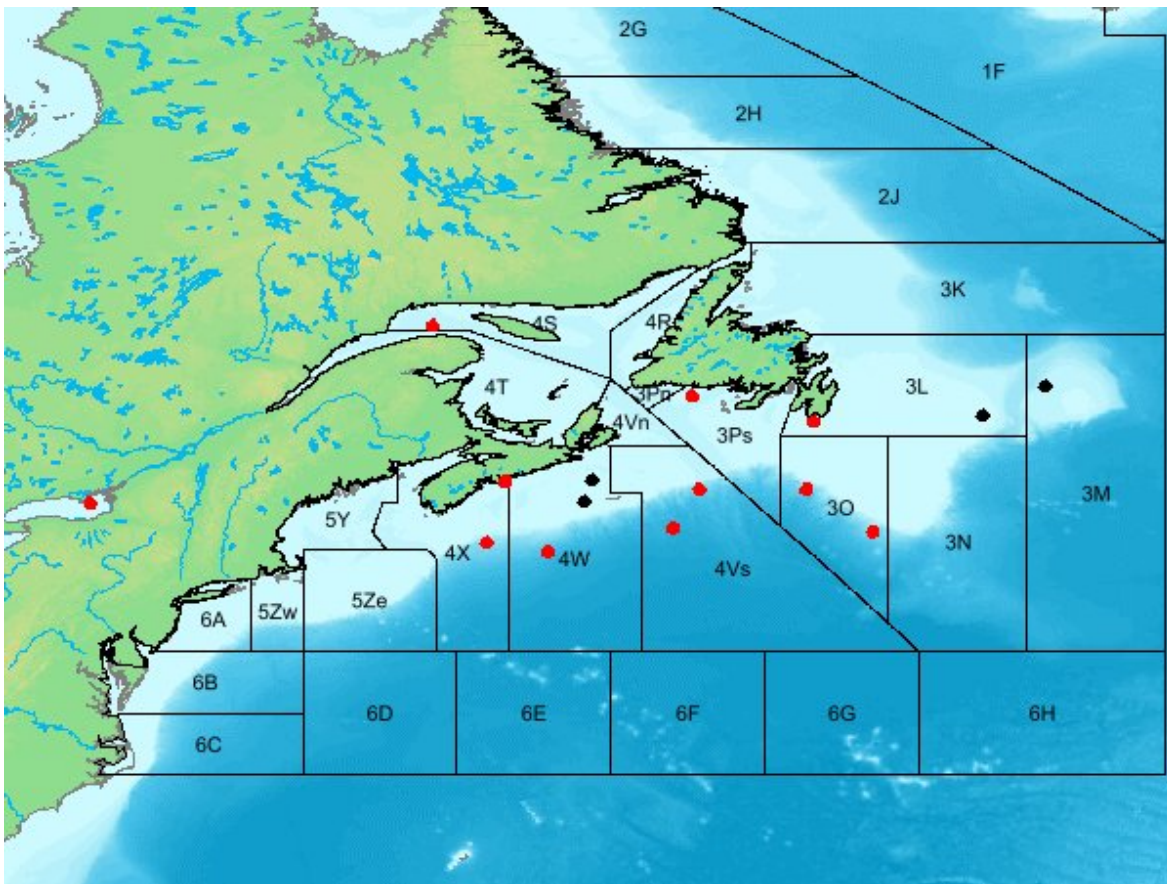


Figure 8: Wave Buoys in the NAFO Area in 2010

Total = 19 Platforms

Tide and Water level Data

As the designated data center, ISDM processes and archives observed water level data collected from the gauge network maintained by the Canadian Hydrographic Service (CHS). There are four main CHS regions: Pacific, Central & Arctic, Quebec, and Atlantic region. Data is also exchanged with Environment Canada every year. Over 2 million new observations are archived every month. The historical tide and water level data archive has digital records with the earliest dating back before the turn of the century.

In 2010, data was reported from 98 stations with 55 of those stations in the NAFO region. Data are quality controlled by the regional CHS tidal officers and ISDM before they become available to the public.

The following map displays where ISDM tide and water level data were collected from:

- **Figure 9: Tide and water level data in the NAFO Area in 2010**

Historical water level data and station benchmarks are available on-line from the ISDM web site:

www.isdm.gc.ca/isdm-gdsi/twl-mne/index-eng.htm

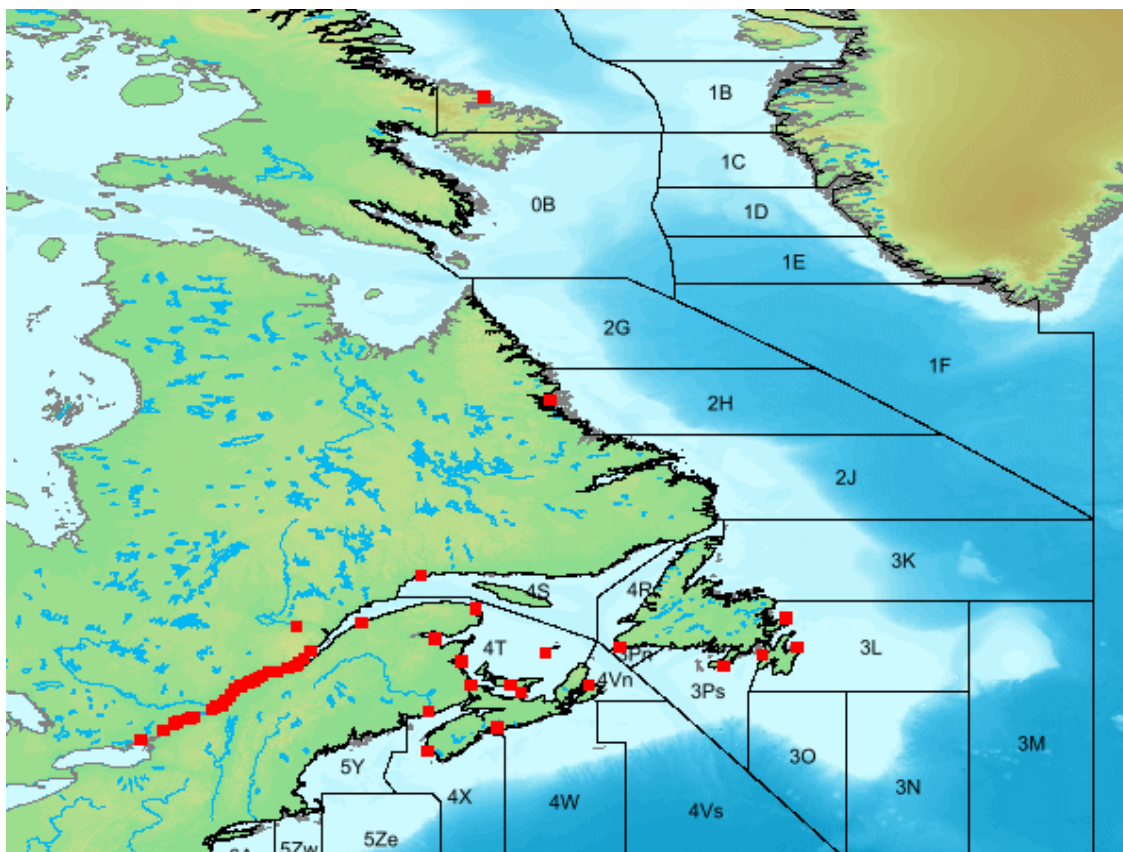


Figure 9: Tide and water level data in the NAFO Area in 2010

Total = 55 gauges

Activity Updates

The Argo data system

Argo is an international program to deploy profiling floats on a 3 by 3 degree grid in the oceans of the world. Each profiling float samples and reports both temperature and salinity from 2000m to the surface every 10 days. Some of the newer floats now also report oxygen. Data are distributed on the Global Telecommunications System (GTS) within 24 hours of collection and made available on two Global servers located in France and the US. ISDM's role is to carry out the processing of the data received from Canadian floats, to distribute the data on the GTS and the global servers within 24 hours and to handle the delayed mode processing.

ISDM developed a Canadian web site

www.isdm.gc.ca/isdm-gdsi/argo/index-eng.html that contains data and information about Canadian floats as well as general information and statistics about the global array. Global information is also available from the Argo Information Centre in Toulouse at argo.jcommops.org.

During 2010, the Canadian Argo program deployed 16 Argo floats in the NAFO region, including 8 oxygen floats (15 actually active) and produced 1308 temperature and salinity profiles and 77 oxygen profiles. Currently, there are 78 active floats and 64 inactive floats in the NAFO region. Figure 10 shows the Canadian Argo floats profiling and drifting in the North Atlantic in May 2010 (blue tracks). The tracks in red indicate floats that are inactive and thus no longer reporting, but who last or once reported in the North Atlantic.

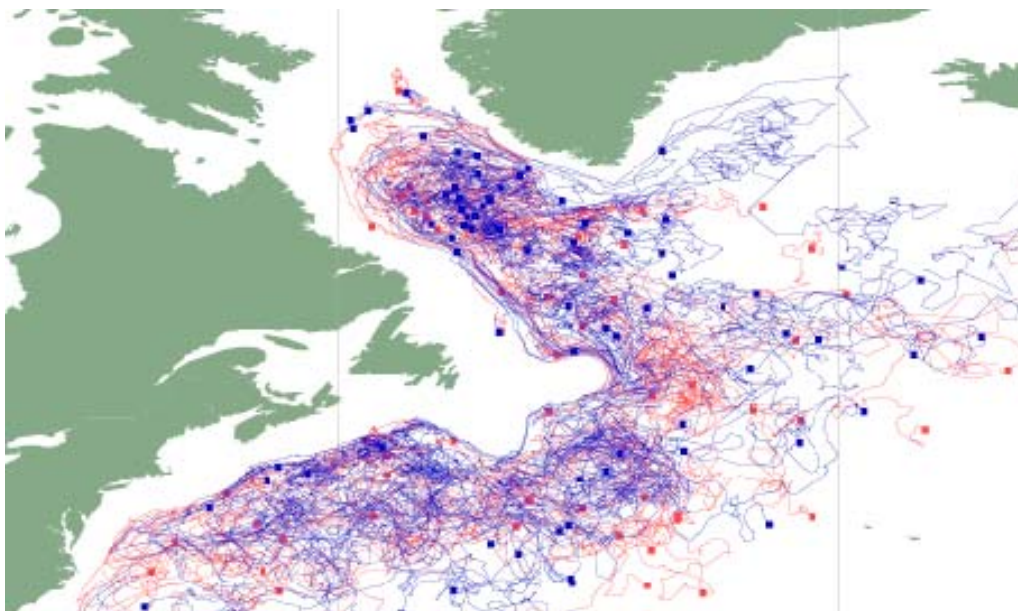


Figure 10: Canadian Argo profiling floats May 2010

Atlantic Zone Monitoring Programme (AZMP)

The DFO Atlantic Zone Monitoring Programme activities include regular sampling for 7 fixed stations and 13 standard sections, and research cruises in the AZMP area to collect other physical, chemical and biological data. As part of ISDM's activities in data management, ISDM continues to build and maintain the AZMP web site: www.isdm.gc.ca/isdm-gdsi/azmp-pmza/index-eng.html.

The wealth of data and information on the site includes:

- Physical and chemical data from 1999 to the present such as CTD, bottle and bathythermograph measurements
- Climate indices showing long term trends of physical variables in the areas of Seawater, Freshwater, Ice, Atmosphere
- Water level data for 9 gauges ranging from 1895 to present
- Graphical representations of biological data (phytoplankton, zooplankton)
- Remote Sensing links for Ocean Colour, SST and Primary Productivity product

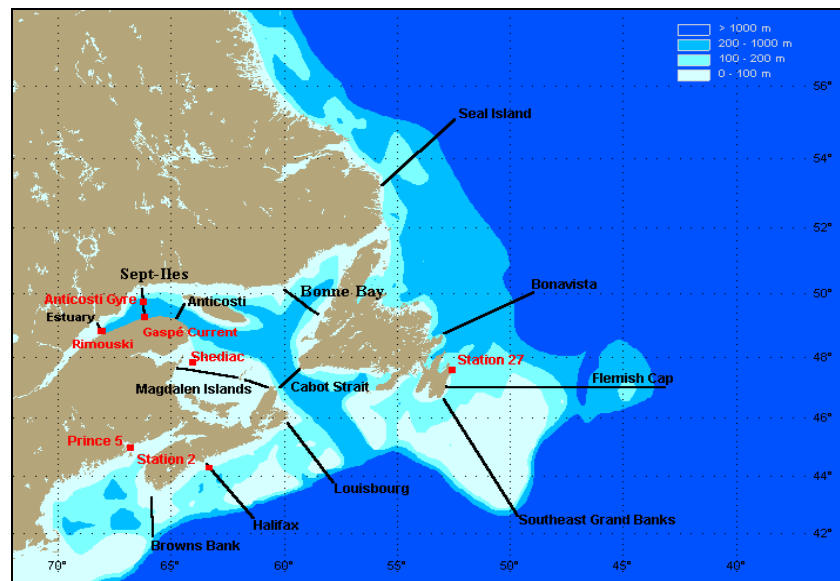


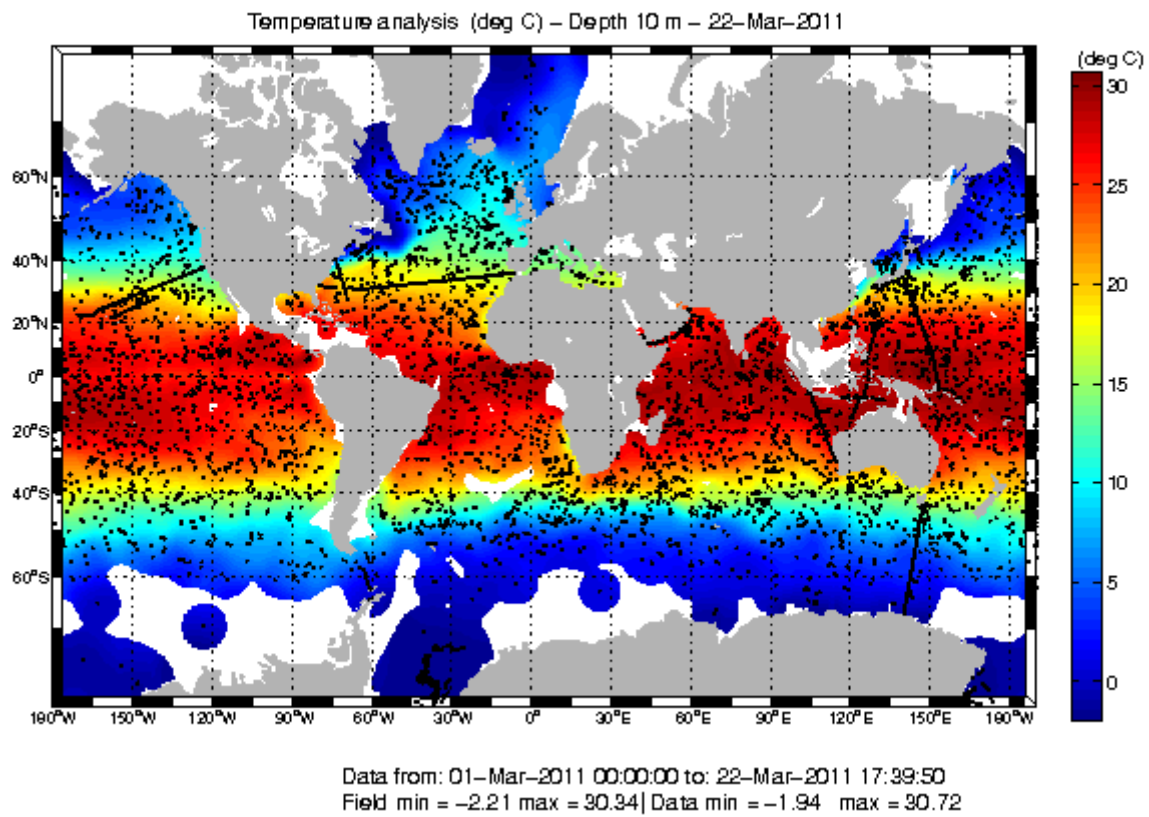
Figure 11: Map of AZMP sections and stations

Centre for Ocean Model Development and Application (COMDA)

DFO has created a virtual Centre for Ocean Model Development and Application (COMDA) with a mandate to provide national leadership, coordination and advice in areas of ocean model development and application that are departmental priorities. COMDA will be leading and assisting in the development and execution of different scientific projects. One of the initial and major projects includes "Ocean Modelling for Benthic Habitat Mapping" in collaboration with NRCan to provide a quantitative representation of ocean current and waves influences on the seabed surrounding Canada. Other projects are listed here: www.mar.dfo-mpo.gc.ca/science/ocean/comda/comda-e.html

ISDM's involvement with COMDA will be to provide data streams of temperature and salinity for model initialization and data assimilation. This step involves creation of three-dimensional fields of temperature and salinity that represent the real-time state of the ocean. This is done by integrating all real-time data sources that are received, controlled or processed at ISDM. The scientific method behind this integration is called objective analysis. The depth levels can be targeted according to the needs of scientists and other clients. Figure 12 illustrates the current daily analysis of temperature and salinity at 10 metres depth.

One by-product of this operation is the capability of generating very accurate fields of temperature and salinity for periods from the recent past, using all data that was available at the time and that has been coming to ISDM since (delayed mode, calibrated data).



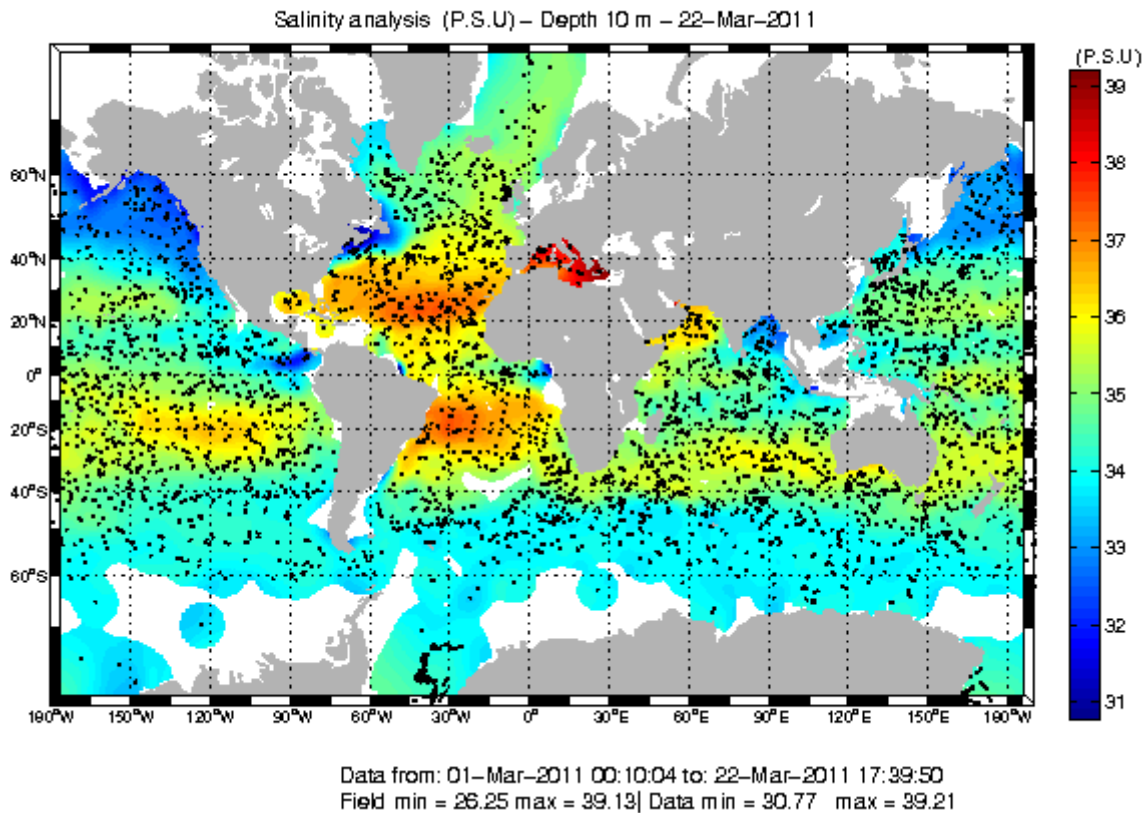


Figure 12: COMDA/OI Climatology analysis for March 22, 2011 at 10m depth

Aquatic Invasive Species (AIS)

Aquatic Invasive Species are a major threat to Canada's fisheries and aquaculture industry and have been entering Canadian waters for centuries but never as rapidly as today. Every decade, some 15 alien species establish themselves in our coastal or inland waters. In the absence of their natural predators, the most aggressive of them spread rapidly. They can radically alter habitat, rendering it inhospitable for native species. The zebra mussel and sea lamprey are examples of such species that have greatly affected the Great Lakes.

The most effective approach to dealing with this threat involves managing the pathways through which invasive species enter and spread through Canadian waters. For aquatic species these pathways are shipping, recreational and commercial boating, the use of live bait, the aquarium/water garden trade, live food fish, unauthorized introductions and transfers, and canals and water diversions. The shipping pathway is considered the largest single source of new aquatic invasive species. Ballast water that is taken on in foreign ports, for ship stability and safety at sea, is discharged in Canadian waters, along with undesirable "hitchhikers" - foreign species ranging from bacteria to larger organisms.

The Canadian Aquatic Invasive Species database and web application was developed in 2004-5. The main objective was to provide a geo-referenced repository for all invasive species observations gathered in Canada by DFO scientists, provincial departments, other federal or municipal departments and the general public. The second objective was to create a decision making tool that would allow the production of augmented value products that would illustrate trends and movements over time and various locations and thus allow the department to be proactive rather than reactive to observations made.

Currently there is data from the Great Lakes, the Maritimes and some from the Vancouver area. Most of the data are observations of location name, long-lat, species name, date, and any metadata provided.

National Science Data Management Committee (NSDMC)

This committee was again funded in 2010-11 to a total of \$827k. From this 17, projects were funded with about 1/6 going to data rescue, and 1/4 for building archives for data that had none. The other funds were spread over improving infrastructure, building a metadata repository, and supporting continuing work to create a detailed gridded bathymetry around Canada. Some funded initiatives included a national multispecies tagging system and the rescue of multi-regional freshwater temperature data.

2010-11

- There were 3 projects directly concerned with data rescue funded at \$125K
- Five were targeted to build archives for data where none now exist funded at \$211K
- A total of 17 projects were approved for NSDMC funding from the \$827k total

References

List of NAFO Standard Oceanographic Sections and Stations. The reprint of NAFO SCR DOC., NO. 1, Serial N1432, 9p. Printed and distributed by: NAFO, P.O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9.

Table 1: Real Time data received during 2010

Total: 333,809 stations

Platform Name	COUNTRY	CALL SIGN	CRUISE PERIOD	BATHY	TESAC	NAFO SUBAREA
GEORGES BANK	USA	44011 10	Apr-09 - Aug-01	0	2636	5ZE
BOSTON	USA	44013 10	Jan-01 - May-19	0	3276	5ZW
			Jun-25 - Dec-20	0	4236	5ZW
VIRGINIA BEACH 64NM, VA	USA	44014 10	Jan-01 - Dec-31	0	8514	6C
BUOY N NORTHEAST CHANNEL	USA	44024 10	Jan-01 - Dec-31	0	7324	4X
LONG ISLAND	USA	44025 10	Jan-01 - Mar-20	0	1547	6A
BUOY	USA	44029 10	Jan-01 - Dec-31	0	8737	5ZW
			Jan-01 - Dec-31	0	8708	5ZW
			Jan-01 - Dec-31	0	8734	5Y
			Jan-01 - Dec-28	0	8624	5Y
			Jan-01 - Dec-31	0	8739	5Y
			Jan-01 - Dec-31	0	8228	5Y
JAMESTOWN	USA	44041 10	Jan-01 - Dec-31	0	8461	6B
POTOMAC	USA	44042 10	Jan-01 - Feb-06	0	812	6B
			Mar-09 - Jun-05	0	2056	6B
			Jun-11 - Jul-21	0	944	6B
			Aug-31 - Dec-31	0	2872	6B
PATAPSCO	USA	44043 10	Jan-01 - Jan-19	0	387	6B
			Mar-16 - Dec-22	0	6518	6B
SUSQUEHANNA	USA	44057 10	Apr-26 - Dec-16	0	5419	6B
STINGRAY POINT	USA	44058 10	Jan-01 - Sep-15	0	5972	6B
NORFOLK	USA	44059 10	Jan-01 - Jul-06	0	4301	6B
			Jul-22 - Nov-11	0	2570	6B
UPPER POTOMAC	USA	44061 10	May-17 - May-17	0	1	6B
GOOSES REEF	USA	44062 10	Jul-30 - Sep-23	0	1272	6B
			Oct-13 - Nov-15	0	755	6B
			Nov-25 - Dec-26	0	724	6B
ANNAPOLIS	USA	44063 10	May-17 - Jul-26	0	1605	6B
			Aug-05 - Nov-10	0	2055	6B
			Nov-19 - Dec-31	0	985	6B
R21	USA	48900 10	Jul-22 - Aug-03	0	1285	6A
MAERSK VILNIUS	SINGAPORE	9V8503 10	Dec-20 - Dec-25	4	0	6B,6D
RAILROAD, CHESAPEAKE RESE	USA	BRIM2 10	Jan-01 - Mar-02	0	4382	6B
			Mar-16 - May-19	0	5617	6B
		BRIM2 A10	May-19 - Jul-28	0	6371	6B
			Sep-16 - Oct-26	0	3628	6B
			Oct-26 - Dec-31	0	5732	6B
OPILIO	CANADA	CFD2576 10	May-05 - May-05	0	1	4T
			Jul-06 - Jul-06	0	1	4T
PANDALUS	CANADA	CFD4703 10	Mar-16 - Mar-16	0	1	4X
			Apr-14 - Apr-14	0	1	4X
			May-12 - May-12	0	1	4X
SHAMOOK	CANADA	CG2676 10	Jan-26 - Jan-31	0	13	3L
			May-16 - May-19	0	5	3PS
			May-29 - Jun-11	0	24	3PS
			Jun-24 - Jun-24	0	1	3L

			Jul-06 - Jul-06	0	1	3L
			Aug-03 - Aug-25	0	22	3L
			Aug-30 - Aug-31	0	9	3L
			Sep-08 - Sep-19	0	22	3K
			Sep-27 - Sep-30	0	15	3L
			Oct-05 - Oct-12	0	9	3L
			Oct-23 - Oct-27	0	5	3L
ALFRED NEEDLER	CANADA	CG2683 10	Feb-23 - Mar-21	0	92	4VS,4W,5ZE
			Mar-28 - Mar-30	0	13	4W
			Apr-07 - Jun-26	6	496	3L,3N,3O,3PS,3PN,4R
			Jul-02 - Aug-06	0	195	4VN,4VS,4W,4X,5Y,5ZE
			Sep-11 - Sep-19	2	16	3L,3PS
			Sep-25 - Oct-15	5	105	3L,3N,3O
			Oct-21 - Dec-10	7	259	3K,3L,3N,3O
BELUGA	CANADA	CG3161 10	Mar-12 - Mar-12	0	1	4T
			Mar-22 - Mar-22	0	1	4T
			Apr-07 - Apr-07	0	1	4T
			Apr-13 - Apr-13	0	1	4T
			Apr-21 - Apr-21	0	1	4T
			May-05 - May-05	0	1	4T
			May-11 - May-11	0	1	4T
			May-18 - May-18	0	1	4T
			Jun-03 - Jun-03	0	1	4T
			Jun-16 - Jun-16	0	1	4T
			Jun-22 - Jun-22	0	1	4T
			Jul-07 - Jul-07	0	1	4T
			Jul-14 - Jul-14	0	1	4T
			Jul-21 - Jul-21	0	1	4T
			Jul-27 - Jul-27	0	1	4T
			Aug-03 - Aug-03	0	1	4T
			Aug-11 - Aug-11	0	1	4T
			Sep-07 - Sep-07	0	1	4T
			Sep-15 - Sep-15	0	1	4T
			Sep-28 - Sep-28	0	1	4T
			Oct-13 - Oct-13	0	1	4T
			Oct-25 - Oct-25	0	1	4T
			Nov-16 - Nov-16	0	1	4T
			Nov-30 - Nov-30	0	1	4T
NSC CALANUS II	CANADA	CG3187 10	May-08 - May-08	0	1	4T
			May-14 - May-17	0	17	4S
			Jun-15 - Jun-27	0	33	4T
F.G. CREED	CANADA	CG3198 10	Jun-11 - Jun-18	0	51	4T
			Jul-03 - Jul-18	0	66	4T
			Aug-17 - Sep-07	0	45	4S,4T
			Oct-20 - Oct-20	0	1	4S
			Oct-25 - Nov-01	0	5	4R
TELEOST	CANADA	CGCB 10	Mar-09 - Mar-09	0	1	3L
			Mar-15 - Mar-25	0	13	4VS,4W
			Apr-01 - Apr-09	1	10	3L
			Apr-15 - May-27	139	259	3K,3L,3M,3N,3O,3PS

				Jun-03 - Jun-19	0	116	4R,4S,4T,4VN
				Jul-08 - Jul-23	29	105	2G,2H,2J,3K,3L,3M
				Aug-03 - Aug-31	0	127	4R,4S,4T,4VN
				Sep-08 - Sep-29	0	145	4T,4VN
				Oct-04 - Dec-20	27	353	2H,2J,3K,3L,3M,3N
MARTHA L. BLACK	CANADA	CGCC	10	Jan-19 - Jan-19	0	2	4S,4T
				Feb-01 - Feb-01	0	1	4T
				Feb-17 - Feb-17	0	2	4S,4T
				Mar-07 - Mar-07	0	2	4S,4T
				May-19 - May-23	0	28	4T
HUDSON	CANADA	CGDG	10	Apr-08 - Apr-23	0	83	3PS,4R,4VN,4VS,4W,4X ,5ZE
				May-01 - May-12	0	51	3K,3L,3PS,4VS,4X
				May-19 - May-30	0	40	1F,2H,2J,4W
				Nov-06 - Nov-16	0	64	4R,4S,4T,4VN,4W,4X
				Nov-24 - Dec-09	35	68	2J,3K,3L,3M,3N,3O
				Dec-16 - Dec-20	0	10	4W
CCGS VIOLA M DAVIDSON	CANADA	CGEC	10	Aug-16 - Aug-16	0	1	4X
				Sep-21 - Sep-21	0	1	4X
				Oct-12 - Oct-12	0	1	4X
				Nov-15 - Nov-15	0	1	4X
				Dec-15 - Dec-15	0	1	4X
SWEET HALL, CHESAPEAKE BA	USA	CVQV2	10	Jan-01 - Jan-05	0	273	6B
				Jan-25 - Jan-26	0	48	6B
				Feb-24 - Jun-15	0	9678	6B
		CVQV2	A10	Jun-15 - Sep-30	0	9996	6B
				Sep-30 - Dec-15	0	6808	6B
METEOR	GERMANY	DBBH	10	Aug-06 - Aug-09	1	16	3L,3M
OYSTER RIVER	USA	GBQN3	10	Apr-13 - Aug-04	0	9999	5ZW
		GBQN3	A10	Aug-04 - Nov-26	0	9996	5ZW
				Nov-26 - Dec-07	0	889	5ZW
GOODWIN ISLAND	USA	GDWV2	10	Jul-13 - Jul-13	0	8	6B
CHESNUT NECK	USA	JCQN4	10	Jan-01 - Jan-03	0	144	6A
				Apr-02 - Jul-28	0	9855	6A
		JCQN4	A10	Jul-28 - Sep-29	0	5834	6A
				Oct-05 - Nov-19	0	4161	6A
				Nov-19 - Dec-23	0	2862	6A
BUOY 126, JACQUES COUSTEA	USA	JCTN4	10	Apr-02 - Jul-14	0	8448	6A
				Jul-20 - Aug-06	0	1547	6A
		JCTN4	A10	Aug-06 - Nov-25	0	9991	6A
				Nov-25 - Dec-09	0	1008	6A
EMPIRE STATE	USA	KKFW	10	May-12 - May-15	10	0	6E,6F,6G,6H
OTTER POINT CREEK	USA	LTQM2	10	Mar-25 - Jul-14	0	9999	6B
		LTQM2	A10	Jul-14 - Nov-01	0	9995	6B
				Nov-01 - Dec-16	0	3802	6B
T - WHARF BOTTOM	USA	NAQR1	10	Jan-01 - Apr-17	0	8504	5ZW
				May-11 - May-28	0	1495	5ZW
		NAQR1	A10	May-28 - Sep-02	0	8727	5ZW
				Sep-07 - Sep-22	0	1270	5ZW
				Sep-22 - Dec-31	0	9059	5ZW
SAFMARINE NGAMI	BELGIUM	ONFC	10	Feb-15 - Feb-15	3	0	6A,6B,6C

			Apr-05 - Apr-06	9	0	5ZW,6D,6E
			Jun-12 - Jun-12	1	0	6D
			Sep-27 - Sep-29	13	0	5ZW,6A,6D,6E
NUKA ARCTICA	DENMARK	OXYH2 10	May-04 - May-04	0	3	1F
OLEANDER	NETHERLAND	PJJU 10	Jan-15 - Jan-17	28	0	6A,6B,6D
			Feb-13 - Feb-14	24	0	6A,6B,6D 1C,1D,1E,1F,2G,2H,2J,3 K,3L,3M,3N,3O,3PS,4V S,4W,4X,5ZE,5ZW,6A,6 B,6C,6D,6E,6F,6G,6H
PROFILE FLOAT	USA	Q390058210	Jan-01 - Dec-31	0	1709	
		Q490121410	Oct-20 - Oct-20	0	7	6D
			Oct-30 - Oct-30	0	1	6D
			Nov-09 - Nov-09	0	1	6D
			Nov-19 - Nov-19	0	1	6D
			Nov-29 - Nov-29	0	1	6E
			Dec-09 - Dec-09	0	1	6E
			Dec-19 - Dec-19	0	1	6D 0B,1B,1C,1D,1E,1F,2G, 2H,2J,3K,3L,3M,6B,6C,6 D,6G
PROFILE FLOAT	USA	Q490121610		0	370	
SEA ANIMAL	UNKNOWN/IN	Q990026510	Mar-31 - May-26	0	160	2J,3K,3L,3M,4R
			Mar-31 - May-03	0	102	1F,2J,3K,4R
			Apr-03 - May-09	0	113	1F,2J,3K
			Mar-30 - May-05	0	100	1F,2J,3K,4R
			Oct-06 - Oct-06	0	2	1F
SCOTTON LANDING	USA	SCLD1 10	Jan-01 - Jan-07	0	101	6B
			Jan-12 - May-28	0	6675	6B
UNKNOWN/INCONNU	UNKNOWN/IN	SHIP 10	Jan-05 - Jan-06	0	2	4W,4X
			Jan-13 - Jan-13	0	1	4X
			Jan-19 - Jan-19	0	1	4X
			Jan-27 - Jan-27	5	2	4X,6E
			Feb-02 - Feb-03	4	1	4X
			Feb-08 - Feb-10	2	1	4X 3L,3PS,4R,4S,4T,4VN,4 VS,4W,4X,5Y,5ZE
			Feb-15 - Mar-17	51	95	
			Mar-24 - Mar-31	3	2	4X
			Apr-08 - Apr-14	3	2	4T,4X
			Apr-21 - Apr-21	0	1	4X
			Apr-28 - May-12	21	4	3L,3PS,4VN,4VS,4W,4X
			May-18 - May-25	16	2	4W,4X,5ZE
			Jun-02 - Jun-02	1	2	4T,4X,5ZE 3M,4T,4VN,4W,4X,5ZE, 5ZW,6B,6C
			Jun-09 - Jun-30	77	6	
			Jul-07 - Jul-07	1	1	4W,4X
			Jul-13 - Jul-14	0	2	4X
			Jul-21 - Jul-21	0	1	4X
			Jul-29 - Jul-29	1	0	4VS
			Aug-04 - Aug-05	0	2	4T,4X
			Aug-11 - Aug-11	0	1	4X
			Aug-18 - Aug-25	9	2	0A,1A,4X
			Aug-31 - Sep-01	0	3	4W,4X
			Sep-08 - Sep-08	0	1	4X
			Sep-16 - Sep-16	0	1	4X
			Sep-24 - Oct-06	1	8	4W,4X

			Oct-13 - Oct-14	0	2	4W,4X
			Oct-20 - Oct-20	0	1	4X
			Oct-27 - Nov-17	43	11	3PS,4T,4W,4X,5ZE,5ZW,6B,6C
			Nov-24 - Nov-24	0	1	4X
			Dec-01 - Dec-01	0	1	4X
			Dec-08 - Dec-08	0	1	4X
			Dec-15 - Dec-15	0	1	4X
RICKERS GENOA	MARSHALL I	V7FS3 10	Feb-09 - Feb-09	1	0	3M
			Jun-22 - Jun-26	20	0	3M,3N,3O,4VS,4W,4X,5ZE,5ZW,6A
			Nov-18 - Nov-22	19	0	4VS,4W,4X,5ZE,5ZW,6A,6G,6H
OLEANDER	MARSHALL I	V7SX3 10	Mar-19 - Mar-21	35	0	6A,6B,6D
			Apr-02 - Apr-04	26	0	5ZE,6A,6B,6D
			Jun-12 - Jun-13	26	0	6A,6B,6D
			Jul-02 - Jul-02	2	0	6A
			Jul-09 - Jul-15	34	0	6A,6B,6D
			Dec-03 - Dec-04	27	0	6A,6B,6D
CAPE BALLARD	CANADA	VCXB 10	Jul-19 - Jul-19	1	1	3PS
			Jul-25 - Aug-26	4	259	0B,1C,2G,2H
MENAUHANT, WAQUOIT BAY RE	USA	WAQM3 10	Jan-05 - Jun-01	0	9999	5ZW
		WAQM3 A10	Jun-01 - Sep-19	0	9999	5ZW
			Sep-19 - Oct-05	0	1479	5ZW
T/S STATE OF MAINE	USA	WCAH 10	Jun-16 - Jun-19	14	0	3N,4VS,4W,4X,6H
HORIZON PRODUCER	USA	WJBJ 10	Feb-13 - Feb-14	16	0	6A,6B,6C
SEALAND NAVIGATOR	USA	WPGK 10	Mar-11 - Mar-13	4	0	6B,6C
			Mar-25 - Mar-28	6	0	6B,6C
			May-22 - May-22	68	0	6A,6B,6C
			Jun-03 - Jun-05	6	0	6B,6C
			Jun-17 - Jun-19	7	0	6B,6C
			Jul-01 - Jul-03	5	0	6B,6C
			Jul-15 - Jul-17	6	0	6B,6C
			Jul-29 - Jul-31	6	0	6B,6C
			Aug-14 - Aug-14	39	0	6A,6B,6C
			Aug-26 - Aug-28	5	0	6B,6C
			Sep-04 - Sep-06	6	0	6B,6C
			Sep-23 - Sep-23	3	0	6B,6C
			Dec-04 - Dec-04	50	0	6A,6B,6C
UNKNOWN/INCONNU	UNKNOWN/IN	ZCDJ3 10	Nov-30 - Dec-02	40	0	6F,6G,6H
TMM SINALOA	BERMUDA	ZCDJ6 10	Aug-21 - Aug-22	13	0	6H
			Sep-14 - Sep-15	4	0	6H
S.A. ORANJE	SOUTH AFRI	ZSDN 10	Apr-25 - Apr-25	1	0	6E
			Jul-04 - Jul-06	10	0	5ZW,6D,6E
			Aug-31 - Sep-01	2	0	5ZW,6E

Table 2: Delayed mode data collected during 2010

Total: 1961 stations

Country	Cruise Num	Cruise Period	BT	CTD	BOTTLE	NAFO Subarea
CANADA	18AU10001	Aug-16 - Aug-16	0	3	0	4X
CANADA	18AU10002	Aug-03 - Aug-03	0	5	0	4X
		Aug-10 - Aug-10	0	5	0	4X
		Aug-17 - Aug-17	0	5	0	4X
		Aug-24 - Aug-24	0	5	0	4X
		Aug-30 - Aug-30	0	5	0	4X
CANADA	18AU10003	Sep-15 - Sep-15	0	1	0	4X
		Sep-21 - Sep-21	0	2	0	4X
CANADA	18AU10004	Sep-07 - Sep-07	0	5	0	4X
		Sep-14 - Sep-14	0	5	0	4X
		Sep-21 - Sep-21	0	5	0	4X
		Sep-28 - Sep-28	0	5	0	4X
CANADA	18AU10005	Oct-05 - Oct-05	0	5	0	4X
		Oct-12 - Oct-12	0	5	0	4X
		Oct-19 - Oct-19	0	5	0	4X
		Oct-26 - Oct-26	0	5	0	4X
CANADA	18AU10006	Oct-12 - Oct-12	0	2	0	4X
		Oct-22 - Oct-22	0	1	0	4X
CANADA	18AU10007	Nov-16 - Nov-16	0	5	0	4X
CANADA	18AU10008	Nov-15 - Nov-15	0	3	0	4X
CANADA	18AU10009	Dec 15 - Dec 15	0	2	0	4X
CANADA	18AU10010	Dec 15 - Dec 15	0	3	0	4X
CANADA	18AU10011	Jun-14 - Jun-14	0	3	0	4X
CANADA	18AU10012	Jul-14 - Jul-14	0	3	0	4X
CANADA	18AU10669	May-12 - May-12	0	1	0	4X
		Jun-14 - Jun-14	0	1	0	4X
		Jul-14 - Jul-14	0	1	0	4X
		Aug-16 - Aug-16	0	1	0	4X
		Sep-21 - Sep-21	0	1	0	4X
		Oct-12 - Oct-12	0	1	0	4X
		Nov-15 - Nov-15	0	1	0	4X
		Dec 15 - Dec 15	0	1	0	4X
CANADA	18BG10033	Mar-12 - Mar-12	0	1	1	4T
		Mar-22 - Mar-22	0	1	1	4T
		Apr-07 - Apr-07	0	1	1	4T
		Apr-13 - Apr-13	0	1	1	4T
		Apr-21 - Apr-21	0	1	1	4T
		May-05 - May-05	0	1	1	4T
		May-11 - May-11	0	1	1	4T
		May-18 - May-18	0	1	1	4T
		May-26 - May-26	0	1	1	4T
		Jun-03 - Jun-03	0	1	1	4T
		Jun-10 - Jun-10	0	1	1	4T
		Jun-16 - Jun-16	0	1	1	4T
		Jun-22 - Jun-22	0	1	1	4T

		Jul-07 - Jul-07	0	1	1	4T
		Jul-14 - Jul-14	0	1	1	4T
		Jul-21 - Jul-21	0	1	1	4T
		Jul-27 - Jul-27	0	1	1	4T
		Aug-03 - Aug-03	0	1	1	4T
		Aug-11 - Aug-11	0	1	1	4T
		Aug-19 - Aug-24	0	2	2	4T
		Aug-31 - Aug-31	0	1	1	4T
		Sep-07 - Sep-07	0	1	1	4T
		Sep-15 - Sep-15	0	1	1	4T
		Sep-28 - Sep-28	0	1	1	4T
		Oct-13 - Oct-13	0	1	1	4T
		Oct-25 - Oct-25	0	1	1	4T
		Nov-16 - Nov-16	0	1	1	4T
		Nov-30 - Nov-30	0	1	1	4T
CANADA	18CN10008	May-08 - May-08	0	1	0	4T
		May-14 - May-17	0	17	0	4S
CANADA	18CN10011	Jun-21 - Jun-27	0	29	0	4T
CANADA	18CN10012	Jun-15 - Jun-18	0	4	0	4T
CANADA	18FC10022	Jun-11 - Jun-18	0	51	0	4T
CANADA	18FC10023	Jul-10 - Jul-18	0	43	0	4T
CANADA	18FC10029	Oct-20 - Oct-20	0	1	0	4S
		Oct-25 - Nov-01	0	5	0	4R
CANADA	18FC10036	Aug-31 - Sep-07	0	36	0	4T
CANADA	18FC10058	Jul-03 - Jul-07	0	23	0	4T
CANADA	18FC10065	Aug-17 - Aug-30	0	9	0	4S,4T
CANADA	18HE10003	Mar-09 - Mar-16	0	88	88	4R,4S,4T,4VN
CANADA	18HU10070	Nov-06 - Nov-16	0	0	64	4R,4S,4T,4VN,4W,4X
CANADA	18HU10983	Nov-23 - Dec 11	0	0	49	2J,3K,3L,3M,3N,3O
CANADA	18MF10019	May-19 - May-23	0	28	0	4T
CANADA	18MF10031	Jan-19 - Jan-19	0	2	2	4S,4T
		Feb-01 - Feb-01	0	1	1	4T
		Feb-17 - Feb-17	0	2	2	4S,4T
		Mar-07 - Mar-07	0	2	2	4S,4T
CANADA	18NE10001	Feb-23 - Mar-09	0	35	0	4W,5ZE
CANADA	18NE10934	Jun-15 - Jun-15	0	0	1	3L
CANADA	18NE10935	Jun-26 - Jun-26	0	0	1	3L
CANADA	18NE10942	Oct-05 - Oct-05	0	0	1	3L
CANADA	18NE10944	Nov-01 - Nov-01	0	0	1	3L
CANADA	18OK10959	Aug-20 - Aug-20	0	0	1	3L
CANADA	18PA10001	Jan-27 - Jan-27	0	2	0	4X
CANADA	18PA10002	Jan-27 - Jan-27	0	5	0	4X
CANADA	18PA10003	Feb-15 - Feb-15	0	2	0	4X
CANADA	18PA10004	Feb-16 - Feb-16	0	5	0	4X
CANADA	18PA10005	Mar-15 - Mar-15	0	2	0	4X
CANADA	18PA10006	Mar-16 - Mar-16	0	5	0	4X
CANADA	18PA10007	Apr-14 - Apr-14	0	3	0	4X
CANADA	18PA10008	Apr-13 - Apr-13	0	5	0	4X
CANADA	18PA10009	May-11 - May-12	0	3	0	4X
CANADA	18PA10010	May-04 - May-04	0	5	0	4X

		May-11 - May-18	0	10	0	4X
		May-25 - May-25	0	1	0	4X
CANADA	18PA10013	Jun-01 - Jun-01	0	4	0	4X
		Jun-08 - Jun-08	0	5	0	4X
		Jun-15 - Jun-15	0	5	0	4X
		Jun-22 - Jun-22	0	5	0	4X
		Jun-29 - Jun-29	0	5	0	4X
CANADA	18PA10014	Jul-06 - Jul-06	0	5	0	4X
		Jul-13 - Jul-13	0	5	0	4X
		Jul-20 - Jul-20	0	5	0	4X
		Jul-27 - Jul-27	0	5	0	4X
CANADA	18PA10669	Jan-27 - Jan-27	0	1	0	4X
		Feb-15 - Feb-15	0	1	0	4X
		Mar-16 - Mar-16	0	1	0	4X
CANADA	18SG10666	Jun-23 - Jun-23	0	1	0	4W
CANADA	18TL10037	Jun-03 - Jun-19	0	116	83	4R,4S,4T,4VN
CANADA	18TL10052	Aug-03 - Aug-31	0	127	0	4R,4S,4T,4VN
CANADA	18TL10900	Mar-09 - Mar-09	0	0	1	3L
CANADA	18TL10970	Apr-01 - Apr-01	0	0	1	3L
		Apr-09 - Apr-09	0	0	1	3L
CANADA	18TL10971	Apr-15 - May-04	0	0	81	3K,3L,3M,3N,3O,3PS
CANADA	18TL10972	May-27 - May-27	0	0	1	3L
CANADA	18TL10973	Jul-08 - Jul-24	0	0	62	2G,2H,2J,3K,3L,3M
CANADA	18TL10974	Sep-08 - Sep-29	0	145	81	4T,4VN
CANADA	18TL10979	Dec 13 - Dec 13	0	0	1	3L
CANADA	18VA10001	May-11 - Jun-03	0	67	0	4T
CANADA	18VA10009	Jul-08 - Jul-13	0	70	0	4T
		Jul-21 - Jul-25	0	47	0	4T
		Aug-05 - Aug-11	0	70	0	4T
		Aug-17 - Sep-14	0	152	0	4T,4VN
CANADA	18VA10666	Jan-06 - Jan-06	0	1	0	4W
		Feb-16 - Feb-16	0	1	0	4W
		May-11 - May-11	0	1	0	4W
		Aug-31 - Aug-31	0	1	0	4W
CANADA	18VA10668	Apr-14 - Apr-14	0	1	0	4T
		May-05 - May-05	0	1	0	4T
		Jun-02 - Jun-02	0	1	0	4T
		Jul-06 - Jul-06	0	1	0	4T
		Aug-05 - Aug-05	0	1	0	4T
		Nov-04 - Nov-04	0	1	0	4T

Table 3: Profile data collected prior to 2010 and processed during the past year

Total: 4,254 stations

Unique ID	Year	CTD	TowedCTD	BOT	BT	NAFO Subarea
181C07686	2007	0	76	0	0	4W 4VS 4VN 4X
181C08775	2008	0	61	0	0	5ZE 4X 5Y 4W
181C08830	2008	0	167	0	0	4X 4W 5Y 4VS 4VN
181C08833	2008	0	1	0	0	3L
181C09833	2008	0	1	0	0	3L
181C09887	2009	50	21	0	82	3L 3K
189908103	2008	0	0	1	0	3L
189909104	2009	247	0	0	0	3L 2G 2H 0B 1C
18BG09029	2009	0	22	22	0	4T
18FC09005	2009	0	20	0	0	4T 4S
18GP08001	2008	0	0	2	0	3L
18HE09003	2009	0	85	0	0	4T 4S 4R 4VN
18HU03072	2003	0	11	0	0	4W 4VS 3PS
18HU04005	2004	0	19	0	0	4X 4W
18HU04019	2004	0	39	0	0	3L 3K 3PS 4VS 4W
18HU05012	2005	0	19	0	0	4X 3L 3K
18HU05021	2005	0	8	0	0	4X 5ZE 4W
18HU06011	2006	0	38	0	0	4X 3PS 3L 3K
18HU06019	2006	0	67	0	0	3K 2J 2H 1F 1E 4R 4VS 4W
18HU07001	2007	0	82	0	0	4X 4W 4VS 4VN 4R 3PS 3O
18HU07007	2007	0	44	0	0	4X 4W 3PS 3L 3K
18HU07011	2007	0	61	0	0	3L 3K 2J 2H 1F 1E 2G 4W
18HU08006	2008	0	49	0	0	4X 4W 3L 3K
18HU08009	2008	0	51	0	0	3L 2H 1F 2J 4W
18HU08865	2008	0	0	60	0	3L 2J 3K 3M 3N 3O 3PS
18HU09063	2009	0	14	73	0	4T 4S 4VN 4R
18HU09929	2009	0	89	0	36	3L 3K 2J 3M 3N 3O
18HU97009	1997	0	0	32	0	3L 3K 2J 1F 2H 2G 1E
18HU99044	1999	0	34	34	0	4W 6G 1F 1E 2G
18MF03072	2003	0	42	0	0	4T 4VS 6F 6G 3M 3K 1F
18MF03099	2003	0	37	0	0	4VS 6F 6G 3N 3M 3K 1F
18NE08867	2008	0	0	1	0	3L
18NE09002	2009	0	44	0	0	4W 4VS
18NE09841	2009	0	33	0	0	4W 5ZE
18NE09867	2008	6	1	0	0	3L
18NE09902	2009	80	0	0	5	3PS 3PN
18NE09903	2009	73	1	0	3	3PS
18NE09904	2009	84	0	0	4	3L 3PS 3O 3N
18NE09905	2009	81	1	0	3	3O 3N 3L
18NE09906	2009	73	2	0	8	3L 3O 3N
18NE09907	2009	0	5	0	0	3PS
18NE09911	2009	0	29	0	0	3PS 3L
18NE09912	2009	0	0	0	11	3K 1F 2G 2H
18NE09913	2009	43	0	0	4	3L 3O 3N

18NE09914	2009	19	2	0	1	3L 3O 3N
18NE09915	2009	57	2	0	0	3L 3O 3N
18NE09916	2009	70	1	0	4	3L 3N
18NE09917	2009	82	1	0	6	3L 3O 3K
18NE09918	2009	48	2	0	1	3L 3K
18NE09927	2009	12	2	0	0	3L 3O
18NE98065	1998	0	1	0	0	4X
18OK08798	2008	0	0	1	0	3L
18OK08852	2008	0	0	1	0	3L
18OK09873	2009	0	27	0	2	3PS
18OK09874	2009	0	7	0	0	3PS
18OK09875	2009	0	2	0	0	3L
18OK09876	2009	0	32	0	0	3L
18OK09877	2009	0	25	0	0	3L
18OK09878	2009	0	22	0	0	3K
18OK09879	2009	0	29	0	0	3L
18OK09880	2009	0	20	0	0	3L
18OK09881	2009	0	24	0	0	3L
18OK09882	2009	0	3	0	0	3L
18OK09883	2009	0	25	0	0	3L 3PS
18OK09901	2009	0	3	0	0	3L
18OK09923	2009	0	1	0	0	3L
18OK09924	2009	0	1	0	0	3L
18OK09925	2009	0	1	0	0	3L
18PA09021	2009	0	2	0	0	4X
18PA09022	2009	0	5	0	0	4X
18PA09669	2009	0	1	0	0	4X
18TL05035	2005	0	0	69	0	4T 4S 4R 4VN
18TL05045	2005	0 0 1		89	0	4VN 4T 4S 4R 3K
18TL07745	2007	0	169	0	0	4W 4X 4VS 4VN
18TL07749	2007	0	176	0	0	4T 4VN
18TL08041	2008	0 0 1		26	0	4VN 4R 4T 4S
18TL08756	2008	0	0	2	0	3L
18TL08805	2008	0	66	0	0	4W 4VS
18TL08806	2008	0	0	2	0	3L
18TL08807	2008	0	0	76	0	3L 3O 3N 3M 3K
18TL08808	2008	27	6	3	0	3L 3K
18TL08809	2008	0	0	2	0	3L
18TL08811	2008	0	0	54	0	3L 3M 3K 2J
18TL08815	2008	0	192	0	0	4T 4VN
18TL08817	2008	0	0	1	0	3L
18TL08823	2008	0	0	1	0	3L
18TL08824	2008	0	0	1	0	3L
18TL08826	2008	0	0	1	0	3L
18TL08827	2008	0	0	2	0	3L
18TL08828	2008	0	0	2	0	3L
18TL08829	2008	0	0	1	0	3L
18TL08833	2008	0	0	2	0	3L
18TL08835	2008	0	0	2	0	3L
18TL08836	2008	0	0	2	0	3L

18TL08837	2008	0	0	1	0	3L
18TL08864	2008	0	0	2	0	3L
18TL09037	2009	0	0	86	0	4T 4S 4R 4VN
18TL09051	2009	0	0 1	11	0	4VN 4T 4R 4S
18TL09808	2008	27	6	0	0	3L 3K
18TL09885	2009	83	2	0	3	3L
18TL09886	2009	0	1	0	32	3L 3M 3N 3PS 3K
18TL09890	2009	0	120	0	50	3L 3M 3K 2J 2H 2G
18TL09892	2009	0	2	0	0	4T
18TL09894	2009	16	2	0	0	3L 3O
18TL09895	2009	23	3	0	2	3L 3O 3N
18TL09896	2009	77	1	0	1	3L 2J
18TL09897	2009	68	0	0	17	3K 2J
18TL09898	2009	39	0	0	0	3K 3L
18TL09899	2009	15	1	0	3	3L
18TL09928	2009	0	2	0	0	3PS
18VA06666	2006	0	1	0	0	4W
18VA09001	2009	0	12	12	0	4S 4T
18VA09024	2009	0	2	0	0	3PS
18VA09054	2009	0	31	0	0	4R
18VA09668	2009	0	1	0	0	4T
29VE09001	2009	0	68	0	0	3M 3L
316G09001	2009	0	23	0	0	6A 6B 6C
316G09002	2009	0	169	0	0	5ZW 6A 6B 6C 5ZE 4X 5Y
316G09007	2009	0	20	0	0	5ZW
316G09008	2009	0	215	0	0	5ZE
316G09009	2009	0	158	0	0	5ZW 6A 6B 6C 5ZE 4X 5Y
316G09011	2009	0	159	0	0	5ZW 5ZE 6A 6B 6C 4X 5Y
33H509001	2009	0	124	0	0	6B 6C 6A 5ZW 5ZE
33HH09001	2009	0	391	0	0	6A 6B 6C 5ZW 5ZE 5Y 4X
33HH09004	2009	0	29	0	0	6A
33HH09005	2009	0	356	0	0	6B 6C 6A 5ZW 5ZE 4X 5Y

Table 4: TRACKOB data collected during 2010

TOTAL: 754 stations

Ship Name	Country	Call Sign	Cruise Period	TRACKOB	NAFO Subarea
		FNFP B10	Jun-30 - Jul-02	274	1F
		FNFP C10	Jul-02 - Jul-02	8	1F
UNKNOWN/INCONNU	UNKNOWN/IN	KS049 10	Apr-15 - Apr-22	22	6A,6B,6C,6D
			Apr-28 - Apr-30	12	6A,6B,6C
			May-06 - May-08	11	6A,6B,6C
			May-14 - May-16	8	6A,6B,6C
			May-22 - May-24	5	6B,6C
			May-30 - Jun-01	7	6A,6B,6C
			Jun-07 - Jun-09	14	6A,6B,6C
			Jun-15 - Jun-17	13	6A,6B,6C
			Jun-23 - Jun-25	13	6A,6B,6C
			Jul-01 - Jul-03	12	6A,6B,6C
			Jul-09 - Jul-11	15	6A,6B,6C
			Jul-17 - Jul-19	13	6A,6B,6C
			Jul-25 - Jul-27	13	6A,6B,6C
			Aug-02 - Aug-04	15	6A,6B,6C
			Aug-10 - Aug-12	14	6A,6B,6C
			Aug-18 - Aug-20	12	6A,6B,6C
			Aug-26 - Sep-05	27	6A,6B,6C
			Sep-11 - Sep-13	14	6A,6B,6C
			Sep-19 - Sep-21	13	6A,6B,6C
			Sep-27 - Sep-29	13	6A,6B,6C
			Oct-05 - Oct-07	13	6A,6B,6C
			Oct-13 - Oct-17	25	6A,6B,6C
UNKNOWN/INCONNU	UNKNOWN/IN	KS085 10	Sep-04 - Sep-21	95	1A,1B,1C,1D,1E,1F,2G,2H,2J,3K,4R,4S,4T
			Sep-28 - Oct-14	50	4T,4VN,4VS,4W,4X,5Y,5ZW,6A,6B,6D
			Oct-20 - Oct-24	23	6B,6C,6D

Table 5: DRIBU data received during 2010

TOTAL = 364,648 messages from 162 buoys

BUOY	DATE RANGE	DAYS	SST	AP	AT	WS	WD	TC	NAFO Subarea
13518	Oct-17 - Nov-22	37	X	X	-	-	-	-	6H,3M
25621	May-04 - Jul-15	72	X	X	X	-	-	-	1F,1E,2G
25622	May-04 - Dec-31	242	X	X	X	-	-	-	1F,1E,1D,0B,2G,2H,2J,3K
31527	Sep-30 - Oct-30	30	X	X	-	-	-	-	6D
41559	Dec-06 - Dec-07	1	X	X	-	-	-	-	6G
41598	Feb-15 - Aug-15	182	X	X	X	-	-	-	6G,6F,6H
41606	Dec-15 - Dec-24	10	X	X	-	-	-	-	6F
41619	Dec-06 - Dec-28	22	X	X	-	-	-	-	6H
41632	Jan-01 - May-06	126	X	X	-	-	-	-	6D,6E,4X,4W,6F,4VS,6G,3N,6H,3M
41699	Mar-26 - May-31	66	X	X	-	-	-	-	6C,6D,6E
41903	Nov-07 - Dec-31	55	X	X	-	-	-	-	6C,6D,6E
41928	Jun-26 - Sep-04	70	X	X	-	-	-	-	6C,6B,6D,4X,6E,6F
41955	Jan-01 - Mar-03	62	X	X	-	-	-	-	6G
41956	Jan-01 - Feb-04	35	X	X	-	-	-	-	6D
41973	Apr-27 - Jun-27	62	X	X	-	-	-	-	6C,6D,6E,6F
41974	Aug-21 - Oct-22	62	X	X	X	-	-	-	6D,6E
41977	Jan-01 - Jul-19	200	X	X	-	-	-	-	6D,6E,6G,6F,6H
41983	Oct-10 - Dec-31	83	X	X	-	-	-	-	6C,6B,6D,6E,5ZE,4X,4W,6F,4VS,6G
41984	Jan-01 - Apr-23	113	X	X	X	-	-	-	6D,6E,6H,3N,3M
41986	Jan-01 - Apr-03	93	X	X	X	-	-	-	6C,6D,6E,6F,6G
41987	May-25 - Dec-31	221	X	X	-	-	-	-	6G,6F,4VS,3N,6H,3M
41989	Sep-11 - Nov-07	58	X	X	-	-	-	-	6F,6E
41992	May-25 - Nov-23	183	X	X	-	-	-	-	6H,6G,6F
42501	Jul-22 - Aug-01	11	X	X	-	-	-	-	6C
42503	Oct-21 - Dec-31	72	X	X	-	-	-	-	6C,6B,6D,4X,5ZE,4W,6E,6F
42518	Sep-14 - Nov-07	54	X	X	-	-	-	-	6C,6B,6D,6E,4X,4W,4VS,6G,6F
42520	Aug-04 - Nov-21	109	X	X	-	-	-	-	6C,6B,6D,5ZE,4X,4W,4VS,6G,3O,3N,6H,3M
42524	Sep-23 - Oct-30	37	X	X	-	-	-	-	6C,6B,6D,6E,5ZE,4X,4W
42542	Aug-25 - Sep-10	17	X	X	-	-	-	-	6C,6D,6B
42547	Oct-28 - Dec-31	65	X	X	-	-	-	-	6C,6B,6D,5ZE,4X,4W,6E
42548	Jul-27 - Sep-02	37	X	X	-	-	-	-	6C,6B,6D,6E,4X,5ZE
42549	Jul-22 - Dec-31	163	X	X	-	-	-	-	6C,6B,6D,6E,6F,4VS,4W,6G
42555	Jul-21 - Dec-31	164	X	X	-	-	-	-	6C,6D,6E,5ZE,4X,4W,6F,6G
42558	Nov-06 - Dec-31	56	X	X	-	-	-	-	6C,6B,6D,6E
42559	Aug-16 - Dec-31	138	-	X	-	-	-	-	6C,6B,6D,6E,4W,4VS,6F,6G
43523	Jan-17 - Mar-09	52	X	X	-	-	-	-	6H,6G
44509	Feb-25 - May-04	68	-	X	-	-	-	-	3K,3L,3N
44510	Mar-30 - Jun-12	74	X	X	-	-	-	-	3K,3L,3M
44547	May-17 - Nov-22	189	X	X	X	-	-	-	1F,1E,1D,0B,2G,2H,2J
44548	Jan-01 - Dec-31	365	X	X	X	-	-	-	2J,3K,3L,3M
44549	Jan-01 - Dec-14	348	X	X	X	-	-	-	3K,3L,3M,2J,1F
44550	Jan-01 - Mar-10	69	X	X	X	-	-	-	3L,3N,3M
44552	Aug-16 - Nov-13	90	X	X	-	-	-	-	6D,6E,4X,4W,6F
44553	Aug-16 - Dec-04	111	X	X	-	-	-	-	6D,6E,4W,6F
44554	Aug-24 - Dec-31	130	X	X	-	-	-	-	4X,4W,6E,6F,4VS
44555	Aug-31 - Nov-15	76	X	X	X	-	-	-	3M,3K
44556	Aug-31 - Dec-31	123	X	X	-	-	-	-	4W,4VS,3O,3PS
44557	Aug-31 - Nov-13	74	X	X	X	-	-	-	3N,3L,3M,3K
44561	Sep-13 - Dec-31	110	X	X	-	-	-	-	4VS,3O,3N,3M
44562	Sep-15 - Dec-31	108	X	X	X	-	-	-	1F,2J,2H
44601	Oct-21 - Dec-31	72	X	X	X	-	-	-	3L,3N,3M
44607	May-13 - Oct-21	162	X	X	X	-	-	-	1F,1E,2G,2H
44608	Mar-14 - Dec-31	293	X	X	X	-	-	-	1F
44609	Jan-01 - Jan-11	11	X	X	X	-	-	-	3N,3M
44611	Jan-01 - Jun-20	171	X	X	X	-	-	-	2J,3K,3L,3M,1F
44612	Oct-11 - Dec-31	82	-	X	X	-	-	-	4VS
44613	Feb-07 - Mar-15	37	X	X	X	-	-	-	1F
44614	Jan-01 - Apr-06	96	X	X	X	-	-	-	1F
44615	Jan-01 - Jan-12	12	X	X	X	-	-	-	3N,3M
44616	Feb-09 - Dec-06	301	X	X	X	-	-	-	1F,1E,2G,0B,2H,2J
44621	Jan-05 - Feb-04	31	-	X	X	-	-	-	3M,3K
44629	Jan-15 - Feb-05	21	X	X	X	-	-	-	6H
44636	Jan-01 - Feb-09	40	X	X	X	X	X	-	4VS,3O,3N
44637	Jan-01 - Feb-10	41	X	X	X	X	X	-	3N,3M
44641	Jan-01 - May-26	146	X	X	X	-	-	-	4X
44660	Mar-19 - Mar-23	4	-	-	-	-	-	-	4X
44665	Nov-08 - Dec-31	54	X	X	X	-	-	-	3O,3PS,4VS,4W
44721	Jan-15 - Jun-24	161	X	X	X	-	-	-	3M,3K,2J,1F
44724	Nov-19 - Nov-24	6	X	X	X	-	-	-	3K
44746	Jan-01 - May-30	150	-	X	X	-	-	-	3N,3M,3K,2J,1F
44751	May-23 - Dec-31	223	-	X	X	-	-	-	4VS,3PS,3O

44752	May-21 - Aug-29	101	X	X	X	X	X	-	4X,4W,4VS
44754	Jun-19 - Dec-31	196	-	X	X	-	-	-	4VS,3PS,3O,3N
44755	May-22 - Dec-31	224	X	X	X	X	X	-	4W,4VS,6F,6E,6G
44764	Nov-24 - Dec-31	38	X	X	X	-	-	-	1F
44768	Nov-03 - Dec-31	59	X	X	X	-	-	-	3M,3K
44769	Jan-01 - Jan-02	2	X	X	X	-	-	-	2J
44772	Jan-01 - Jan-27	27	X	X	X	-	-	-	4VS,3O,3N,6H
44777	Jan-20 - Feb-19	31	X	X	X	-	-	-	1F
44831	Sep-15 - Dec-31	108	X	X	X	-	-	-	2J,2H,1F
44834	May-06 - Aug-22	108	X	X	X	-	-	-	6D,6C,6B,6E,4X,4W
44835	Jan-26 - Dec-10	318	X	X	X	-	-	-	1F,2H
44836	Oct-07 - Dec-29	84	X	X	X	-	-	-	3N,3M
44839	Oct-07 - Nov-20	45	X	X	X	-	-	-	3N,3M
44842	May-06 - Jul-24	80	X	X	X	-	-	-	6H
44844	Apr-29 - Oct-16	170	X	X	X	-	-	-	6E,6F,4VS,6G
44845	Sep-21 - Dec-31	102	X	X	X	-	-	-	3K,2J,1F
44846	Apr-30 - Dec-11	225	X	X	X	-	-	-	3N,6H,6G,4VS,6F,6E,3O
44848	Jan-08 - Oct-12	277	X	X	X	-	-	-	1F,2J,3K
44850	May-29 - Jun-26	29	X	X	-	-	-	-	3M
44858	Jan-01 - Feb-15	46	X	X	-	-	-	-	4VS,3O,3N,3M
44859	Jan-01 - Jan-21	21	X	X	-	-	-	-	3N,3M
44876	Feb-02 - Feb-28	27	X	X	X	-	-	-	3N,3O,3M
44880	Jan-12 - Feb-09	29	X	X	X	-	-	-	3L,3N,3M
44881	Jun-17 - Dec-09	175	X	X	-	-	-	-	6H,3M,3N
44883	Jun-17 - Dec-06	172	X	X	-	-	-	-	6H,3N,6G,6F,4VS,3M
44884	Jan-01 - Dec-31	365	X	X	X	-	-	-	6E,4X,4W,6F,4VS,3O,3N,3M
44885	Jan-06 - May-07	122	X	X	X	-	-	-	6H,6G,3N,3M
44886	Oct-13 - Dec-12	61	X	X	-	-	-	-	6H,3M
44887	Feb-13 - Jul-06	143	X	X	X	-	-	-	1F,2H,2J,3K,3L
44889	Jan-20 - Jun-26	158	X	X	X	-	-	-	3K,3M,3L,1F,2J
44890	Jan-01 - Nov-14	318	X	X	X	-	-	-	6G,6H
44891	Oct-26 - Nov-16	22	X	X	X	-	-	-	6H
44892	Jun-17 - Dec-31	197	X	X	-	-	-	-	6H,6G
44893	Mar-09 - Jul-15	129	X	X	X	-	-	-	6E,4W,4VS,6F,3O,3N,3M
44894	Jun-17 - Dec-31	198	X	X	-	-	-	-	3N,4VS,6H,3M,6G
44895	Jan-20 - Jun-18	150	X	X	X	-	-	-	3K,2J,3L,3M
44896	Mar-09 - Jun-19	103	X	X	X	-	-	-	4VS,3O,3N,3M
44897	Jun-21 - Nov-07	139	X	X	-	-	-	-	4VS,3O,3N,3M,3K
44898	Jun-21 - Aug-04	44	X	X	-	-	-	-	4VS,6G,3O,3N,6H
44899	Apr-28 - Nov-06	193	X	X	X	-	-	-	6E,6D,6C,6B,4X,6F,6G,6H,3N,3M
44901	Jun-18 - Oct-27	131	X	X	-	-	-	-	4VS,3O,3N,6H,3M
44902	Jun-18 - Jun-19	1	X	X	-	-	-	-	4VS
44903	Nov-05 - Dec-03	29	-	X	X	-	-	-	6D,6C
44904	Jan-01 - Jul-20	201	X	X	-	-	-	-	2J
44906	Jun-21 - Oct-14	115	X	X	-	-	-	-	4W,4X,4VS
44907	Jun-21 - Dec-31	194	X	X	-	-	-	-	4X,4W,4VS,6G,6F,3O,3N
44908	Mar-11 - Jul-10	122	X	X	X	-	-	-	3O,3PS,4VS,3N,6G,3M
44909	Jan-01 - Jun-08	159	X	X	-	-	-	-	3L,3N,3O
44912	Sep-21 - Dec-31	102	X	X	X	-	-	-	3K,3L
44913	Sep-21 - Dec-31	102	X	X	X	-	-	-	3K,2J,1F
44916	Jun-21 - Aug-12	52	X	X	-	-	-	-	4X
44917	Mar-12 - Dec-31	295	X	X	X	-	-	-	3L,3O,3N
44918	Sep-10 - Sep-15	5	-	-	-	-	-	-	6H
44919	Jul-19 - Nov-14	118	X	X	X	-	-	-	6H
44921	Jun-21 - Dec-31	194	X	X	-	-	-	-	4X,4W,6E,6F,6D,4VS,6G,3N,6H,3M
44922	Mar-12 - Apr-03	23	X	X	X	-	-	-	3M
44924	Aug-03 - Dec-31	151	X	X	-	-	-	-	1F,1E,1D,0B
44925	Apr-25 - May-31	36	-	X	-	-	-	-	1F
44928	Jan-01 - Mar-01	60	-	-	-	-	-	-	3M,3K
44929	Jun-21 - Sep-01	72	X	X	-	-	-	-	4VS,3O,3N,6H
44930	Jan-01 - Apr-29	119	-	-	-	-	-	-	3M,3K,2J,1F
44933	Jan-01 - Jun-05	156	X	X	X	-	-	-	4X,6D,6E,4W,6F,4VS,3O,3N,3M,6H
44934	Mar-25 - Oct-20	209	X	X	-	-	-	-	6B,6D,6E,6C
44935	Jan-01 - Feb-18	49	X	X	X	-	-	-	6E,6F,6G,6H
44937	Jan-04 - May-24	141	X	X	X	-	-	-	2J,1F,3K,3L,3M,3N,3O
44938	Jan-04 - Jul-22	199	X	X	X	-	-	-	3L,3N,3M,3K,2J,1F
44939	Jun-21 - Dec-31	194	X	X	-	-	-	-	4VS,3N,6H,3M
44940	Jun-21 - Oct-24	125	X	X	-	-	-	-	4VS,6G,3O,3N,6H,6F
44941	Jun-21 - Dec-11	173	X	X	-	-	-	-	4W,4VS,3PS,3O,3N,3M
44942	Jul-20 - Dec-31	165	X	X	X	-	-	-	1F,2H
44943	Jan-04 - Dec-31	362	X	X	X	-	-	-	3PS,3PN,4R,4VN,4T,4VS,4W,4X,5ZE
44944	Jun-22 - Jul-30	38	X	X	X	-	-	-	1F
44945	Aug-10 - Dec-17	130	X	X	-	-	-	-	4VS,3PS,3O,3N,3M,6H
47532	Sep-14 - Nov-02	50	-	X	X	-	-	-	0A
47557	Sep-22 - Dec-31	101	-	-	-	-	-	-	0A
48555	Sep-15 - Oct-01	17	-	X	-	-	-	-	0A
48577	Aug-13 - Oct-21	69	-	X	X	-	-	-	6B,4X,5Y,4W
48593	Jan-01 - Mar-13	72	-	X	X	-	-	-	0B

48594	Jan-01 - Apr-19	109	-	X	X	-	-	-	0A,0B,2G,2H
48621	Sep-18 - Dec-07	80	-	X	-	-	-	-	0A,1A
48630	Apr-13 - May-20	38	-	-	-	-	-	-	1F,1E
48632	May-31 - Jul-05	35	-	-	-	-	-	-	0A,1A
48636	Aug-02 - Aug-02	1	-	X	-	-	-	-	1F
48679	Mar-08 - Apr-12	36	-	X	-	-	-	-	1A
61935	Sep-24 - Sep-24	1	X	-	-	-	-	-	3M
62910	Mar-28 - Dec-31	279	X	X	X	-	-	-	1F,1E,2G,2H,2J,3K
62926	Dec-25 - Dec-31	7	X	X	-	-	-	-	1F
62930	Nov-07 - Dec-16	39	X	X	-	-	-	-	6H
64522	Jan-01 - Apr-23	113	-	X	X	-	-	-	2G,2H,2J,3K,3L,3N
64606	Jan-01 - Jan-10	10	-	X	X	-	-	-	3K

Table 6a: Current data recovered in 2009 and not yet processed in 2009

Latitude	Longitude	Sounding Depth (meters)	Instrument Depth (meters)	Start Date	End Date	Serial Number	Mooring Number
45.0753	55.4734	275	159	12-Dec-2008	20-Jan-2009	ADCP RDI # 3745	1714
44.3521	63.3051	103	11.15	14-Oct-2008	02-Apr-2009	ADCP RDI # 10487	1705
44.2498	63.1662	169	16.24	14-Oct-2008	10-Apr-2009	ADCP RDI # 10572	1706
44.1339	63.0329	172	15.34	15-Oct-2008	10-Apr-2009	ADCP RDI #10220	1707

Table 6b: Current data recovered and not yet processed in 2009

Latitude	Longitude	Sounding Depth (meters)	Instrument Depth (meters)	Start Date	End Date	Serial Number	Mooring Number
45.3576	64.4033	55	53	07-Jan-09	04-Mar-09	ADCP RDI # 104	1708
45.3321	64.4210	53	51	07-Jan-09	04-Mar-09	ADCP RDI # 499	1709
45.3353	64.3244	57.5	55.5	07-Jan-09	04-Mar-09	ADCP RDI # 8336	1710
45.2418	64.2580	28.5	26.5	07-Jan-09	04-Mar-09	ADCP RDI # 9186	1715
45.3101	64.3361	53	N/A	07-Jan-09	26-Mar-09	ADCP RDI # 511	1711
48.5496	47.6507	2263	233	11-May-08	08-May-09	ADCP RDI # 8680	1677
48.5496	47.6507	2263	363	11-May-08	08-May-09	Aanderaa # 7127	1677
48.5496	47.6507	2263	713	11-May-08	08-May-09	Aanderaa # 655	1677
48.5496	47.6507	2263	1113	11-May-08	08-May-09	Aanderaa # 4998	1677
48.5496	47.6507	2263	1513	11-May-08	08-May-09	Aanderaa # 397	1677
48.5496	47.6507	2263	1913	11-May-08	08-May-09	Aanderaa # 464	1677
48.5496	47.6507	2663	2238	11-May-08	08-May-09	Aanderaa # 376	1677
48.8315	47.4544	2480	2455	12-May-08	08-May-09	Aanderaa # 476	1678
49.1375	46.9211	2744	2719	14-May-08	10-May-09	Aanderaa # 566	1679
50.5116	46.2642	1745	1720	15-May-08	14-May-09	Aanderaa # 0563	1682
50.3956	46.8274	2220	2195	17-May-08	14-May-09	Aanderaa # 0392	1683
50.5592	45.9405	2241	2216	15-May-08	13-May-09	Aanderaa # 5573	1684
55.1203	54.0893	1018	998	28-May-08	25-May-09	Aanderaa # 5002	1680
45.2413	64.2581	27.6	25.6	04-Mar-09	25-May-09	ADCP RDI # 0039	1716
45.3573	64.4021	49	47	04-Mar-09	25-May-09	ADCP RDI # 9184	1717
74.0817	91.0481	146	77	04-Aug-08	01-Aug-09	ADCP RDI # 0493	1686
74.1997	90.8491	277	252	03-Aug-08	02-Aug-09	ADCP RDI # 8956	1688
74.1959	90.8413	267	75	03-Aug-08	02-Aug-09	ADCP RDI # 1269	1689
45.2406	64.2597	27	N/A	17-July-09	27-Aug-09	ADCP RDI # 8599	1737
45.2497	64.2944	26.5	N/A	17-July-09	27-Aug-09	ADCP RDI # 10487	1738
45.3351	64.4764	38	33	17-July-09	27-Aug-09	ADCP RDI # 2456	1739
45.3578	64.4703	68	N/A	17-July-09	27-Aug-09	ADCP RDI # 9184	1740
42.7391	61.5750	1710	1599	03-Oct-2008	28-Sept-09	Aanderaa # 33	1697
42.7391	61.5750	1710	1605	03-Oct-2008	28-Sept-09	Aanderaa # 595	1697

42.7391	61.5750	1710	1608	03-Oct-2008	28-Sept-09	Aanderaa # 20	1697
42.1636	61.0704	3870	968	02-Oct-08	29-Sept-09	Aanderaa # 1039	1701
42.8493	61.6309	1116	1066	03-Oct-08	28-Sept-09	ADCP RDI #11432	1696
42.7377	61.5769	1703	1653	03-Oct-08	28-Sept-09	ADCP RDI # 10942	1697
42.6583	61.4599	2302	2252	03-Oct-08	28-Sept-09	ADCP RDI # 11433	1698
42.5559	61.3671	2787	2737	03-Oct-08	29-Sept-09	ADCP RDI # 11089	1699
42.3928	61.2761	3393	3343	02-Oct-08	29-Sept-09	ADCP RDI # 11431	1700
42.1636	61.0704	3870	3820	02-Oct-08	29-Sept-09	ADCP RDI # 10941	1701
44.3521	65.3052	102	96	10-Apr-09	03-Oct-09	ADCP RDI #9186	1721
44.2511	63.1634	173	169	10-Apr-09	02-Oct-09	ADCP RDI #11217	1722
44.1341	63.0329	176	172	10-Apr-09	03-Oct-09	ADCP RDI #10657	1723
43.0334	65.7669	129	127	15-Apr-09	09-Oct-09	ADCP RDI # 8336	1720
45.9036	61.0176	13.5	12.5	20-May-09	20-July-09	ADCP RDI # 3409	1755
46.2785	60.3008	8	7	22-July-09	04-Nov-09	ADCP RDI # 3409	1756
66.6666	60.7811	440	250	17-Sept-08	10-Oct-09	Aanderaa # 4603	C1
66.7607	60.0787	649	200	17-Sept-08	10-Oct-09	Aanderaa # 9607	C2
66.7607	60.0787	649	500	17-Sept-08	10-Oct-09	Aanderaa # 6405	C2
66.8573	59.0632	1034	200	17-Sept-08	10-Oct-09	Aanderaa # 7525	C3
66.8573	59.0632	1034	500	17-Sept-08	10-Oct-09	Aanderaa # 6402	C3
66.9809	57.6915	863	200	17-Sept-08	11-Oct-09	Aanderaa # 5574	C4
66.9809	57.6915	863	500	17-Sept-08	11-Oct-09	Aanderaa # 5578	C4
Latitude	Longitude	Sounding Depth (meters)	Instrument Depth (meters)	Start Date	End Date	Serial Number	Mooring Number
67.0357	57.0341	695	200	16-Sept-08	08-Oct-09	Aanderaa # 4271	C5
67.0357	57.0341	695	500	16-Sept-08	08-Oct-09	Aanderaa # 5569	C5
67.0706	56.6827	391	250	16-Sept-08	08-Oct-09	Aanderaa # 3306	C6

Table 6c: Current meters deployed 2009 and not yet recovered

Deployment Date/Location	Instrument Type	Number of Instruments	Projected Recovery Date
May 2009 Orphan Basin	Aanderaa RCM8 Aanderaa RCM11 ADCP RDI	4 4 1	May 2010
May 2009 Laurentian Fan	Aanderaa RCM8 Aanderaa RCM11 ADCP RDI	2 4 1	May 2010
May 2009 Labrador Sea	Aanderaa RCM 8	1	May 2010
May 2009 Orphan Knoll	Aanderaa RCM11	4	May 2010
September 2009 Halifax Stn. 2	ADCP RDI	1	September 2010
October 2009 Scotian Slope	ADCP RDI	3	October 2010
October 2009 Davis Strait	ADCP RDI	3	October 2010
October 2009 Scotian Slope	ADCP RDI Aanderaa RCM11	6 1	October 2010
October 2009 Georges Bank	ADCP RDI	1	October 2010
August 2009 Barrow Strait	ADCP RDI	4	August 2010