



**Environment
Canada**

**Environnement
Canada**

National Report Canadian Marine Program

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SOT- V Geneva, Switzerland
May 18-22, 2009

AVOS Network

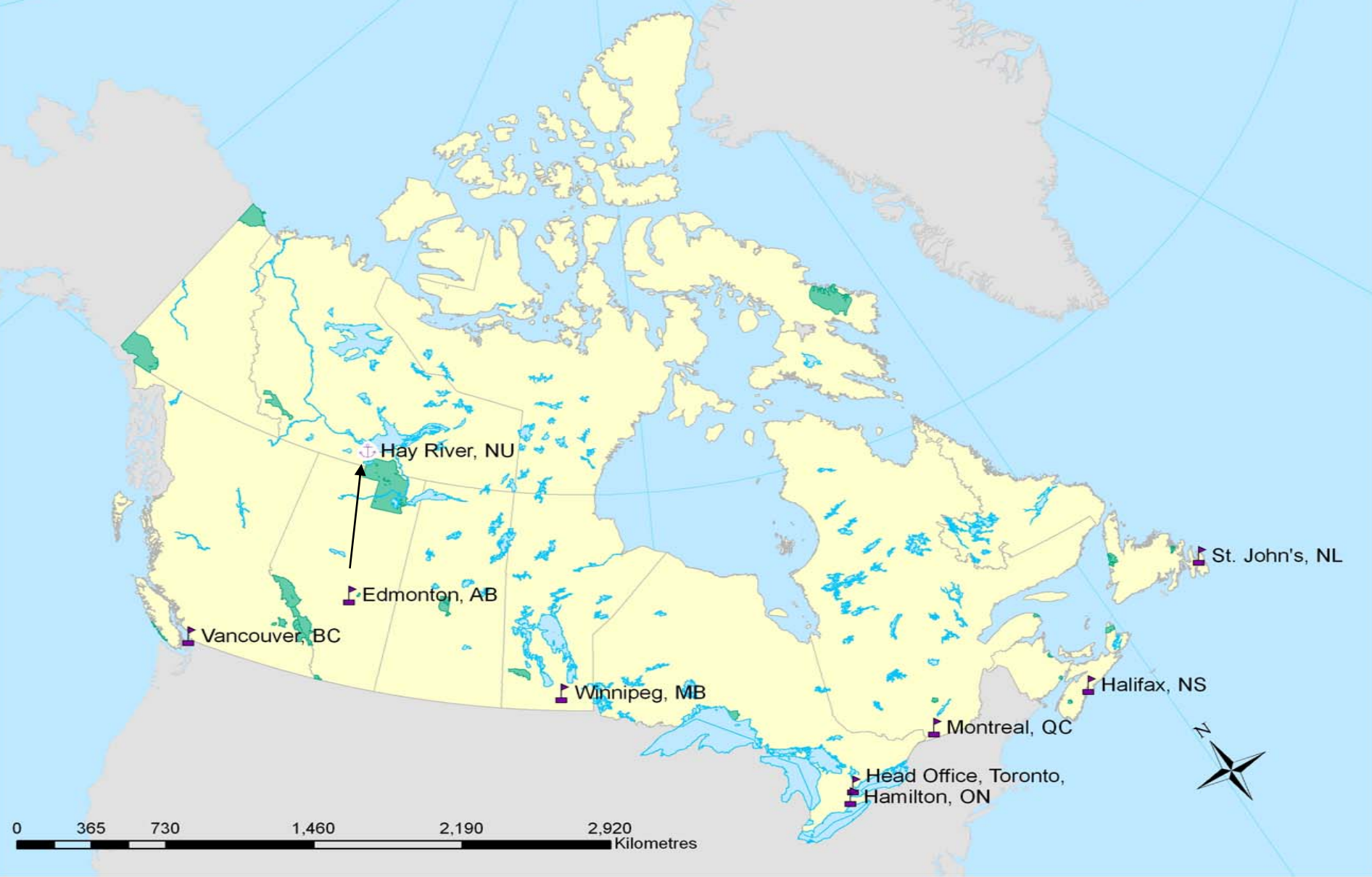


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New Staff Members

- Dale Boudreau – A/Marine Network Manager
- Chris Marshall – Marine Network Manager on French Language Training – will return mid summer 2009
- 4 new PMO's/Technologists being recruited/trained up

Environment Canada - PMO Stations (2009-05-11)



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AVOS™ Parameters & Sensors



- ◆ Wind (direction/speed/gust)
 - ◆ RM Young Anemometer (model 05103)
- ◆ Air Temperature & Relative Humidity
 - ◆ Rotronics (MP101-A)
 - ◆ Radiation Shield
- ◆ Sea Surface Temperature
 - ◆ AXYS – HATS Sensor
- ◆ Atmospheric Pressure
 - ◆ Vaisala PTB210

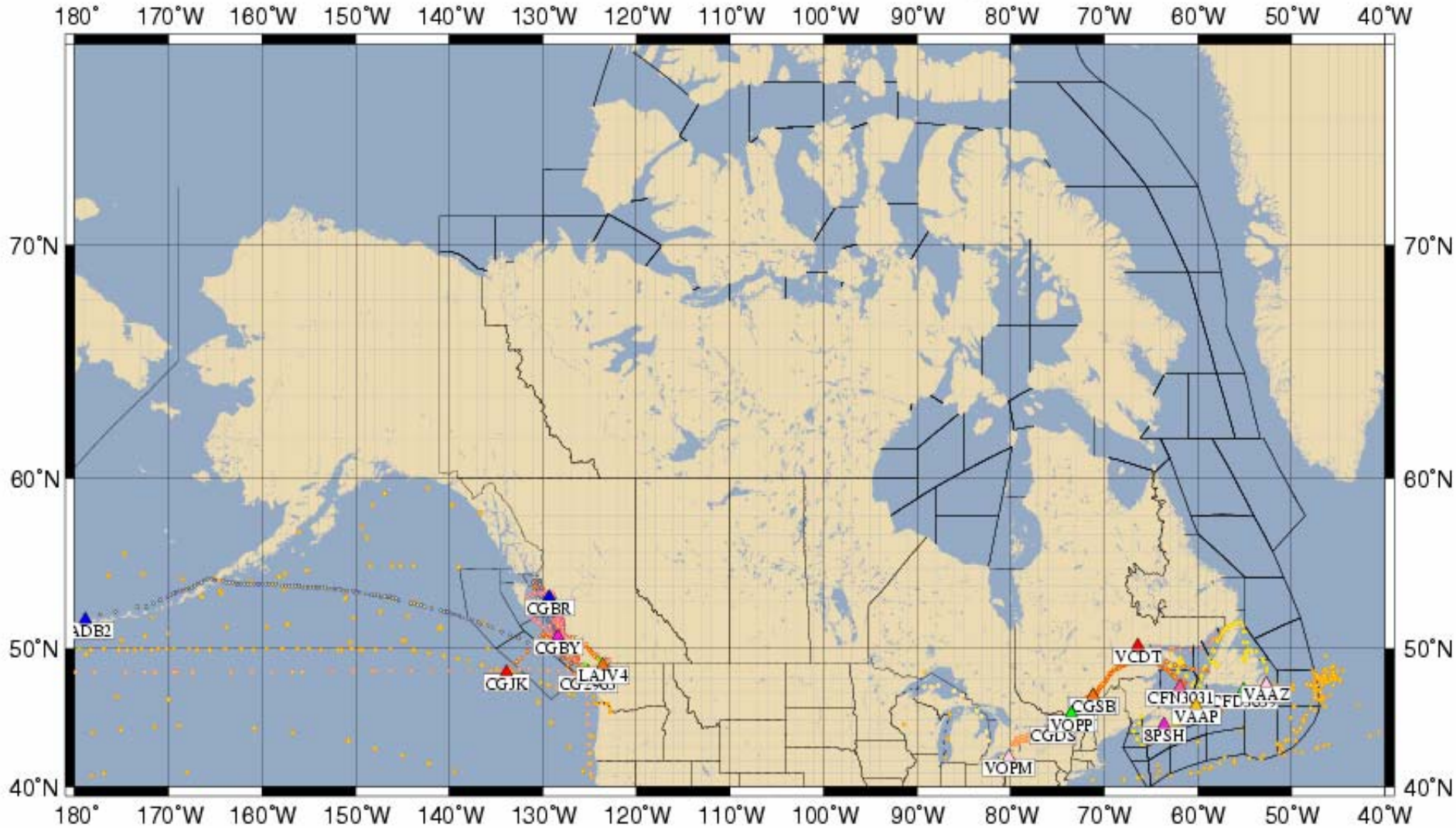
2008/9 AVOS Ships Distribution

| | TOTALS | PYR | PNR | Ontario | Quebec 1 equipped with Iridium | Atlantic |
|------------------------------------|--------|-----|-----|---------|--|----------|
| Selected Ships | 36 | 05 | 04 | 06 | 08 | 13 |
| Supplementary Ships (no SST) | 11 | 08 | 00 | 01 | 00 | 02 |

AVOS demographics

- **24 Canadian Coast Guard (CCG)**
 - 50% of present AVOS fleet
 - CCG ships selected because of routing through the Arctic (data sparse area) and quality of technical staff
- **Remainder of Fleet**
 - Containers ships, car carriers and ferries
 - Regular routes
 - Intercontinental
 - Etc.

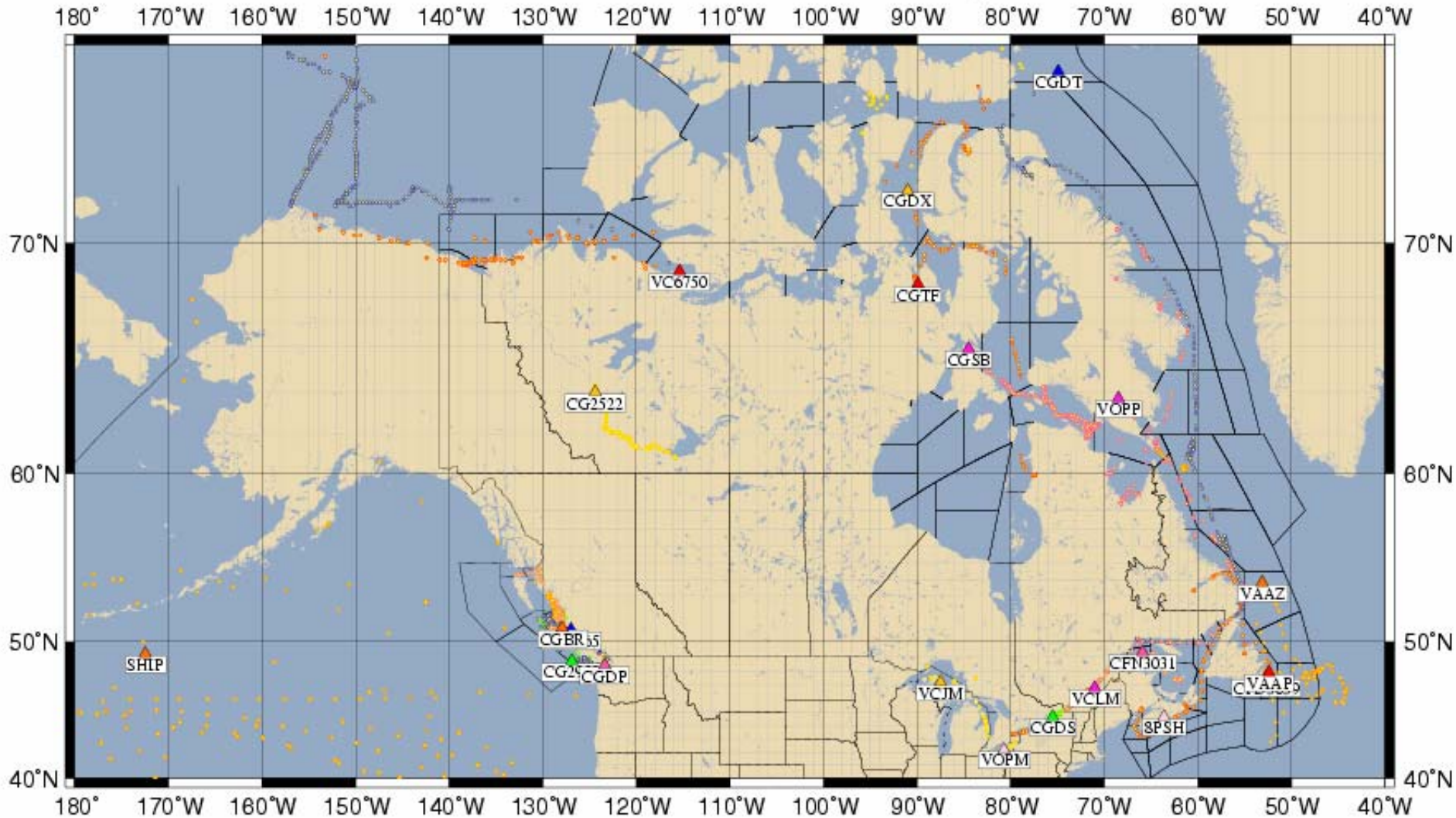
Canadian AVOS Ships



GM 2006 May 10 12:28:29 AVOS ships active in the past 2 days, showing the last 1 month path in globe quadrant 7 (North West)

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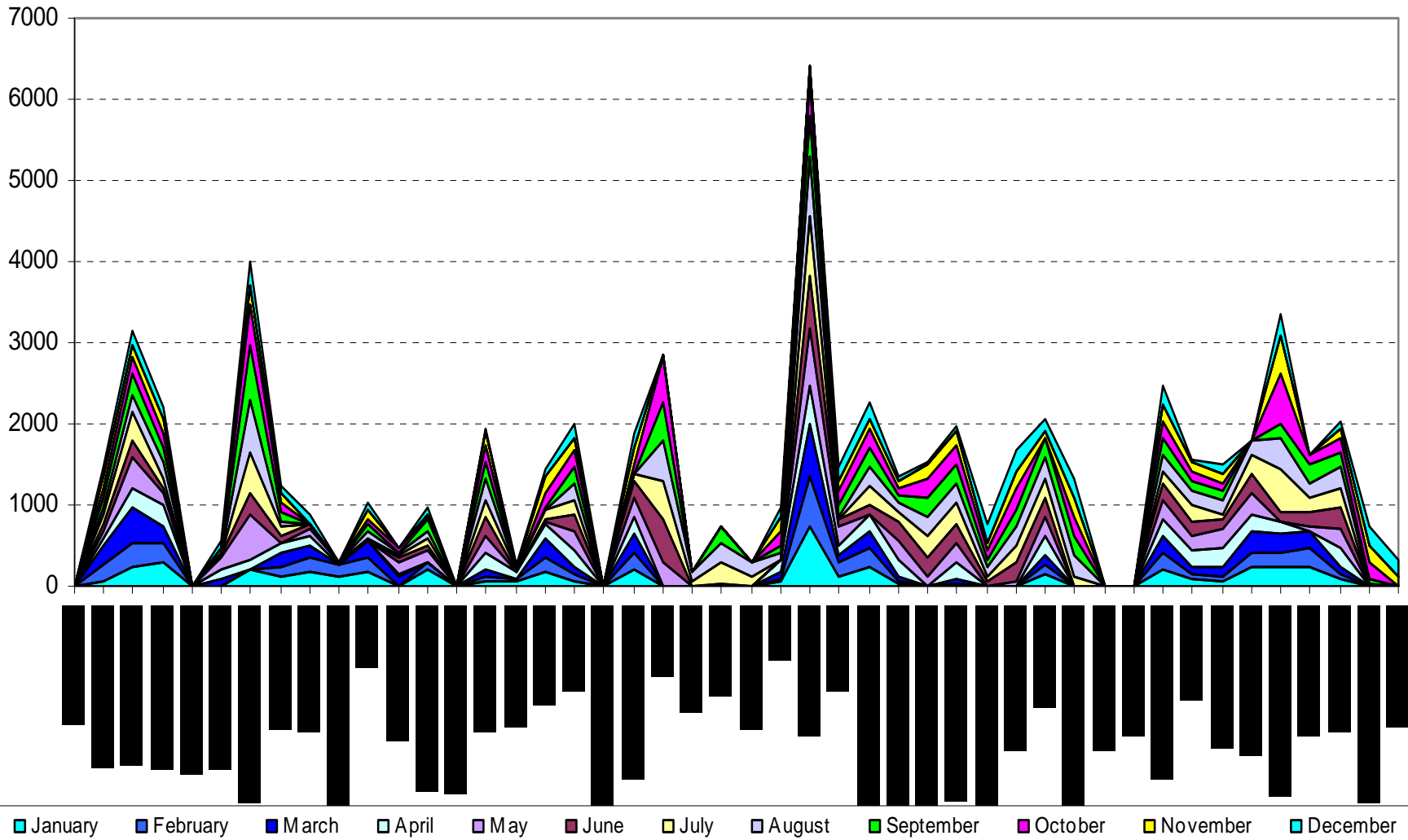
Canadian AVOS Ships



GM 2006 Sep 7 01:31:03 AVOS ships active in the past 2 days, showing the last 1 month path in globe quadrant 7 (North West)

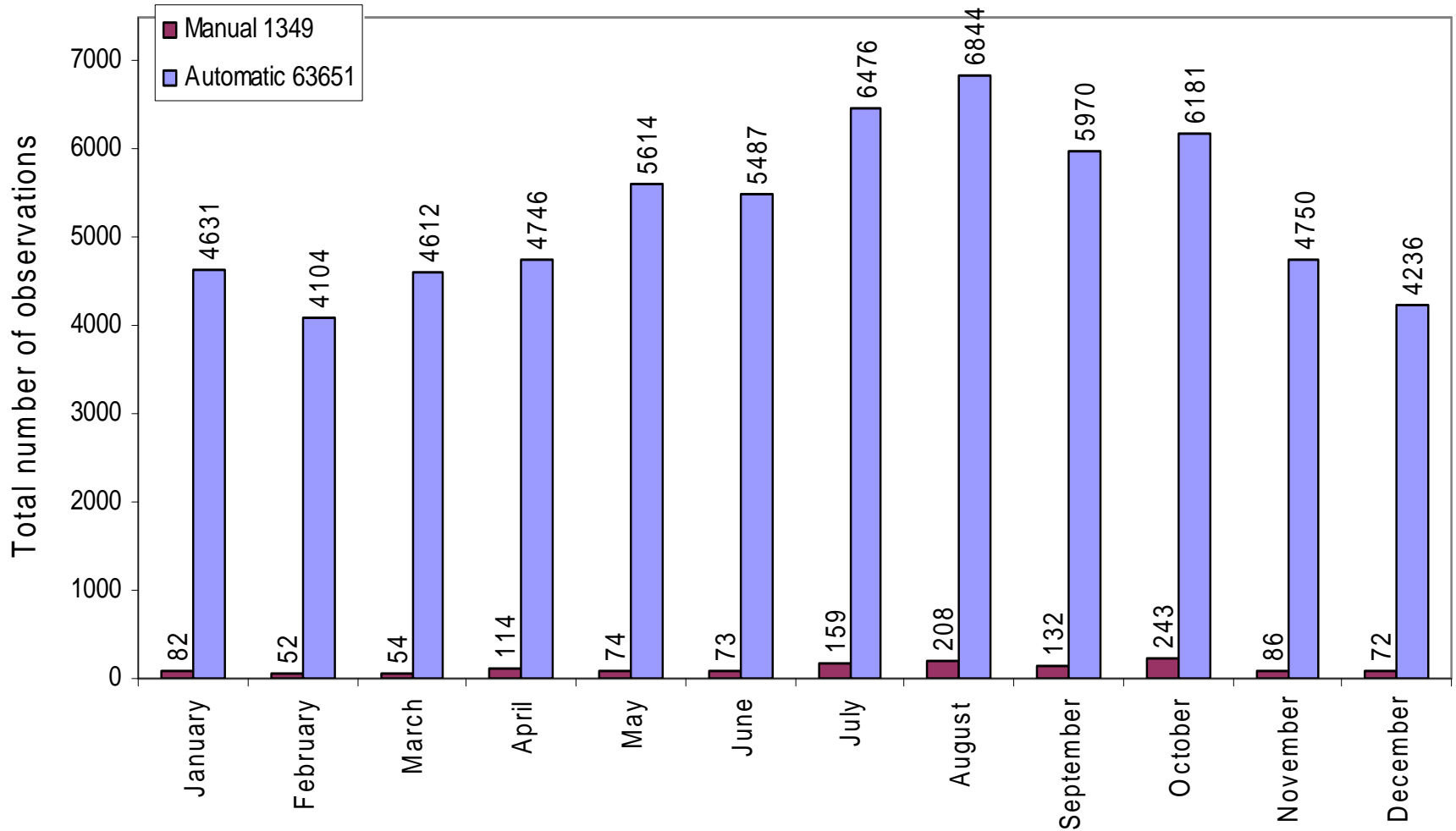
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Total number of Transmissions from each AVOS Ship - 2008



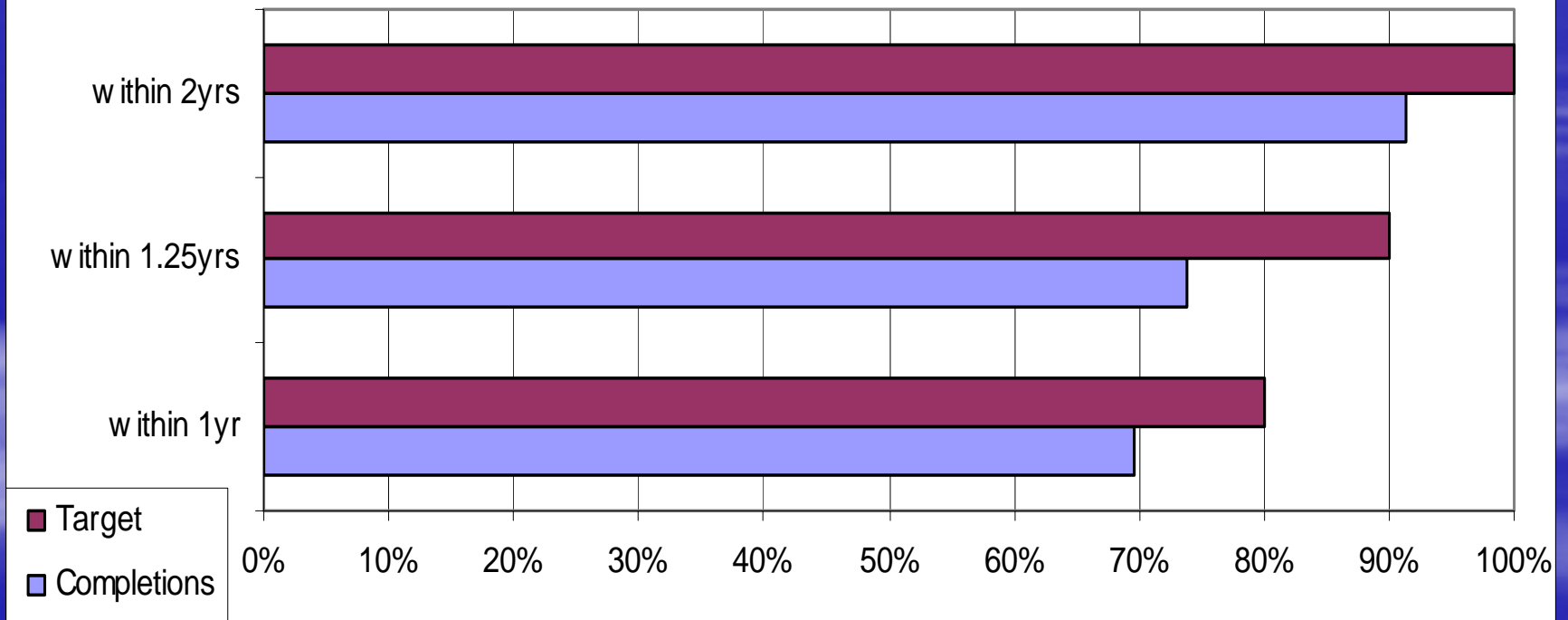
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Total number of Observations(manual/automatic) from AVOS Ships -01/01/2008 - 31/12/2008



AVOS Network Maintenance

AVOS Maintenance Target Completions (as of 01st Feb'09)



Pub47 Update

- The AVOS Bridge Software is now updated to MQCS-V and IMMT-3 versions
- Quarterly updates are being done and sent to WMO by our Standards Officer
 - EC will now copy E-SURFMAR on updates which will ensure no duplication of ship recruitments

VOS Rationalization

- Equipment handover letter sent to Regional managers
- Legacy VOS has been given the option to continue with email transmissions using “TurboWin” software (will be considered Auxiliary ships)
- Will also recruit new ships in the North which will be given the email transmission option through “TurboWin” software
- No regular maintenance by “PMOs”
- EC still needs a data management strategy for “TurboWin” (No capability to label data in current system. Need to flag data, especially if on GTS. Can identify to users in Pub47)

AVOS Network

FY 2008-2009 Highlights were:

- 47 ships with AVOS (up from 33 in 2007)
- *Recruited 3 new ships to be installed this summer*
- Capital budget used to procure 12 new AVOS units with Iridium communication
- 13 AVOS units retrofitted with Iridium communication to be installed over the next 2 years
- The Meteorological Service of Canada is now ISO 9001 Certified/Registered (effective summer 2008)
 - The ISO 9001 initiated the implementation of mandatory checklists and maintenance manuals for all networks

AVOS Network

Plans for FY 2009/10

- 7-10 new Iridium AVOS recruits
- Target of 55-60 AVOS ships by the end of next FY (deployment plan being developed)
- Implementation of Iridium transmitters on all AVOS's (roll-out plan has been developed)
- Hourly observations regardless of ship location
- Research improvements to SST measurements
- Ship call-sign masking for CCG ships
- Swap old ship PCs (6-8 yrs. old) with new models

Marine Network Challenges

- Staff shortage in regions
- Some of the key experienced people are eligible to retire within next 2-5 years
- Apprentice Program for new recruits
 - Length of program – too long
 - Very little Marine content (esp. with equipment)
- Creative solutions
 - National maintenance team ?
 - Contracting out services ?
 - Reduce maintenance frequency ?



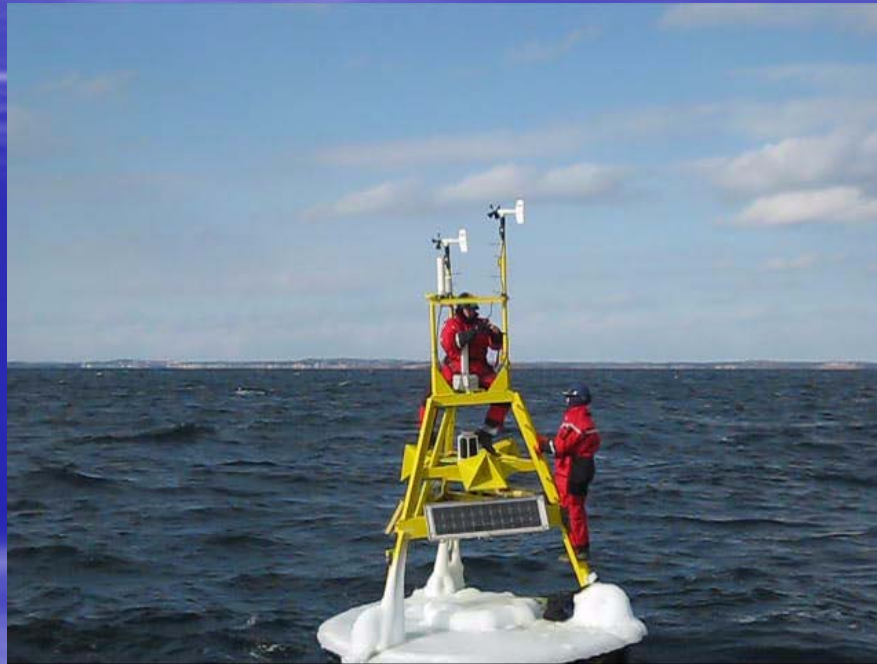
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2008/9 BUOY Distribution

| Moored Buoys | Pacific Coast | Great Lakes and Inland Waters (Seasonal buoys in PNR & ON) | NW Atlantic & Gulf of St. Lawrence |
|--------------------|---------------|--|------------------------------------|
| Moored Operational | 16 | 19 | 9 |
| Moored Research | 2 | | |

| Drifter Buoys | NE Pacific | Arctic Ice Beacons | NW Atlantic |
|---------------------------------------|-------------------------|--------------------|-------------|
| Deployed | 9 | 4 | 5 |
| Operational February 11 th | 24 (incl. 4 Iridium) | 12 | 4 |
| Barometer Upgrades | 20 | | |

Questions/Comments Thank You



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