

Report from the Data Buoy Cooperation Panel and OceanSITES project office.

Hester VIOLA, viola@jcommops.org

Data Buoy Cooperation Panel

Network Status and distribution

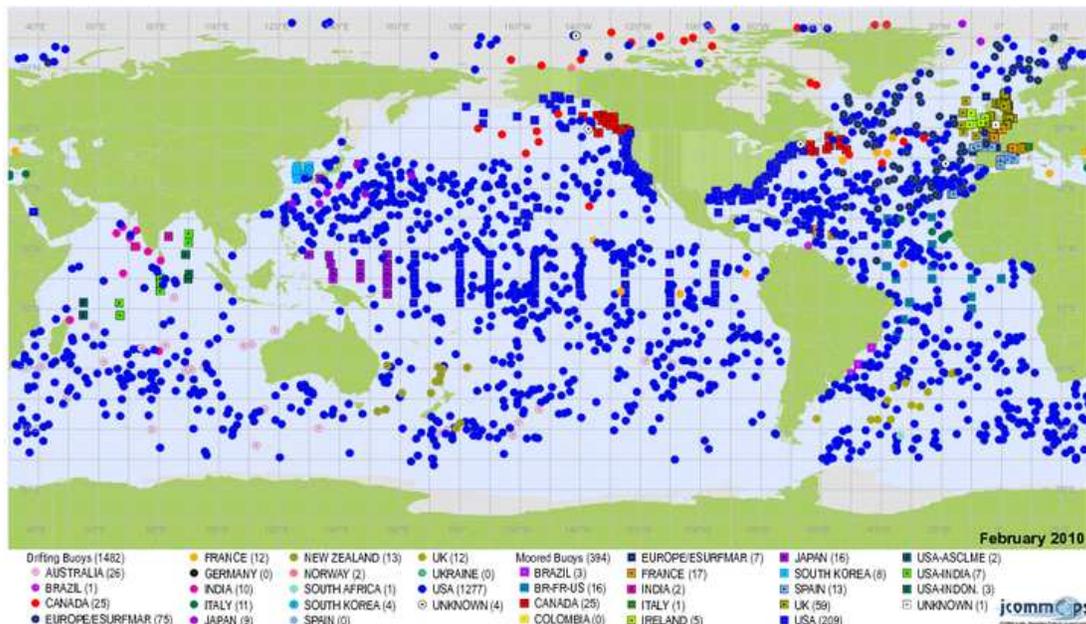
<http://www.jcommops.org/dbcp/network/status>

The total number of buoys globally was stable in the last year. The spread across the globe has been even apart from a recent sparseness in the eastern Pacific Ocean. For the Drifting Buoy network, the Southern Ocean and Arctic Ocean were identified as areas where deployment opportunities are needed, as well as the central and far north Pacific, surrounding New Zealand and to the west of the African continent.

Note that there are new moorings from Colombia and Brazil.

Very good coverage overall, and particular improvements in the Southern Indian and Pacific Oceans. The far Southern Ocean is still quite sparse though.

The coverage in the Arctic looks good here but the gaps in the Russian sector of the Arctic and the North west Pacific are clearly visible.



DBCP monthly status by country for February 2010. (Data Buoys reporting on the GTS via Météo-France)

All Maps are visible on <http://www.jcommops.org/dbcp/network/maps.html> for the current month or on <http://www.jcommops.org/dbcp/network/dbcpmaps.html> for older maps

Use of pdf layer features for high resolution maps:

A note about the PDF versions of maps: All of the maps produced each month at JCOMMOPS are in both PNG and PDF file formats. Within the PDF files there are Layers which can be toggled on and off, for example to view certain GTS platform message types only. Some instructions on how to use this Layer function in Adobe Acrobat are available at: <http://www.jcommops.org/FTPRoot/JCOMMOPSmaps-AdobeReader.doc>

Interactive('Live') Maps

Links available there to Google Earth (Daily and Monthly) and Google Maps (Monthly)

- New and improved Google Earth files layers (daily and monthly updates),
http://www.jcommops.org/FTPRoot/DBCP/status/dbcp_daily.kmz (daily) and
<http://www.jcommops.org/FTPRoot/DBCP/status/dbcp.kml> (monthly)

Monthly:

- Maintained monthly dynamic map: <http://w4.jcommops.org/WebSite/DBCP>
- Google Earth Monthly DBCP Map <http://www.jcommops.org/FTPRoot/DBCP/status/DBCP.KMZ>
- JCOMMOPS Maintains a dynamic map of all JCOMM observing systems
<http://w4.jcommops.org/WebSite/JCOMM>
- *Google Earth for JCOMM* : <http://www.jcommops.org/FTPRoot/JCOMM/Status/jcommops.kmz>

Daily:

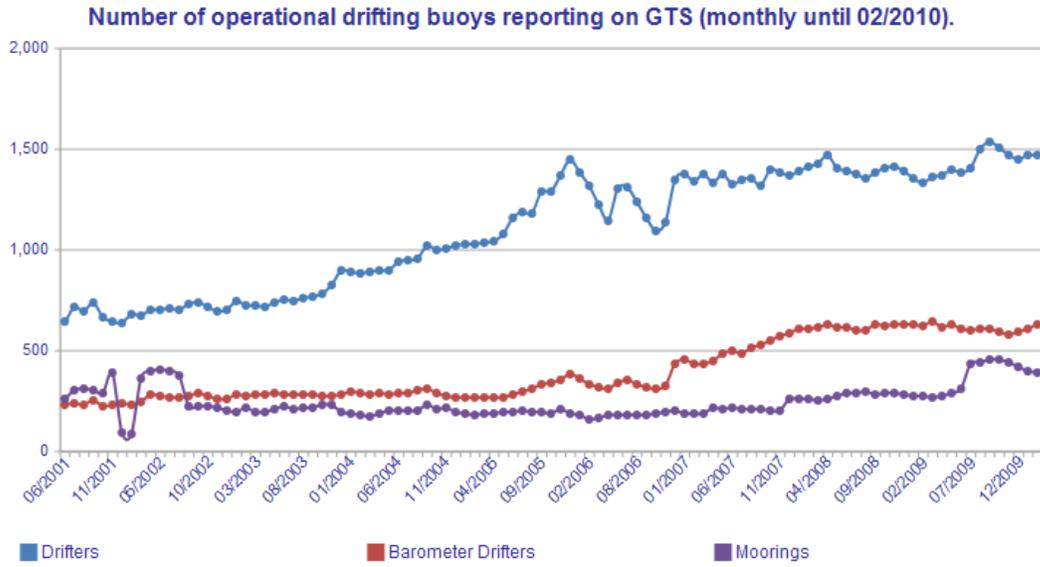
- Maintained daily dynamic map (drifter trajectories for 14 days):
http://w4.jcommops.org/WebSite/DBCP_RT
- Google Earth Daily DBCP MAP http://www.jcommops.org/FTPRoot/DBCP/status/dbcp_daily.kmz

Global Observations

The JCOMM Observations Coordination Group's phased-in implementation plan, is to eventually equip at least 700 drifting buoys with barometers outside of the tropics, this goal was not quite achieved this year. This July the number in the higher latitudes (above 30 degrees N/S) was ~470, compared with 485 last July. There are peaks for these regions during the summer months, due to more opportunities to deploy and a lack of ice, but this does not allow for a sustainable growth in the buoy network.

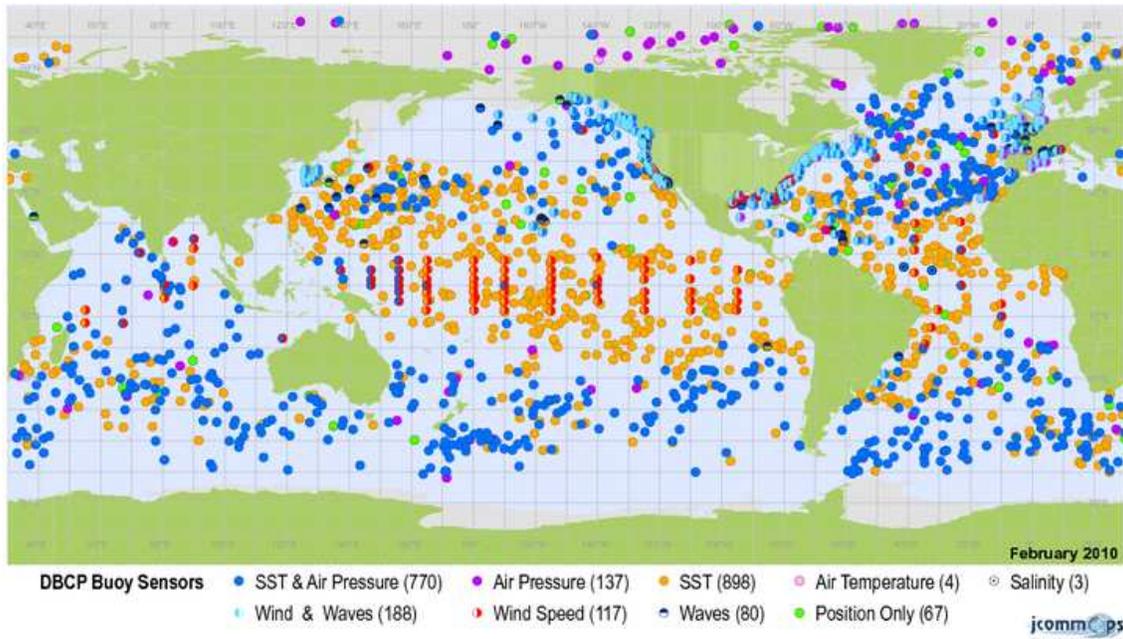
The Global Drifter Center, supported by NOAA, continues to offer the Barometer upgrade opportunity for standard SVP drifters for ~\$1000 per unit (see the following URL for details: http://www.jcommops.org/dbcp/svpb_upgrade.html) to encourage buoy operators to equip drifters with a barometer.

The measurement of Mean Sea Level Air Pressure is a very important part of the observations taken from the buoy network. There was a steady growth in the number of buoys reporting Air Pressure in the last year, but a proportional decrease in percentage terms in the last few months.



GTS data as received by Meteo France. [View Network growth data](#) (.CSV)

Chart of growth in the buoy network (Drifters, Moorings and Barometers on Drifters)
<http://www.jcommops.org/dbcp/network/status.html>



Map of the main observations on the GTS from Drifting and Moored Buoys for February 2010.

JCOMM Maps of platforms and observation types

PDF and PNG Files are accessible directly from <http://www.jcommops.org/FTPRoot/JCOMM/Maps/>

All in situ marine observations:

http://wo.jcommops.org/cgi-bin/WebObjects/JCOMMOPS.woa/wa/map?type=GTSM_FMT

Sub-surface salinity and temperature profiles (now included in a single map):

http://wo.jcommops.org/cgi-bin/WebObjects/JCOMMOPS.woa/wa/map?type=GTSM_SZ

All Floats, Drifting and Moored Buoys:

<http://wo.jcommops.org/cgi-bin/WebObjects/JCOMMOPS.woa/wa/map?type=BUOYS>

All Floats, Drifting and Moored Buoys - Polar areas:

http://wo.jcommops.org/cgi-bin/WebObjects/JCOMMOPS.woa/wa/map?type=BUOYS_POLES

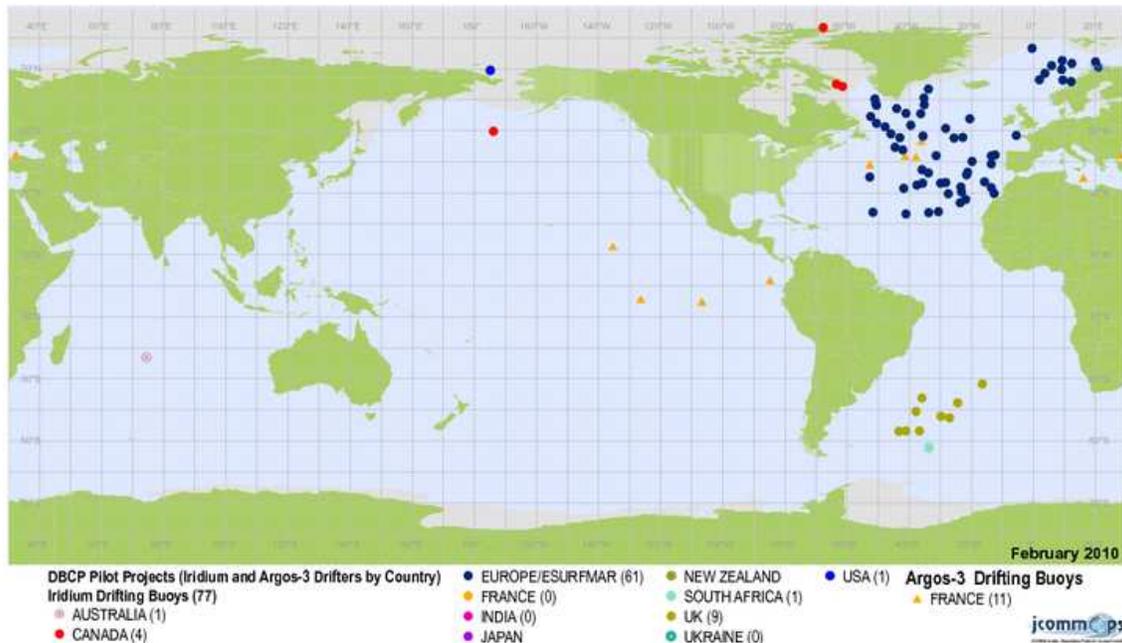
GTS Delays

- In general, the delay between observation time and GTS dissemination has decreased this year for all Argos Buoys
 - Problem areas: Central/Southern Atlantic, Southern Pacific and Mediterranean.
 - The arctic is still generally good
- Iridium Delays are insignificant – often just several minutes. The DBCP is encouraging buoy operators to use Iridium in the the Problem areas.

Pilot Projects

- While surface current, SST and Air pressure remain the core measurements for the buoy network, observations of Waves and Wind have been monitored more closely added to this map to show the lack of coverage of Wave measurements.
- There are two DBCP Wave Pilot Projects established to investigate how best to improve this situation. One using drifters with GPS to model wave motion and one to intercompare moored buoy technologies to recommend the most reliable and efficient systems for measuring spectral waves. Details at <http://www.jcomm.info/wet> and <http://www.jcomm.info/wmd>
- The panel is considering a pilot project of 'High resolution' Temperature measurements from drifting buoys in support of satellite validation and the Group for High Resolution Sea Surface Temperature (GHRSSST) Science Team – Validation and Diurnal Variability WG . This will involve an initial fleet of 50 buoys with individually calibrated thermistors and GPS and a trial through the European E-SURFMAR program.
- A Pilot Project of Argos-3 buoys is underway.

Iridium Pilot Project



Seeks to evaluate the feasibility of Iridium technology for *real-time telecommunication* of drifter data

- under *various conditions* e.g. in wide temperature ranges, remote ocean areas and in rough seas, where the buoy will be frequently submerged

DBCP funds used to upgrade 50 Argos buoys to Iridium (\$500 each) to be deployed worldwide

Since its inception in early 2007, the DBCP Iridium Pilot Project has seen more than 200 Iridium-equipped SVPB drifters deployed, of which approximately 80 are still active and reporting hourly data on the GTS. In order to stimulate the roll-out of the project, the Panel has from the beginning offered to cover the nominal costs (USD 500) of upgrading a traditional Argos-equipped buoy to Iridium + GPS. Overall the Panel is very satisfied with the progress of the project, both in terms of the number of platforms deployed, and the progress that is being demonstrated in reducing satellite usage costs and greatly improving data timeliness and quantity. For further information about the project, including interactive maps, refer to <http://www.jcommops.org/dbcp/iridium-pp/>

The project has demonstrated that drifters can successfully use Iridium for telecommunications, though the impacts of the GPS on battery life is still to be improved and the real costs of using Iridium assessed. Low-cost telecommunications have been offered to project participants, but in future it still remains to be seen exactly how much an Iridium buoy will cost. This is to be assessed in 2010 during analysis of the project results.

There are now operationally supported Iridium processing services are offered by :

CLS via the Argos System (including full real-time QC and GTS dissemination)

JouBeh (including full real-time QC and GTS dissemination via the Canadian met service)

As well as many other government agencies. The costs for using the Argos System with Iridium include the GTS dissemination of data, but need to be negotiated with CLS or CLS America.

Information Exchange

New Publications of interest

- Draft report on tests to be undertaken by a data processing center putting data on the GTS (especially for Iridium Processing centres)
- The British Antarctic Survey published a “Satellite buyers Guide”, which was placed on the DBCP website.
- Best Practices page on
- The DBCP brochure was updated to a two page document, useful for taking to ships of opportunity to encourage them to deploy drifters. http://www.jcommops.org/dbcp/doc/DBCP_BROCHURE_2009.pdf

New DBCP web page

The screenshot shows the DBCP website front page. The header features the DBCP logo and the title "DATA BUOY COOPERATION PANEL". Below the header is a navigation menu with links for Home, Overview, Platforms, Deployments, Network Status & Maps, Data, Community, and Search & Help. The main content area includes a section titled "Helping Meteorologists and Oceanographers worldwide" with a description of the DBCP's mission. To the right, there are "Quick Links" and "News & Meetings" sections. A world map showing buoy locations is displayed in the center. The footer contains logos for WMO, JCOMM, and IOC, along with a "Background of the DBCP" section.

DBCP website front page. <http://dbcp.jcommops.org>

Some information about the DBCP was entered onto the JCOMM website. <http://www.jcomm.info> under the Observations Program Area – e.g. Content added for the [OPA](#) and the [DBCP](#), Groups for OceanSITES (under DBCP Action Groups in People and Teams)

A photo album for the DBCP was uploaded onto <http://picasaweb.google.com/JCOMMOPS/DBCP#> for general use.

Deployment opportunities

New-ish opportunities:

- Navocean Air Deployments recommenced
- Cruises of German research vessels (IFM-GEOMAR) POLARSTERN, METEOR & MERIAN, SONNE & POSEIDON
- KNMI, Netherlands will make VOS ships available for deployments.
- The DART Tsunami buoy deployment and maintenance cruises will provide an ongoing opportunity in the Pacific and Central Atlantic oceans. Cruise planning is completed each year by NDBC.
- The POGO Research Cruise database contained information which could be of use to panel members. Panel members can also enter information about cruises for others to use <http://www.pogo-oceancruises.org/cruises/>
- The **Australian Antarctic Division** has its cruise schedules from 2010-11 online at: <http://its-db.aad.gov.au/proms/public/schedules/voyage.cfm?season=1011>. There are upcoming cruises from Hobart to Macquarie Island in both May-June and October 2010. Then plans for voyages to Antarctica from November 2010.
- The **GO-SHIP** program lists all planned cruises on its new website: <http://www.go-ship.org/CruisePlans.html>. A map of the cruises which are regularly undertaken is here: http://www.go-ship.org/RefSecs/Map_RefSecs1.1.pdf. e.g. **The US Repeat Hydrography** program will complete the **Southern Ocean S04P** section in 2011. This will extend from McMurdo to Punta Arenas along 67° S with southward (Pacific) extensions along P14, P15, P16, P18.
- The Research project GEOTRACES has some planned cruises in the North Pacific and Atlantic:
 - [in June-July of 2010](#) departing from Tokyo
 - see <http://www.jodc.go.jp/geotraces/plan.htm> for proposed cruises in 2011 and 2012 from Japan
 - and <http://www.bodc.ac.uk/geotraces/cruises/programme/> for global plans (including 2 planned cruises in the Sub-Tropical and Southern Atlantic)
- The Korean Polar Research Institute (KOPRI) will launch its new research icebreaker the *Araon* in early 2010 with open sea and ice trials between Christchurch and Cape Burks Antarctica. The Araon (“ara”=sea; “on”=all) has been designed to carry out multidisciplinary research in the Arctic and Antarctic regions and to provide logistics support for Antarctic research stations. Further information on <http://www.go-ship.org/CruisePlans.html>.
- Information is available at http://www.jcommops.org/depl_opport/depl_opport.html.
- Updates are also sent each month via email to the DBCP community.
- For the Drifting Buoy (and Argo) network, the Southern Ocean and Arctic Ocean are areas where deployment opportunities are needed most, as well as the central and far north Pacific, surrounding New Zealand and to the west of the African continent.
- JCOMMOPS overlaid active SOOP lines with these areas of interest to obtain a list of lines to consider.

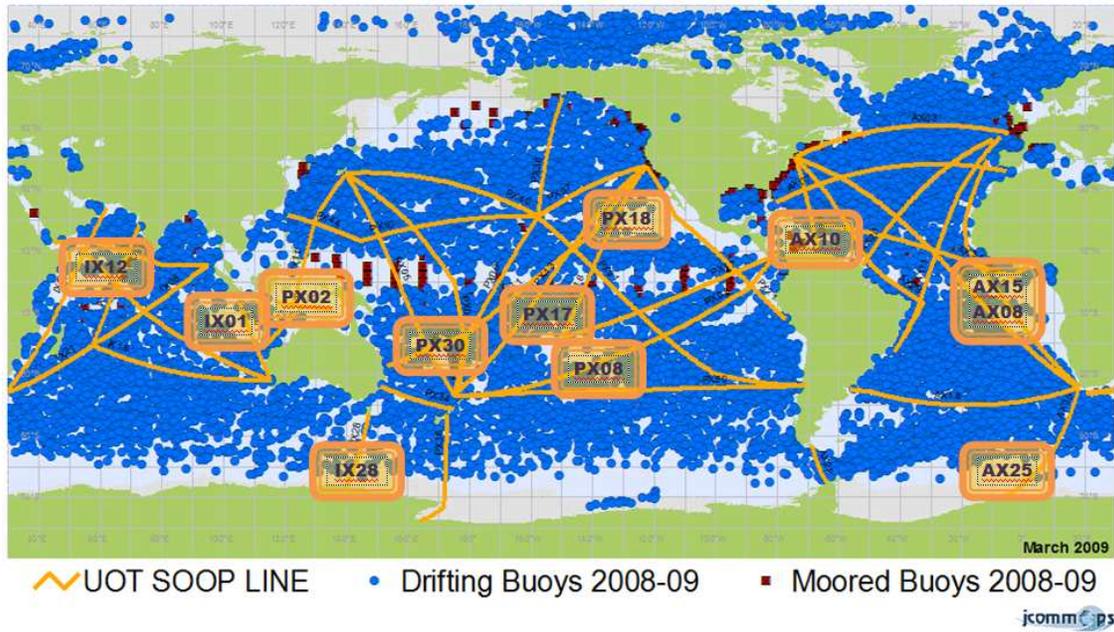


Figure 3 – showing the SOOP lines overlaid on the drifting buoy locations in 2008-09, showing (orange boxes) which lines could be used more to deploy drifters to fill gaps in the DBCP network.

- SOOP Lines which could be used to deploy drifting buoys in areas or to deploy buoys more regularly in the areas required are:

INDIAN	PACIFIC	ATLANTIC
IX01 (BOM)	PX02 (BOM)	AX08 (AOML)
IX12 (BOM)	PX08 (AOML/SIO)	AX10 (AOML)
IX28 (CSIRO)	PX17 (IRD)	AX15 (IRD)
	PX18 (AOML/SIO)	AX25 (AOML)
	PX30 (CSIRO)	

Lines which have been active in the SOOPIP, which go through areas that have been consistently without drifting buoys. In brackets are the agencies nominally responsible for the lines.

Oceansites

JCOMMOPS provides support for the OceanSITES (30% of Hester Viola's time). The priority tasks in the previous year, were:

- Updating documentation to get a clearer Network status
- Creating new map products to view network status
- Updating websites
- Updating contact details and user groups
- Supporting the Data Management Team in getting data (and metadata) onto GDACs
- Maintaining Site Catalog, monitoring data flows and GDAC structure
- Seeking Sustained funding for the Project Office Support

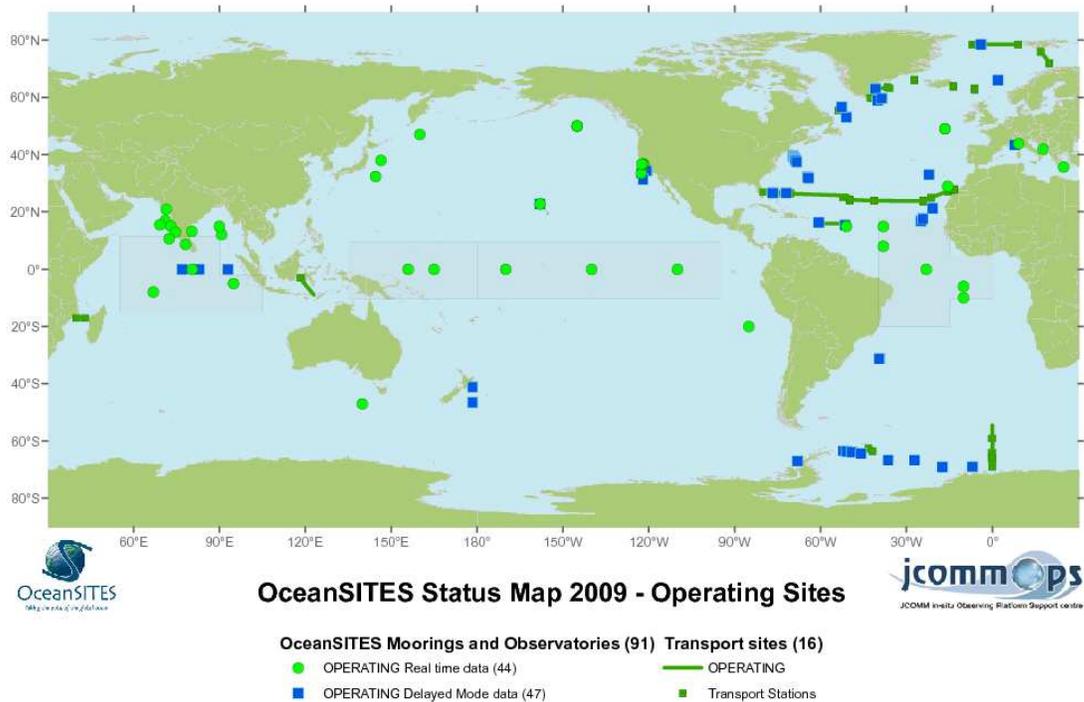
The website at www.oceansites.org had been updated with new scientific descriptions of sites, a new summary spreadsheet listing all sites and new Current Status maps and Vision maps (2009) and a Google Earth file as a new interactive map. A new Monthly map now available showing sites sharing data on the GTS of WMO.

PDF and PNG Files are also accessible directly from <http://www.jcommops.org/FTPRoot/OceanSITES/maps/>

All active and current sites: http://www.jcommops.org/FTPRoot/OceanSITES/maps/200908_CURRENT.pdf

Google Earth File: http://www.jcommops.org/FTPRoot/OceanSITES/status/200908_oceansites_locations.kmz

All planned and discontinued sites: http://www.jcommops.org/FTPRoot/OceanSITES/maps/200908_VISION.pdf



Note: This status was based on information provided in 2009.

Current OceanSITES Status

The GDACs are now up and running:

- <ftp://data.ndbc.noaa.gov/data/oceansites/>
- <ftp://ftp.ifremer.fr/ifremer/oceansites/>

Organisational issues

- The DBCP agreed to pursue the creation of an action group for the International Tsunameter Partnership (ITP)
- In 2008 the DBCP established an executive board to oversee and plan for administrative and financial matters on behalf of the Panel.
- The DBCP also established a series of Task Teams to globally address specific areas of its goals:
 - [DBCP Task Team on Data Management](#)
 - [DBCP Task Team on Instrument Best Practices and Drifter Technology Development](#)

- [DBCP Task Team on Moored Buoys](#)
 - [DBCP Task Team on Capacity Building](#)
- David Meldrum stood down as Chair of the DBCP in 2009 and has been replaced by Al Wallace from Environment Canada. The Vice Chairs are Dr Rajendran from NIOT India, Ken Jarrott from BOM, Australia and Jean Rolland from Meteo France.

Future Priorities for DBCP Technical Coordinator

- Integration of OceanSITES data/metadata into JCOMMOPS database
- Adding extra metadata fields to GTS Data Flows (BUFR templates) and assessing success in adoption of BUFR
 - Look also at management of Moored Buoy metadata across all JCOMM programs
- Improve documentation of common (“Best”) practices
- Looking at Delays across the network and support for testing alternative telecommunications systems such as Iridium.
- Management of OceanSITES metadata and assisting in data flow. Creation of a full database and online query tools for OceanSITES network status and platform metadata.
- Working in JCOMMOPS on improved management of deployment opportunity information along with CCHDO and SeaDataNet.