

A photograph showing the wake of a ship on a dark blue ocean under a cloudy, overcast sky. The white foam of the wake is prominent in the foreground and middle ground. The horizon line is visible in the distance.

MetService NZ Marine Programme

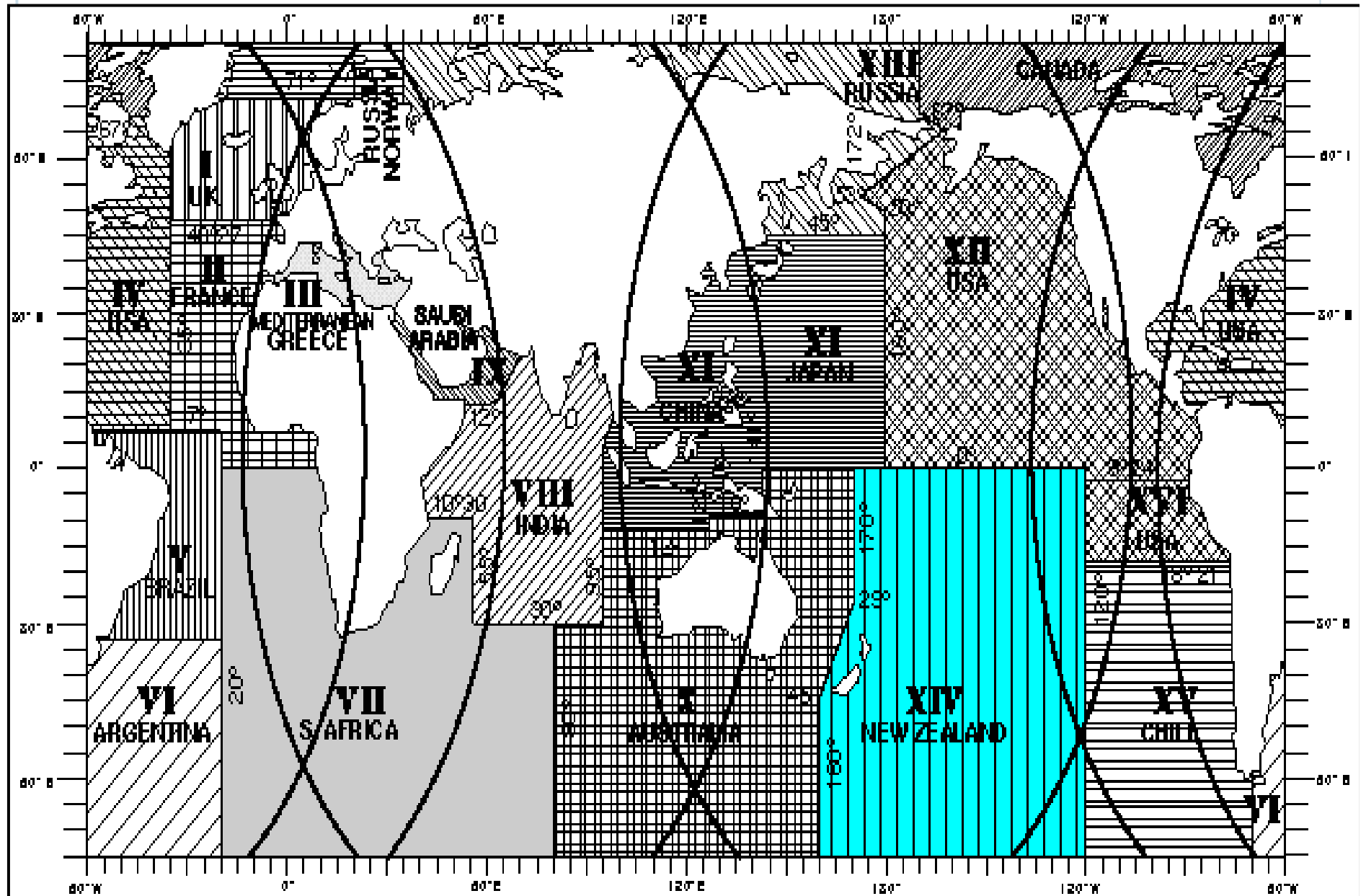
Julie Fletcher
Manager Marine Observations

SOT-V, Geneva 18-22 May 2009

Marine Programme Objectives

- To maintain a VOS fleet of about 30 Selected Ships & a network of 12 Drifting Buoys to provide quality real-time marine data for NZ Forecasting Operations
- To exchange SHIP and BUOY data internationally to provide input to Global Models and for Climatological and Research applications

MetService NZ Marine Forecasting Area (METAREA XIV)

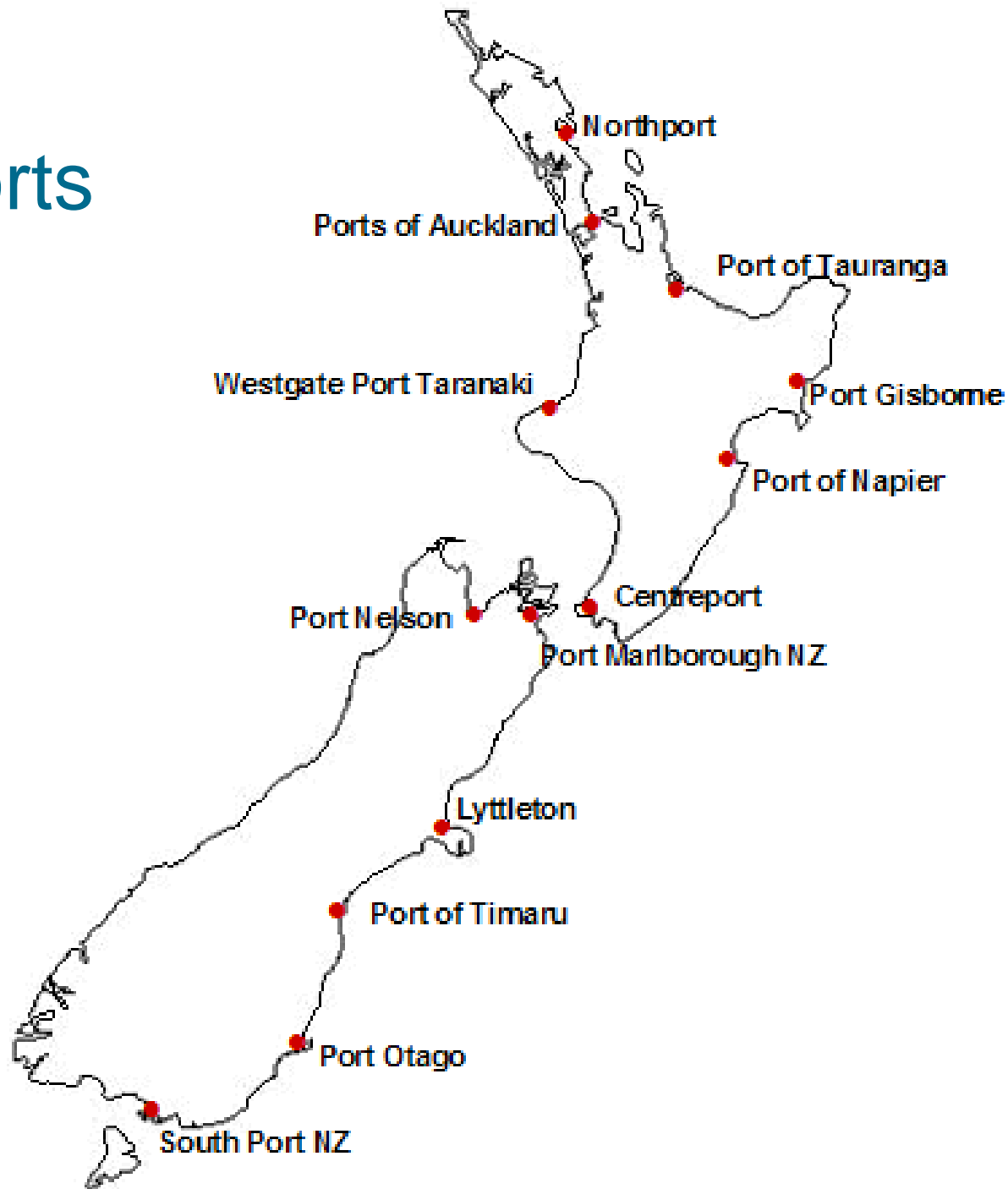


VOS Management

- All PMO activities - ship visiting
- Recruitment & Decommissioning of VOS
- Focal Point for NZ SOT, VOS & VOSClm activities
- Maintenance of VOS database
- Monitoring, QC & follow up action
- Assistance to foreign VOS



NZ Ports



MetService Marine Network

NZ Marine Network at 1 May 2009

43 VOS Ships

(32 Selected 1 Supplementary 10 Auxiliary)

10 Drifting Buoys

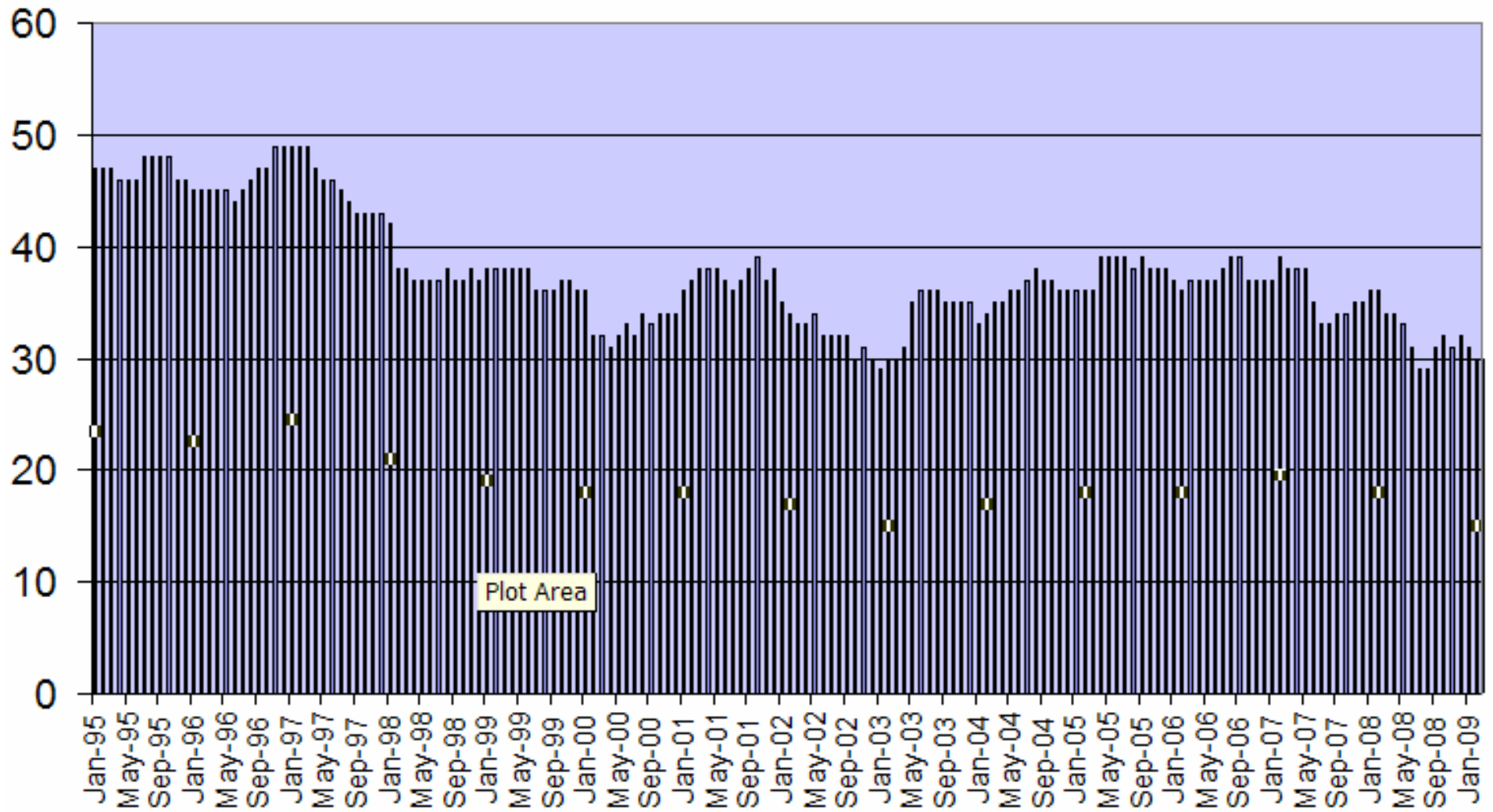
Recent NZ VOS Fleet changes

	Recruited	Decommissioned	Total VOS
2007	6	8	46
2008	8	11	43

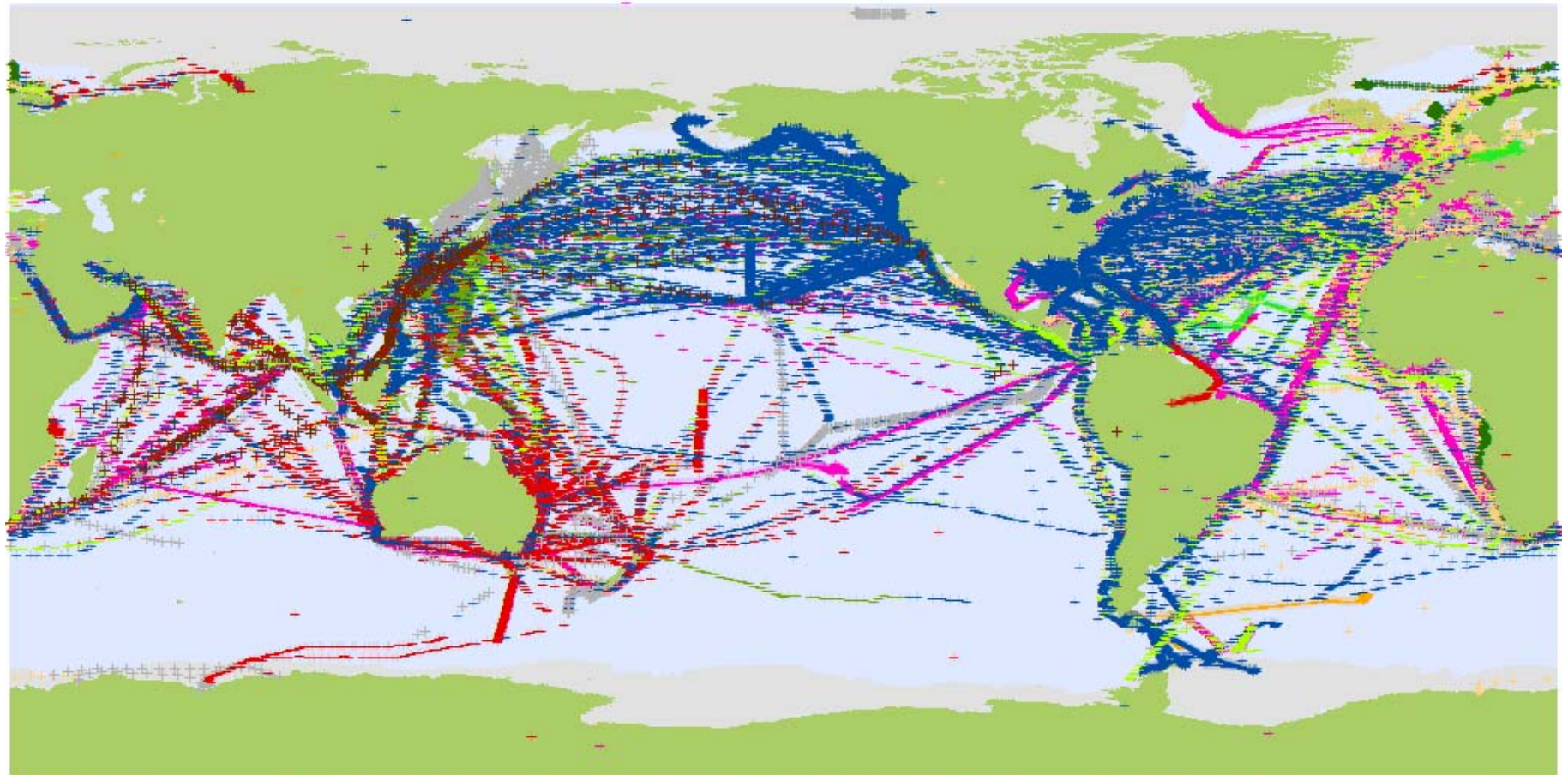
VOS Volatility and Turnover

- Shipping industry highly volatile
- High turnover of ships
- Of 32 NZ Selected ships, 27 ships have joined since 2000
- More than half the VOS Fleet is newer than 4 years old
- Lack of stability = high workload

NZ VOS - Numbers of Selected Ships



NZ VOS input 22,493 Obs onto GTS in 2008



VOS (1933)

SHIP Reports (121190)

-	AMMC (Melbourne)	-	EGRR (Exeter)	-	EUMS (Darmstadt)	-	RJTD (Tokyo)
+	BIRK (Reykjavik)	+	EHDB (De Bilt)	-	KWBC (Washington DC)	+	WSSS (Singapore)
-	EDZW (Offenbach)	+	ENMI (Oslo)	-	LFPW, LFWV (Toulouse)	+	Other

April 2009

jcommps
ATMOSpheric Chemistry Pattern Support Unit

Vessel Types

'Selected' VOS Vessel Types	Number of ships
Container Ship	17
Gas Tanker	6
Liquid Tanker	2
General Cargo	2
Research Vessel	1
Support Vessel	1
Cement Carrier	1
RORO	1
Sailing Ship	1

Instrumentation

Manual Observing

- Precision Aneroid Barometer
- Fuesse Aneroid Barometer (few ships only)
- Marine Barograph
- Stevenson Screen + thermometers
- Sea Bucket

New : Plastic screens

Coming : Vaisala PTB 330 Electronic barometer



Increase in TurboWin use

Year	% of Selected ships with TurboWin
2004	33%
2005	39%
2006	59%
2007	57%
2008	63%

Automation

Automation

One Marine AWS - RV TANGAROA

- Based on Sutron 9000RTU with manual input option
- MTSAT comms
- Hourly observations
- Tangaroa L 70m, B13.8m, Gross tonnage 2282



Inspection Regime

- All NZ VOS inspected at least once per year
- Some ships receive several visits
- All barometers calibrated against PMO's Vaisala PTB220AD Transfer Standard barometer which is traceable to National/International standards
- Foreign VOS ships visited when possible and on request

New Initiatives

- May 07 – first VOSClm ship recruited
- July 07 – Pub 47 Ver 3 metadata submitted in xml format
- Aug 07 – first mSTAR-SHIP installation
- Dec 07 – New ‘Southern’ Forecast area
- Feb 09 – NZKL SNVE01 hourly bulletins commenced
- Feb 09 – NZ Navy began roll out of TurboWin to fleet
- Apr 09 – began quarterly GCC submissions

1st VOSClm ship – MV VEGA GOTLAND, with Plastic MetSpec screens



Aztec Plastic Screens



Low Cost Ship AWS -ZMENA

- mSTAR SHIP AWS based on MetService generic family of land AWS
- GPRS cellular network comms, 1 min data
- Using GPS for position & True WSD
- Coastal container ship SOE, L130m Gross tonnage 7470
- Concept is successful, plan to install on more coastal ships

Vodafone GPRS
Coverage



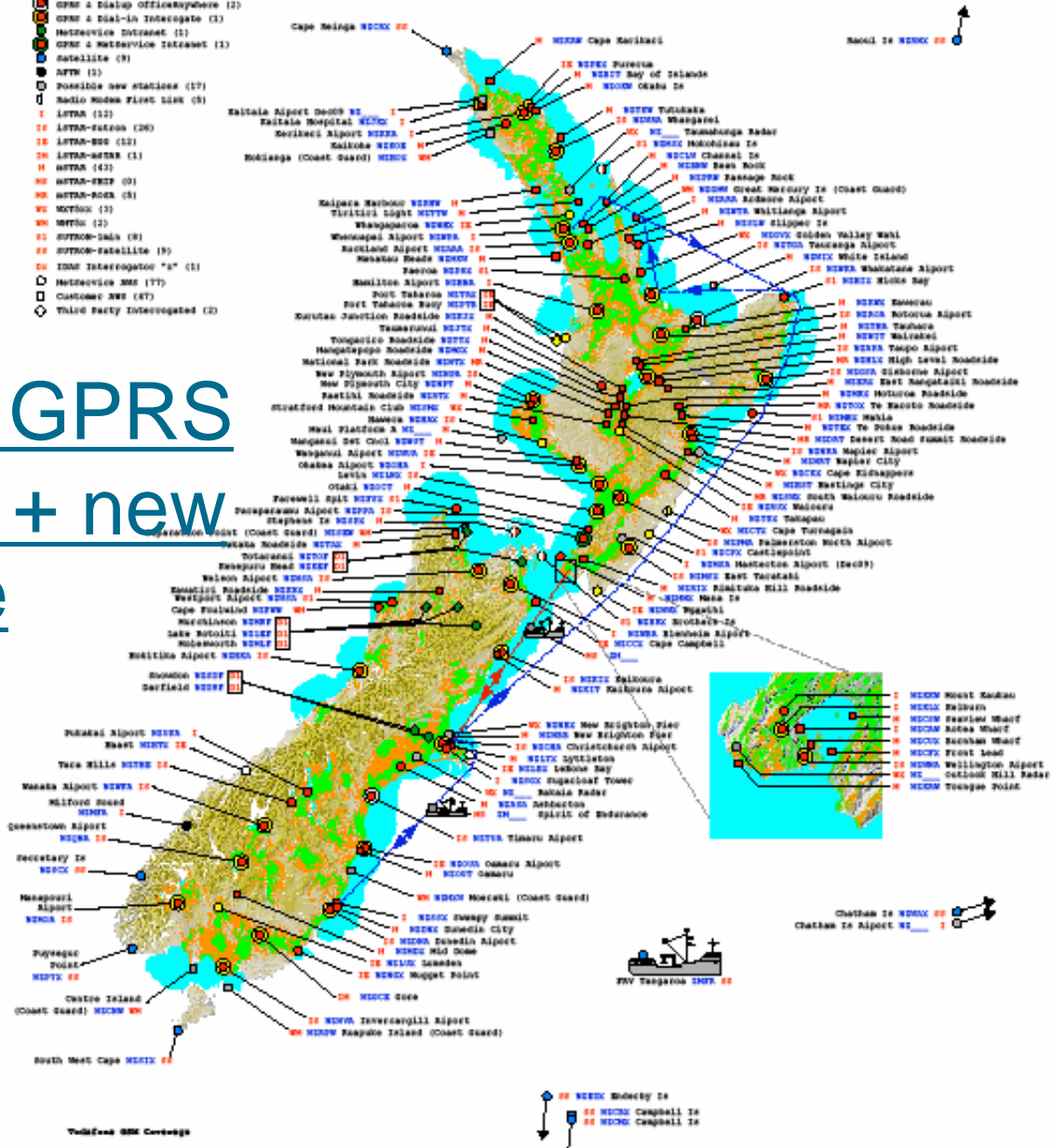
AWS Key

Includes overseas, test, demo, short term lease.

- Total AWS (~120)
- GPS only (30)
- Broadband Office/anywhere only (9)
- IPSTAR coastline only (8)
- GPS & Broadband Office/anywhere (39)
- Dialup Office/anywhere only (2)
- GPS & Dial-In Interrogated (2)
- GPS & Dial-In Interrogate (3)
- MetService Interstat (1)
- GPS & MetService Interstat (1)
- Satellite (8)
- AVTN (1)
- Possible new stations (17)
- Radio Mobile Fleet Line (8)
- LETA (12)
- LETA+satcom (26)
- LETA+SD (12)
- LETA+AVTN (1)
- AVTN (47)
- AVTN+GPS (2)
- AVTN+SD (5)
- AVTN+ (2)
- AVTN+ (2)
- AVTN+Satellite (9)
- EDGE Interrogate "A" (1)
- MetService AWS (77)
- Customer AWS (87)
- Third Party Interrogated (2)

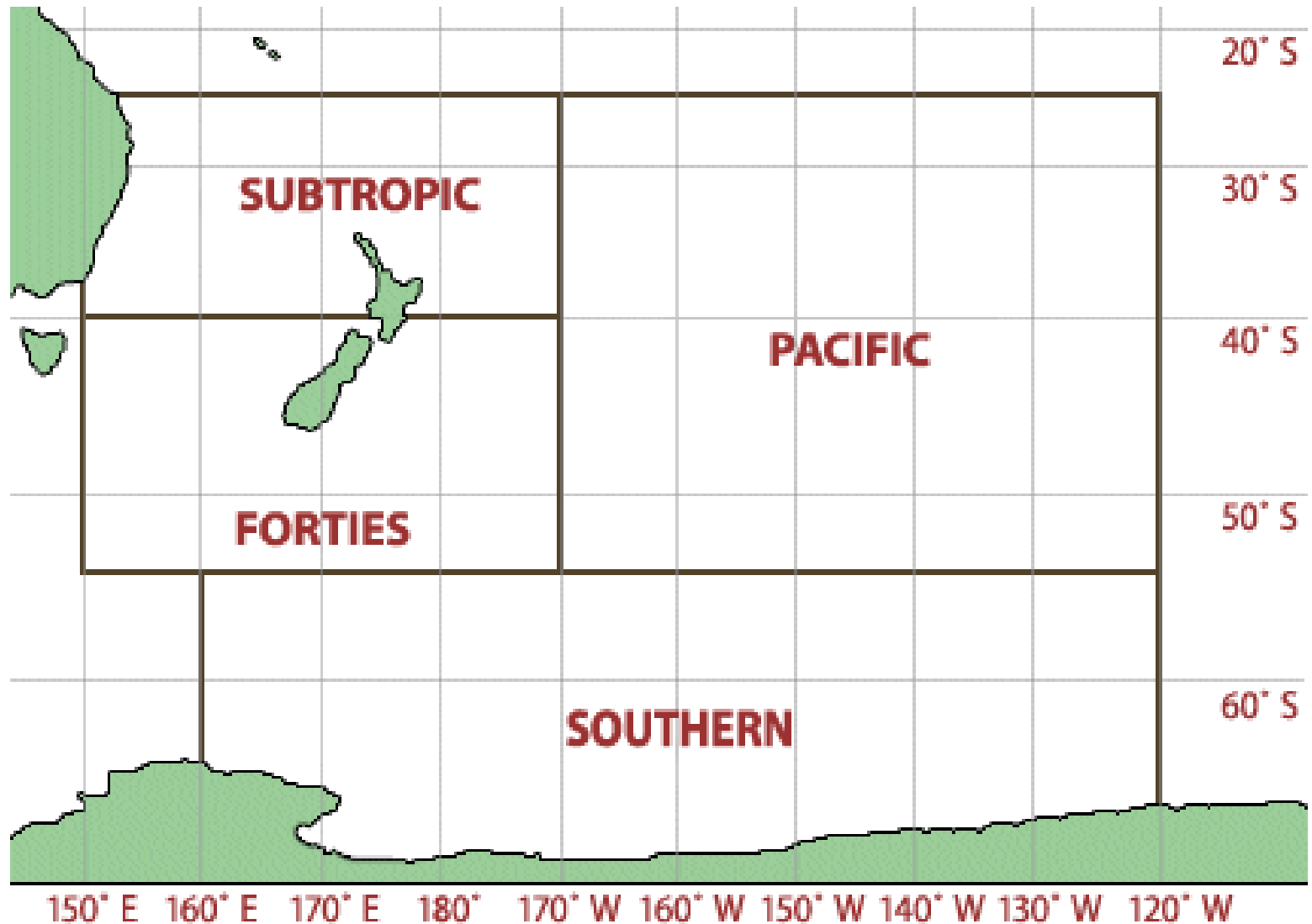


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Vodafone GPRS Coverage + new Ship route

New 'SOUTHERN' Forecast Area



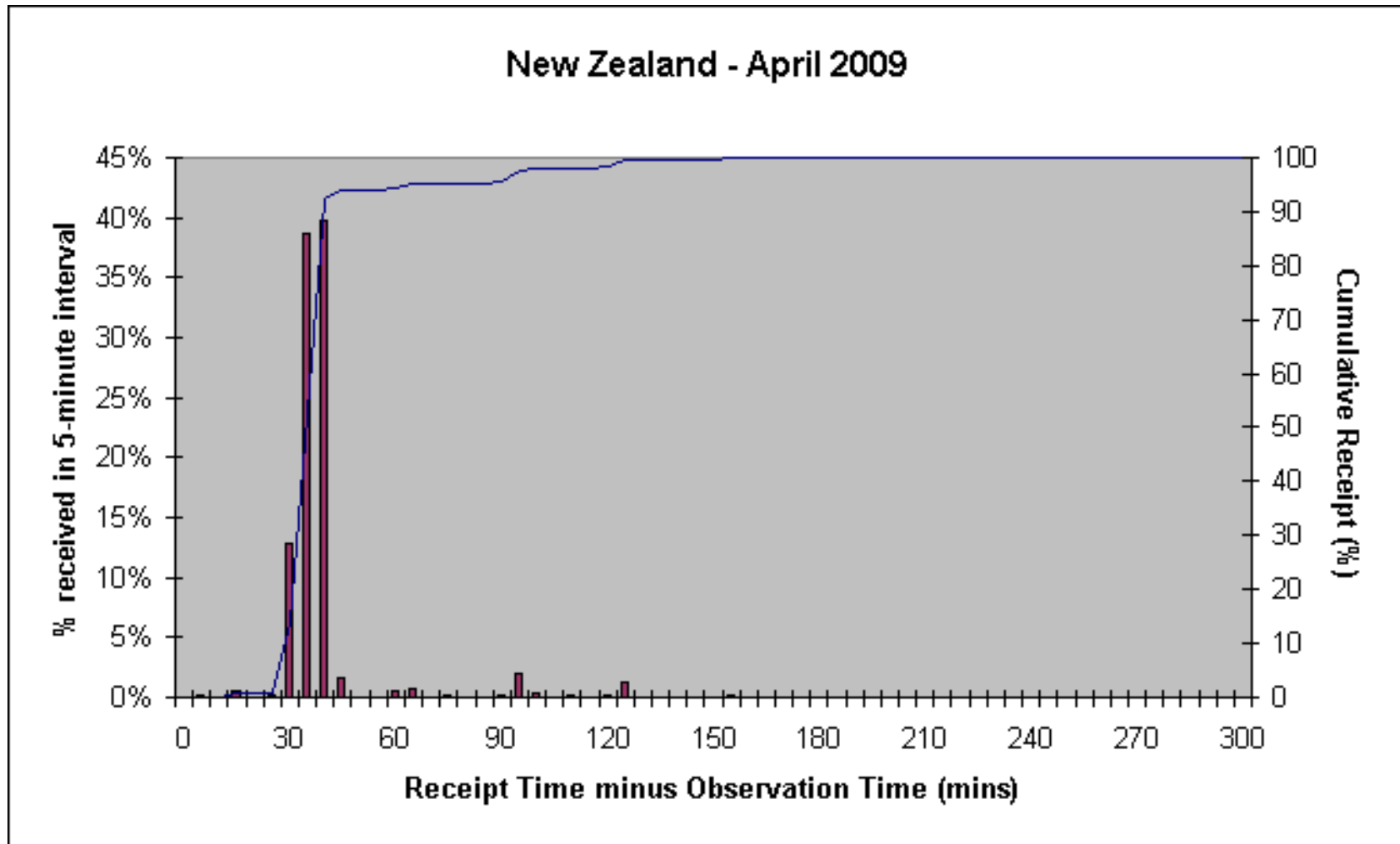
MCSS Submissions

- Dec 2006 - MetService recommenced submitting VOS IMMT data to the GCCs by collating the IMMT files collected from VOS using TurboWin since 2004.
- Submissions made annually in Dec 06, 07, 08
- From Q1, 2009 submissions will now be made quarterly.

Obs Quality & Quantity Monitored

- Count of Obs recvd in Real-Time versus Obs done in E-logbook
- Forecaster & data entry staff feedback
- Use of MeteoFrance VOS QC tools
- Use of UKMO Monthly stats and TOR
- Regular feedback to ships on communications and data quality issues

TOR NZ VOS April 2009



Other SOT activities



- Buoy Programme – finding ships and loading buoys for deployment
Since Aug 08, deployed 6 MetService Buoys and 40 GDC buoys
- Assisting overseas agencies with info on ship routes and schedules
- Positive Note: an increase in ships wanting to help with SOT programmes for environmental reasons

Challenges and Difficulties

- Volatility – global crisis, fuel costs, company mergers etc have all affected the NZ VOS
- Lack of stability has affected the recruitment of more VOSCLim ships
- More training required to get better OBs
- ISPS code needs forward planning, impromptu visits no longer possible
- Not all ships have PCs for TurboWin
- Problems with networked PCs and Read/Write privileges
- Language problems - clear instructions
- Many ship visits done out of normal hours

Thanks to International PMOs

- Co-operation between International PMOs is excellent
- Assistance received to issue and remove instruments
- Information shared on ship routes, possible recruits, ship changes and best practice
- I find the SOT work stimulating and interesting



Thanks to global
PMOs and VOS FP
for their positive and
timely help and
advice