International Arctic Buoy Programme
http://iabp.apl.washington.edu
Chairperson's and Coordinator's Report for DBCP 27th Session

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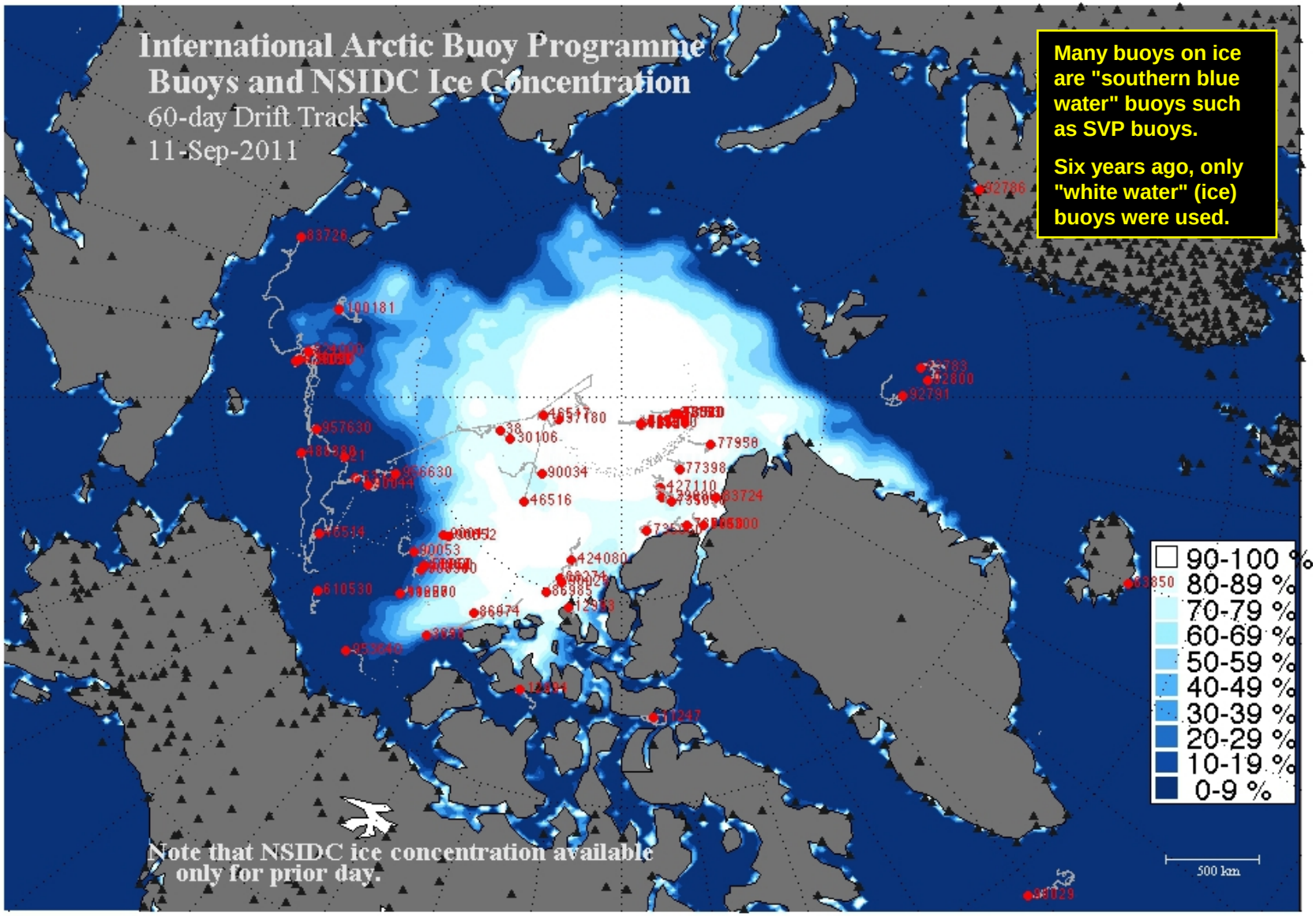
26 September 2011 edition

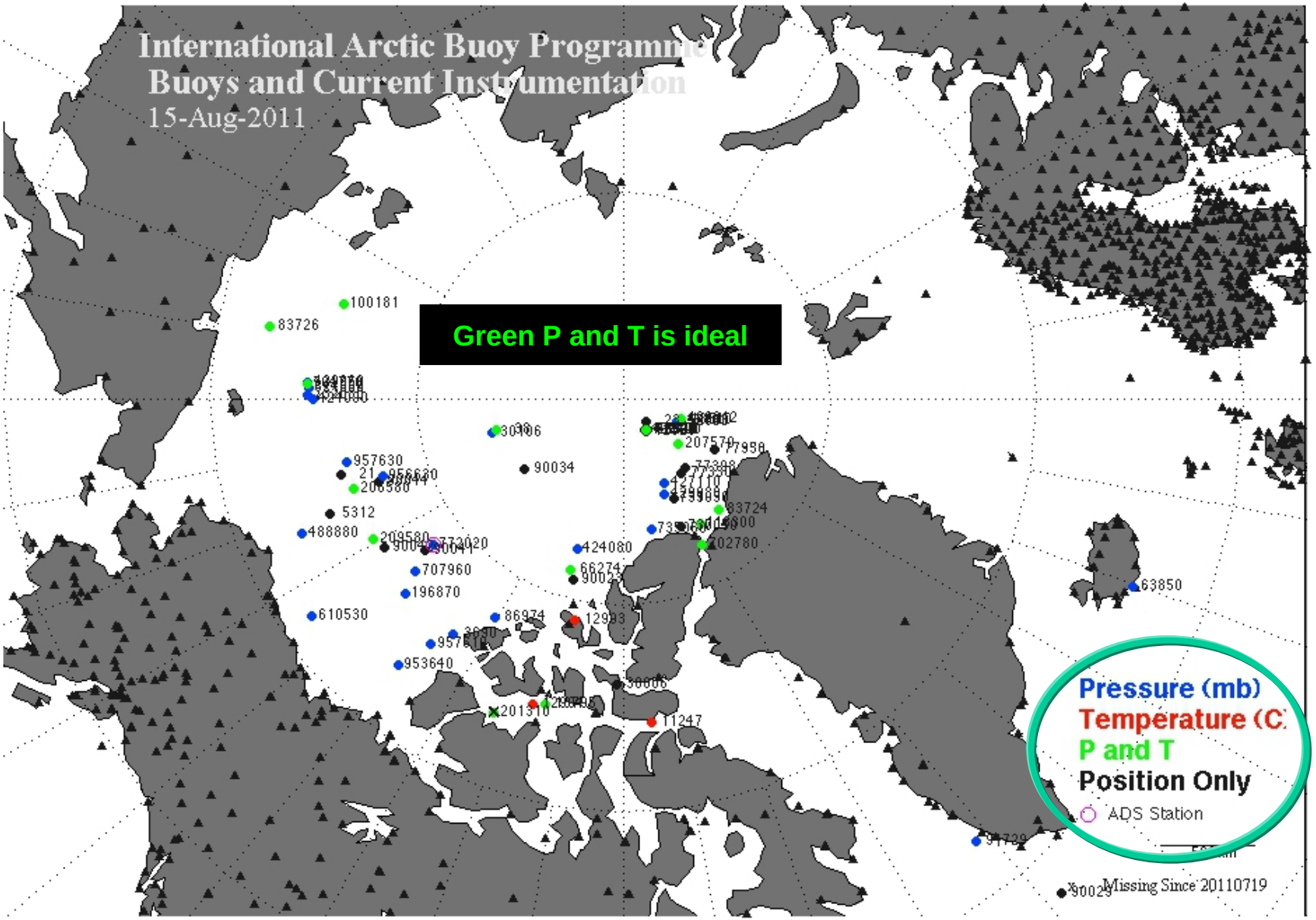
11 September 2011

http://iabp.apl.washington.edu

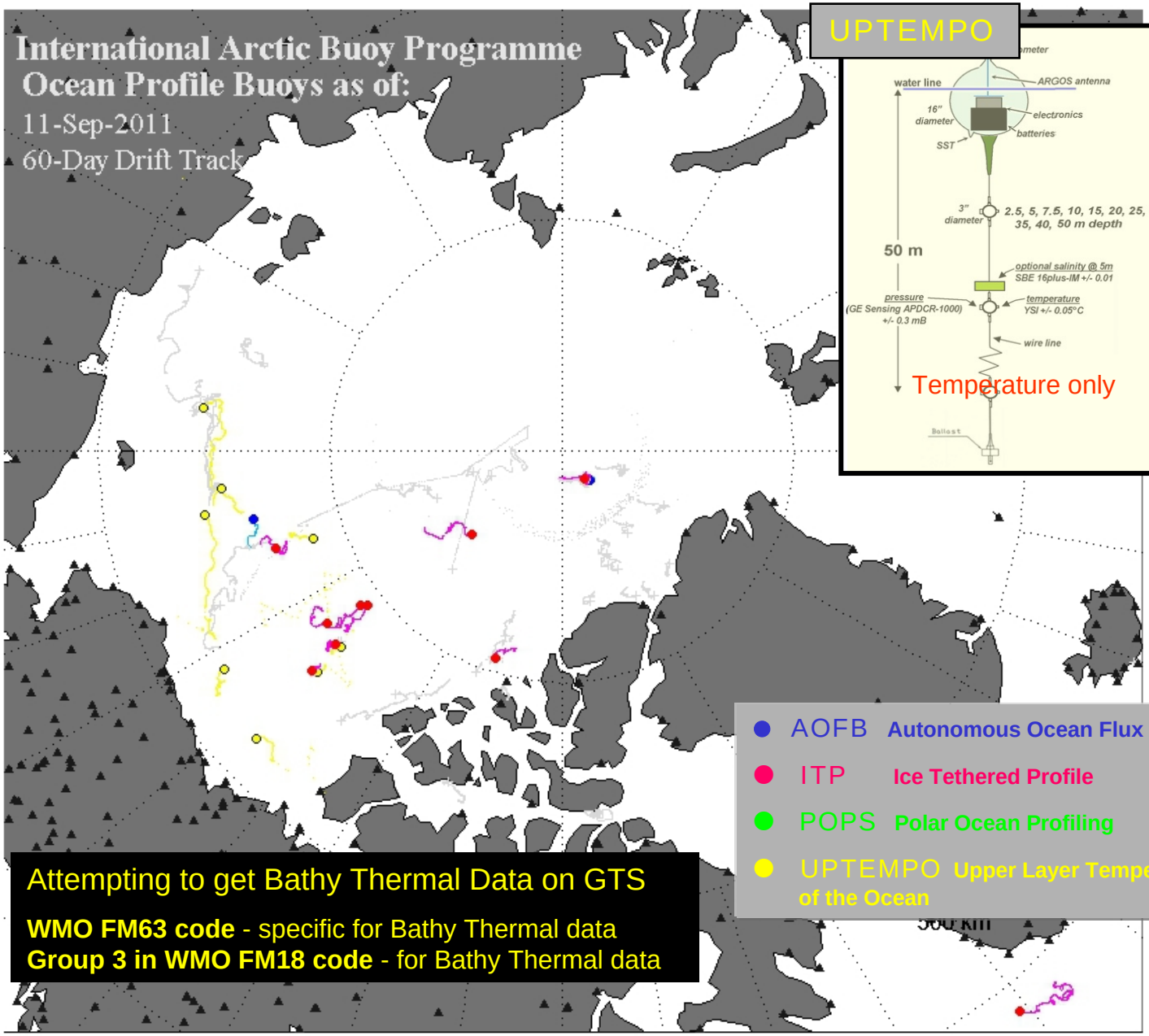
- Spatial distribution across Arctic Basin could be better.
- Seasonal ice zone could use more buoys



Buoy array with respect to basic surface meteorology air pressure and air temperature



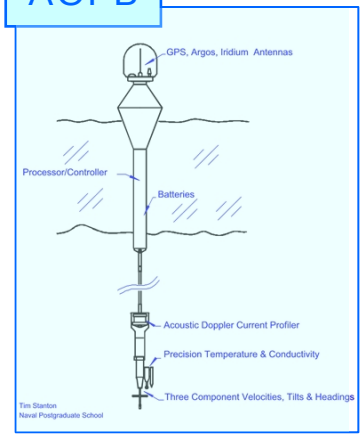
Several oceanographic buoys in array. **Most also have basic air temperature and air pressure sensors and that data is getting on the GTS**



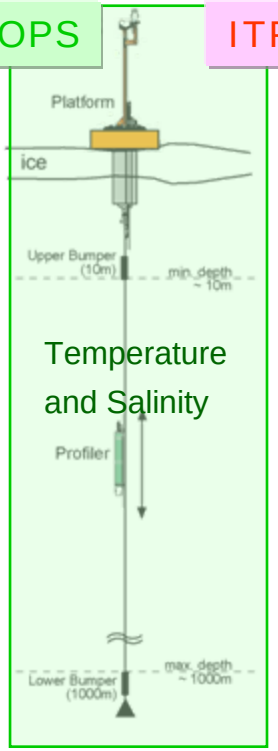
UPTEMPO

Temperature only

AOFB



POPS ITP

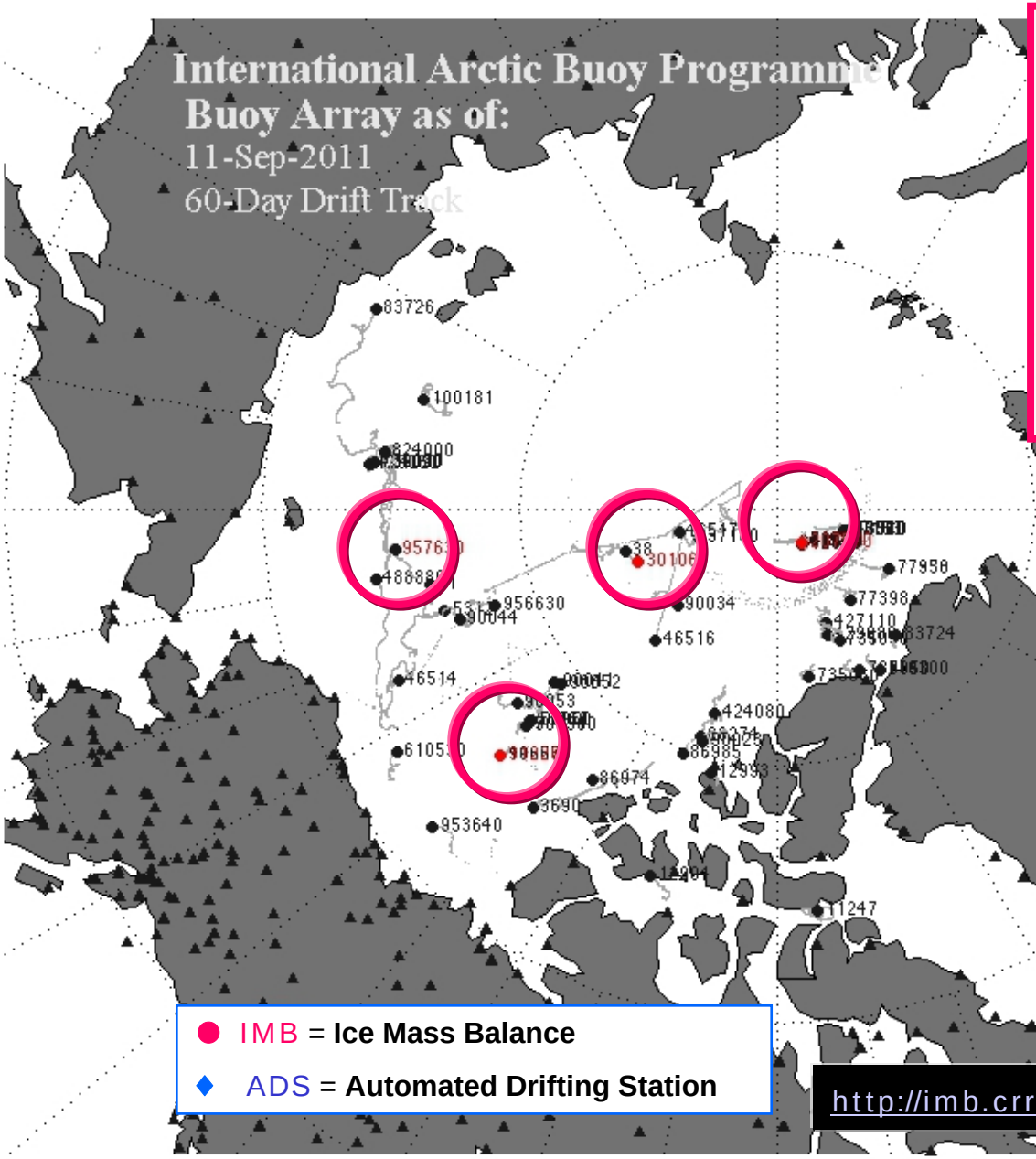


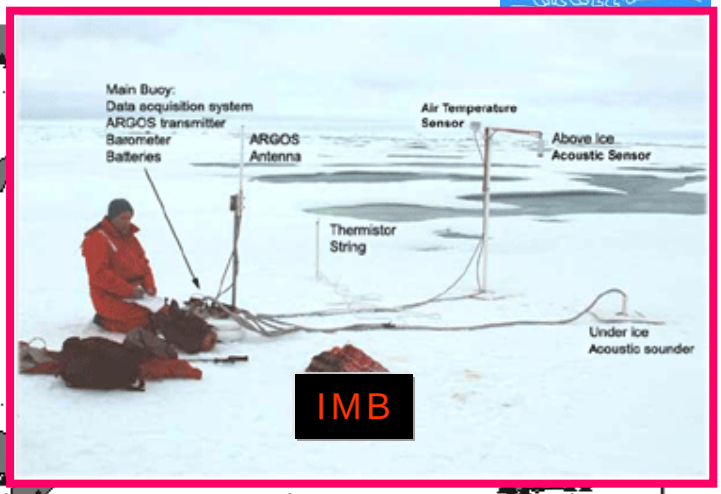
- AOFB **Autonomous Ocean Flux Buoy**
- ITP **Ice Tethered Profile**
- POPS **Polar Ocean Profiling**
- UPTEMPO **Upper Layer Temperature of the Ocean**

Attempting to get Bathy Thermal Data on GTS

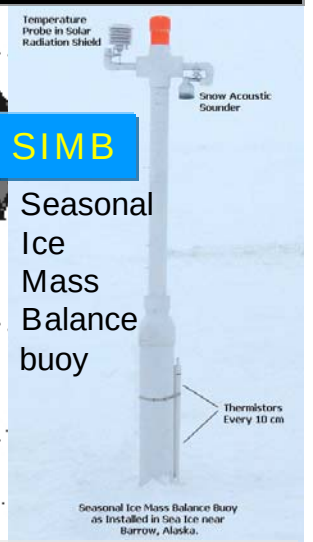
WMO FM63 code - specific for Bathy Thermal data
Group 3 in WMO FM18 code - for Bathy Thermal data

A few IMB Ice Mass Balance buoys in array





SIMB buoys in our future



Seasonal Ice Mass Balance buoy

● IMB = **Ice Mass Balance**

♦ ADS = **Automated Drifting Station**

http://imb.crrel.usace.army.mil/SeasonalIBinst.htm

Atmospheric components "O" buoy: None show in array 15

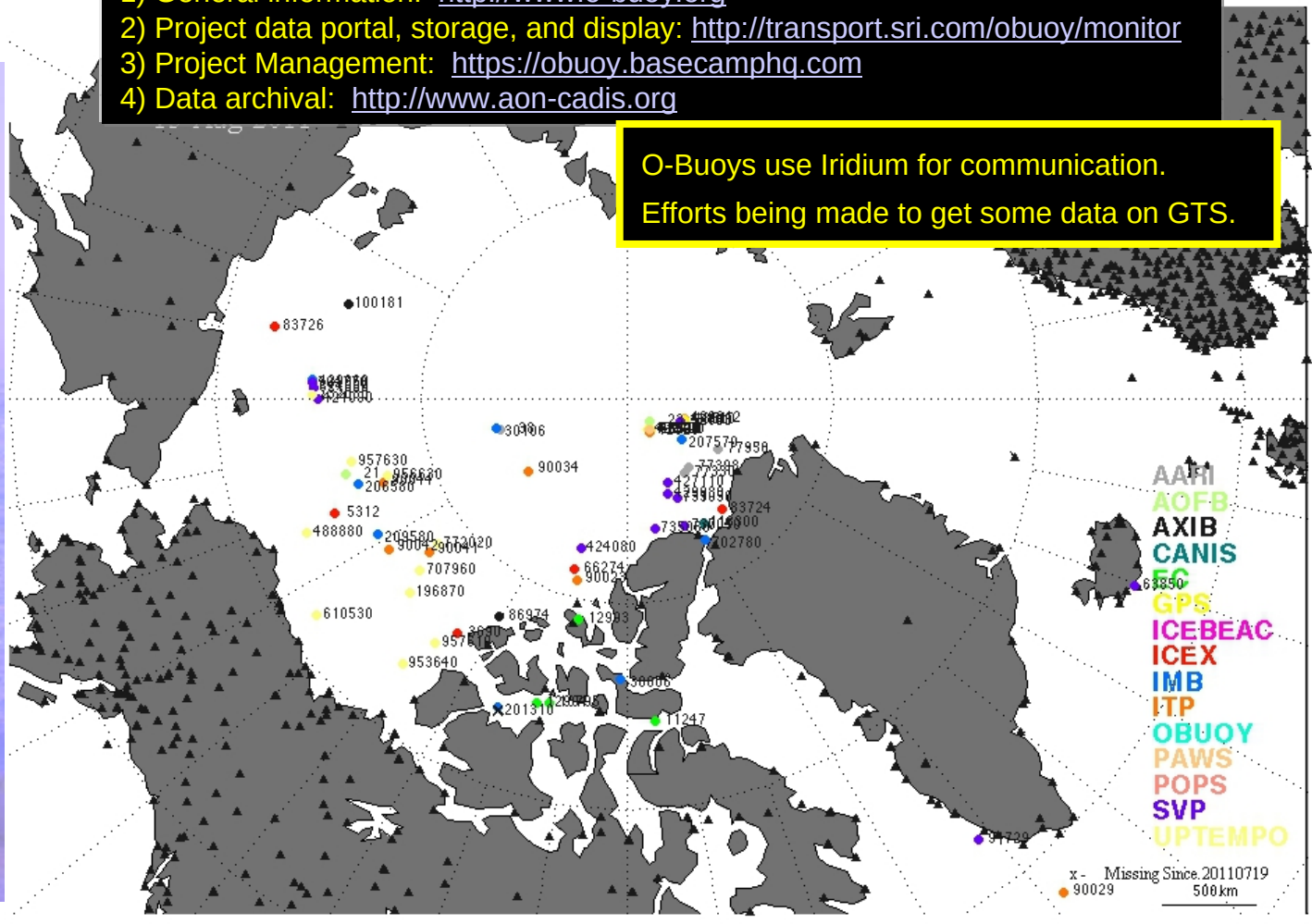
August monthly but..

OB-4 was to be deployed with UNCLOS this summer
OB-3 to be re-deployed in Hudson Bay again in winter/spring, 11/12
OB-5 was to be deployed Beaufort Gyre with BGOS/DFO July 2011
OB-6 to NPEO spring 2012
OB-y to Siberian Sea with NABOS 2012? (and another in 2014)
OB-x to Beaufort Gyre with BGOS/DFO 2012, 2013

1) General information: http://www.o-buoy.org
2) Project data portal, storage, and display: http://transport.sri.com/obuoy/monitor
3) Project Management: https://obuoy.basecamphq.com
4) Data archival: http://www.aon-cadis.org

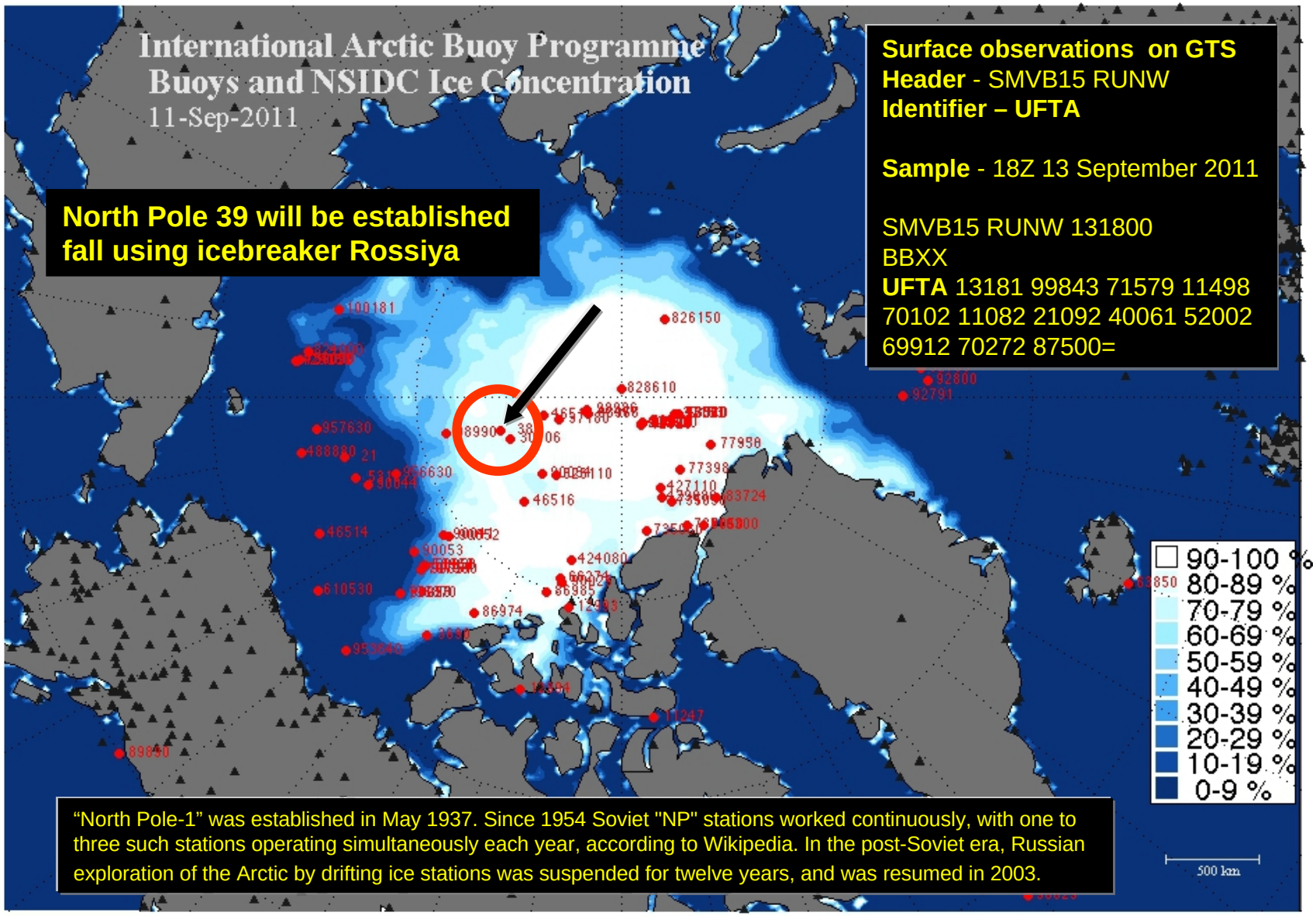
O-Buoys use Iridium for communication.

Efforts being made to get some data on GTS.



Manned Russian Station NP38 **provided real-time meteorological information October to 2010 to September 2011**

NP38 http://www.aari.nw.ru/resources/d0014/np38/default.asp?lang=0



North Pole 39 will be established fall using icebreaker Rossiya

Surface observations on GTS
Header - SMVB15 RUNW
Identifier – UFTA

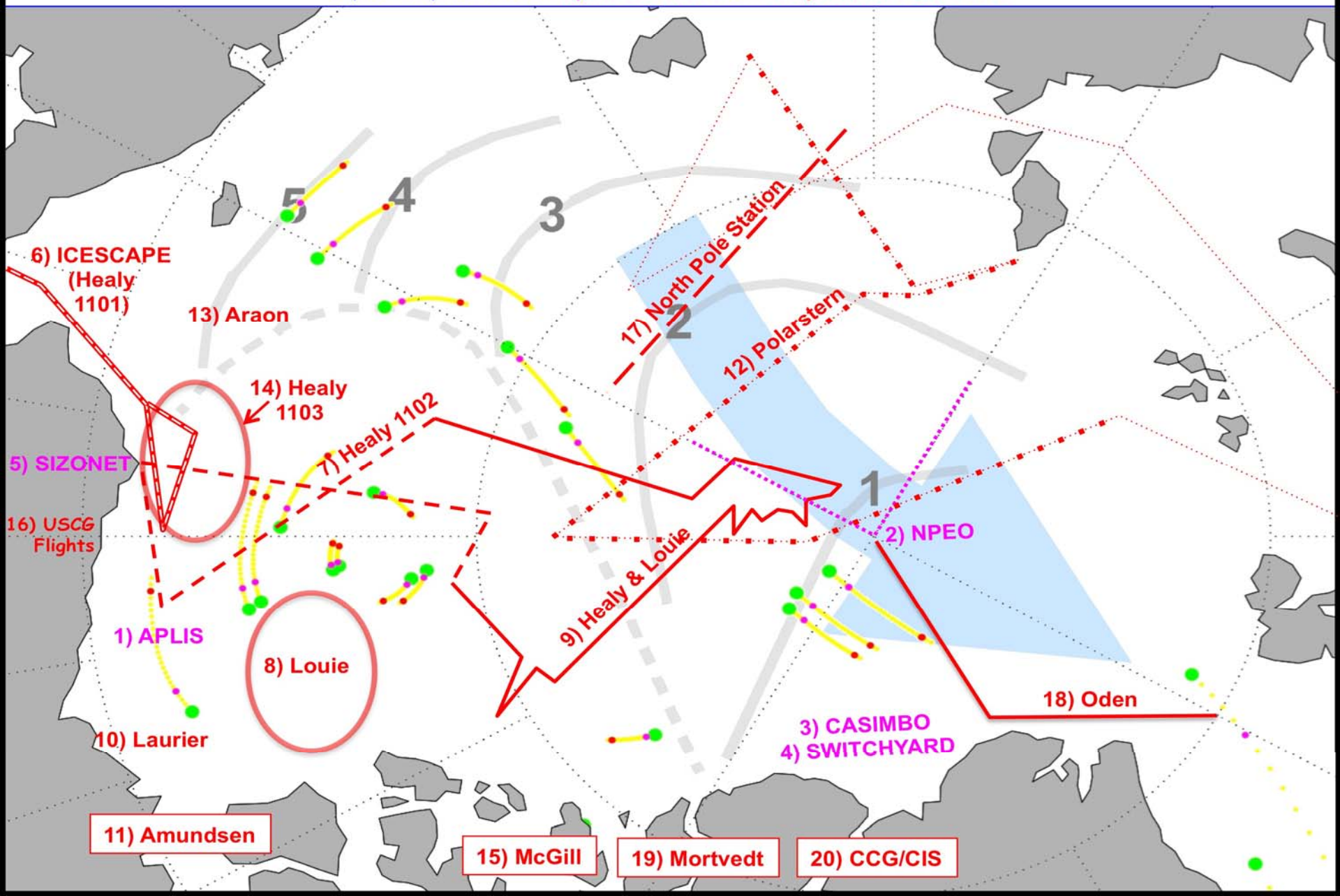
Sample - 18Z 13 September 2011

SMVB15 RUNW 131800
BBXX
UFTA 13181 99843 71579 11498
70102 11082 21092 40061 52002
69912 70272 87500=

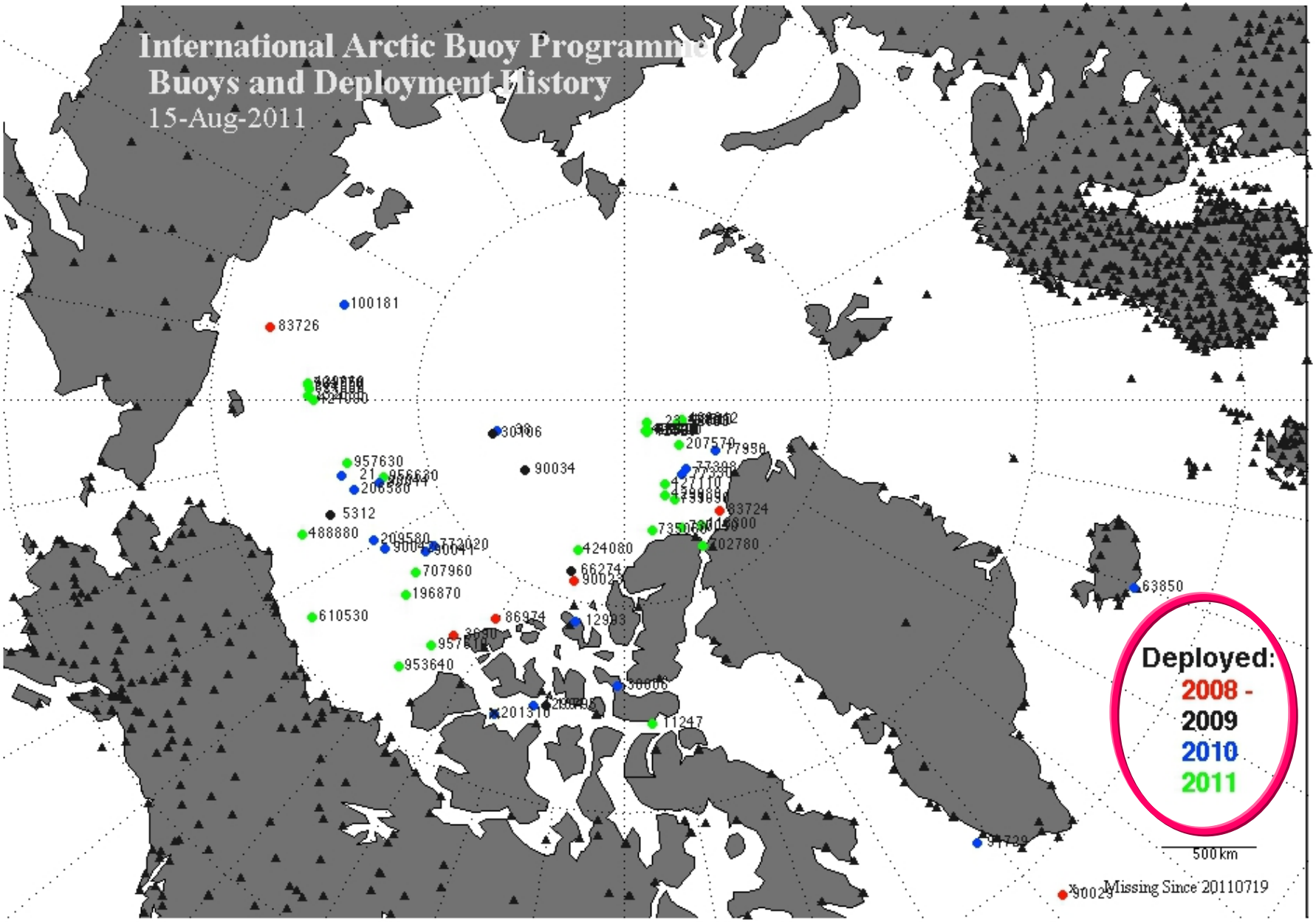
"North Pole-1" was established in May 1937. Since 1954 Soviet "NP" stations worked continuously, with one to three such stations operating simultaneously each year, according to Wikipedia. In the post-Soviet era, Russian exploration of the Arctic by drifting ice stations was suspended for twelve years, and was resumed in 2003.

IABP Deployment Plans – Logistics & Residence Time

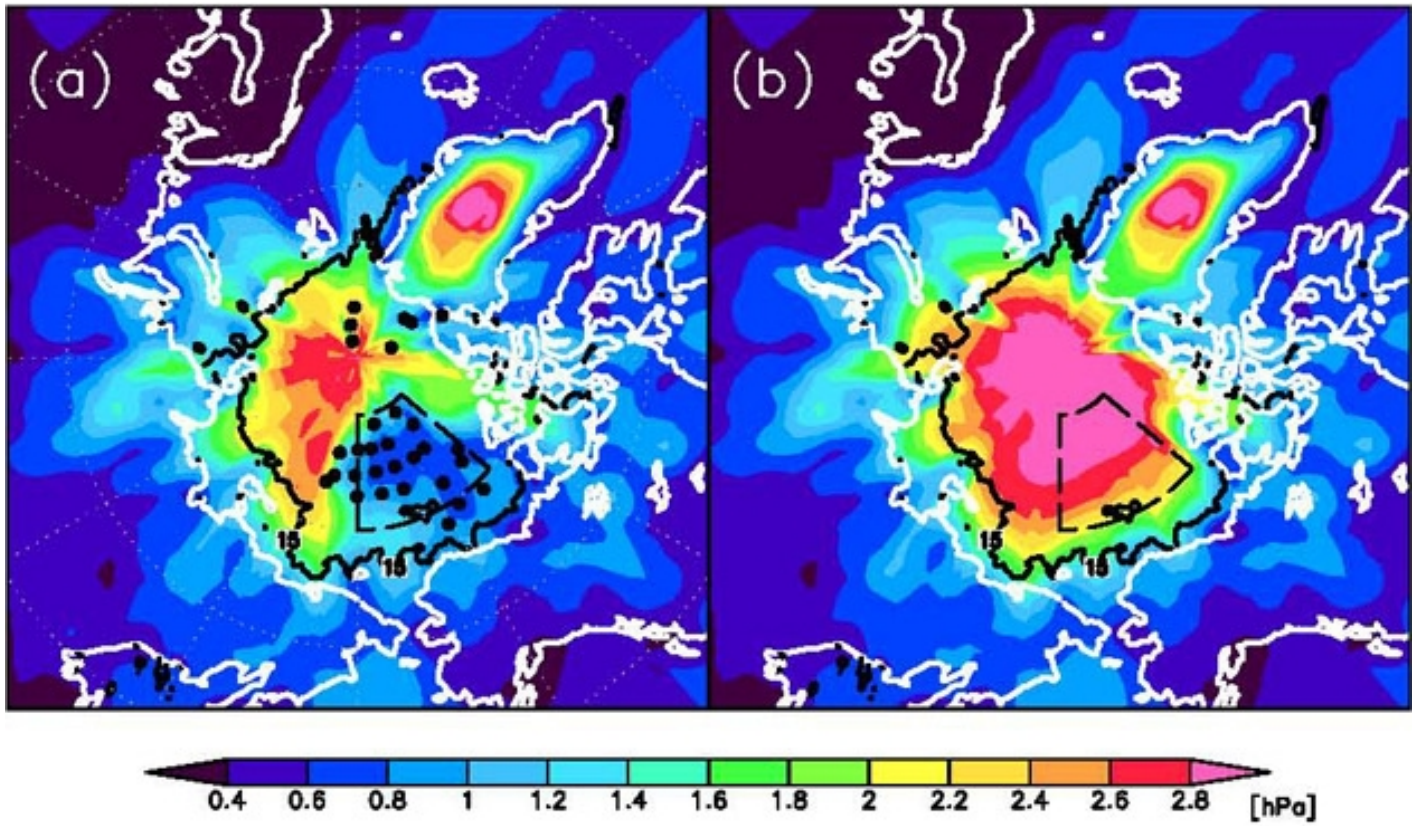
The dots show the location of drifting buoys reporting March, 2011, and expected positions on April 15, 2011 and September 15, 2011.



Annual deployments remain a must



Spread of Sea Level Pressure (SLP) Reanalyses



The spread between SLP Reanalyses is low in areas where there are buoy observations (left). The spread increases to cover the whole Arctic when the buoys are removed from the reanalyses (right). The buoy obs. also help constrain of estimates of wind and heat.

(Inoue et al, 2009)

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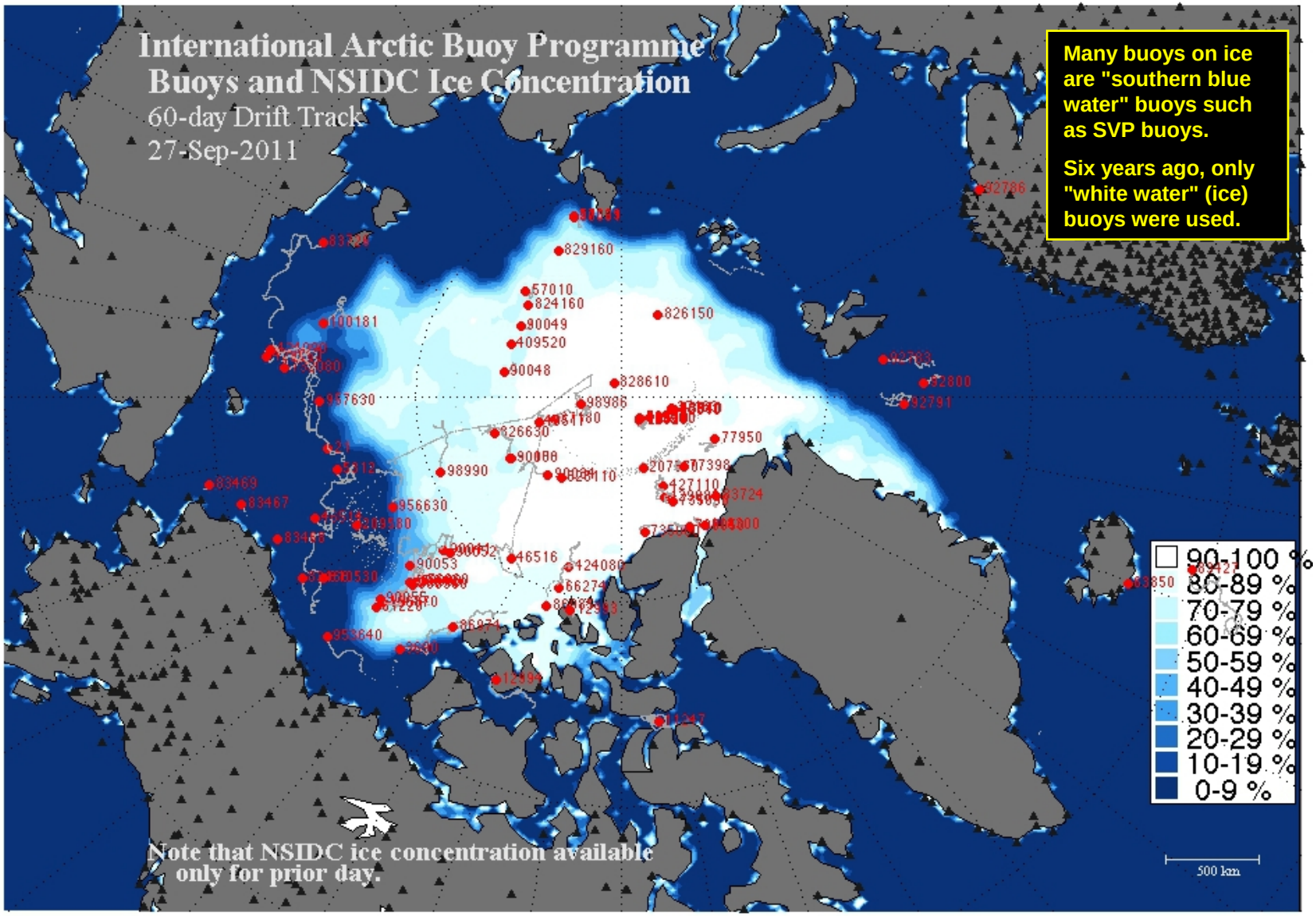


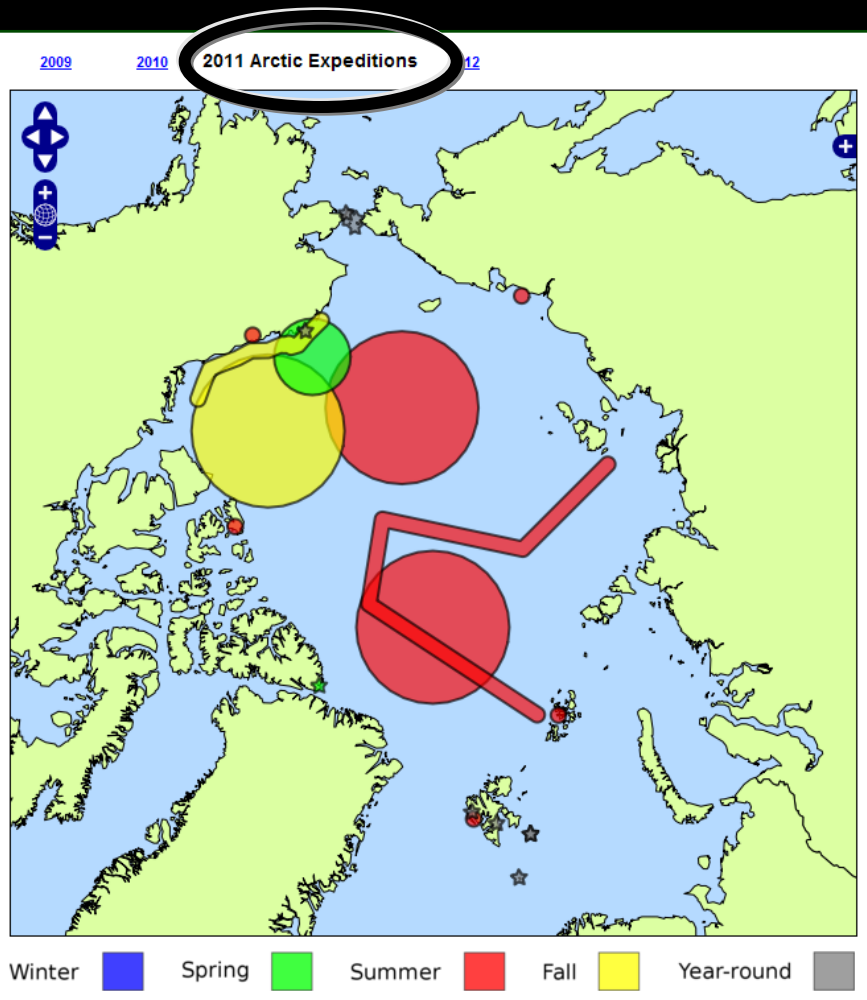
Comparison of IABP buoy array August 2007 to July 2011

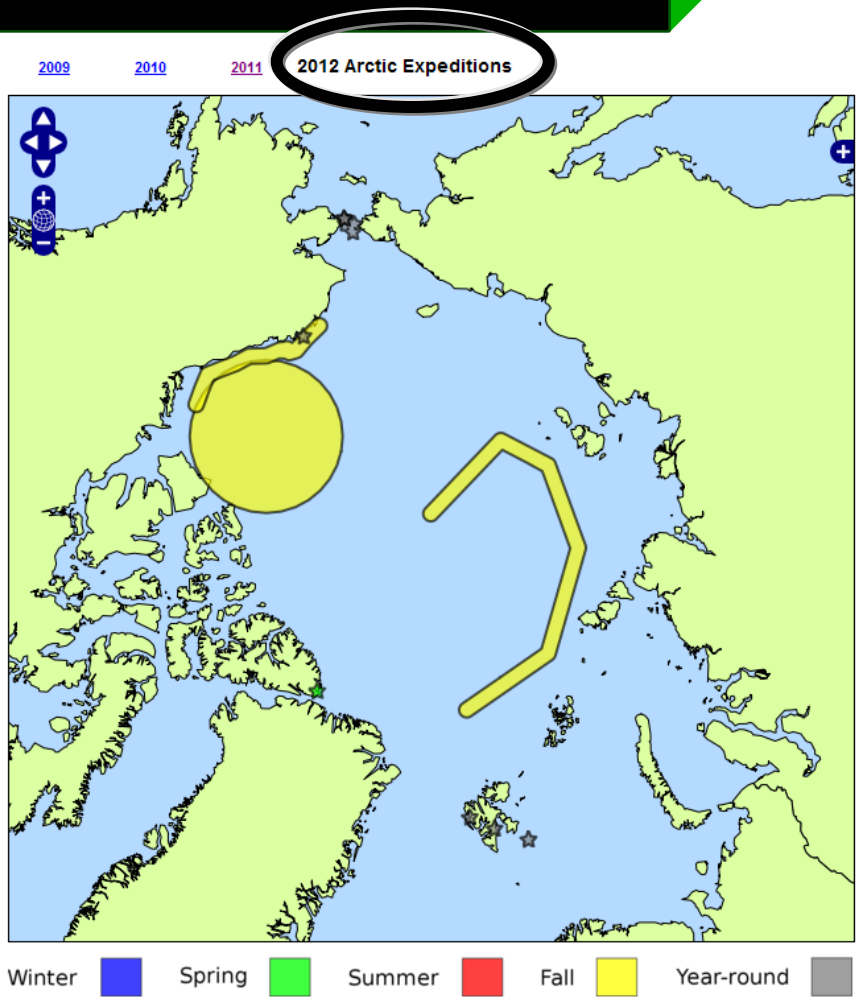
	2007 17 August	2008 15 August	2009 9 August	2010 23 August	2011 26 July
Ocean Profiling POPS or ITP	9	7	11	13	8
Ocean Profiling UpTempo				2	3
Arctic Ocean Flux Buoy		1	1	2	2
Ice Mass Balance	8	9	5	4	8
Near Surface Air Chemistry O buoy				1	nil
Only Surface air temperature and **surface air pressure**	33	30	25	11	5
Only Surface air temperature	1	1	1	1	Nil
Only Surface air pressure	8	20	40	22	20
Position only	30	23	6	15	25
Russian manned station		NP 35	NP 36	Nil NP37 Sep 2009 to May 2010	NP38
Total Numbers of buoys	**89**	**91**	**89**	**72**	**72**
Iridium Argos					34 38

www.iceplan.org Field planning website in year two

Site courtesy CliC / CliC sea ice working group and IARC, Jenny Hutchings, website coordinator

- One-stop shop for Arctic sea ice field planning coordination
- Seek to include all expeditions where buoys are to be deployed
- Hope to encourage collaborations and pave way for coordinated sea ice data collection





IABP Participants Annual Meeting

Annual International Arctic Buoy Programme Meeting

1-3 June 2011 in Victoria, Canada

Host

Meteorological Service of Environment Canada

IABP Executive

Chairman	Christine Best	Canada
Vice-Chairman	Christian Haas	Canada
Member	Pablo Clemente-Colón	United States
Member	Takashi Kikuchi	Japan
Member	Jean-Claude Gascard	France

IABP Coordinator

Ignatius Rigor	United States

Discussion / Issues

Challenges to sustain IABP network

- Increasing areas of First-Year Ice and Open Water during summer

- Deploying buoys in the Eurasian Arctic

Buoy data not getting onto GTS

- **Argos Buoys** - Yann Bernard, Service Argos, provided the IABP Coordinator a list of active Argos platforms in the IABP area north of 66N not yet being processed by Service Argos for the GTS. The IABP Coordinator will be contacting those on the list to see if they are wiling to share via having data posted to the GTS.

- **Iridium Buoys** - Many researchers are using Iridium rather than Argos to get their data and that data is being posted to ftp sites and no further. Efforts are being made to have data flipped to the GTS. For example, Joubeh, Scotia Weather, and Environment Canada have collaborated for posting Iridium data on the GTS.

Obtaining data that did not get onto the GTS

During the IPY in particular, there were buoys on ice whose data has yet to make it to GTS or IABP archives. Efforts are being made to have that data entered into the GTS and IABP archives.

2012

Expect trends to continue:

- more buoys that can survive freeze-thaw cycle
- more oceanographic buoys
- more ice mass balance buoys
- buoys that are using Iridium communication to set up procedures to have, at minimum, position and basic meteorological data posted to the GTS in real time.

Resolution of Kalman filter concerns