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# National Report for Canada

27<sup>th</sup> Session of the DBCP –  
Geneva Switzerland  
September 26-30<sup>th</sup>, 2011

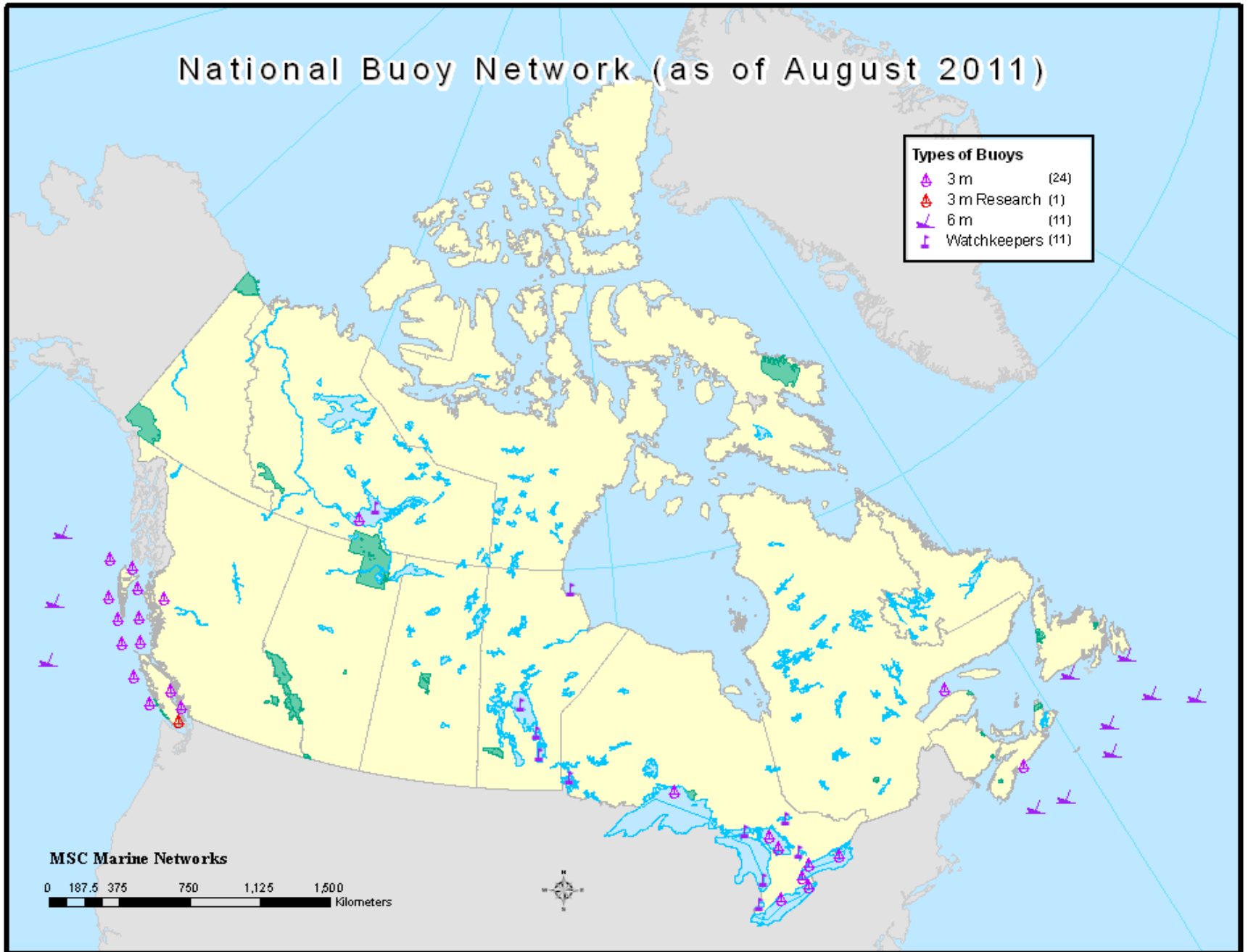
Chris Marshall – Manager of Marine Networks  
Environment Canada – Meteorological Service of Canada



# National Buoy Network (as of August 2011)

## Types of Buoys

- 3 m (24)
- 3 m Research (1)
- 6 m (11)
- Watchkeepers (11)



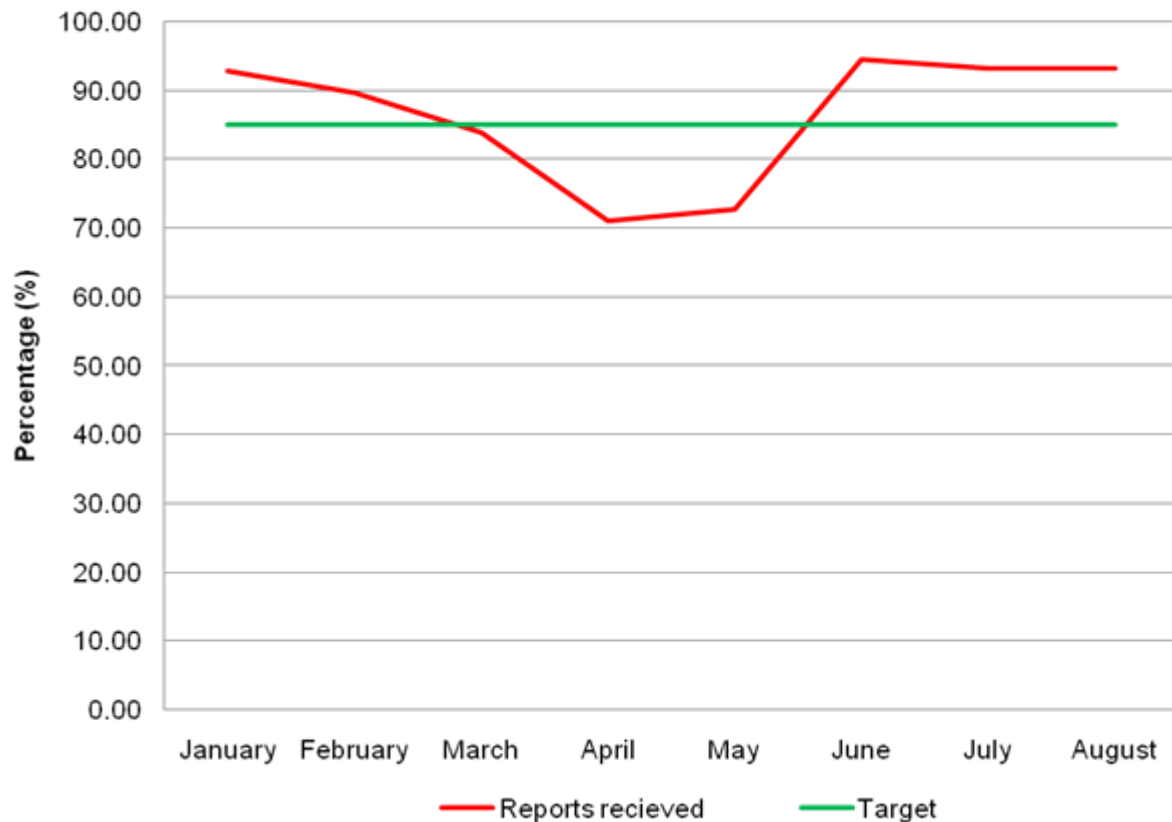


## 2011 Moored Buoy Distribution

	NE Pacific	Inland Waters (Seasonal)	NW Atlantic & Gulf of St. Lawrence
Moored Operational	16	20	10 (1 seasonal)
Moored Research/ Test	2		



## Real-time Buoy Data Availability Statistics (2011 to date)



Composite statistic for network of 47 buoys, reduction in spring attributed to outages following winter storm season, prior to maintenance voyages.

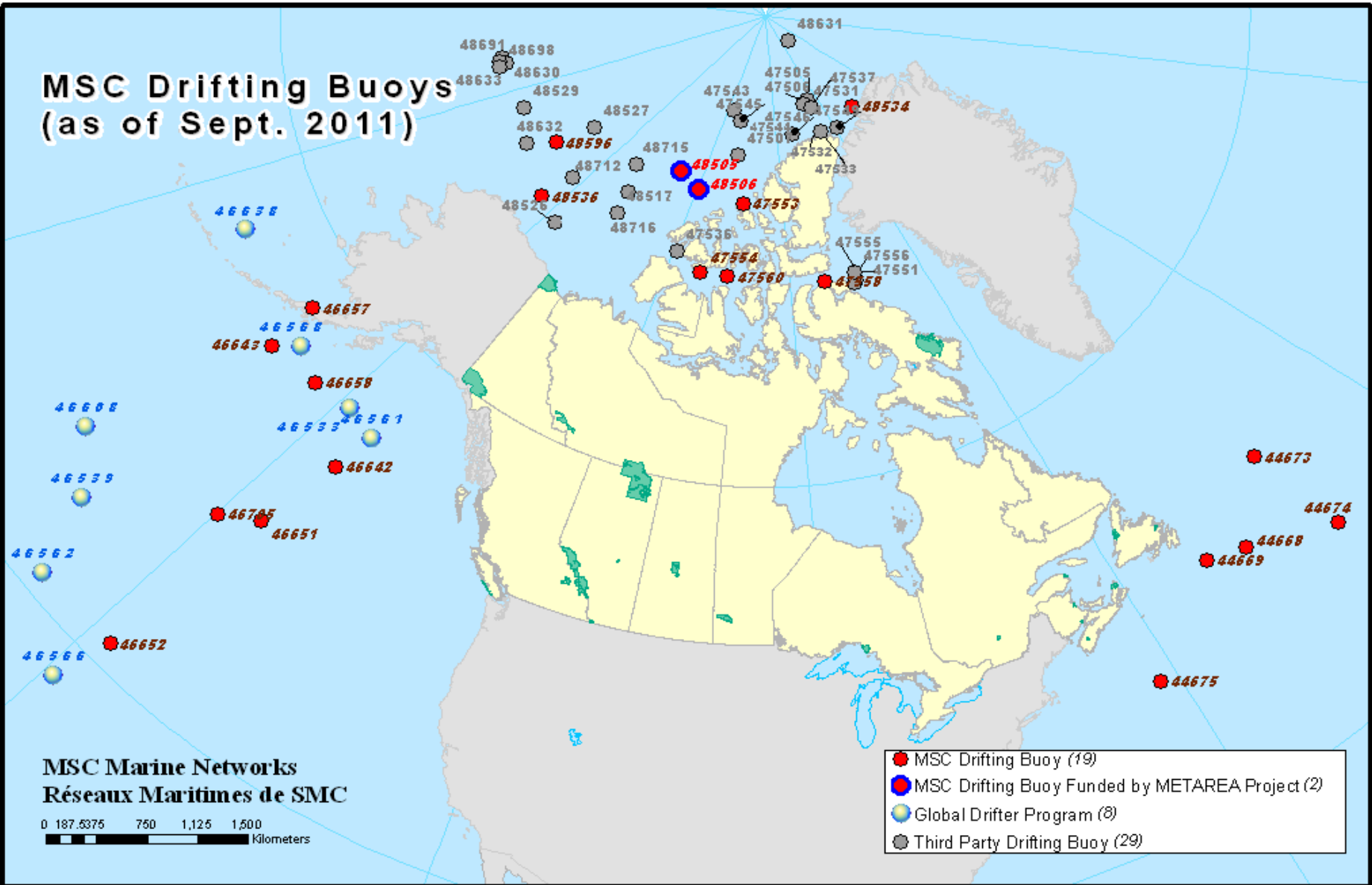


## 2010/11 Drifter Buoy Distribution

	NE Pacific	NW Atlantic	Arctic Basin
Deployed	7	5	2
<b>Operational August 31st</b>	7	5	9
<b>Barometer Upgrades (GDP)</b>	8		

→ All MSC deployed drifters are equipped with barometers.

# MSC Drifting Buoys (as of Sept. 2011)



MSC Marine Networks  
Réseaux Maritimes de SMC

0 187.5375 750 1,125 1,500  
Kilometers

- MSC Drifting Buoy (19)
- MSC Drifting Buoy Funded by METAREA Project (2)
- Global Drifter Program (8)
- Third Party Drifting Buoy (29)



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# Drifting Buoys In the Arctic (as of Sept. 2011)





## 2011/12 Planned Buoy Deployments

	NE Pacific	NW Atlantic	Arctic Basin
Drifter	12	4	8
Barometer Upgrades	12 (via GDP)		
Datawell waveriders	1	1	

**Note:** This table does not include the annual seasonal spring deployments of our operational moored buoys in the Great Lakes and Inland waters





## Drifter Deployments

- MSC is ramping up number of ice buoy/beacons as part of “METAREA Project” --- goal is sustained deployments over the next number years to form the **Canadian Arctic Buoy Array (CABA)**
- Arctic deployments will be done in collaboration with IABP and other parties to ensure optimal coverage --- all MSC funded ice buoys will have pressure obs.
- EC staff in Vancouver have ramped up deployment efforts, and have engaged the services of 4 different ships of opportunity. Deployments next 12 months will include MSC funded buoys, along with GDP barometer upgrades.
- All MSC funded buoys will use Iridium telemetry (when possible), and be equipped with barometers.



## New Initiatives

- Continue to work with Jou Beh Technologies and Scotia Weather Services to receive and route third-party buoy data to the GTS. Over 30 buoys are now being processed through the system with continued growth.
- 2 Datawell MarkIII waverider buoys will be deployed as contribution to PP-WET. For 2011/12 buoys collocated with Halifax Harbour 3MD (44258) and La Perouse Bank 3MD (46206).
- Continue work on specifications/requirements for next generation buoy “payload” (system) solution. Requirement include 2 way communication capability enhancing ability for remote corrective actions --- goal of RFP in spring of 2012.
- Playing catch-up regarding requirements to meet **BUFR** message encoding requirements for moored and drifting buoy network, as well as SHIP observations.



## New Initiatives

- 50% of Moored buoy network now equipped with SUTRON SatLink2 40W GOES transmitter. Expected to roll out to remainder of the network by end of 2012.
- Working with AXYS Technologies to integrate Iridium modem into existing WM100 buoy platform (prototype will be built and tested).
- Continued collaborating with NDBC:
  - Plans for Director level bi-lateral meeting in early 2012
  - Continued interaction between technical staff (NDBC sent a representative to EC National Buoy Meeting last December).
- EC is implementing a new system (**SSMS** – station/sensor management system) which will improve ability to track network assets (serial numbers of sensors) as well as maintenance costs (via work-orders)



# Asset and metadata management



Assets | Rebuildable Inventory

Assets: Assets >

## Hierarchy

- [-] MARINE WEATHER
  - [-] AVOS (Parent asset for all AVOS stations.)
  - [-] DRIFTER BUOYS (Parent asset for all drifter buoys stations.)
  - [-] MOORED BUOYS (Parent asset for all moored buoy stations.)
    - [-] 44137 (East Scotia Slope)
    - [-] 44138 (SW Grand Banks)
    - [-] 44139 (Banquereau Bank)
    - [-] 44140 (Tail of the Bank)
    - [-] 44141 (Laurentian Fan)
      - [-] 216
      - [-] **75860**
      - [-] C6N17 (Moored buoy weather station.)
      - [-] MIS100300
      - [-] MIS100301
      - [-] MIS100302
      - [-] MIS100303
      - [-] MIS100331
      - [-] MIS100332
      - [-] MIS100333
      - [-] MIS100334
      - [-] MIS100335
      - [-] MIS100350
    - [-] 44150 (La Have Bank)
    - [-] 44251 (Nickerson Bank)
    - [-] 44255 (NE Burgeo Bank)
    - [-] 44258 (Halifax Harbour)
    - [-] 45132 (Port Stanley)
    - [-] 45135 (Prince Edward Pt.)

Serial Number **75860**  
 Rebuild Item **RM YOUNG,WIND SENSOR,MODEL 05103**  
 Description **MN,RM YOUNG,WIND SENSOR,MODEL 01503,AVOS & BUOY**  
 Current Org **ALM**  
 Parent Asset Number **44141**  
 Parent Asset Group **MOORING & ANCHOR**  
 Current Status **Issued out of stores**  
 Owning Department  
 Accounting Class  
 Area  
 Subinventory **A-DART**  
 Locator **A-DART.WAREHOUSE**  
 Criticality  
 Maintainable **No**

✓ TIP: Click on the Parent Asset Number to go one level up the Hierarchy.

Work Order Details - Windows Internet Explorer

http://pmcl-merap.nat.ec.gc.ca:8010/OA\_HTML/OA.jsp?page=/oracle/apps/eam/toolbelt/webui/WorkOrderDetailsPG&addBreadCrumb=Y&OA\_SubTabIdx=0&WipEntityId=13327&Context=Workor

Environment Canada / Environnement Canada / Asset Management

Home Logout Preferences Help Diagnostics

EAM Home Assets Work Orders Stores

All

Work Orders: All > Work Orders > Current Organization : ALM

Work Order: 12562

Update Work Order Complete Work Order Estimate View Costs

**Asset Details**

Asset Number: 3D025  
 Description: Moored buoy weather station.  
 Asset Group: 3M  
 Asset Type: DISCUS BUOY  
 Asset Type (Asset): Capital (Asset)  
 Area: PYR  
 Area Description: Pacific and

Work Order: 12562	Description: Perform a buoy annual inspection.
Department: MMS-PY-010	Department Description: Marine Monitoring Section, Vancouver - 010
Status: Released	Activity: MMS-PY-3MD-BUOY ANNUAL INSPECTION
Scheduled Start Date: 12-Apr-2011 13:00:00	Scheduled Completion Date: 09-Aug-2011 16:00:00
Wip Accounting Class: Default	Work Order Type: EC ONSITE
Activity Type: Inspection	Activity Cause: Preventative
Activity Source: Standard	Schedule Name
Planned: No	Work Order Attachments: View (Add)

Operations | Materials | Resources | Quality Plans | Work Relationships | Failure Information

Select Operation: Complete/UnComplete Go Add

Show All Details Hide All Details

Select	Details	Operation Assigned Dept	Description	Scheduled Start Date
<input type="radio"/>	Show	10 MMS-PY-010	Perform a buoy annual inspection.	12-Apr-2011 13:00:00

Operations | Materials | Resources | Quality Plans | Work Relationships | Failure Information

Return To Work Orders

http://pmcl-merap.nat.ec.gc.ca:8010/OA\_HTML/OA.jsp?page=/oracle/apps/eam/workorder/webui/EAM\_EW\_START\_PAGE&OAHPEAM\_MAIN\_55&eAM

**Assets | Rebuildable Inventory**

Assets: Assets > Asset Details:C6N17 >

**Attributes**

Number of Anemometers	2
Primary Anemometer Type	P Propeller/vane
Primary Anemometer Measurement Height (m asl)	5.40
Secondary Anemometer Type	
Secondary Anemometer Measurement Height (m asl)	4.90
Number of Air Temperature Systems	1
Air Temp Instrument Height	4.48
Number of Sea Surface Temperature Systems	5
Sea Surface Measurement Depth	
Number of Air Pressure Systems	2
Primary Air Pressure Measurement Height	0.00
Secondary Air Pressure Measurement	0.00
Number of Wave Systemsave Systems	
Location of Wave Sensor	



# Issues / Summary

- Continued deployment & recovery of moored buoys by Canadian Coast Guard – **critical partnership** – ship time at no cost to EC.
- Would like to thank NDBC for their continued support – includes technical knowledge exchange, and sharing of expertise.
- Excellent support from AXYS Technologies
- Training/retention of qualified meteorological buoy technicians will be a challenge retirement of key staff, and budget constraints.



# A day at the office...





## Example of Buoy Vandalism in Canada





Thank-you / Merci!

[Chris.marshall@ec.gc.ca](mailto:Chris.marshall@ec.gc.ca)

416-739-4468



Deployment of SVP-B August 2011 on the Grand Banks