

DATA BUOY COOPERATION PANEL

DBCP-30/ Doc. 5  
(30-Sep-14)

THIRTIETH SESSION

ITEM: 5

WEIHAI, CHINA  
27-31 OCTOBER 2014

ENGLISH ONLY

**REPORT BY THE TECHNICAL CO-ORDINATOR**

*(Submitted by the former Technical Coordinator, Kelly Stroker, JCOMMOPS)*

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**SUMMARY AND PURPOSE OF DOCUMENT**

This document provides information on the work undertaken by the former Technical Coordinator of the DBCP during the last intersessional period.

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**ACTION PROPOSED**

The Panel will review the information contained in this report and comment and make decisions or recommendations as appropriate. See part A for the details of recommended actions.

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- Appendices:**
- A.** Monthly Maps for August 2014
  - B.** Graph of Parameters Reporting on the GTS
  - C.** Quality of Buoy Data
  - D.** Technical Coordinator non-routine Tasks

**-A- DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT**

5.1 The former Technical Coordinator (TC), Ms Kelly Stroker (USA) reported on her activities on behalf of the Panel during the last intersessional period. During the period 1 September 2013 to 31 August 2014, Ms. Kelly Stroker worked as TC of the Data Buoy Cooperation Panel (DBCP) from the USA on contract to WMO. On average, the TC spends 70% of her time on DBCP-related matters and 30% of her time as OceanSITES Project Office.

5.2 The TC reminded the panel that on October 3, 2014 her current contract ended. Ms. Champika Gallage, Environment Canada, replaced Ms. Stroker in her DBCP TC duties and joined the JCOMMOPS team in Brest during October 2014.

5.3 During the previous year, Ms. Stroker's time as TC was spent on the following:

- Travelling to meet with various DBCP Members, Action Groups, and Teams;
- Producing monthly maps and GTS timeliness reports;
- User assistance as needed;
- Assisting Panel members with technical and programmatic issues;
- Maintaining metadata in the JCOMMOPS database;
- Updating and maintaining DBCP and OceanSITES websites;
- Maintaining mailing lists, contact details and user groups on DBCP, JCOMMOPS, and OceanSITES website;
- Monitoring the Quality-Control Relay traffic;
- Tracking all buoy deployments, and mooring maintenance/installations;
- Preparing for and attending meetings;
- Preparing meeting reports and documents; and
- Developing instructional documents for the new DBCP TC.

5.4 The TC outlined the current status of the data buoy network. During the past 12 months, the average number of drifting buoys reporting onto the GTS was 1340 per month and 406 moored buoys (Figure 1). During the intersessional period we saw a 22% **increase** in the number of active drifting buoys in the array, compared with a decrease in 2012-2013, with the current number of operational drifters on the GTS for August, 2014 at 1532 (Figure 2). The number of barometer buoys continues to hold at around 50%. For the moored buoys, the number dropped through the year but has been steadily rising since April, 2014. The TAO array, in particular, has had a number of maintenance cruises during the year and has increased operations to 50%, up from 30% at this time last year.

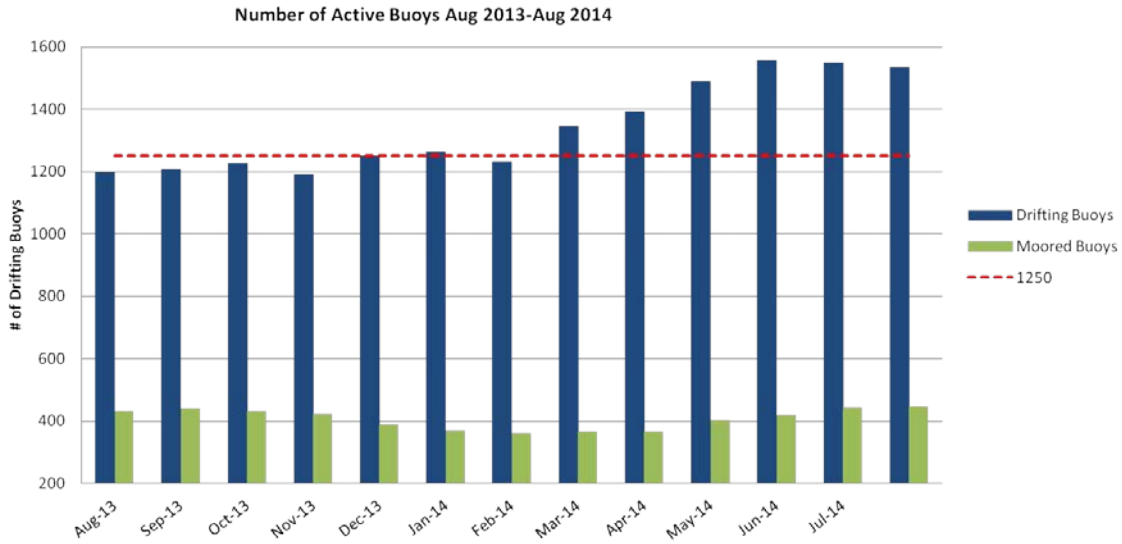


Figure 1 - Number of operational drifting and moored buoys during the last interseasonal period showing the increase in drifting buoys.

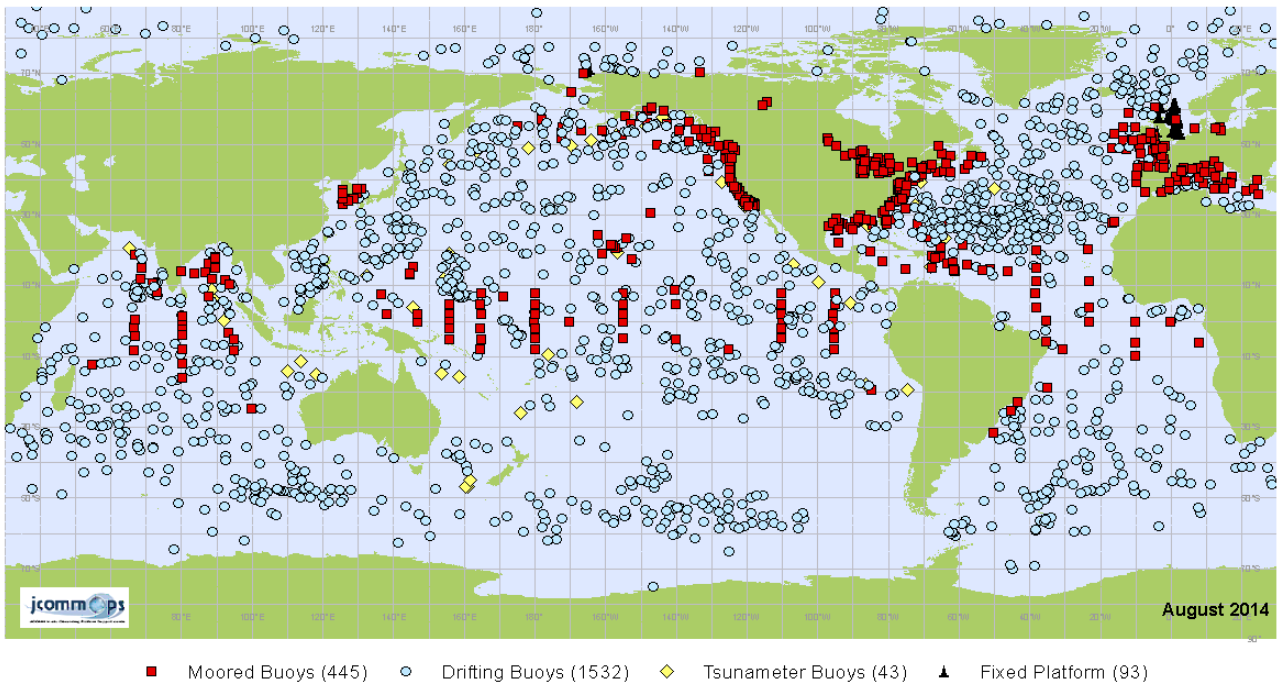


Figure 2 Status of the operational array in August 2014.

5.5 The Technical Coordinator reported that among the drifting and moored buoys reporting on the GTS in BUOY (or BUFR) format, the following variables were measured in Aug 2014.

Variable	Any	Air P	P Tend	SST	Air T	Hum	Wind	Waves	Sub/T	SSS	Sub/Sal	Sub/Cur
<b>Drifting Buoys</b>	1540	771	617	1428	30	3	1	59	51	0	51	0
<b>Moorings</b>	544	354	264	368	425	230	382	373	76	0	74	10

5.6 The TC reported that she created a few new monthly maps this intersessional period. Per a recommendation at DBCP-29 to include a map showing the country of deployment for drifting buoys, during the last intersessional period the TC worked closely with the Global Drifter Program to that effect. As the GDP relies heavily on its international partnerships for the deployment of instruments, it was agreed that these should be recognized. In Jan, 2014, a new map was created to show the country of deployment (Figure 3)

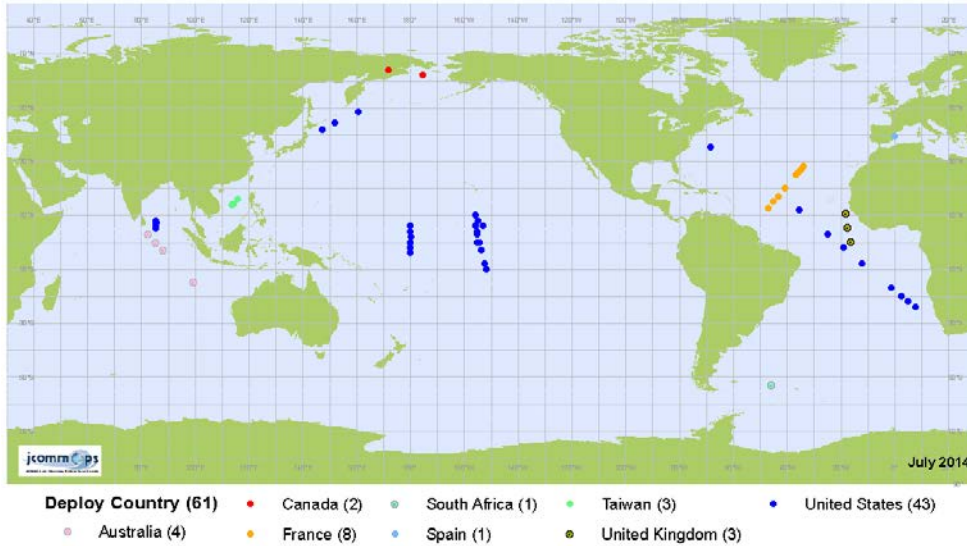


Figure 3 - Map showing country of deployment during July 2014 for drifting buoys.

5.7 In addition to the new map shown above, the DBCP TC also created 2 additional new monthly maps: 1) a map showing barometer upgrades and the country providing the upgrade. The data is provided by the GDP. (Figure 4), and 2) the number of drifting buoys deployed and “lost” each month (Figure 5). These can both be found on the normal maps page in the DBCP site and it is recommended that these maps continue.

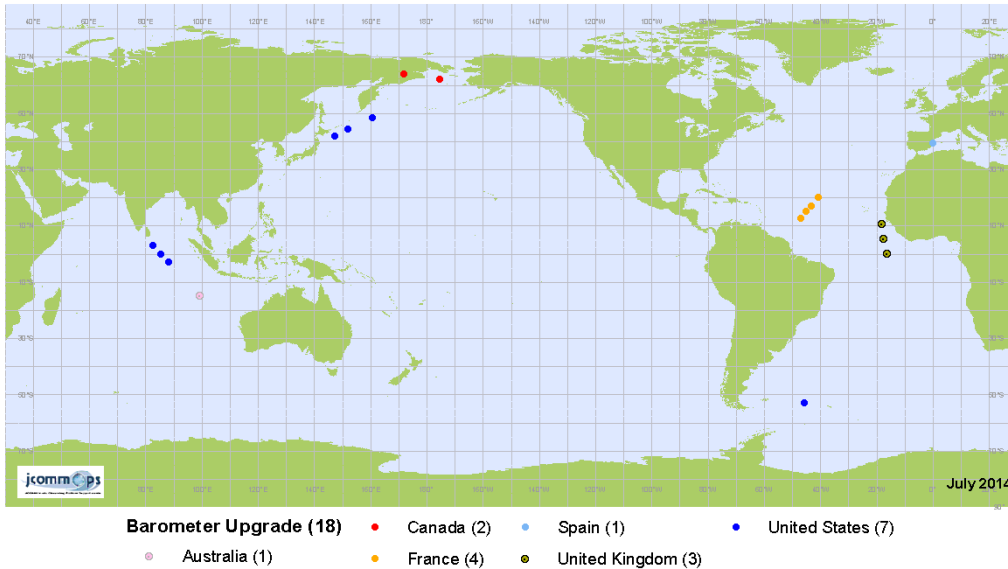
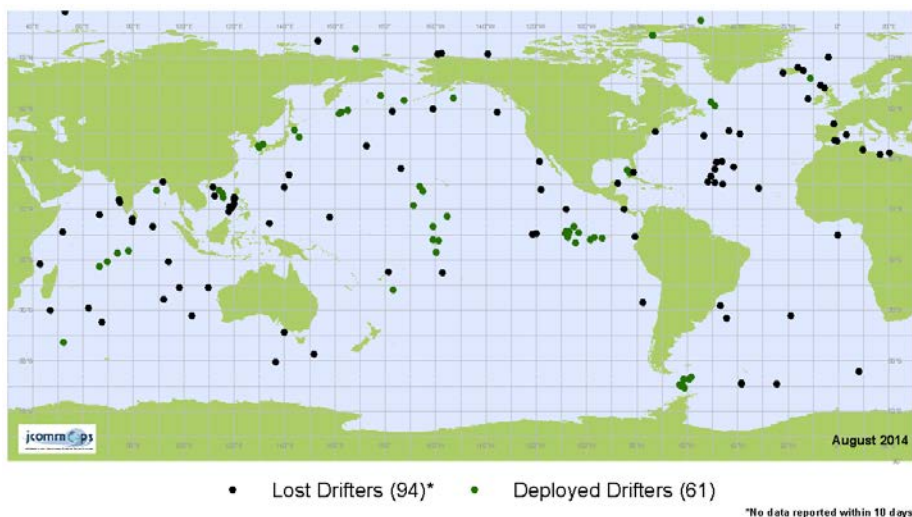


Figure 4 - Barometer upgrades during July 2014.



**Figure 5 - Number of drifters deployed and lost during August 2014.**

5.8 The TC reminded the panel that Deep-Ocean Assessment and Reporting of Tsunami (DART) Buoys have been added to the JCOMMOPS database. The locations of these buoys are included on the monthly maps and in the reporting. The data for these buoys does not come through the normal GTS chains and is not collected by Météo-France or the Integrated Science Data Management (ISDM, Canada). Information on the status of the tsunami buoys is received monthly from NDBC. An automated process for receiving this information or adding the Tsunami buoys to the normal GTS chains is recommended (**action; TC, with NDBC or Météo France; DBCP-31**).

5.9 The TC reported on the status of the TAO refresh buoy array and the GTS header issue that was raised during DBCP-28. The GTS headers were modified in December 2013 and in Jan 2014, the data flowed normally to the GTS. The TC would like to thank NDBC for making this change and informing the community. This allows for much easier monitoring of the TAO array.

5.10 The TC reported that during 2013, NDBC made the decision to reduce the resolution reporting for the TAO array as an anti-vandalism measure. The community was not informed of this change and the decision was made internally. DBCP members should be prepared to discuss any implications that this might have on data assimilation, satellite validation, and research cruises. NDBC stated that the high-resolution positions could be made available to stakeholders and members of the climate community that request this information.

5.11 The Southern Ocean Buoy Programme (SOBP), as part of the DBCP Implementation Strategy, aims to have 300 operational drifting buoys with barometers distributed across the Seas south of 40°S. As of July 2013, there were only 235 drifters in the Southern Ocean and 217 of these were barometer drifters. There were a total of 168 drifting buoys deployed in the Southern Ocean during the last year and DBCP members should continue to look for deployment opportunities in this region (**action; DBCP Members; asap**).

5.12 The TC reported again on the different numbers from the GDP and the JCOMMOPS database. At least once per year the operational drifting buoy information collected at the GDP is compared with that at JCOMMOPS. In August, there were 168 drifters in the JCOMMOPS database that were not included in the GDP deployment log. The differences were found to be the following:

- Buoys as part of the IABP program (these should be categorized differently in the JCOMMOPS database)
- Some test iridium buoys (e.g. Norway IMR)

- Time frame of reporting. JCOMMOPS looks at drifting buoys active during the entire month whereas the GDP produces a snap shot of buoys for that each week.
- Drifting buoys without drogues or drogues at depths centred at other than 15-meters (e.g. JMA buoys)

5.13 The Technical Coordinator reminded the panel that the migration to BUFR is scheduled to be complete at the end of Nov 2014. She provided statistics on the percent of drifting and moored buoys currently reporting to the GTS using Table Driven Codes and mentioned that if there are questions regarding the migration to please make contact. More details on the migration to BUFR will be presented by the Task Team on Data Management in their report.

5.14 Ms. Stroker reminded the panel that there is a new Technical Coordinator starting in October. Ms. Champika Gallage will need some time to get caught up to speed and the TC requests the panels understanding during this time.

5.15 The outgoing Technical Coordinator, Kelly Stroker, wishes to thank the DBCP Members, Task Teams, Chairs, and Executive Board for allowing her to work in the role as TC, especially with the geographic constraints. She thanks you all for an eventful 3 years and wishes the best to all the members.

5.16 **The meeting made the following recommendations:**

- (i.) The panel recommended for the manufacturers to provide information to JCOMMOPS on models, formats, and shipments;
- (ii.) The panel recommended it's members to continue providing Iridium deployments to the Technical Coordinator in the agreed upon format;
- (iii.) The panel recommended members who are not yet transmitting data to the GTS in BUFR format to start doing so as soon as possible; and
- (iv.) The panel recommended that the former TC put together a detail of the TC tasks and responsibilities for the new incumbent.

5.17 **The meeting decided on the following action items:**

- (i.) The TC to work with NDBC or Météo France on an automated process for receiving tsunameter information. (**action; TC, NDBC or Météo France; July 2015**);
- (ii.) The Panel requested the Technical Coordinator to work with Iridium VARs to obtain drifting and moored buoy data (**action; TC; DBCP-31**);
- (iii.) DBCP members should look for deployment opportunities in the Southern Ocean (**action; DBCP Members; asap**).

## **-B- BACKGROUND INFORMATION**

This report covers the activities of the Technical Coordinator of the DBPC for the period of 1 September 2013 to 31 August 2014.

1 During the period 1 September 2013 to 31 August 2014, Ms. Kelly Stroker worked as Technical Coordinator (TC) of the Data Buoy Cooperation Panel (DBCP) from the US on contract

to WMO. On average, the TC spends 70% of her time on DBCP-related matters and 30% of her time as OceanSITES Project Office.

2 The TC reminded the panel that on October 3, 2014 her current contract ends. Ms. Champika Gallage, Environment Canada, will be replacing Ms. Stroker in her DBCP TC duties and will join the JCOMMOPS team in Brest during October 2014.

3 During the previous year, Ms. Stroker's time was spent on the following:

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Other details on the work the TC performs can be found in the Terms of Reference for the Technical Coordinator of the DBCP, ANNEX IV, APPENDIX II of the full meeting report.

#### ***Current status of the data buoy network***

4 The TC outlined the current status of the data buoy network. During the past 12 months, the average number of drifting buoys reporting onto the GTS was 1340 per month and 406 moored buoys (Figure 6). During the intersessional period we saw a 22% **increase** in the number of active drifting buoys in the array, compared with a decrease in 2012-2013, with the current number of operational drifters on the GTS for August, 2014 at 1532 (Figure 7). The number of barometer buoys continues to hold at around 50%. For the moored buoys, the number dropped through the year but has been steadily rising since April, 2014. The TAO array, in particular, has had a number of maintenance cruises during the year and has increased operations to 50%, up from 30% at this time last year. The history of the network from 2001 is maintained and shows the ups and downs over the past few years (Figure 8).

A detailed analysis of this issue was presented at the Science and Technology Session by the Global Drifter Program.

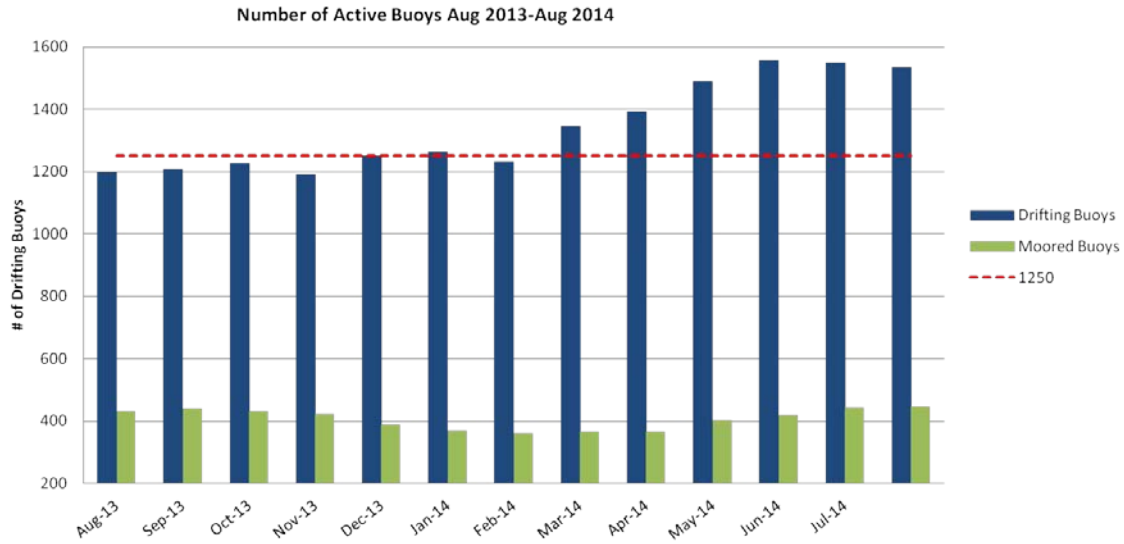


Figure 6 - Operational drifters and moored buoys on the GTS during the period August 2013-Aug 2014. Number of drifters verified and confirmed through Météo-France GTS. Target line of 1250 shown for reference.

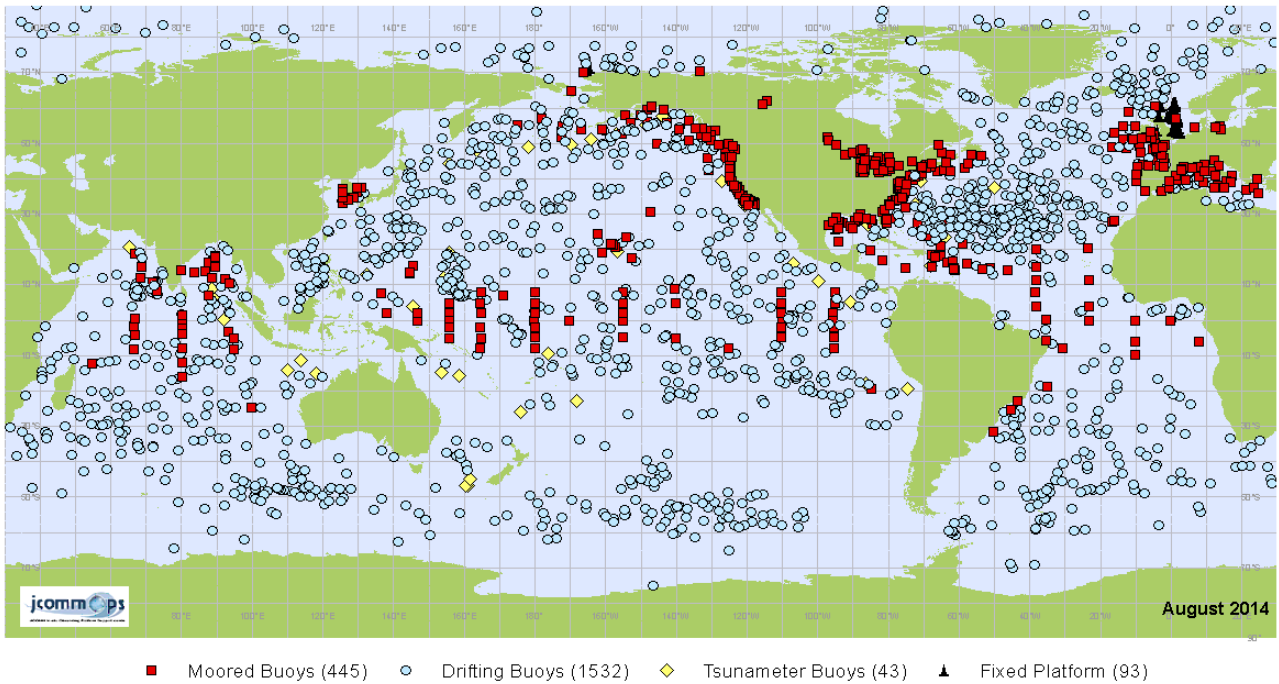
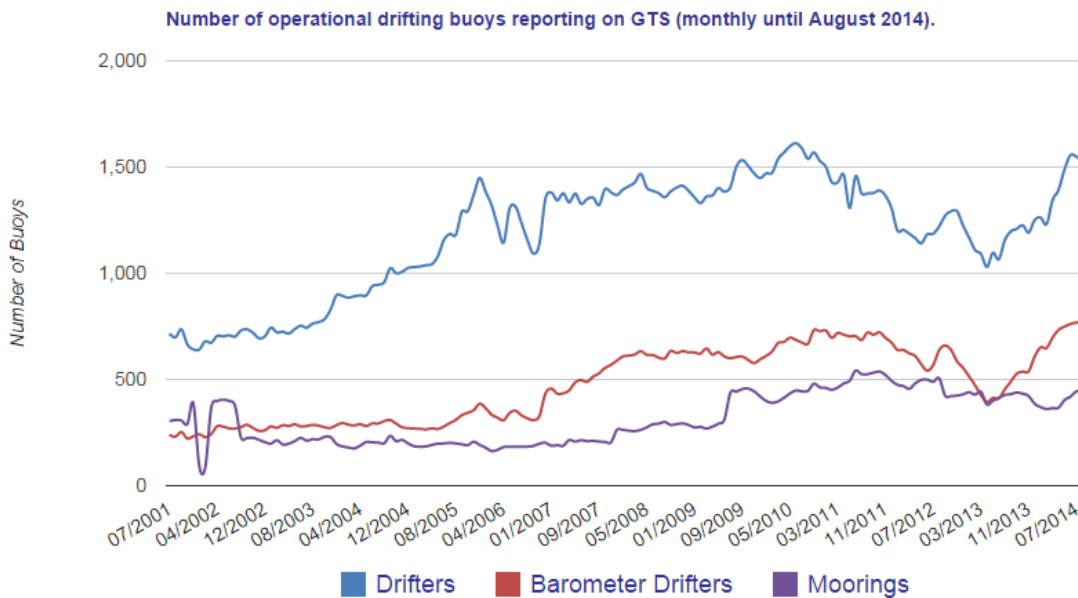


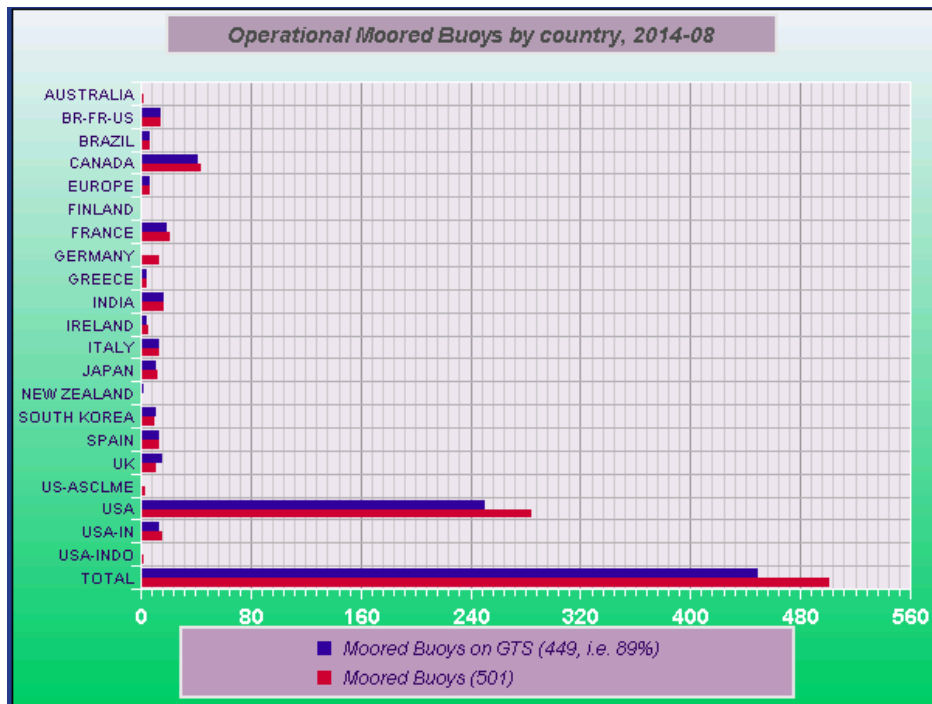
Figure 7- Drifting and Moored buoy monthly status map for Aug 2014. (GTS information received from Météo-France)





**Figure 8 - Number of operational buoys reporting on the GTS since 2001.**

The present status of the moored buoy platforms per country is shown in Figure 9. Presently 89% of all moored buoys active using Argos are transmitting data onto the GTS. For those not using Argos the number is less clear.



**Figure 9-Number of moored buoys per country in July Aug 2014.<sup>1</sup>**

One of the main challenges now with the moored buoy array is finding resources to maintain the systems. Availability of the TAO array has suffered since 2012 after NOAA was forced, due to

<sup>1</sup> <http://wo.jcommops.org/cgi-bin/WebObjects/JCOMMOPS.woa/wa/ptfCountry>

funding challenges, to lay up its research vessel Ka'imimoana, which had been dedicated for servicing TAO.

Performance of the TAO array has improved from the 28% low in March to about 50% at the end of July (Figure 10).

NOAA has three more TAO service cruises planned through December 2014, with the NDBC field service team on NOAA research vessel Ron Brown in September, October and November. NOAA expects the data availability of the TAO array to be at the target 80% after the final cruise is complete. A TPOS (Tropical Pacific Observing System) 2020 Project has been formed to oversee the redesign of the Tropical Pacific Observing System. The group met in Jan 2014.

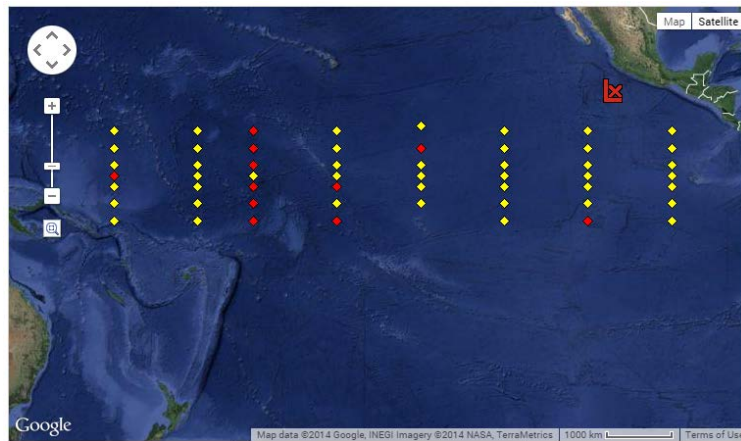


Figure 10 - TAO array status in August 2014.

The status of the drifting buoys platforms per country is shown in Figure 11. Presently 90% of all active drifting buoys transmitting via Argos are putting data onto the GTS. For those not using Argos the number is less clear and this remains a goal for the TC to work with Iridium VAR providers.

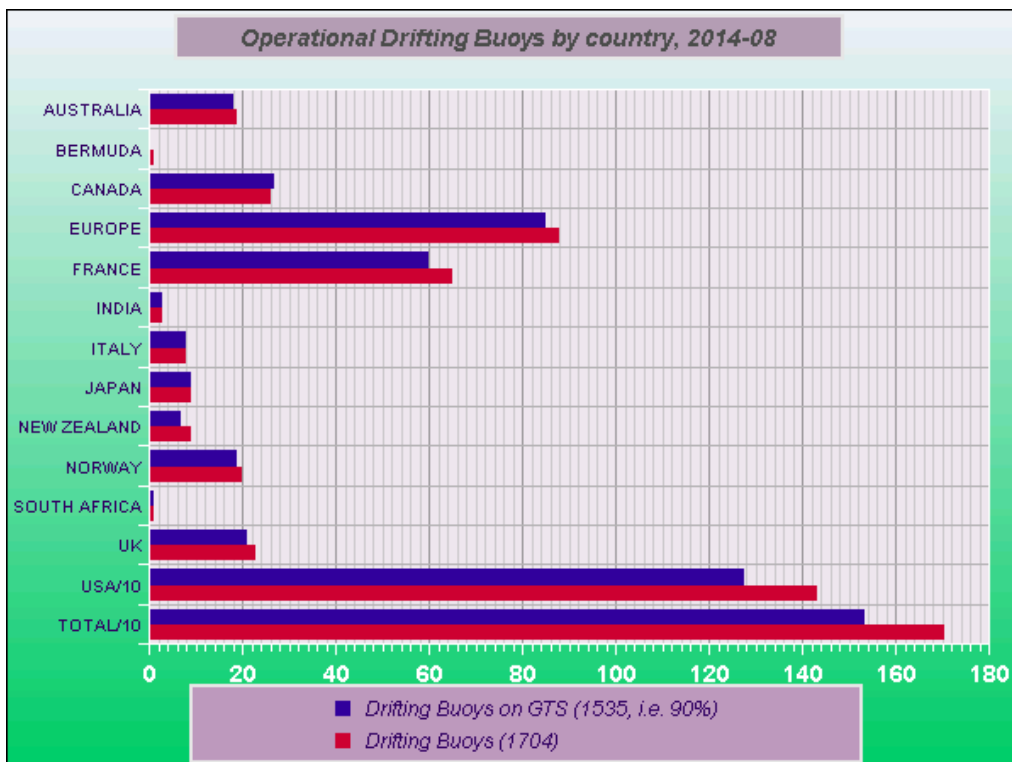


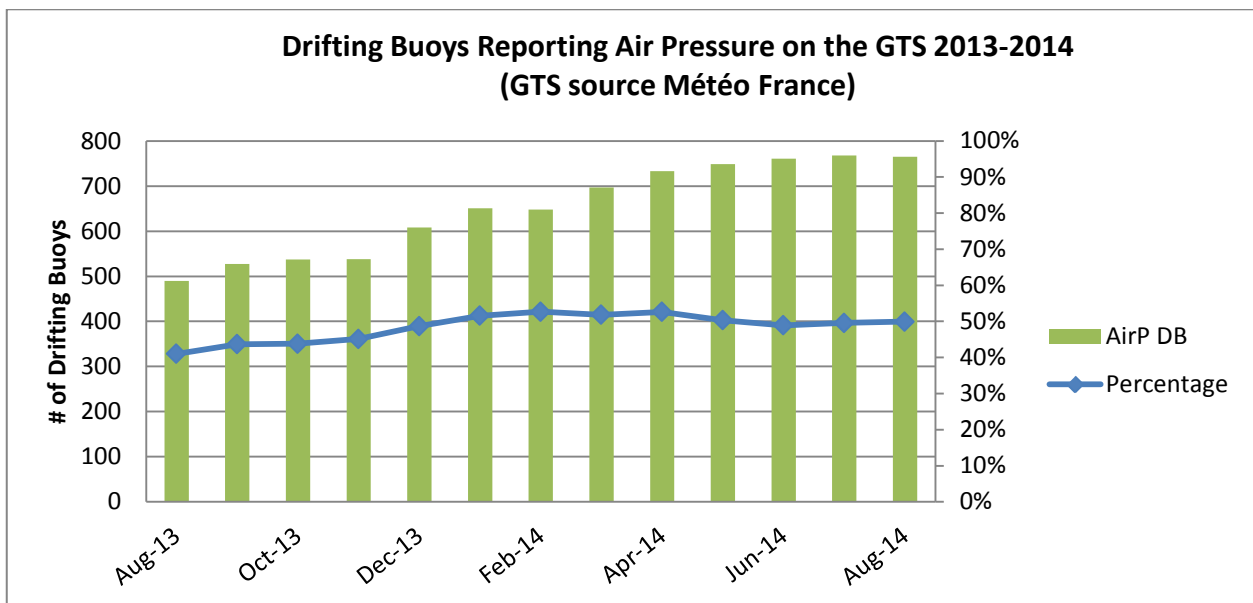
Figure 11 -Number of drifting buoys per country in August 2014

**Variable measured from buoys and reporting on GTS**

5 Amongst the drifting and moored buoys reporting on the GTS in BUOY (or BUFR) format, the following variables were measured in July 2013. The number of drifters reporting Air Pressure is at 50%.

Variable	Any	Air P	P Tend	SST	Air T	Hum	Wind	Waves	Sub/T	SSS	Sub/Sal	Sub/Cur
<b>Drifting Buoys</b>	1540	771	617	1428	30	3	1	59	51	0	51	0
<b>Moorings</b>	544	354	264	368	425	230	382	373	76	0	74	10

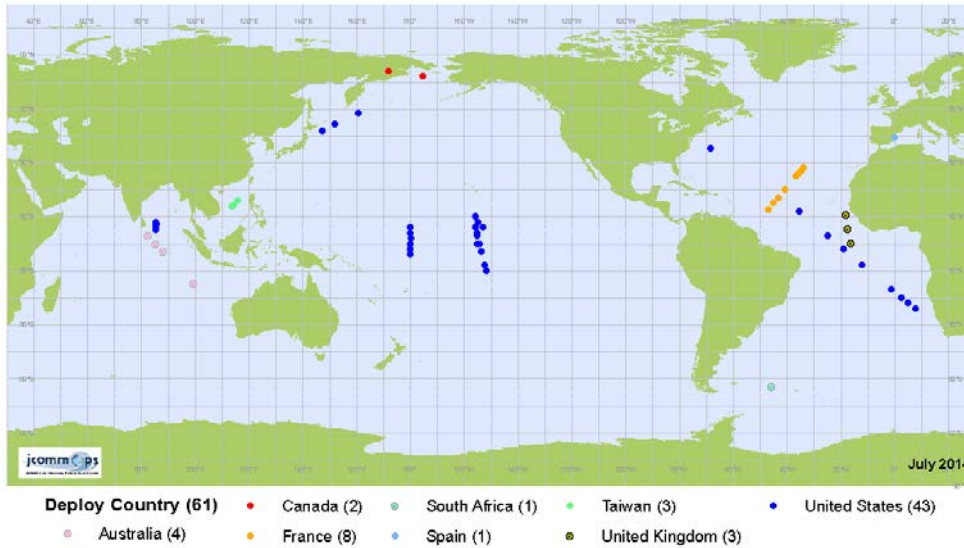
**Table 1 - Drifting and Moored buoy variables being reported on the GTS during August 2014.**



**Figure 12 - Number of drifting buoys reporting Air Pressure on the GTS during August 2013-August 2014. The number of barometers has been holding at 50% for the past 9 months.**

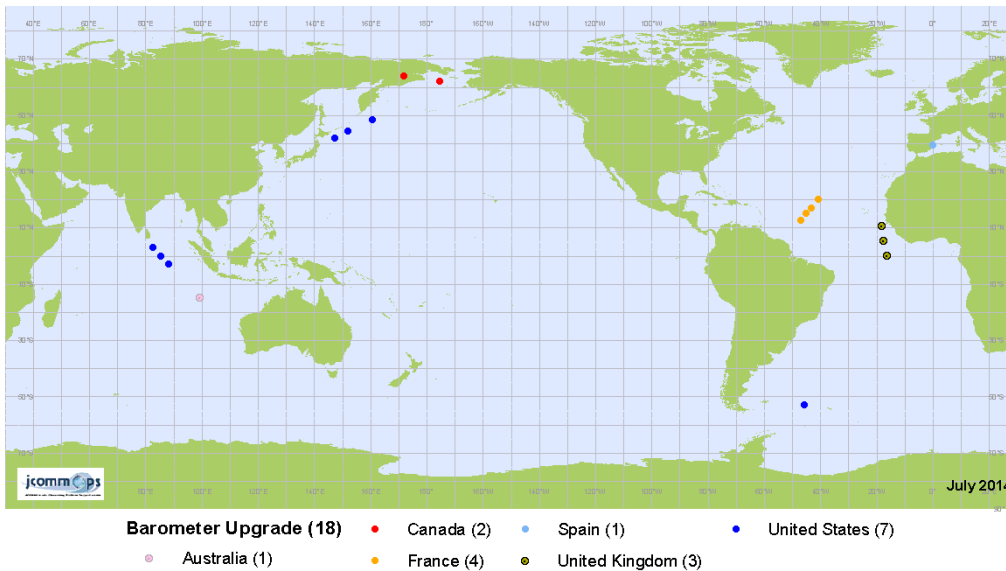
**Updates to Monthly Maps**

6 The TC reported that she had created a few new monthly maps this intersessional period. Per a recommendation at DBCP-29 to include a map showing the country of deployment for drifting buoys, during the last intersessional period the TC worked closely with the Global Drifter Program to include a map showing the country of deployment of drifting buoys. As the GDP relies heavily on its international partnerships for the deployment of instruments, it was agreed that these should be recognized. In Jan, 2014, a new map was created to show the country of deployment (Figure 3)



**Figure 13 -Map showing country of deployment during July 2014 for drifting buoys**

In addition to the new map shown above, the DBCP TC also created 2 additional new monthly maps: 1) a map showing barometer upgrades and the country providing the upgrade. The data is provided by the GDP. (Figure 4), and 2) the number of drifting buoys deployed and “lost” each month (Figure 5). These can both be found on the normal maps page in the DBCP site and it is recommended that these maps continue.



**Figure 14 -Barometer upgrades during July 2014.**

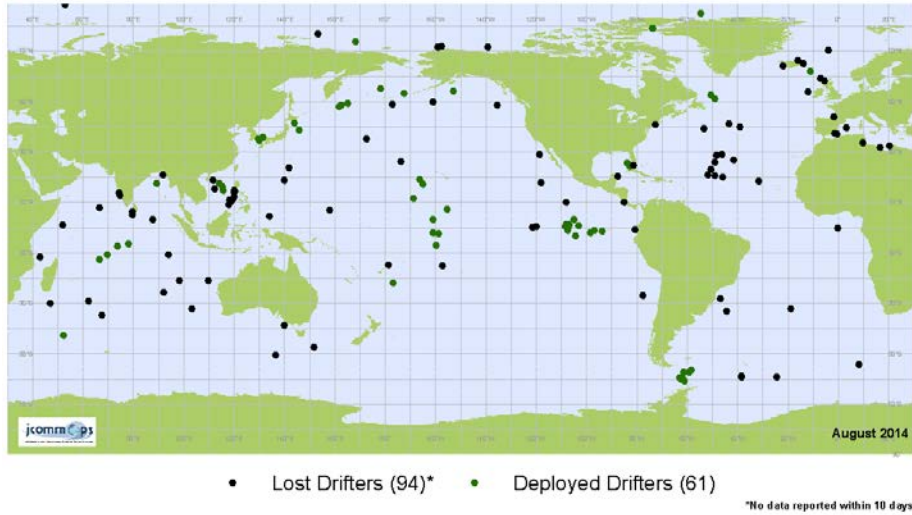


Figure 15 - Number of drifters deployed and lost during August 2014.

**Tsunameters**

7 During the last intersessional period the Technical Coordinator had added Tsunami Buoys to the JCOMMOPS database. The locations of these buoys are included in monthly maps and reporting. They will be held separately as they are not at this time reporting any meteorological parameters onto the GTS. The Tsunami Buoys report water level data only and these data are not received through Météo-France as the rest of the array.

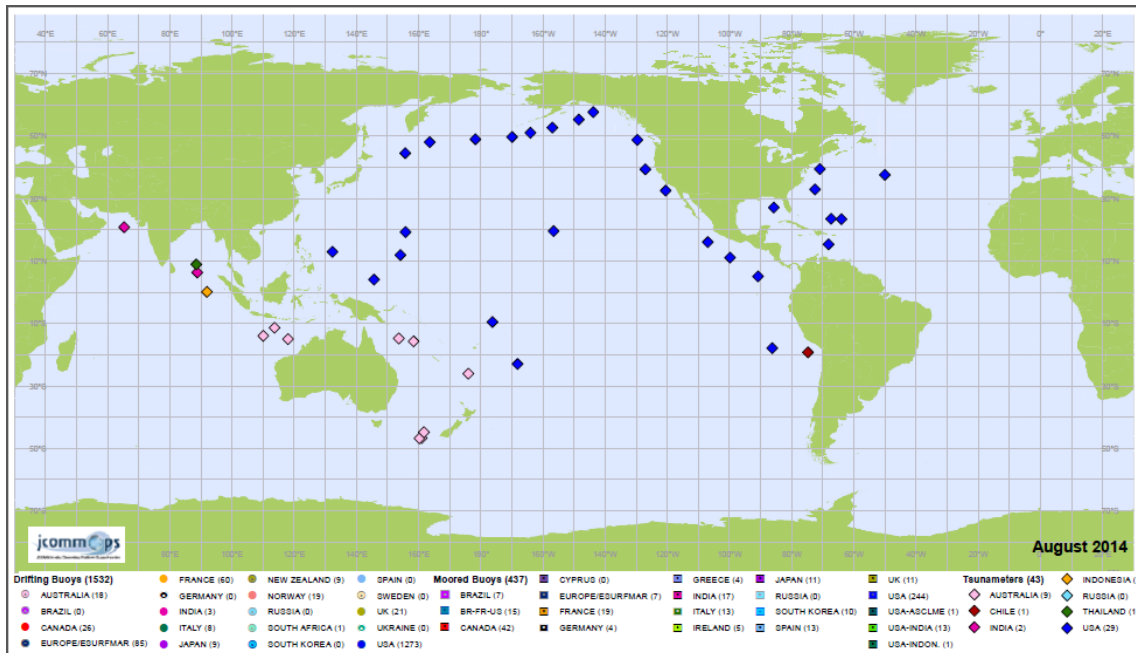


Figure 16 - Operational Tsunami Buoys in August 2014. Location information received from NOAA/NDBC or international partners.

## **GTS Bulletins**

8 There is a goal for ISDM and Météo-France to fully compare data going onto the GTS a least twice per intersessional period. A full comparison was done in Sept 2014 and the details of this will be discussed during the Task Team in Data Management Report. One of the findings from an earlier comparison concerned the reporting of the TAO Refresh buoys. The buoys were reporting under the GTS Header of SXPA01 KWNB but as this format did not follow the WMO specifications the data were not processed at Météo-France.

In early 2014, the headers were modified to follow the WMO specifications and are using SSVX08. A message was sent to the community and the data are now successfully ingested at Météo France (Figure 14).

THIS MESSAGE PROVIDES NOTICE THAT THE NWS NATIONAL DATA BUOY CENTER /NDBC/ WILL DISSEMINATE TAO REFRESH BUOY DATA UNDER THE WORLD METEOROLOGICAL ORGANIZATION /WMO/ HEADINGS COLLECTIVE OF SSVX08 KWNB INSTEAD OF SXPA01 KWNB. THE LEGACY TAO BUOYS WILL CONTINUE TO TRANSMIT UNDER THE SSVX08 KARS HEADER. THE CURRENT DISTRIBUTION OF SXPA01 KWNB WILL AUTOMATICALLY BE ADDED TO THE SSVX08 KWNB HEADER ON THE EFFECTIVE DATE. THE MESSAGE FORMAT WILL CONTINUE TO BE FM18 BUOY, FREQUENCY OF THE REPORTS WILL BE HOURLY. THE DAILY AVERAGE MESSAGE IS NOT DISTRIBUTED FOR THE TAO REFRESH BUOYS. TAO DATA WILL NO LONGER BE DISTRIBUTED ON SXPA01 KWNB ON THE EFFECTIVE DATE.

Figure 17 – Message sent regarding the change in GTS Bulletin Headers for the refreshed TAO array.

## **TAO Reduced Resolution**

9 In June, 2014 it came to the attention of the DBCP Panel and OOPC that the TAO moorings in the Tropical Pacific had made a change in policy regarding the accuracy in positioning reported on the array. The position resolution reported on the GTS and NDBC website was reduced to 0.1 degree. This change was not included in any data management policy or notes. Concerns from the community were raised and some of those are listed below and expressed in a letter sent from OOPC to NDBC:

1. There are many valid reasons why certain groups would need to know the precise location of the moorings: How can those with a valid reason get accurate position information, e.g for cruises that need to take complementary measurements?
2. While highly accurate positions may not be needed for models, the change could still have an impact on data assimilating systems that draw in and archive data from the GTS.
3. For research and validation of satellite data, the position precision could be a significant issue. Some, but not all of this work is carried out in delayed mode.
4. For researchers that do not access data on the GTS, this could be a serious issue. The new policy hinders scientists that use TAO data in slightly delayed mode as well as the many that use non-NWS analyses of TAO data. In areas with large SST gradients, such as those from tropical instability waves, the positional errors might seriously degrade the analysis.

NDBC responded stating that the high-resolution position of each TAO mooring would be provided to their stakeholders and members of the climate and research community. NDBC and OOPC are both requesting that the DBCP identify the best method of informing users of such changes in the future.

**Southern Ocean Buoy Programme (SOBP)**

10 The Southern Ocean Buoy Programme, as part of the DBCP Implementation Strategy, aims to have 300 operational drifting buoys with barometers distributed across the Seas south of 40°S. During August 2014, the number was 216, which means are much closer than last year but still far from reaching our goal.

During the Intersessional period the number went up to a peak of 251 SVP-B drifters in April 2014.

Month	Number of Barometer Drifting Buoy (SVPB)	Number of Drifting Buoy (SVP)
Aug-14	216	235
Jul-14	214	230
Jun-14	223	237
May-14	236	251
<b>Apr-14</b>	<b>251</b>	<b>258</b>
Mar-14	213	229
Feb-14	196	210
Jan-14	180	194
Dec-13	124	145
Nov-13	89	111
Oct-13	85	99
Sep-13	88	99
Aug-13	79	95

**Table 2 - Number of Operational barometer drifting buoys in the Southern Ocean per month during the last intersessional period.**



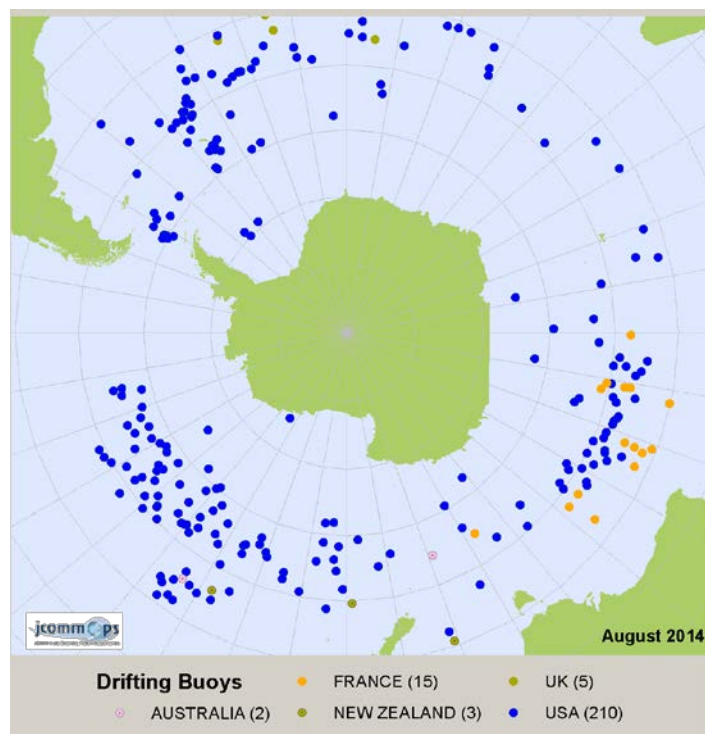


Figure 18 – Active drifting buoys during Aug 2014 in the Southern Ocean below 40°S.

The deployment plans last year were for 228 buoys with Barometers (including 30 upgrades) to be deployed south of 40°S. As it is very difficult to predict deployment opportunities, firm commitments are difficult and this exact numbers of SVPB buoys versus SVPs are also difficult to predict.

Country	Planned	Additional Upgrades	Total	Comment
Australia	5		5	
France		30	30	
Germany	0		0	
New Zealand	10		10	<ul style="list-style-type: none"> <li>- 4 MetOcean Iridium SVP-B</li> <li>- 1 Marlin-Yug Argos SVP-B</li> <li>- 5 Marlin-Yug Iridium SVP-B</li> </ul>
South Africa	20		20	<ul style="list-style-type: none"> <li>- 8 Gough Sept 2013</li> <li>- 10 Sanae Dec-Feb 2013/14</li> <li>- 2 Marion April 2014</li> </ul>
UK	5		5	



				<ul style="list-style-type: none"> <li>- 20 SVPB deployments south of NZ</li> <li>- 30 SVPB deployments near 55S,155W (in conjunction with KISOT)</li> <li>- 30 SVPB deployments throughout the Southern Ocean (aboard Barcelona World Race)</li> <li>- 28 SVPB deployments in the Drake Passage (PI Christian Reiss)</li> <li>- 20 SVPB deployments in the Drake Passage (2 per mo. in conduction with US Antarctic Program)</li> <li>- 10 SVPB deployments in South Atlantic (in conduction with SAWS)</li> <li>- 20 SVPB deployments in the South Atlantic (in conjunction with the Brazilian Navy)</li> </ul>
USA	158		158	
<b>Total</b>	<b>198</b>	<b>30</b>	228	

**Table 3- Barometer Drifter deployment plans for the period August 2013 to July 2014 as agreed at DBCP-29.**

The actual deployments totalled 168. (Table 4). The differences in actual vs deployed were due to a few factors:

- 1) 20 SVPB deployments south of NZ did not happen due to a cancelled cruise
- 2) The Barcelona World Race was cancelled. Thus, 30 SVPB buoys were not deployed.

Country	Buoys purchased or deployed	Additional Upgrades	Total	Comment
Australia	3		3	
France	34		34	
New Zealand	6		6	
South Africa	0		0	ZA deployed a number of units for the GDP
UK	3		3	
USA	122		122	
<b>Total</b>	<b>168</b>		168	

**Table 4 - Actual barometer drifter deployments during the period August 2013 to July 2014.**

The plans for August 2014 – July 2015 are shown in Table 5 below. As mentioned above, the southern ocean is the trickiest basin to predict deployment numbers. According to the GDP, there are normally few opportunities, limited lead times, and shipping difficulties, which makes it difficult to seed these areas. There are several new opportunities for deployments in the Southern Ocean that are being arranged within JCOMMOPS with the Ship Coordinator, Martin Kramp. The details on these deployments will be available in Doc 9.2 – Deployment Opportunities.

Country	Planned	Additional Upgrades	Total	Comment
Australia	5		5	

Canada (IPAB)	12		12	AWI Polarstern cruise to Weddell Sea (ANT 30-3), Dec 2014 - Jan 2015
France		20	20	Plans to deploy in SOBP Indian Ocean
New Zealand	7	10	17	Upgrades provided by GDP
South Africa			0	
UK	12		12	- 7 - HRSST-2 units and will be deployed north of 40S in warmer Atlantic waters - 5 to bedeployed south of 40S in the Southern Atlantic. - All will be Iridium drifters with barometers.
USA	170		170	- 10 SVPB drifters will be deployed in the S. Indian Ocean, by the R/V Kaharoa - 30 SVPB drifters will be deployed in the S. Pacific Ocean, by the R/V Araon - 20 SVPB drifters will be deployed in the Drake Passage, by the R/V LM Gould - 20 SVPB drifters will be deployed in the S. Pacific Ocean, by the Chilean Navy - 20-25 SVPB drifters will be deployed in the S. Indian Ocean, in cooperation with Meteo-France - 30 SVPB driftes will be deployed in the S. Atlantic Ocean, in cooperation with the South African Weather Service - 10 SVPB drifters will be deployed in the S. Pacific Ocean, in cooperation with the New Zealand Met Service - 30 SVPB drifters will be deployed in the Drake Passage, in cooperation with Christian Reiss
<b>Total</b>	<b>206</b>	<b>30</b>	236	

**Table 5 - Barometer Drifter deployment plans for the period August 2014 to July 2015 as proposed to be agreed at DBCP-30.**

***TC priorities***

11 The priorities and actions as outlined at the previous DBCP Session were addressed as following.

- 11.1 Generate a link in JCOMMOPS website for regional drifter deployment organizers to input proposed deployment locations.

The JCOMMOPS Team worked over the last intersessional period on the new website. The IT engineer left the staff abruptly so the team was short handed. A new IT engineer was hired in Aug 2014 and progress is continuing. The website will be shown during the JCOMMOPS report.

11.2 The TC DBCP to work with the Global Drifter Program and other Action Groups on creating a map of deployments by country/program

This was done. See item 5.6 above.

11.3 The TC DBCP to work with NDBC on an automated process for receiving tsunameter information.

The TC still receives emailed copies of the tsunameter information. A recommended method would be to obtain the data from the gts as is the case for all other buoy data. A modification would need to be made to the flow somewhere for this to happen.

11.4 The Panel requested the Technical Coordinator DBCP to work with Iridium VARs to obtain drifting buoy metadata

The TC should continue to have a dialog with Joubeh and others. Some information is received from Joubeh and a login to the online system was set up. But, at present there is no connection to the database for buoy metadata.

11.5 The GTS header should be modified to follow WMO specifications as the entire TAO array has plans to be refreshed by 2014.

Done. See item 5.8 above.

11.6 The conversion to use 7-digits numbers instead of the 5-digit numbers must continue until all cross-reference lists are changed.

The TC retained both 7 digit and 5 digit codes to align with what was reported on the GTS. When BUFR is fully implemented by all parties, the full 7 digit WMO Ids will be the only option.

11.7 Move forward to complete, review and publish the document "An Oceanographer's Marine Meteorologist's Cookbook for submitting Data in Real Time and In Delayed Mode"

Work was done on this cookbook and several revisions and additions were received. However, there are still some empty sections. The secretariat proposes to clean it up and publish it as it with the caveat that there will be revisions.

11.8 DBCP Community (OS TC) should work toward increasing the OceanSITES data contributed to the GTS.

The TC (OceanSITES TC) worked with the community. A few new OceanSITES were added to the GTS over the course of the year.

11.9 The Ship Logistics Technical Coordinator (with OceanSITES TC) is tasked to document OceanSITES deployment and servicing cruises with a view to increasing cooperation with DBCP deployment needs.

These requirements were documented as presented by the OceanSITES Co-Chairs.

11.10 The panel recommended that the current TC put together a detail of her tasks and responsibilities for her incumbent.

In progress and will meet with Ms. Gallage for transfer of duties before and at the meeting

11.11 The Technical Coordinator to continue working with the satellite data telecommunication providers in order to better identify the operators of such buoys in the view (i) to better reflect the status of the buoy networks, whether they report on the GTS or not, and (ii) to convince the buoy operators to allow GTS distribution of their data, and provide technical assistance if needed

Ongoing – easy of communication and and data exchange could be improved.

11.12 TC DBCP to develop a system for making the metadata available via the JCOMMOPS web site

This will be implemented in the new JCOMMOPS website.

11.13 All regular tasks as outlined in the Terms of Reference for the Technical Co-ordinator of the DBCP

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Appendices: 4

# APPENDIX A

## DBCP MONTHLY MAPS – AUGUST 2014

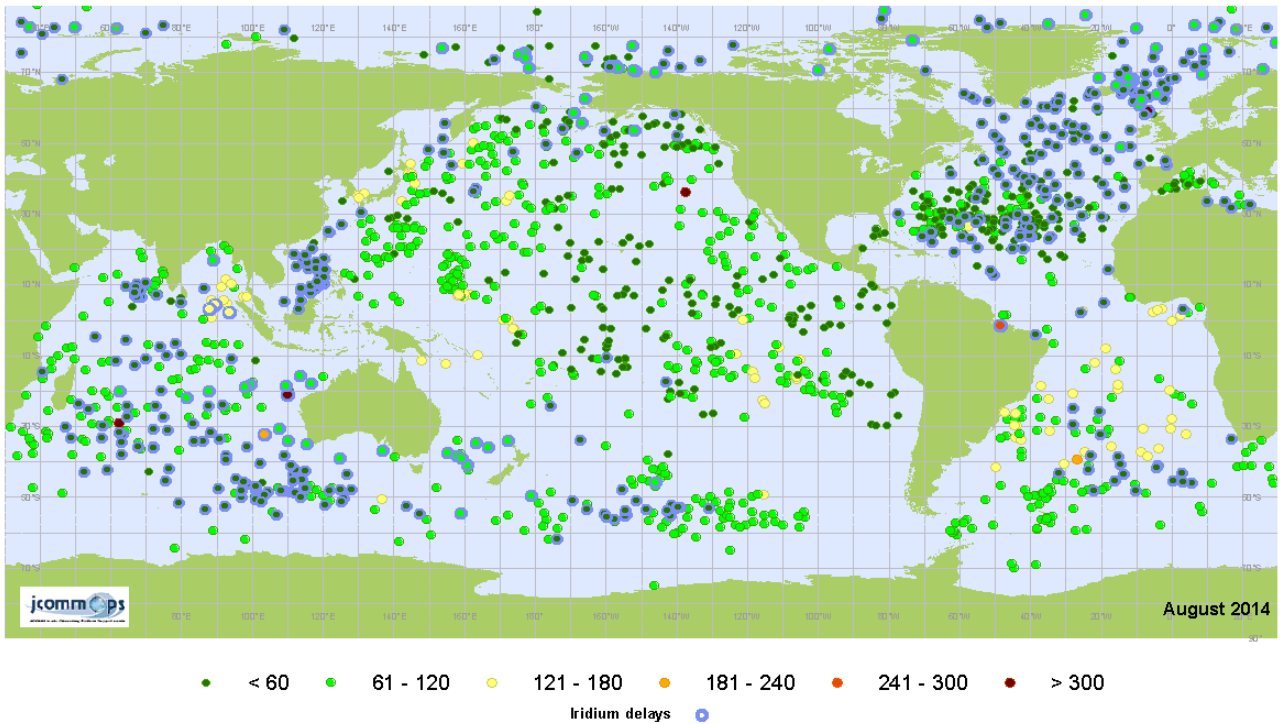


Figure 19 - GTS delays for drifting buoys reporting during July 2013. Iridium drifters outlined in blue.

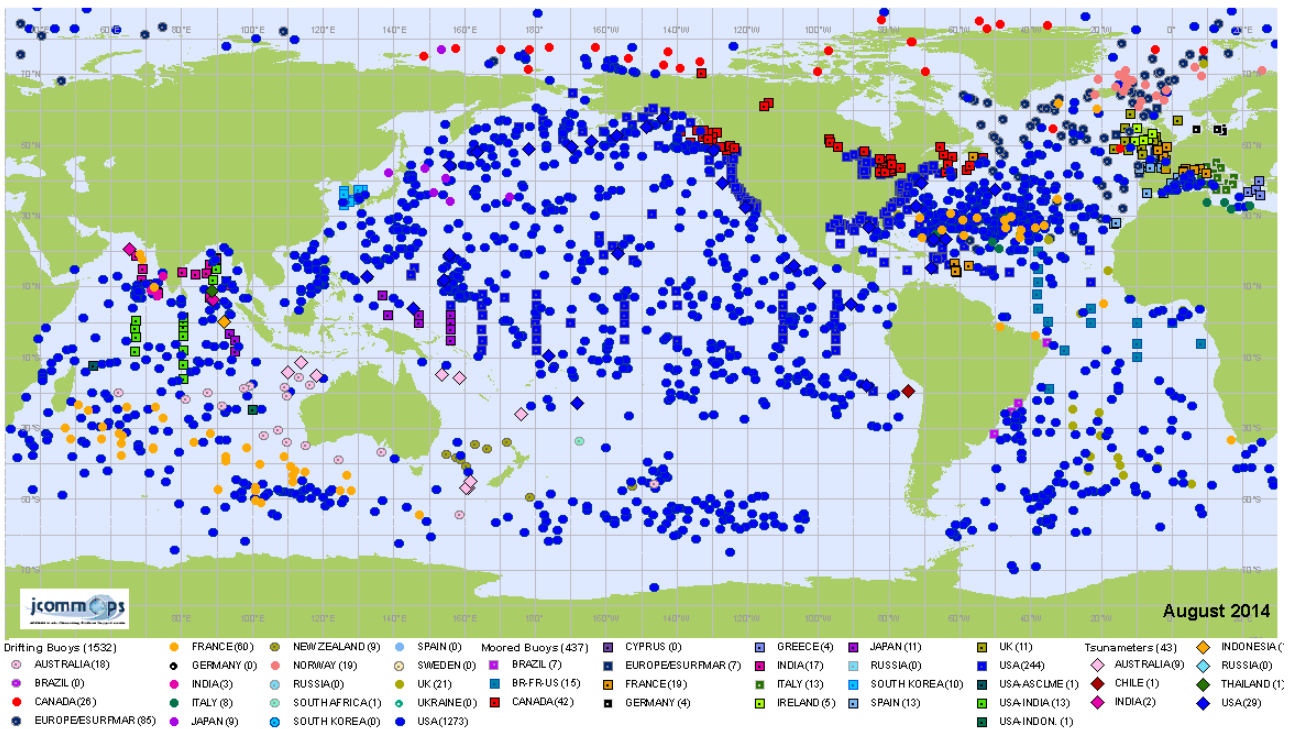


Figure 20 - Buoy networks by country reporting in August 2014.

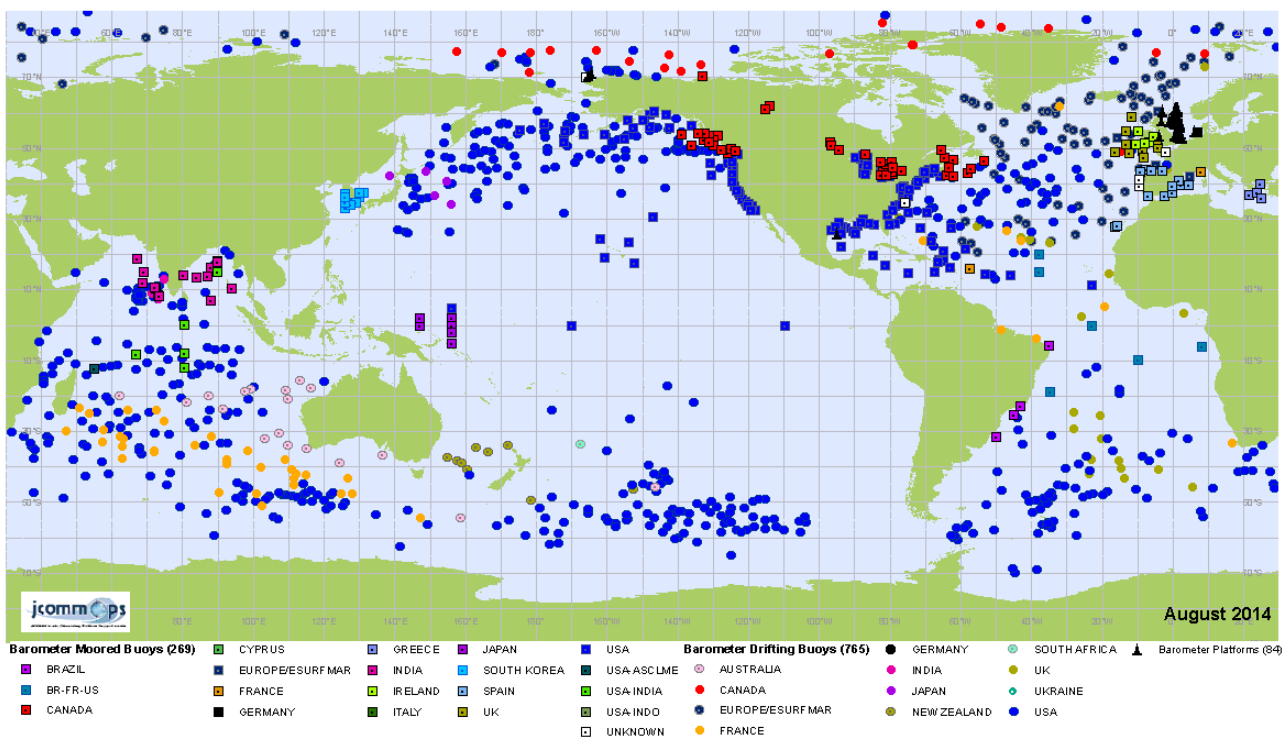


Figure 21 - Drifting and Moored buoys reporting Atmospheric Pressure during August 2014.

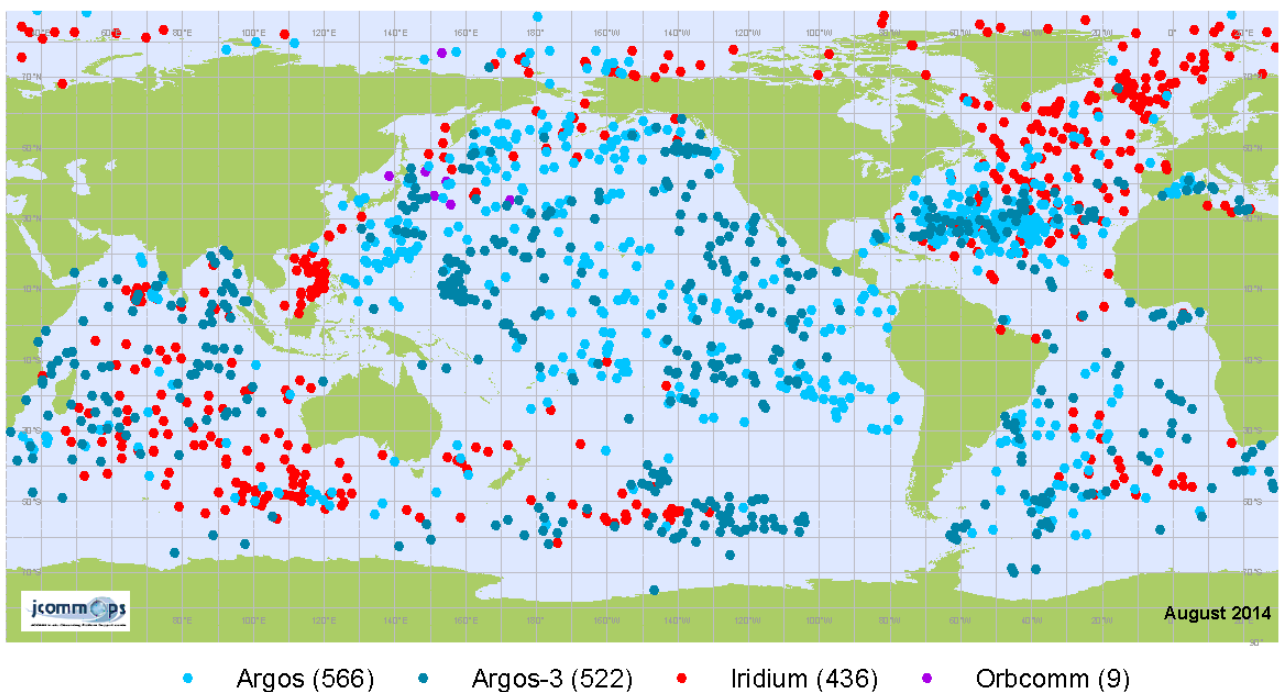
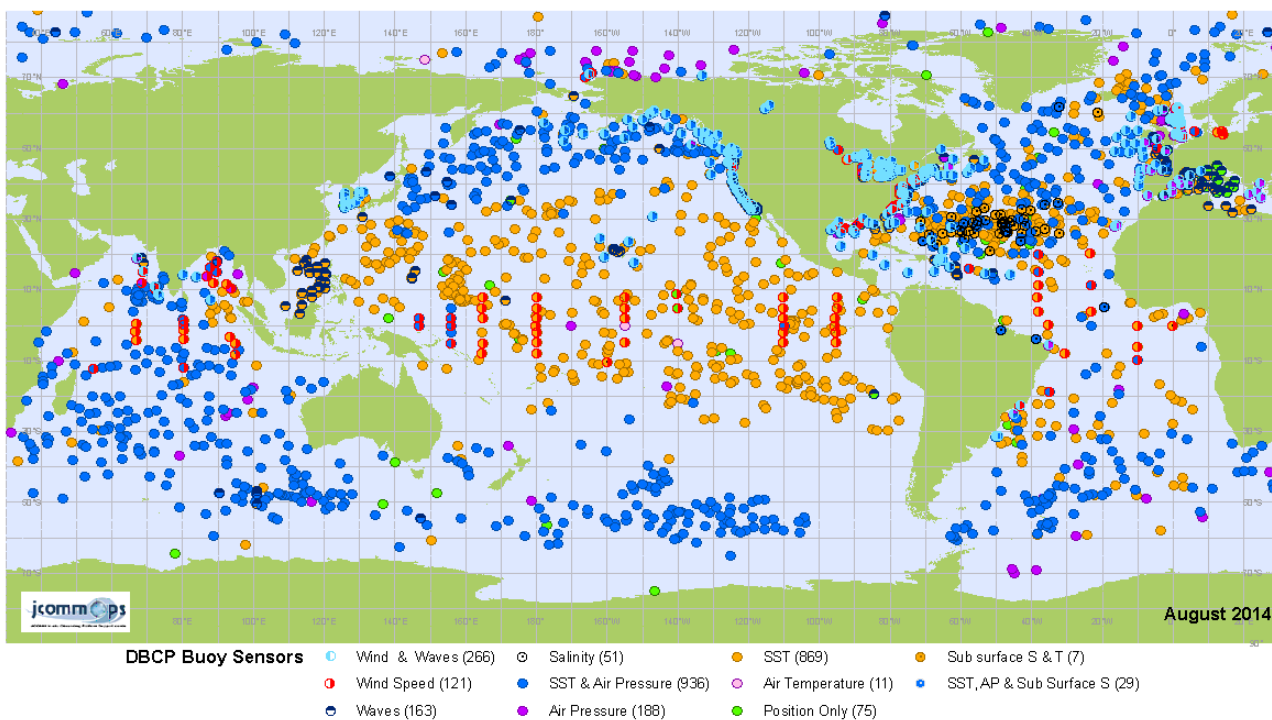
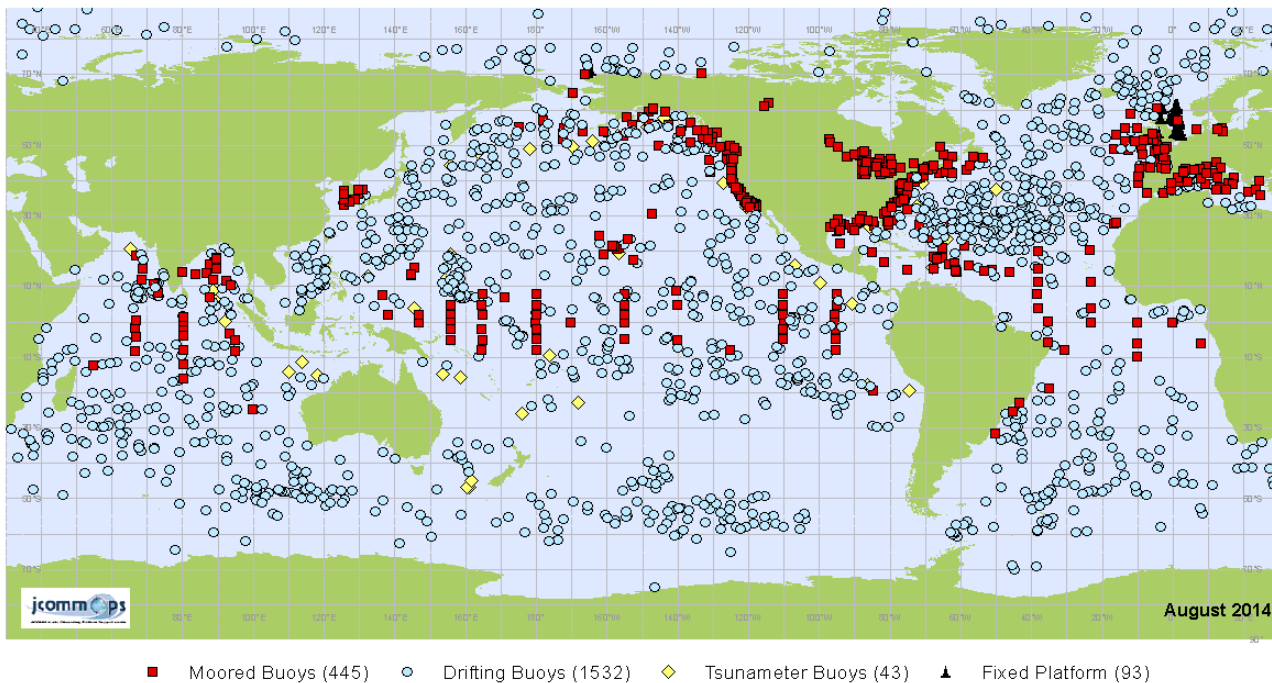


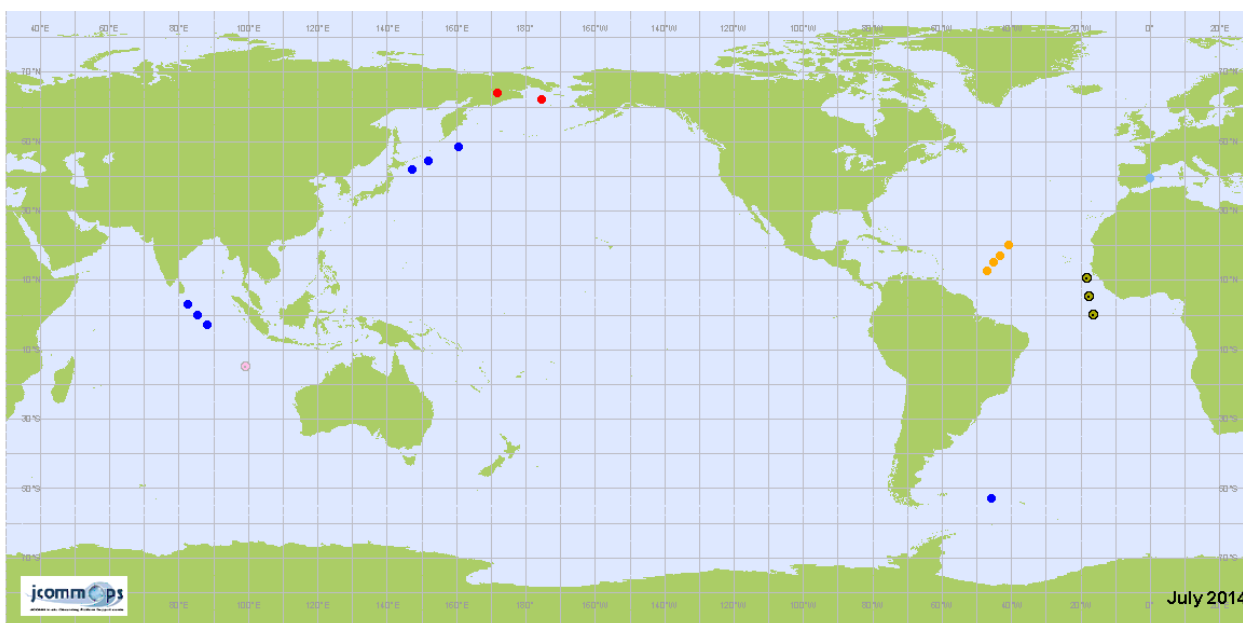
Figure 22 - Iridium and Argos3 Drifting Buoy by Country reporting during August 2014.



**Figure 23 - Parameters reporting to the GTS for drifting and moored buoys during August 2014.**

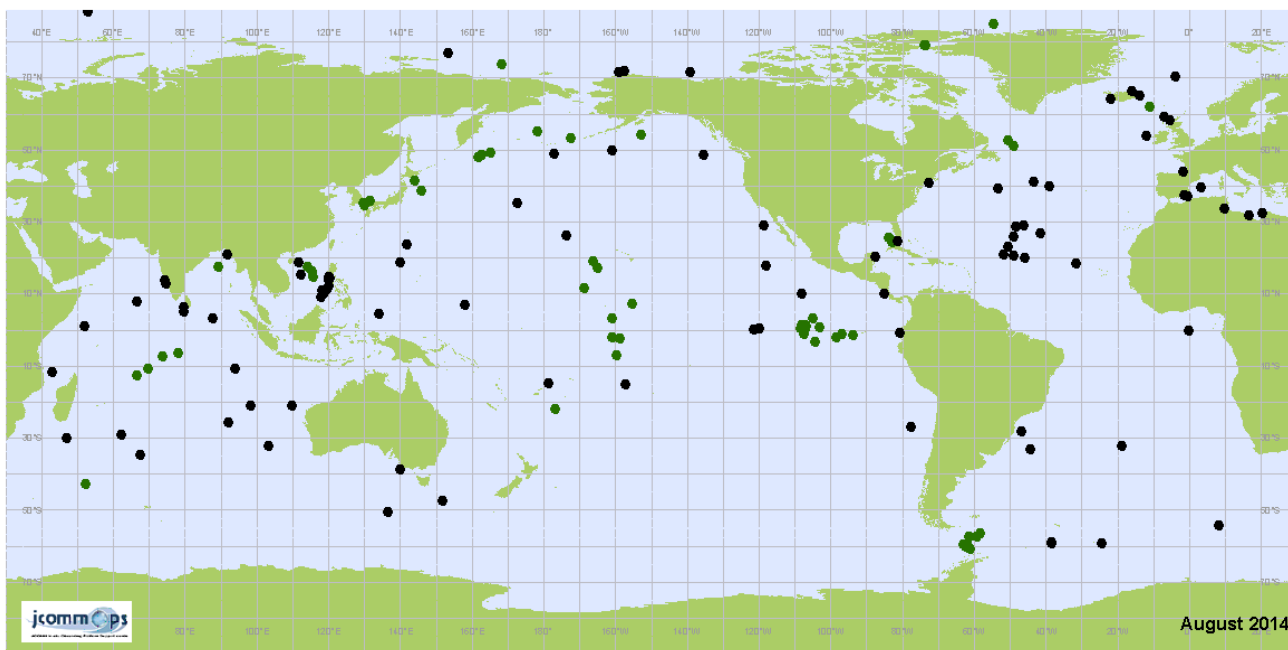


**Figure 24 - Map by platform type – August 2014.**



**Barometer Upgrade (18)**    ● Canada (2)    ● Spain (1)    ● United States (7)  
 ● Australia (1)    ● France (4)    ● United Kingdom (3)

**Figure 25 - Map showing drifting buoys with barometer upgrades and the country providing the upgrade.**



● Lost Drifters (94)\*    ● Deployed Drifters (61)

\*No data reported within 10 days

**Figure 26 - Map showing deployed and lost buoys during the August 2014. Lost buoys are likely dead drifters, as they have not reported any data in over 10 days. You can see that a number of them appear to have run ashore.**



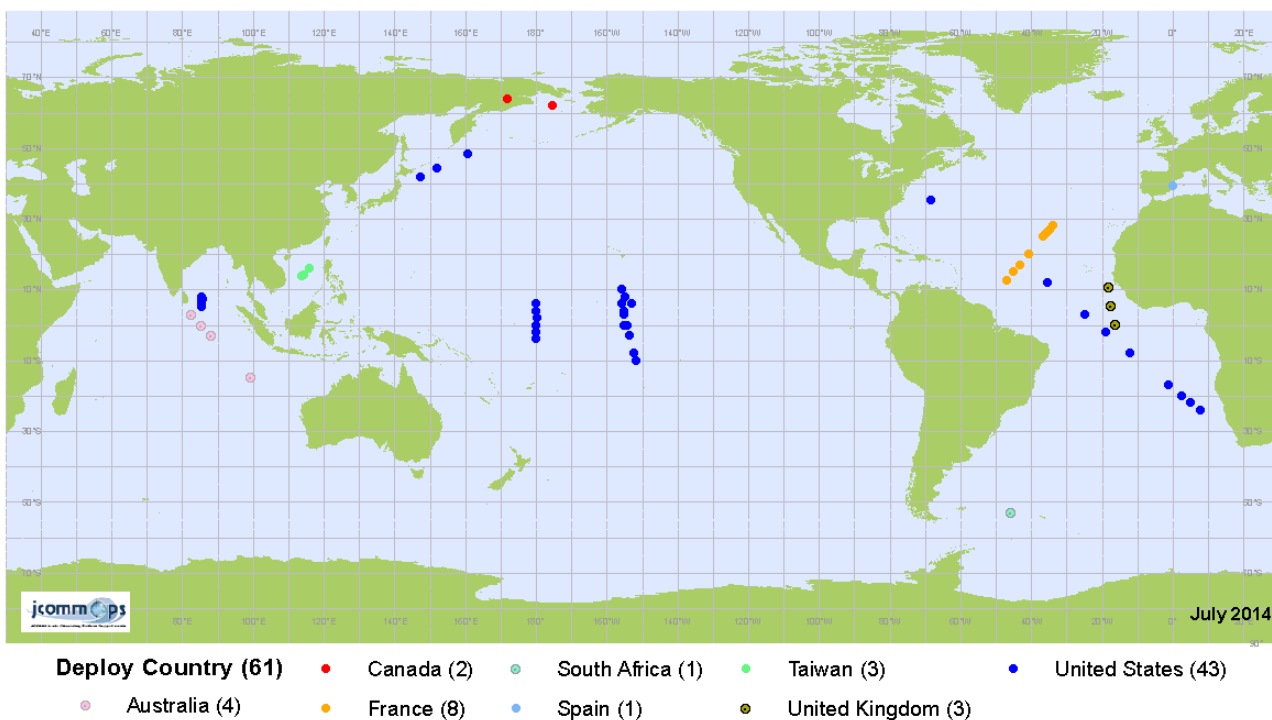


Figure 27 - Map showing country of deployment in August 2014.

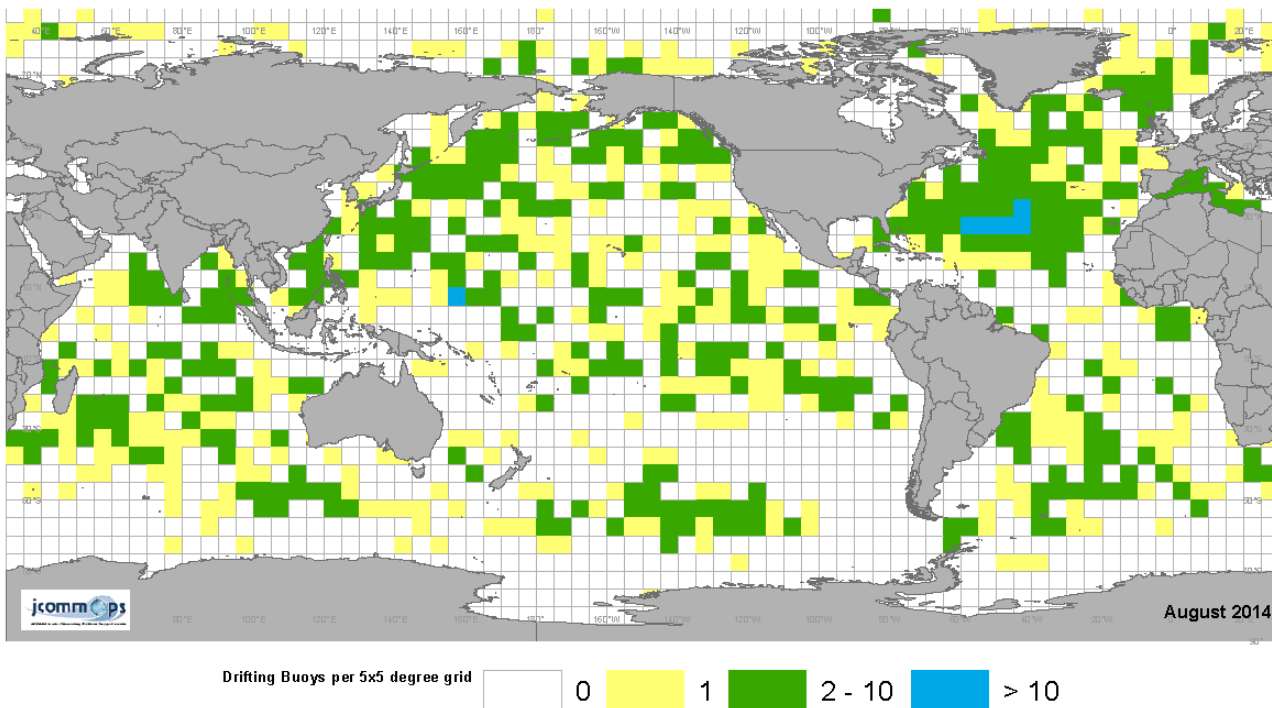
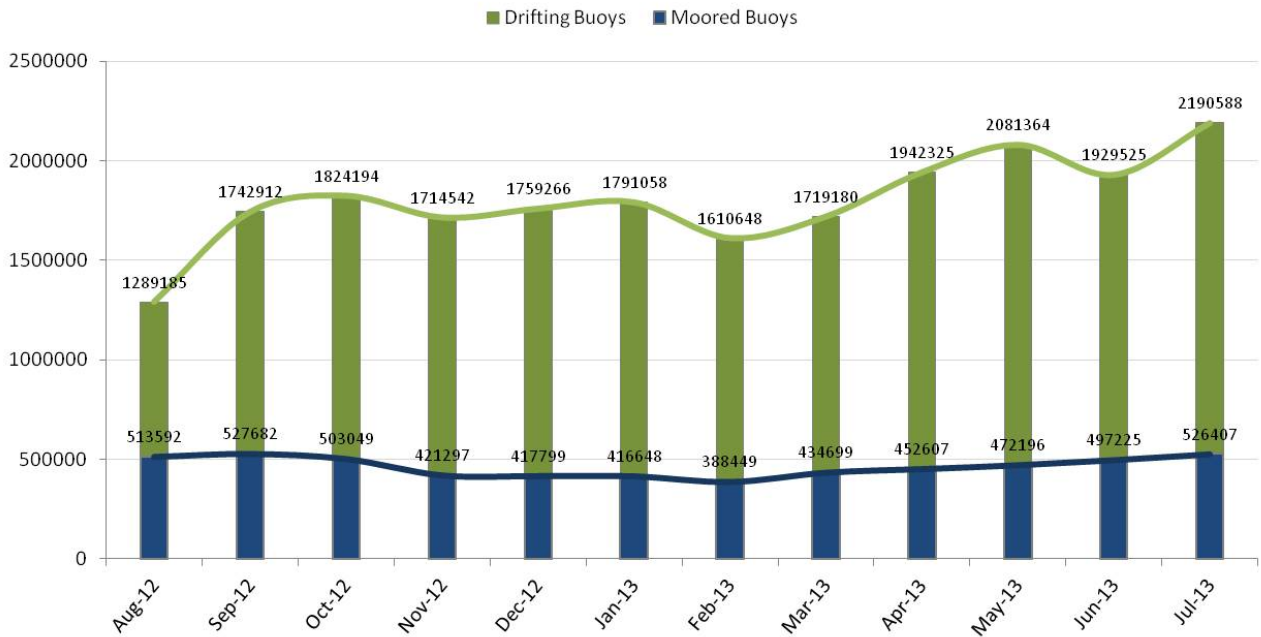


Figure 28 - Buoy density map for drifting buoys. Need areas shown in white and yellow.

## APPENDIX B

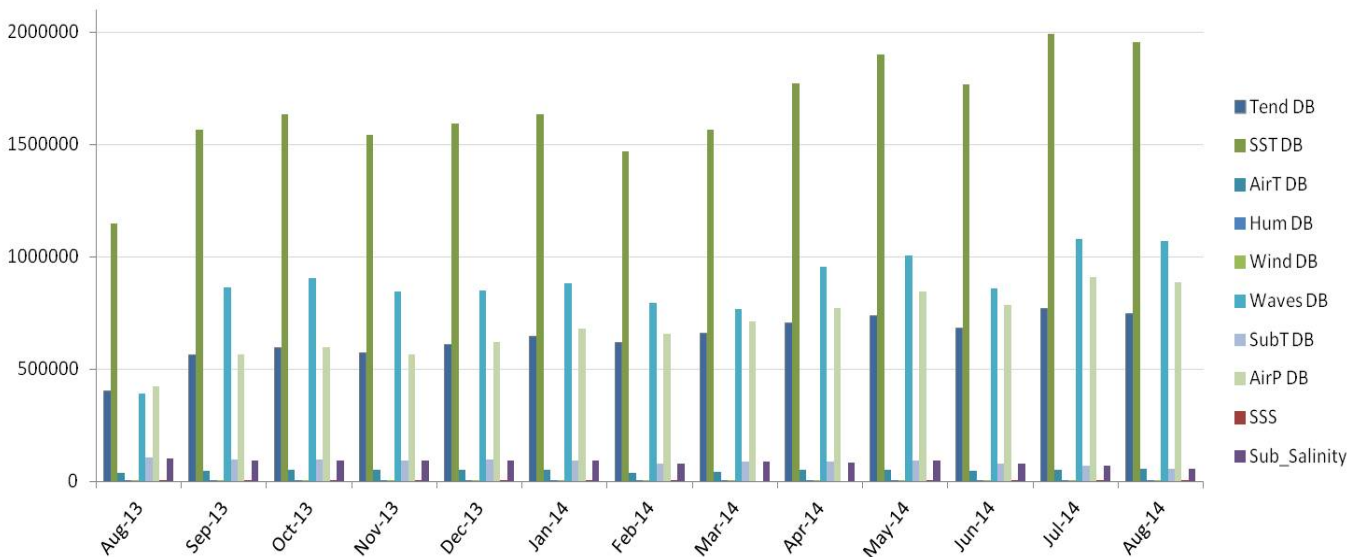
### PARAMETERS REPORTING ONTO THE GTS

Total Number of Obs Reporting on the GTS 2013-2014 (GTS source Meteo France)

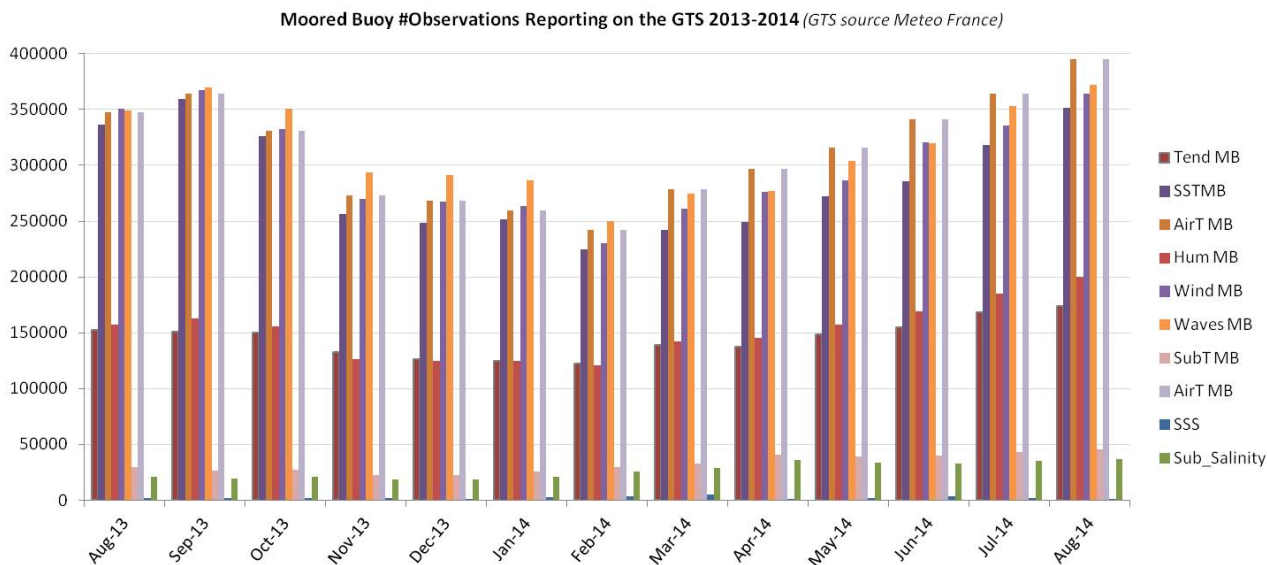


**Figure 29 - Total Number of Buoy Observations reporting onto the GTS per month during Aug 2013-Aug 2014.**

Drifting Buoy #Observations Reprting on the GTS 2013-2014 (source Meteo France)



**Figure 31 - Number of Observations reported by drifting buoys per parameters onto the GTS during August 2013-August 2014. \*\*The number of waves obs is high. The TC is investigating the cause.**



**Figure 33 - Number of Observations reported by moored buoys per parameters onto the GTS during August 2013-August 2014.**

## APPENDIX C

### QUALITY OF BUOY DATA

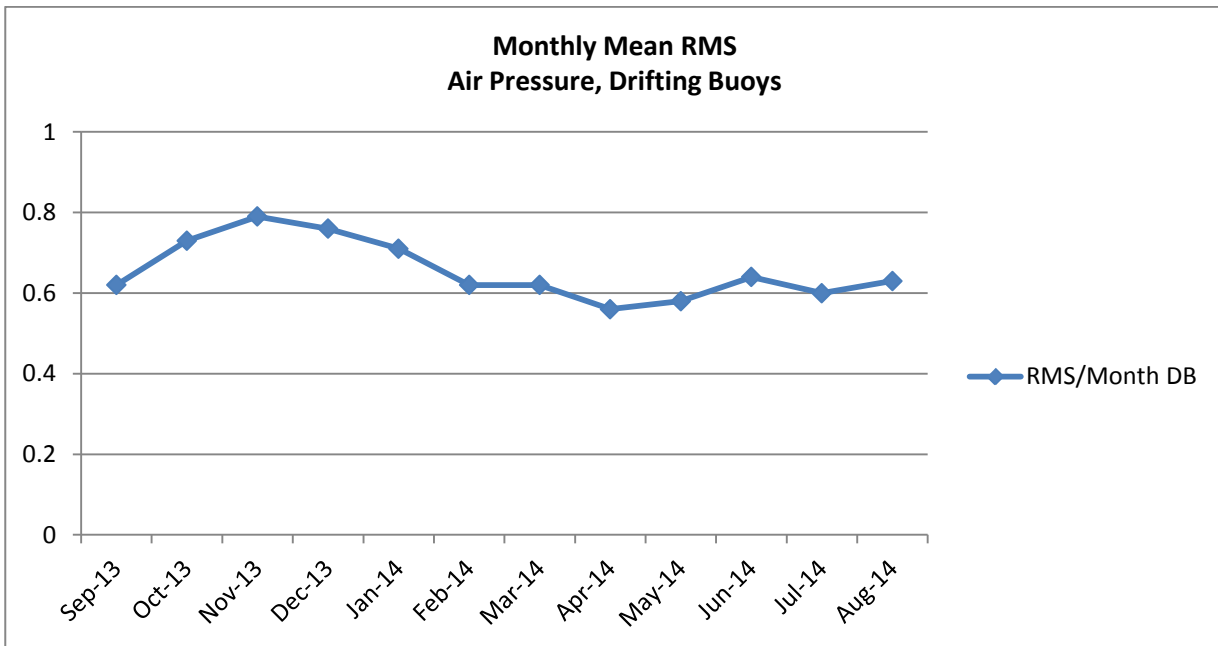


Figure 34 - Drifting buoy Air Pressure Quality Control for the period Aug, 2013-Aug 2014

The RMS (Obs.-FG) for drifting buoy air pressure data based on ECMWF buoy monitoring statistics for the period August 2013 to July 2014. Values were between 0.6 and 0.8 for the previous year.

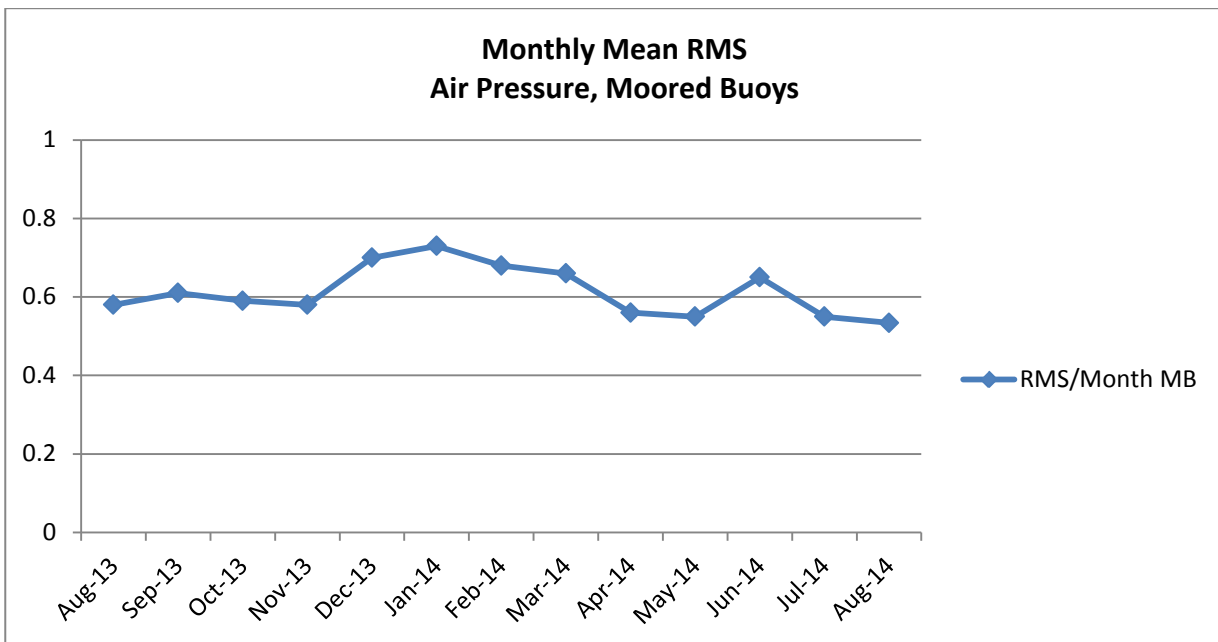


Figure 35 - Moored buoy Air Pressure Quality Control for the period Aug, 2013-Aug 2014

The RMS (Obs.-FG) for moored buoy air pressure data based on ECMWF buoy monitoring statistics for the period August 2013 to Aug 2014. Values were between 0.53 and 0.73 for the previous year.

## APPENDIX D

### TASKS OF THE TECHNICAL COORDINATOR DURING THE INTERSESSIONAL PERIOD (2013-2014)

The following is a short list of highlighted items specific TC DBCP non-regular tasks undertaken during the intersessional period.

These tasks are in addition to the normal monthly maps, metadata and database updates and tracking down drifter and mooring deployments and maintenance, and monthly teleconferences.

#### 1. September 2013

1. Attendance at OCG-5
2. Preparations for and attendance at the 29<sup>th</sup> Session of the DBCP including reports and presentations

#### 2. October 2013

1. Update ITP Standards Document for tsunameters

#### 3. November 2013

1. ESRI Oceans Meeting – presented on JCOMMOPS activities
2. Made several rather significant changes to the OceanSITES website
3. Travel to Toulouse to meet with JCOMMOPS colleagues
4. OceanSITES Report to POGO

#### 4. December 2013

1. Regular tasks

#### 5. January 2014

1. JCOMMOPS Paper for upcoming TPOS Meeting
2. Travel preparations for and attendance at TPOS 2020 Meeting in La Jolla
3. Met with Uwe Send and Matthias Lankhorst in La Jolla (OceanSITES)

#### 6. February 2014

1. Update the status of marine/ocean observing systems for ICT-IOS-8 Discussion

#### 7. March 2013

1. JCOMM CLIMAR abstract submitted
2. Preparations for April travel and JCOMMOPS Meeting in Toulouse
3. Observing Networks Data Architecture document review and revisions

#### 8. April 2014

1. Travel to Toulouse for JCOMMOPS meeting

#### 9. May 2014

1. Preparations for and travel to Port Elizabeth, South Africa for WIO-05
2. WOC Smart Oceans/Smart Industries Meeting in Montreal

**10. June 2014**

1. CLIMAR-IV Meeting in Asheville, NC USA

**11. July 2014**

1. Routine tasks

**12. August 2014**

1. Routine tasks, maps, and begin preparations for DBCP-30
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