



Australian Government

Bureau of Meteorology

National Report by Australia

Australian Bureau of Meteorology

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Outline

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Drifting Buoys



Introduction & Planning

- Buoy Program started in the mid-1970s with FGGE.
- Goal : to support the ABOM's operational forecasting & warning service.
- Deployments mainly in the Indian & Southern Oceans:
 - » Contributes to the IBPIO, SOBP & IPAB.
- Deployments made from ships on an opportunity basis:
 - » Merchant, research, fishing, Customs, RAN, Antarctic re-supply.



Introduction & Planning (cont)

- Buoy Program runs from July to June:
 - » Aligns with the AU fiscal year & Government funding.
- Current funding provides for the purchase of:
 - » ~20 SVP-B style buoys each financial year; and
 - » ~8 SVP-B upgrade buoys each financial year.
- The Deployment Plan is prepared in July/August each year in consultation with key stakeholders:
 - » Regional Forecasting Centres;
 - » National Meteorological and Oceanographic Centre; and
 - » Weather Services Branch.



Program Status

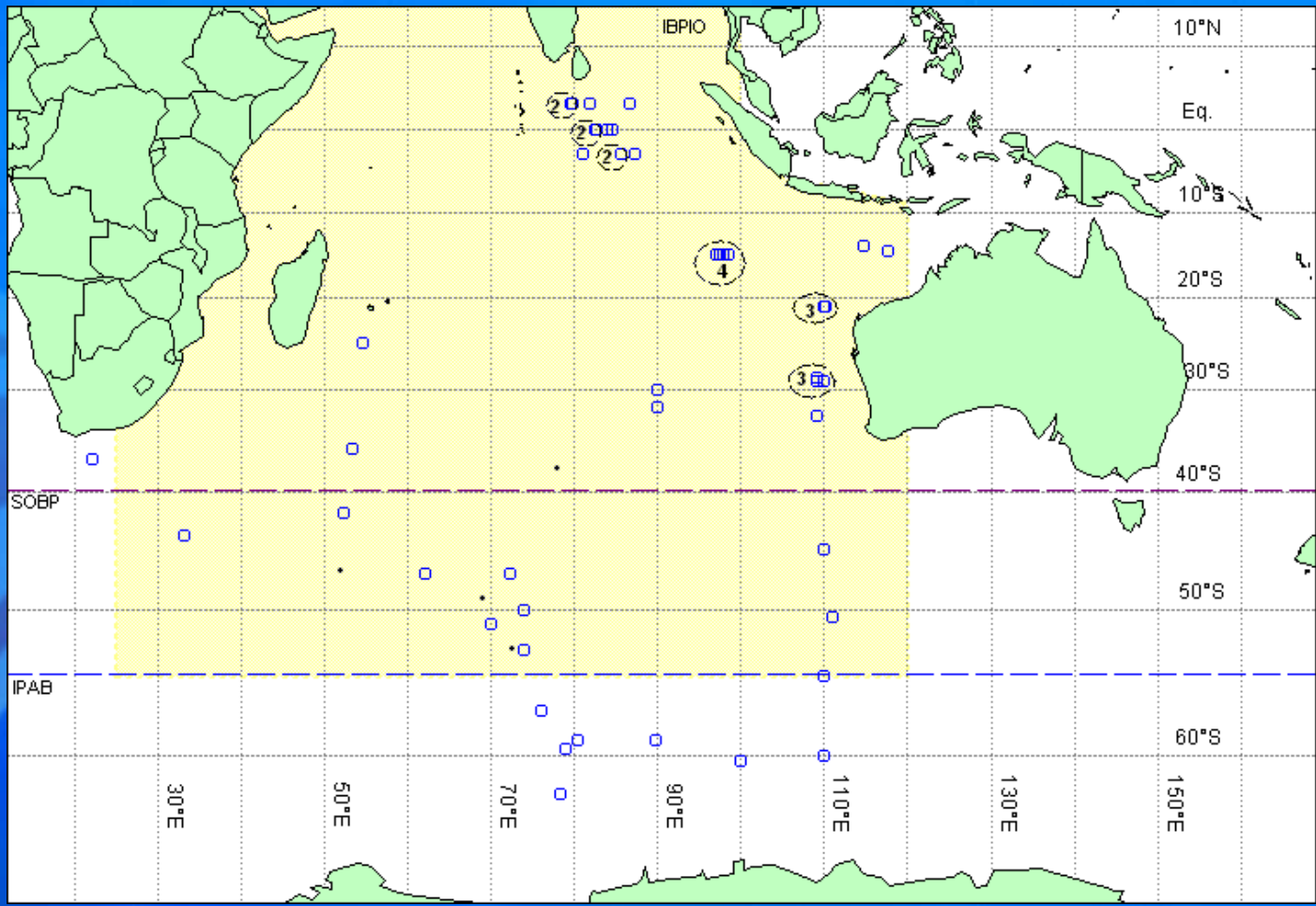
Program Description	Deployed 1-7-2010 to 30-6-2011	Active As at 31-7-2011	On GTS As at 31-7-2011
Bureau-owned buoys	21	18	18
Bureau-funded SVP-B upgrade buoys	8	6	6
GDC-supplied GDP buoys	18	7	7

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The goal is 25 Bureau-owned buoys



2010/11 Review



Includes: Bureau-owned buoys, Bureau-funded SVP-B upgrade buoys & Bureau-deployed GDP buoys



2011/12 Plans

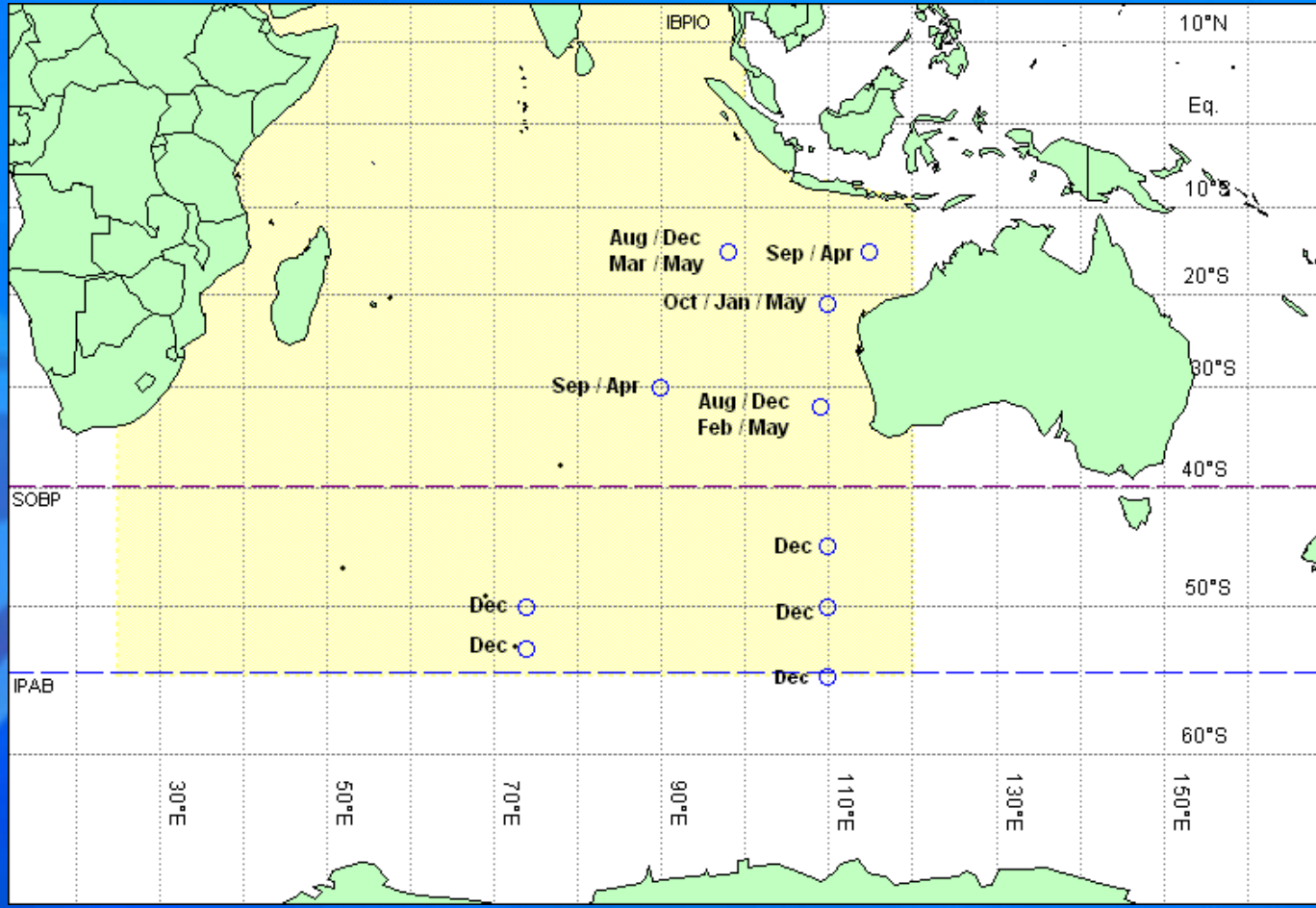
Program Description	Total	SVP-B	SVP-BW	SVP
Bureau-owned	20	20	0	0
Bureau-funded upgrades	8	8	0	0
GDC-supplied	20	20	0	0

48

Details on the JCOMMOPS website: http://www.jcommops.org/depl_opport/australia.html



2011/12 Plans (cont)



○ SVP-B

Bureau-owned buoys only



Quality Monitoring Regime

- Weekly
 - » Météo France Buoy QC Tools.
- Monthly
 - » UK Met Office monitoring statistics.
- Occasional
 - » Buoy QC mailing list.
 - » JCOMMOPS QCRelay.
- Rarely
 - » Forecasters.



SVP-B Performance Issues

- BOM Capital Program, 2010 & 2011:
 - » 3 consecutive Metocean failures on deployment, despite positive pre-deployment checks.
 - » Metocean suggested to remove the water soluble tape prior to deployment with immediate deployment success.
 - » 2010 Metocean deployments were a major disappointment:
 - » Overall: 0.4 yr average lifetime (from 23 failed buoys).
 - » Argos buoy: 0.8 yr maximum lifetime.
 - » Iridium buoy: 0.7 yr maximum lifetime.
 - » 2011 Metocean deployments to date:
 - » 7 Iridium failures: 0.3 yr maximum life.
 - » 4 still operating: ~0.4 yr maximum life (so far).



SVP-B Performance Issues (cont)

- GDP Buoys, 2010:
 - » Shipment of 20 Technocean received late 2010:
 - » Initial testing showed 8 failed to initialise. These units were returned to Technocean.
 - » 4 'good buoys' dispatched for deployment:
 - » 1st buoy failed 1 week after deployment,
 - » 2nd buoy failed 4 weeks after deployment,
 - » 3rd buoy transmitted OK on ship, good voltage,
 - » 4th buoy transmitted OK on ship, low voltage.
 - » Remaining 8 units returned to Technocean for repair after first two 'good buoys' failed.



SVP-B Lifetime Analysis (1)

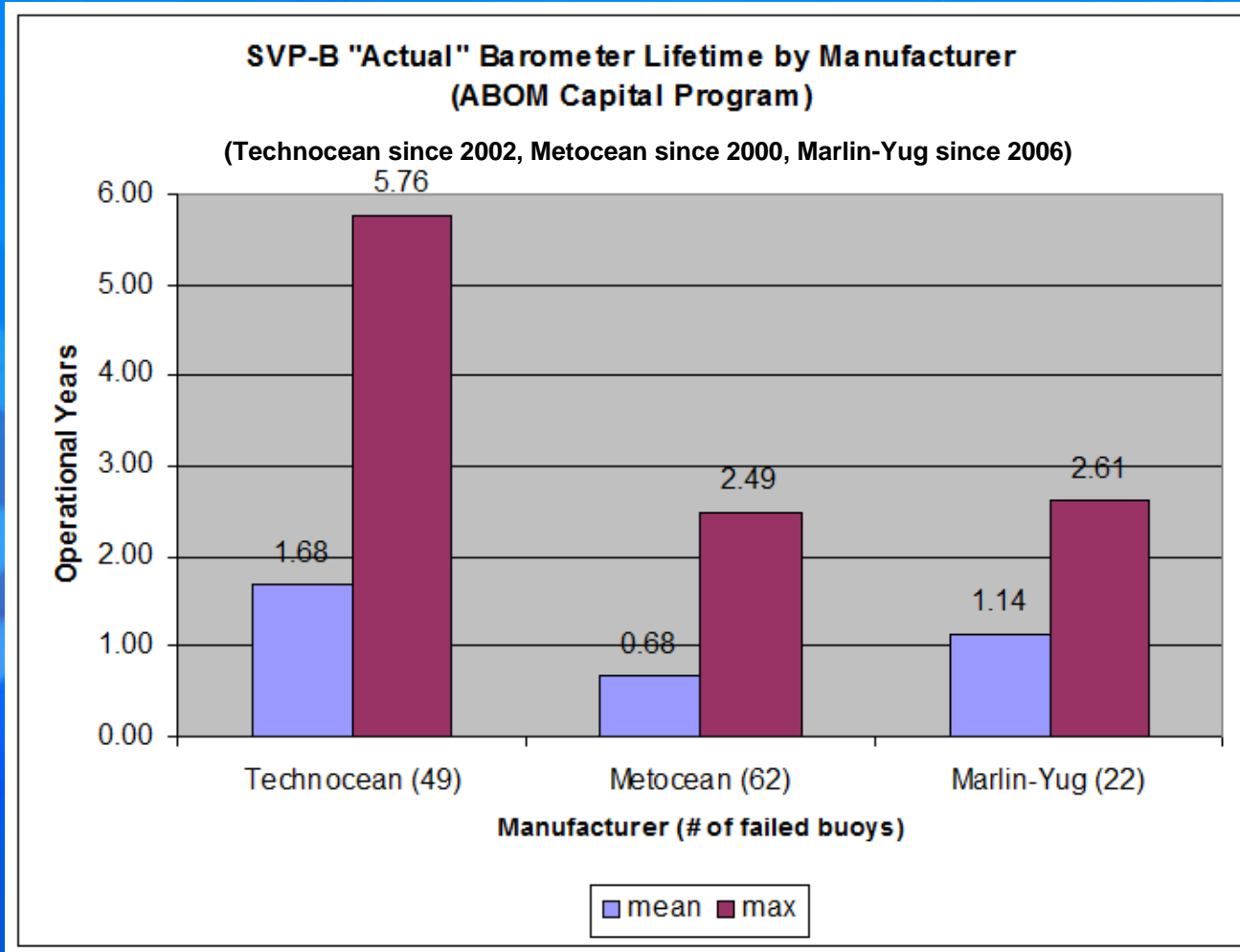
1. “Actual” mean lifetime by program and manufacturer, based on all failed barometers as at *21 September 2011*.
2. “Projected” mean lifetime by program and manufacturer, based on:
 - » all failed barometers as at *21 September 2011*, and
 - » all active buoys deployed before *1 January 2011* assigned a barometer fail date of *21 September 2011*.

A failed barometer is defined as:

- » Failure of the barometer sensor;
- » Barometer sensor declared suspect; or
- » Total buoy failure.

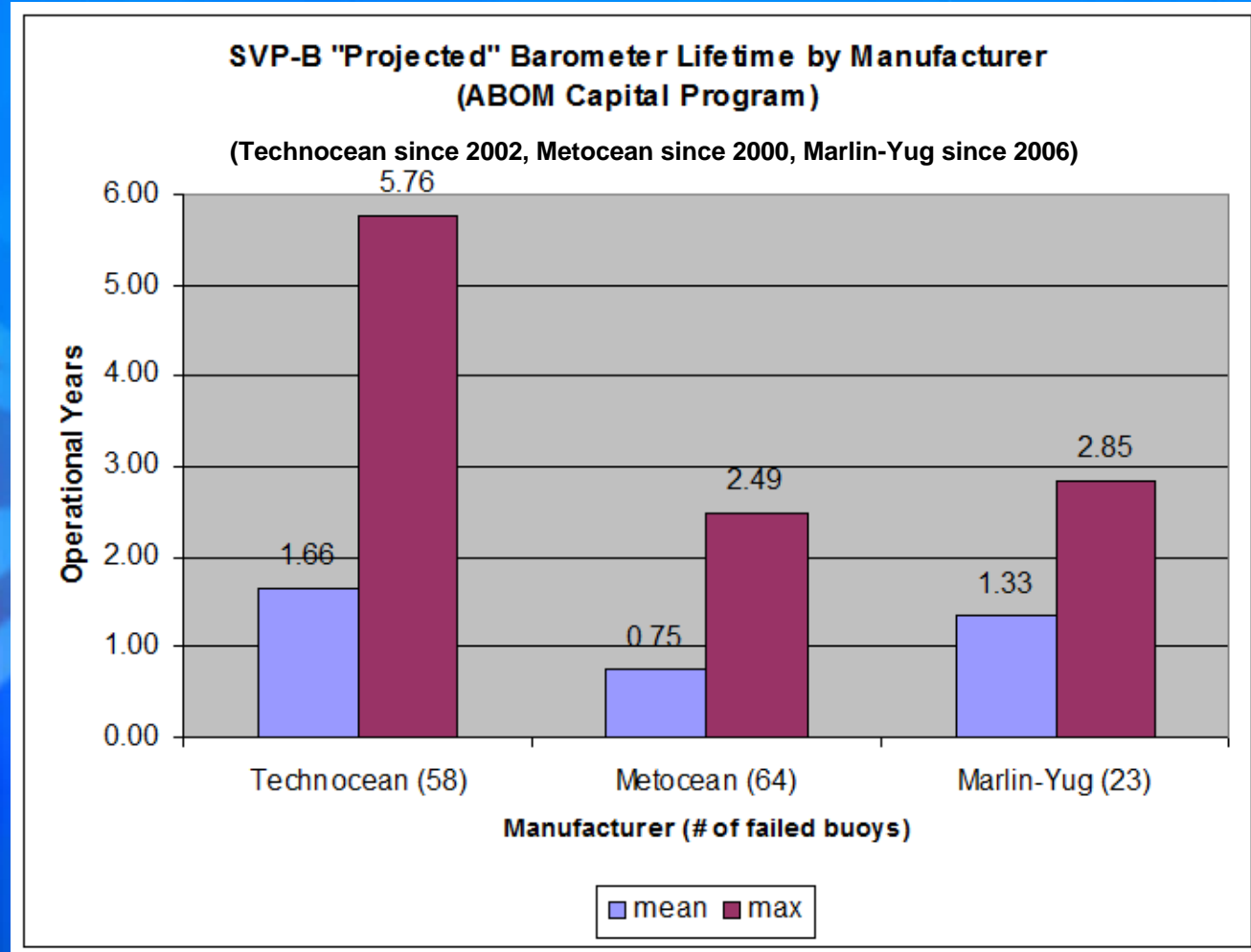


SVP-B Lifetime Analysis (2)



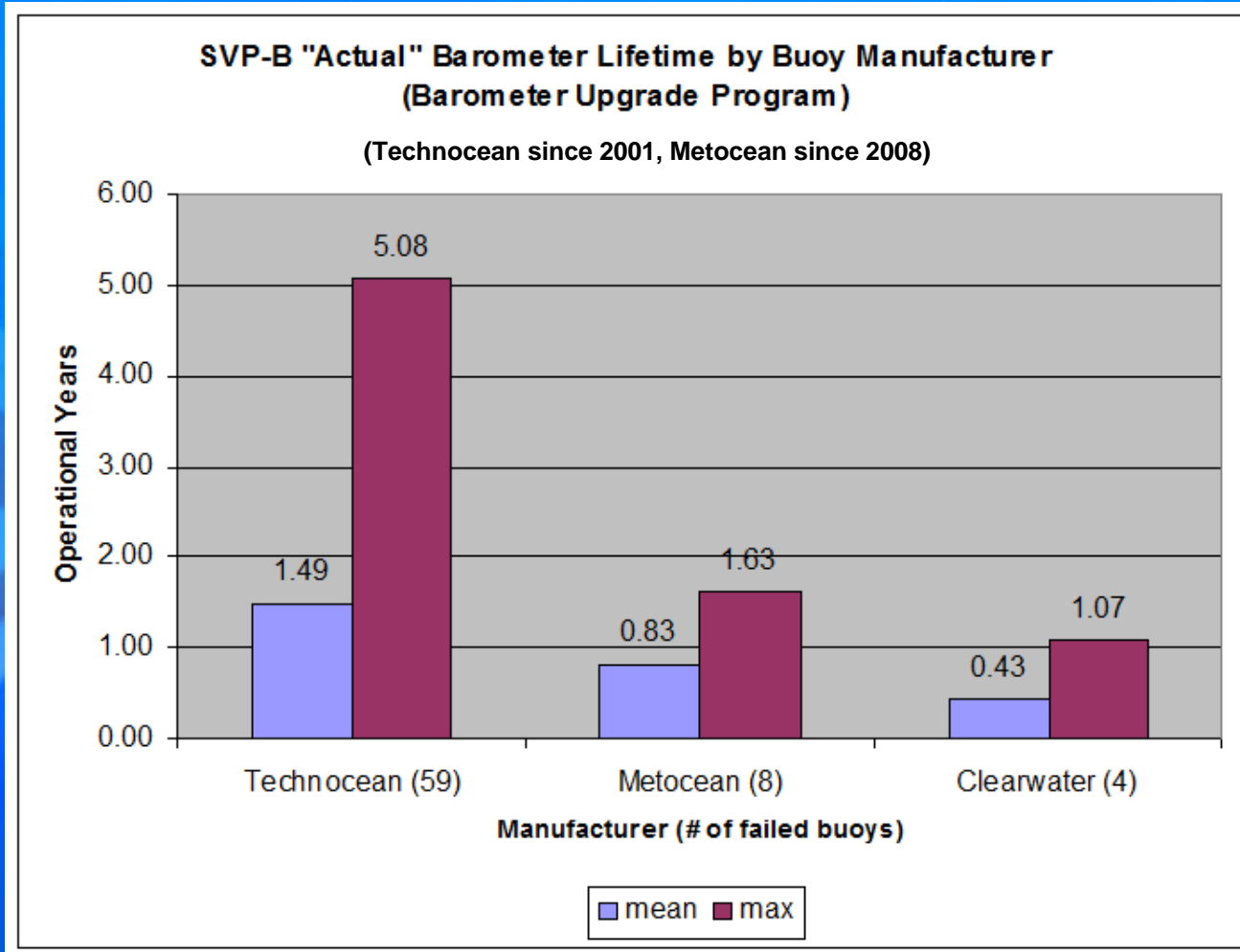


SVP-B Lifetime Analysis (3)



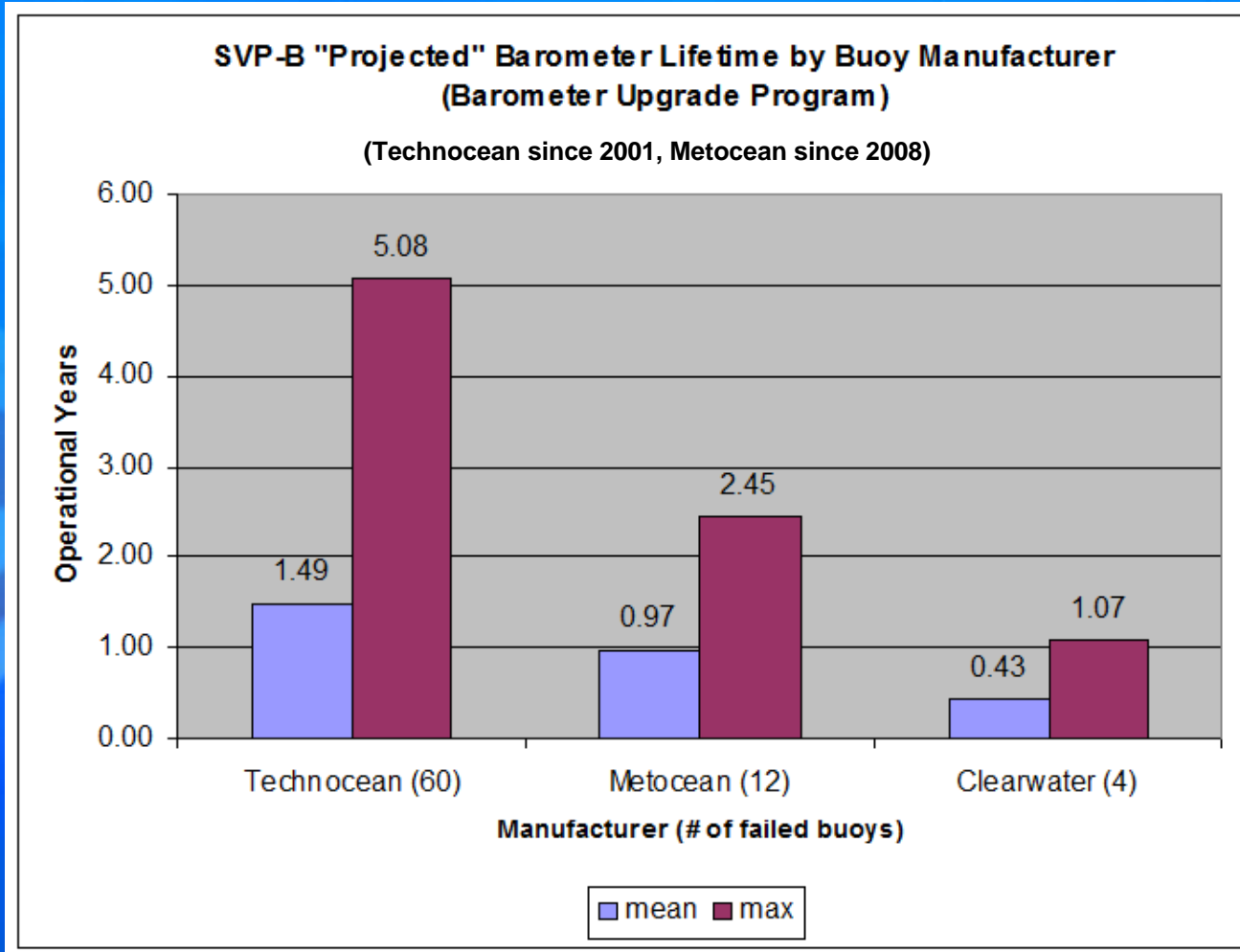


SVP-B Lifetime Analysis (4)



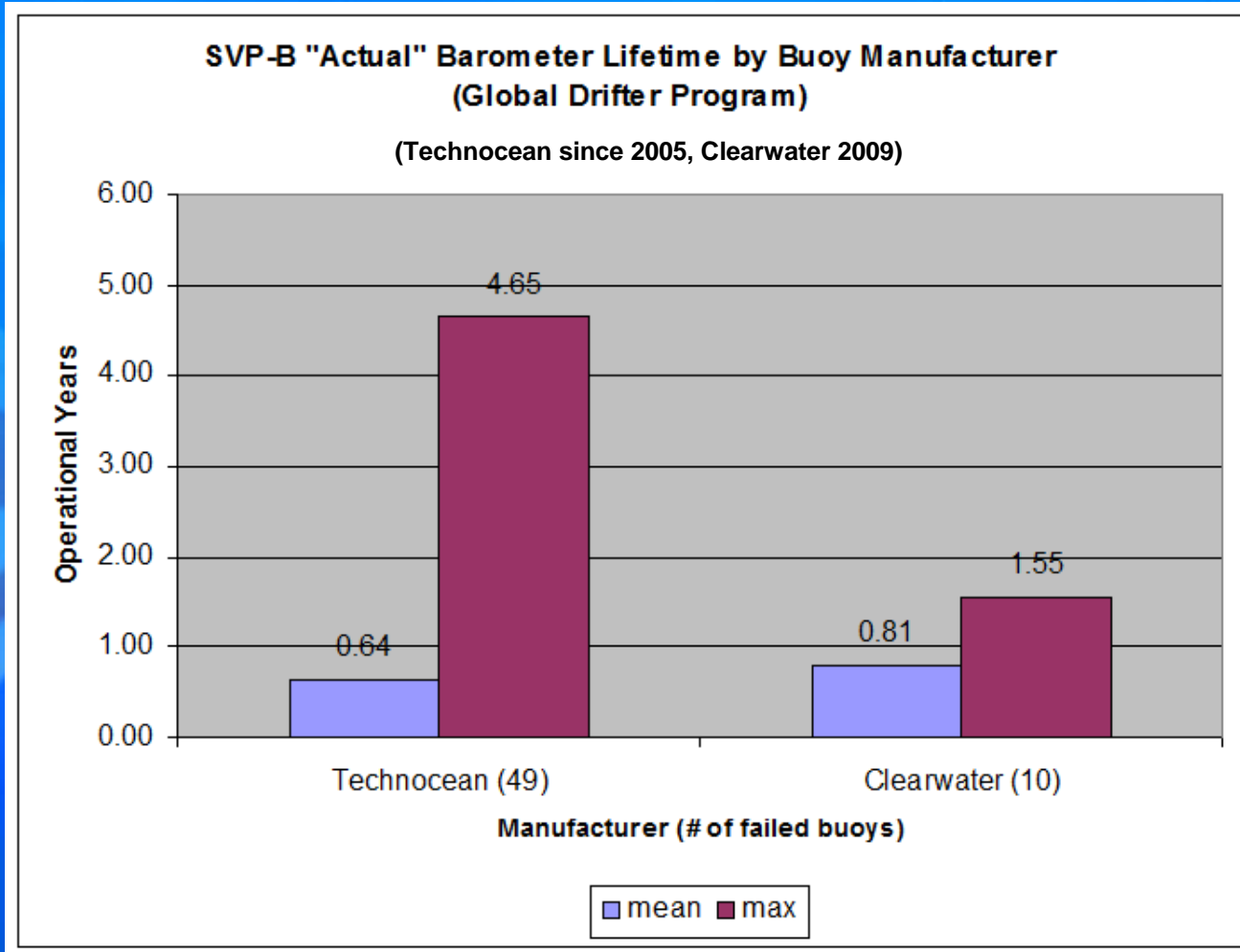


SVP-B Lifetime Analysis (5)



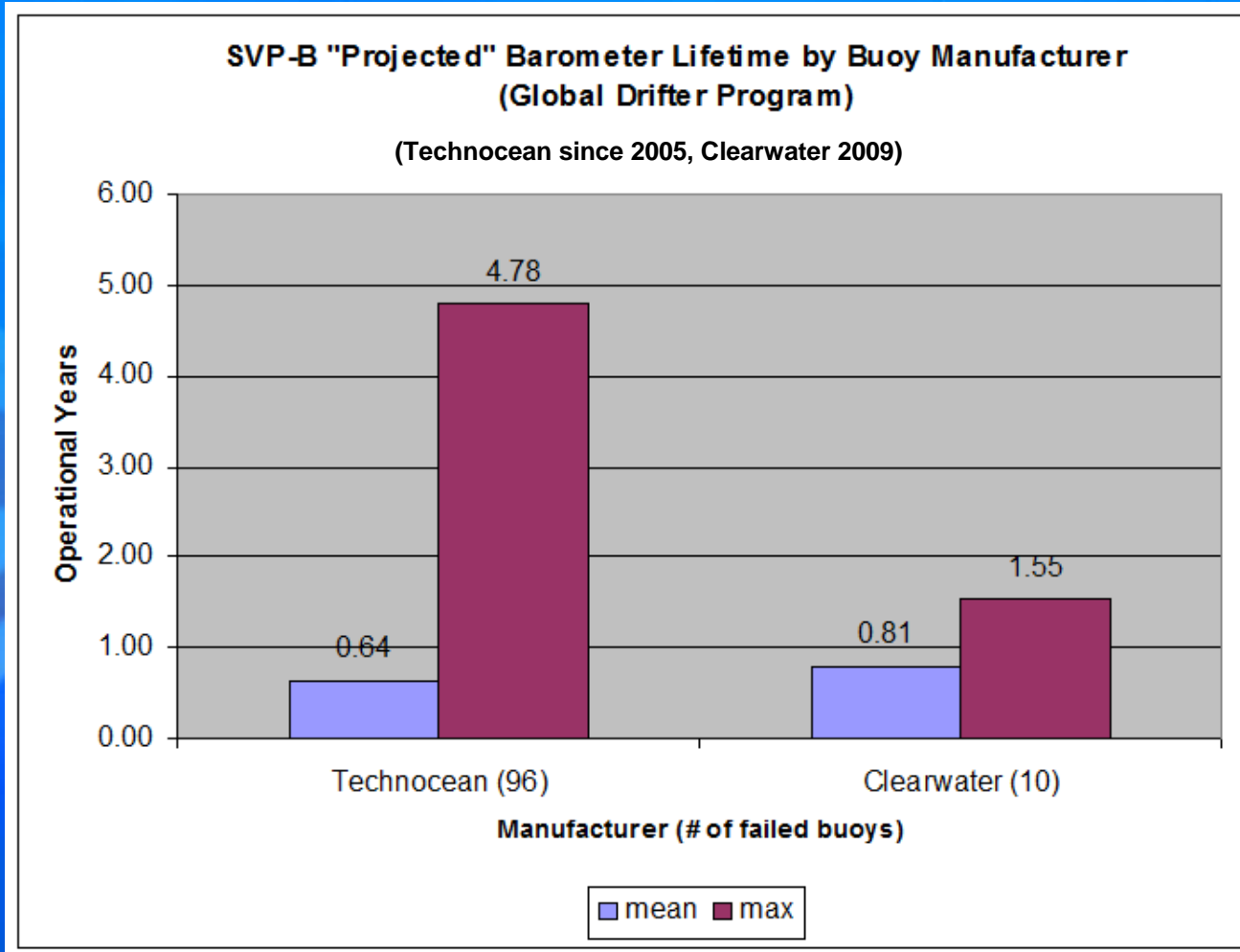


SVP-B Lifetime Analysis (6)





SVP-B Lifetime Analysis (7)





Acknowledgements

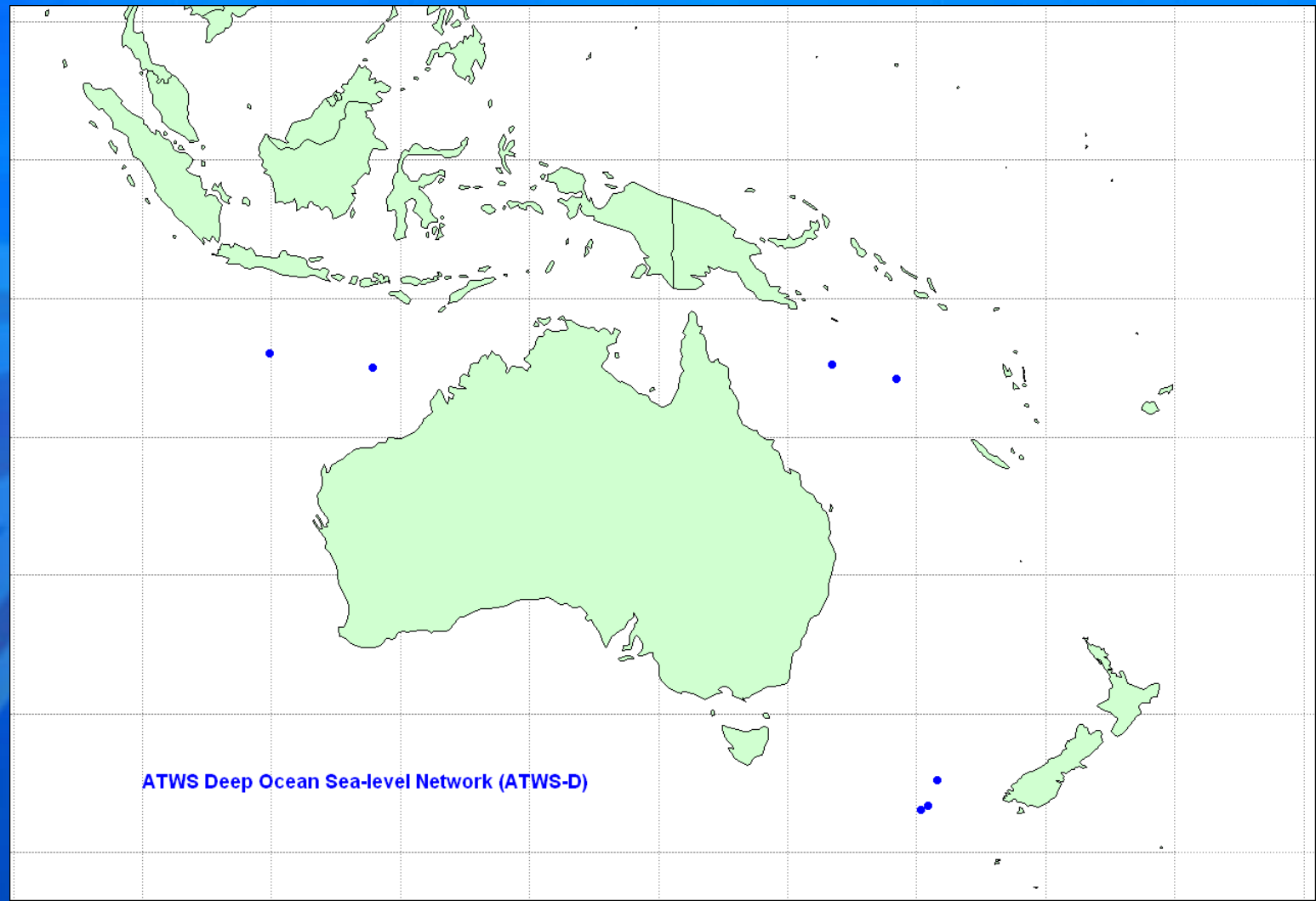
- IBPIO & IPAB partners:
 - » NIPR – Shuki Ushio;
 - » GDC – Shaun Dolk; and
 - » Météo France – Jean Rolland.
- Port Meteorological Officers:
 - » Mal Young, Fremantle;
 - » Albert Dolman, Melbourne; and
 - » Sidney Marais, Cape Town.
- Masters and crews of all the deploying vessels.



Other Buoy Networks

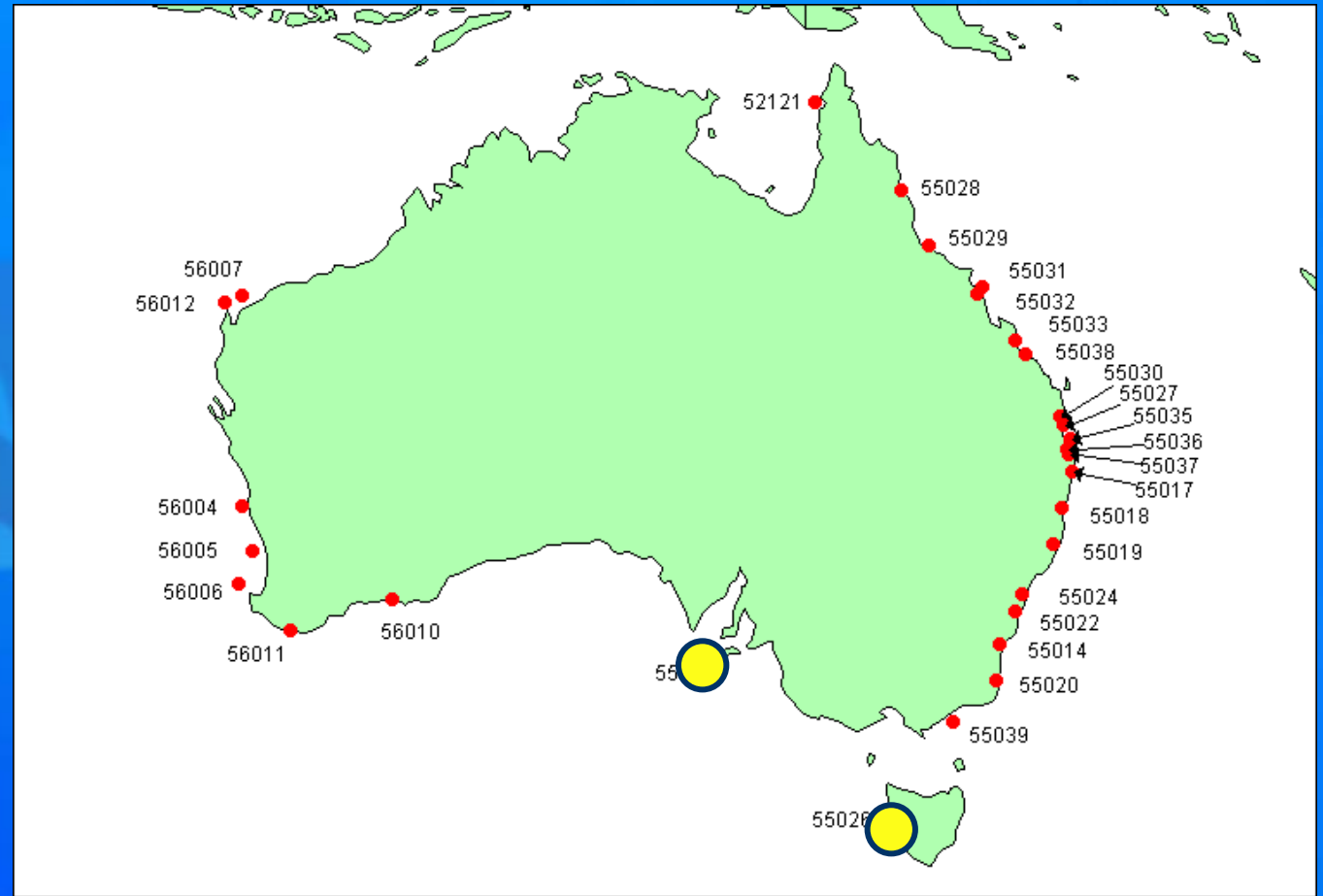


Tsunameter Network





Wave Data Network

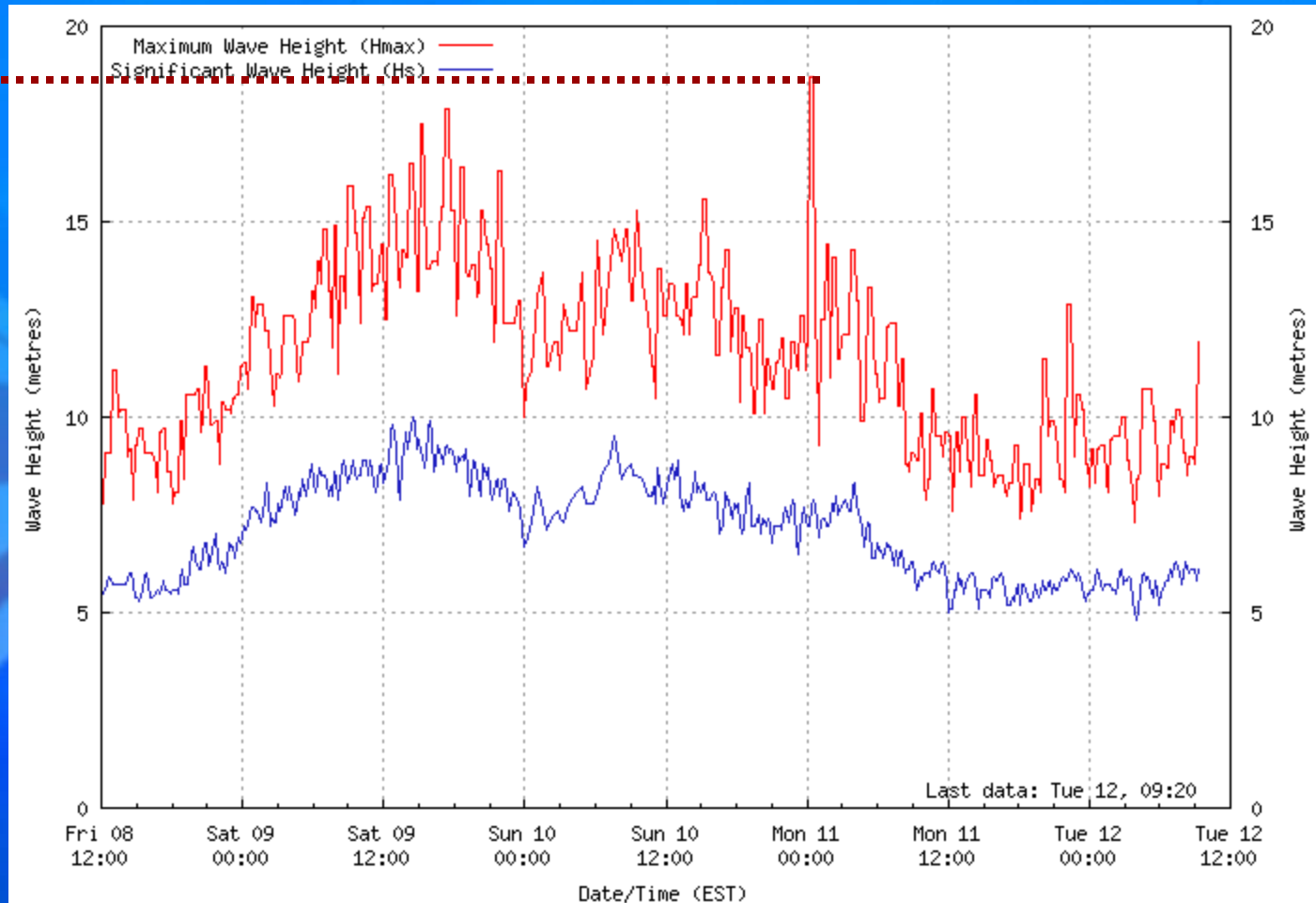




Max Wave Height - 55026

18.68 m
11 July 2011
ABOM Record

All-time record
19.83 m
29 July 1985
by CSIRO





A New Breed of Buoy



