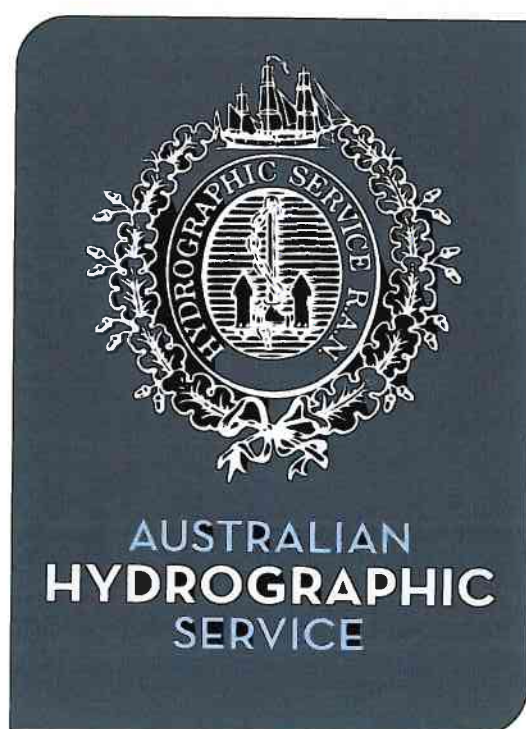


INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC)

11TH Meeting – Brisbane, Australia, 15th-16th February 2012



AUSTRALIAN HYDROGRAPHIC SERVICE
NATIONAL REPORT

11th SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC) MEETING

Brisbane, Australia, 15-16 February 2012

AUSTRALIAN REPORT

1. GENERAL

The key focus of the Australian Hydrographic Service (AHS) has been to achieve initial coverage of Australia's waters. Initial coverage to meet the needs of commercial ports, national and international shipping was achieved in the first half of 2011. There are 64 ENCs still required for full coverage (total approx. 880 cells). These remaining cells cover Antarctica, East Timor, Coral Sea reefs and a small number of plans covering minor recreational boating harbours. Full coverage will be completed before June 2012.

The AHS ISO 9001:2008 Quality Management System was re-certified in 2011. A program of competency mapping of specialist skillsets is currently in progress and arrangements have been made for regular Nautical Cartography training.

2. SURVEYS

2.1 Coverage of New Surveys

Since the last Commission meeting in November 2010, the Australian Hydrographic Service (AHS) has maintained its survey effort in the northern sector of our charting responsibility. The Hydrographic Ships (HS), Survey Motor Launches (SML) and the Laser Airborne Depth Sounder (LADS) have conducted surveys in the Great Barrier Reef, Gladstone approaches, Torres Strait, Sahul Banks, Arnhem Land and Christmas island. In early 2011 a survey squadron comprising Hydrographic ships and survey motor launches was deployed to PNG to conduct surveys in the vicinity of Caution Bay to support new port development. The Deployable Geospatial Support Team (DGST) was deployed to Antarctic to conduct a survey of the approaches to Mawson Station and also participated in a regional Pacific operation titled 'Pacific Partnership'. Pacific Partnership activities included a harbour and approach route survey at Niuatoputapu, Tonga, and beach surveys to assist the task group in Vanuatu and New Caledonia.

The AHS continues to support national fisheries and border protection with the surveys of Sahul Banks and Christmas Island. In addition to planned annual survey requirements the AHS has provided aid to the Brisbane floods and cyclone Yazzi, and met survey requests from the Vanuatu government to survey areas of concern in Port Vila. There has also been an increased focus on improving the standards of surveyed waters within the Torres Strait to aid national Under Keel Clearance initiatives.

Hydroscheme, the AHS three year rolling program of surveying and charting activities, provides guidance on ongoing and new surveys to be conducted. The current version of Hydroscheme 2011-2013 was issued in March 2011 and is available to the public via www.hydro.gov.au. The next edition, Hydroscheme 2011-2015, is expected to be distributed early 2012.

3. NEW CHARTS, ENC'S & UPDATES

3.1 National Charting Scheme

Sixty one New Charts and New Editions of the national paper and raster chart series were produced from November 2010 to Jan 2012. Many of these new charts were part of the project to modernise the Australian and Papua New Guinea series charts and provide ENC coverage.

In addition to the paper charts, we now (Jan 2012) have 816 Electronic Navigational Chart (ENC) Cells produced and released in S63 encrypted format. These ENC cells are maintained in line with the paper charts they cover. All Australian ENC's are being distributed via the IC-ENC network, with limited direct distribution to government, maritime agencies and pilots.

3.2 International (INT) Charting Scheme

The progress on the INT Charting Scheme for Region "L" is as follows:

Small Scale (1:3 500 000 & 1:10 000 000)

No new editions published in 2010 or 2011.

Medium Scale (1:1 500 000)

INT 728 and 635 were published in 2010 and 2011 respectively.

New editions of INT 620 and 621 were published in 2011.

Large Scale

None planned at this stage.

3.3 Chart Printing

On 16 May 2011, the AHS completed its transition to a full Print On Demand (POD) Capability. Since then, every customer order for Australian paper nautical charts has been fulfilled from printing charts on demand from up-to-date print files on large format inkjet printers housed at the Australian Hydrographic Office. Printing charts in-house by POD has significantly reduced costs, eliminated chart wastage and reduced the five week turn around for commercial printing of charts to a number of days. Just as importantly our chart agents and Defence customers are provided with charts up-to-date for Notices to Mariners (NTM). Paper chart sales since the introduction of POD have increased over 10%.

3.4 Temporary & Preliminary NTM Corrections

From January 2011 the AHS has included Temporary and Preliminary corrections in ENC updates, thus enabling ENC's to be fully updated by loading one common file.

3.5 New Branding for AHS Electronic Products

The AHS is progressively changing to new branding for electronic products to highlight their official government status. Products formerly known under the banner of 'Seafarer' will be branded 'Aus'. Our electronic tide tables were rebranded AusTides in October 2011 and our Raster Nautical Charts were rebranded as AusRNC in January 2012.

3.6 Challenges Ahead

The implementation of the Digital Hydrographic Database (DHDB) is revolutionising the way we store and manage data with the creation of a seamless sounding database. The emphasis on loading the database is taking its toll on the output of new and revised charting products.

The Accelerated ENC Project has contractually finished with all 83 charts being accepted by the AHO. We have 11 charts to finalise and publish from the project and expect this to be completed by June 2012.

The urgency in completing ENC coverage has resulted in a backlog of outstanding updates for paper charts. On completion of full ENC coverage the AHO will refocus on incorporating all outstanding survey data in the published products.

Work is continuing on reducing the number of fathoms charts in the series. The final 2 fathoms charts will be replaced by metric versions by April 2012. There are a further 9 charts awaiting shift from older datums to WGS 84, with this program also for completion in 2012.

Finally, implementation of a national ENC service is nearing completion with an intended launch in June 2012. The service is intended for commercial vessels operating in Australian and PNG waters, and expands upon the service currently provided to the Royal Australian Navy.

4. PUBLICATIONS

4.1 Australian National Tide Tables (ANTT)

For details see: <http://www.hydro.gov.au/prodserv/antt.htm>

4.2 AusTides (formerly known as Seafarer Tides)

For details see: <http://www.hydro.gov.au/seafarer/tides/tides.htm>

4.3 Australian Seafarers Handbook AHP 20

The second edition of the Australian Seafarers Handbook was published in December 2009. For details of the publication see: <http://www.hydro.gov.au/prodserv/ash.htm>

4.4 Maritime Gazetteer of Australia

The AHS maintains the Maritime Gazetteer of Australia as a web product. The gazetteer is a listing of all names shown on Australian navigational chart products. The resulting search provides the lat and long of the place, its feature code and the Australian navigational charts on which the place is depicted. For details see: <http://www.hydro.gov.au/tools/mga/mga.htm>

4.5 Australian Chart and Publication Maintenance Handbook AHP 24

The first edition of the Australian Chart and Publication Maintenance Handbook AHP 24 was published in 2011. For details of the publication see: <http://www.hydro.gov.au/prodserv/cpmh.htm>

4.6 Australia Pilot

The current editions of the relevant UKHO Admiralty Sailing Directions are: Australia Pilot NP13 (3rd Edition 2011), NP 14 (11th Edition 2010) and NP15 (11th Edition 2009).

5. MSI

Australia is the coordinator for NAVAREA X, which extends from the Antarctic coast to the equator and from 080E to 170E longitudes. The report of the NAVAREA X MSI activities for the period July 2010 to June 2011 was submitted by Australia to the IHO World-Wide Navigational Warning Service (WWNWS) Sub-Committee Meeting held in Monaco on 13-16 September 2011. A copy of the report is attached as **Annex A**, for consideration under this meeting's agenda item 10 (Report on GMDSS, MSI and NAVAREA coordination).

A WWNWS survey of shipping was undertaken during a 6 week period in late 2011. The survey requested ships advice on: Reception quality, Subject Matter Relevance, Size of Message, Clarity of Messages. This was for the NAVAREAs via SafetyNET, Coastal Areas via NAVTEX and Coastal Areas via SafetyNET. The findings of the survey will be discussed at WWNWS4 Meeting to be held in Japan in September 2012.

6. **C-55 UPDATE**

Data is currently being compiled for updating of C-55.

7. **CAPACITY BUILDING**

7.1 **SWPHC Capacity Building (CB) Proposals**

The AHS co-ordinated regional input to the IHO Capacity Building Sub-Committee (CBSC). The Hydrographer of Australia represented the SWPHC at the 9th CBSC Meeting held in Niteroi, Brazil in May 2011, where all SWPHC proposals were approved.

Subsequent to the CBSC meeting the AHS has carried out following activities:

- Proposed CB projects for the 2013-2017 IHO Work Programme.
- Co-ordinated the CB Workshop on Ports & Shallow Water Bathymetry to coincide with the 11th SWPHC Meeting in Brisbane in February 2012.

7.2 **RAN Hydrographic School**

The RAN Hydrographic School continues to provide training courses in hydrographic surveying for officers and sailors from Australia and the local region under the Defence Cooperation Programme. The H2 Course has been re-recognised at Category B level by the FIG/IHO International Board on Standards of Competence for Hydrographic Surveyors. Its re-recognition is for a further period of 6 years (until 2015) and in Options 1 (Hydrography for Nautical Charting) and Option 6 (Military Hydrography). The course has been extensively re-written and modernised in 2011 to reflex current best teaching practices and E-Learning. The H2 Courses conducted in 2011 included 2 New Zealand students. The H2 Course due to commence in April 2012 includes 2 New Zealand students, 1 student from Pakistan and 1 student from Thailand.

8. **OCEANOGRAPHIC SERVICES**

8.1 **Tide Gauge Networks**

8.1.1 Two permanent Tide gauge networks are operated in the region by the National Tidal Centre (NTC) of the Bureau of Meteorology. They are:

8.1.1.1 The Australian Baseline Sea Level Monitoring Project currently consists of 16 permanent Gauges around the Australian Coastline, including 1 at Cocos Island. Locations of the Gauges are shown in **Figure 1**. In December 2010 the station at Port Stanvac, South Australia was decommissioned because the site owners Mobil Refining Australia decided to shutdown the oil refinery and rehabilitate the site. Re-commissioning of the station sometime in the future depends on the long-term availability of the pier. Monthly reports are published by the NTC and can be located on their website at: www.bom.gov.au/oceanography/projects/abslmp/reports.shtml

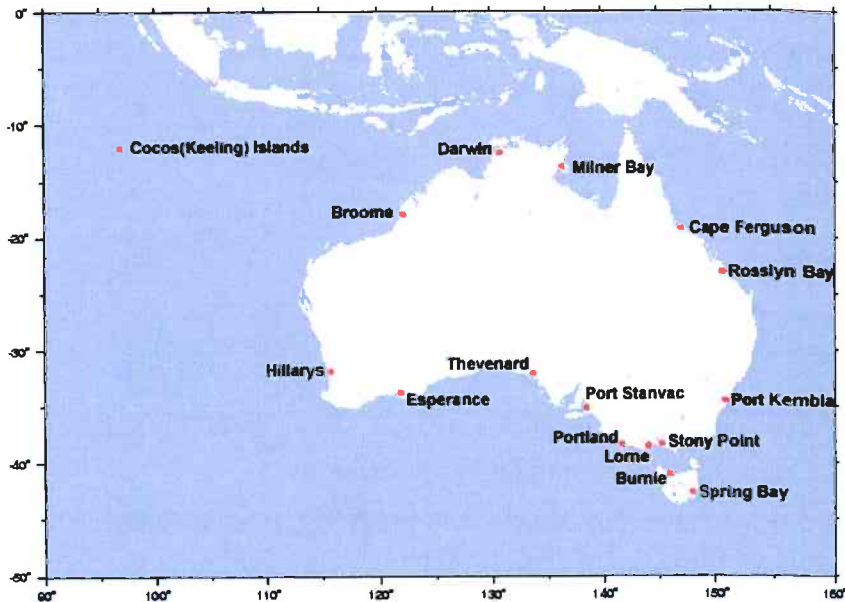


Figure 1: Australian Baseline Sea Level Monitoring Project sites

8.1.1.2 The South Pacific Sea Level and Climate Monitoring Project which currently consists of 12 permanent Gauges throughout the South Pacific region monitoring sea level and related parameters. Locations of the Gauges are shown in **Figure 2**. In 2011 work began on an Observation Network Upgrade Project (ONUP) which is scheduled to upgrade all Pacific stations by mid-2013 with modernised data loggers, real-time satellite communications and additional radar-type water level sensors. As of February 2012, 5 of the 12 stations have been upgraded, including Tonga, Fiji, Samoa, Kiribati and Solomon Islands.

Monthly reports are published by the NTC and can be located on their website at:

www.bom.gov.au/oceanography/projects/spslcmp/spslcmp_reports.shtml

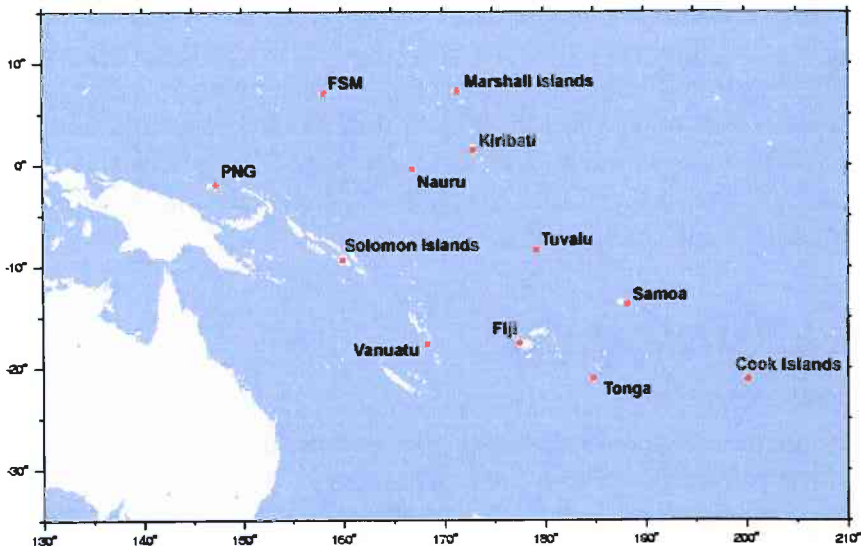


Figure 2: South Pacific Sea Level and Climate Monitoring Project Sites

8.1.2 Since 1994 the gauges in both arrays have been able to be accessed in real time for tsunami monitoring purposes. Since the December 2004 Sumatran event however, all but one of 35 sites have been equipped with more reliable communications links that transmit the data every minute via satellite and made available via the Global Telecommunication System (GTS) every three minutes. Efforts are continuing to improve real time data accessibility to enhance local and regional capacity to capture the data and develop emergency response strategies in the event of a tsunami.

All of the existing stations also capture weather information and contribute to the global models to provide enhanced information for forecasts in the region.

8.1.3 The Australian Tsunami Warning System (ATWS) is supported by the permanent Australian and Pacific tide gauges as well as an additional network of 18 radar-type tide gauges at 6 Pacific and 12 Australian sites and 6 deep-ocean tsunameters (DART buoys) as shown in **Figure 3**. The primary purpose of these additional stations is for the detection of tsunami and real time data is made available to support the operations of the Pacific Tsunami Warning System. Further information about the Australian Tsunami Warning System is available at <http://www.bom.gov.au/tsunami/about/atws.shtml>

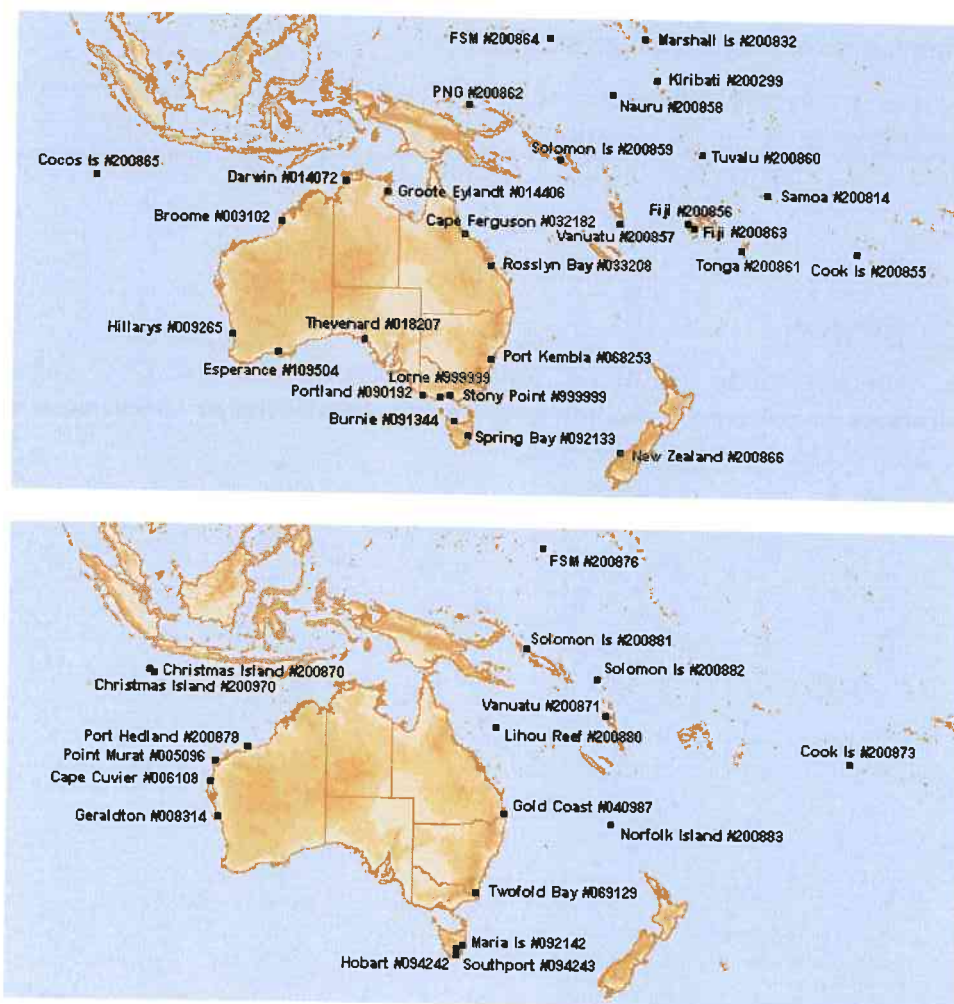


Figure 3: Australian Baseline and South Pacific SEAFRAME stations (top) and additional ATWS radar gauges (bottom) used for monitoring of tsunamis in the Australian region.

Recent tsunami activity that has been detected by the Australian tide gauge networks include:

- Mw7.3 earthquake off Vanuatu on 25th December 2010 - 30cm tsunami at Port Vila, 15cm at Luganville.
- Mw9.0 earthquake off Japan on 11th March 2011 – Tsunami signals detected throughout the Pacific and along the east coast of Australia. Tsunami signals reached 2.1 m at PNG, 1.4m at Vanuatu and 0.6m at Port Kembla and Spring Bay.
- Mw7.8 earthquake off Kermadec Islands on 6th July 2011 – 30cm tsunami at Cook Islands.
- Mw7.1 earthquake off Vanuatu on 20th August 2011 –35cm tsunami at Port Vila.

8.1.4 An array of five Permanent Data Transmitting Tide Gauges and one Transmitting Tidal Stream gauge is operated by the Australian Maritime Safety Authority, located in the Torres Strait between Australia and New Guinea. The Tide Gauges are located at Booby Island, Goods Island, Turtle Head, Nardana Patches and Ince Point. The Tidal Stream Gauge is located at Nardana Patches. Further information is available on page 269 of the Australian National Tide Tables, 2012 edition.

8.1.5 Several State departments and individual Port Authorities also operate approximately 100 permanent gauges throughout Australia, and details are contained in the Australian National Tide Tables.

8.1.6 The Australian Hydrographic Service (AHS) operates tide gauges in support of survey operations, but has no permanent gauge locations.

8.1.7 The AHS is currently developing software for a Tides Information System (TIS) that will enable the generation of the Australian National Tides Tables (ANTT) from an Oracle 10g database. It is expected that the 2013 edition of the ANTT will be produced from the TIS.

9. CONCLUSION

9.1 The AHS has made significant progress on completion of ENC coverage, and improving services to mariners including implementation of Print to Order paper charts and inclusion of T&P NTM in ENC update files.

9.2 Australia is strongly committed to supporting capacity building in the SWPHC Region.
