A blue and yellow weather buoy is floating in the ocean. The buoy has a yellow top section with a white antenna and a blue bottom section. The text "WEATHER BUOY" and "DO NOT DISTURB" is visible on the blue section. In the background, a green net is visible, partially submerged in the water.

MetService NZ Buoy Programme

Julie Fletcher
Manager Marine Observations

Outline

1. Programme Objectives
2. Status of MetService Buoy Network
3. SOBP Deployments
4. Future



MetService Buoy Programme Objectives

- To maintain an operational network of 12 buoys in the Tasman Sea to provide accurate, real-time pressure data for NZ Forecasting Operations
- To work with GDC (under DBCP) to purchase Barometer Upgrades and assist with deployment logistics for GDC buoys in support of SOBP
- To exchange BUOY data internationally to provide input to Global Models and for Climatological and Research applications



* The GMDSS is under implementation for the Arctic METAREAS and is expected to be fully operational by 2010/11

MetService Buoy Programme Status

- 5 MetService Buoys operational at 1 September 2011
- 4 operational in Tasman Sea +1 'Island Buoy'. All are SVPB type

Network Changes:

2006 Upgrade Numbers doubled from 5 to 10

FY07/08 Network expanded from 7 to 12 buoys

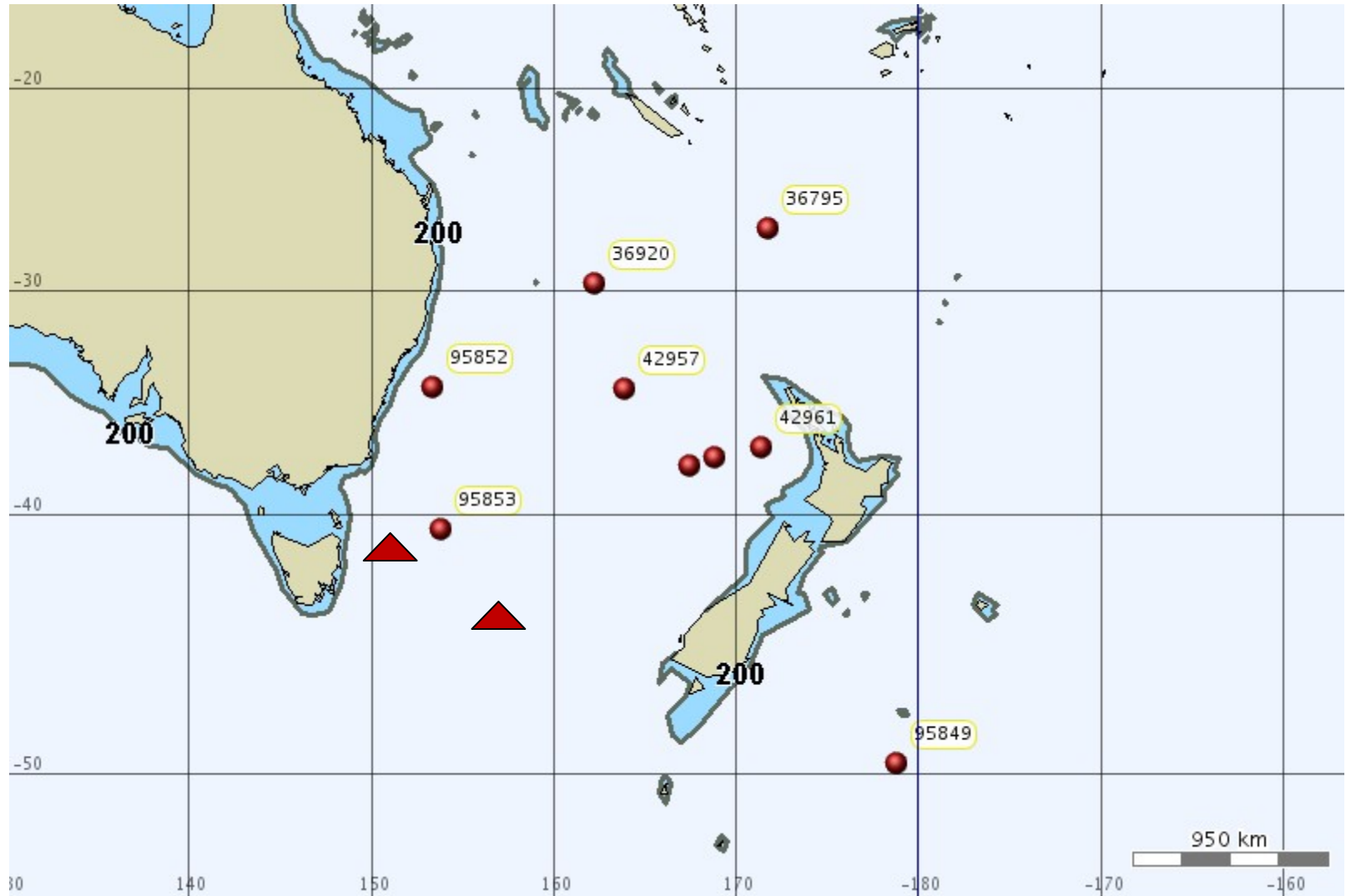
2008 Two 'Island Buoys' installed

May 2010 – Review cuts buoy deployments

Oct 2010 – Decision to rebuild Buoy Programme



Tasman Sea Buoys as at 1 September 2011



Antipodes Island 49 40 S 178 48E



Buoy #67788 WMO 55078



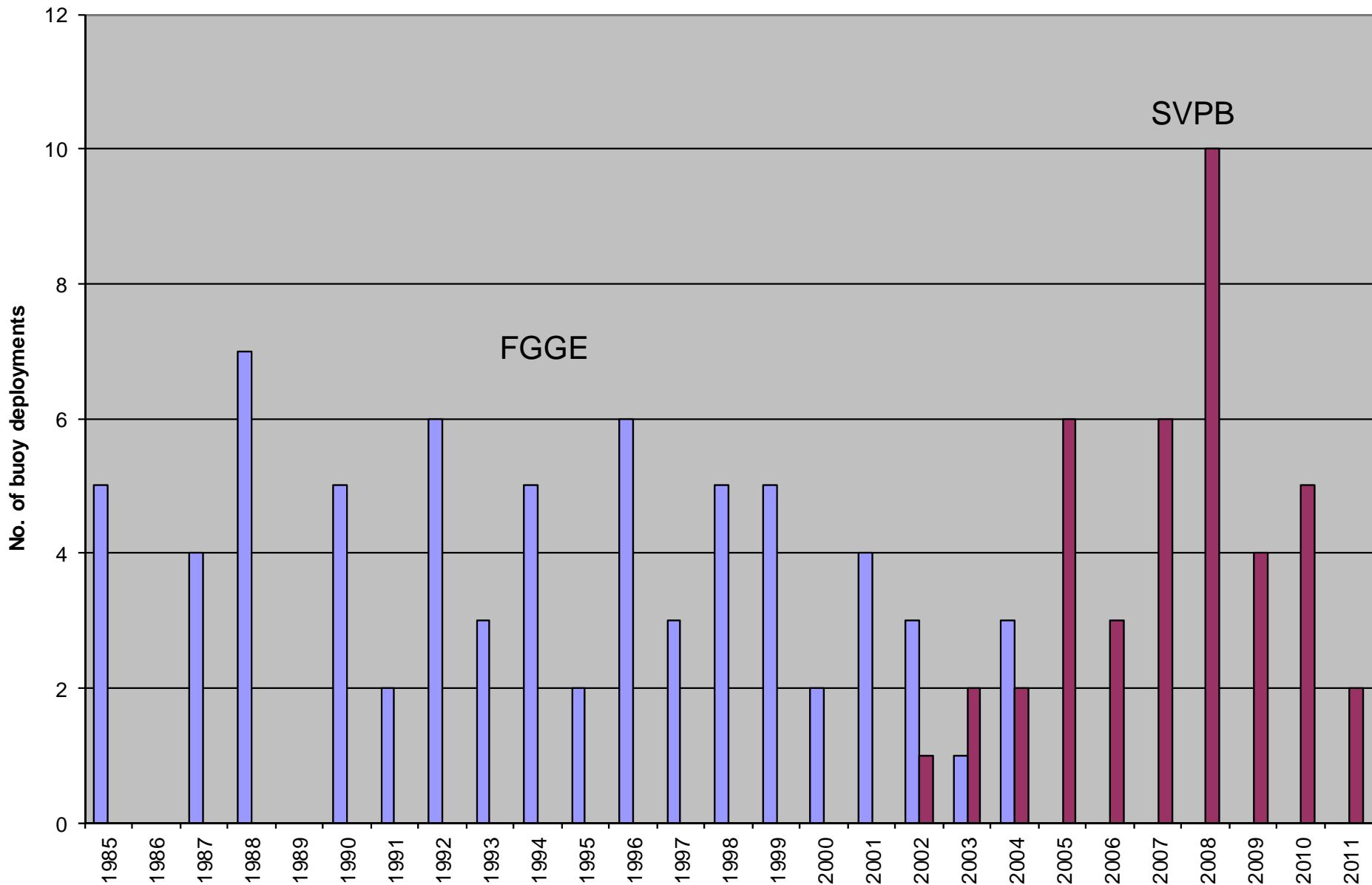
MetService NZ Deployments

42 Deployments since September 2010

- 5 SVPB in Tasman Sea – NZ national programme
- 29 SVPB in Southern Ocean – SOBP – GDC+Upgrades
- 6 ARGOS3 PMTs from Marlin-Yug – Argos3 PP
- 2 MetOcean Iridium Buoys – IR PP

All deployments made by ships – Container vessels, Research, Eco-tourist cruise ships, General cargo ships.

MetService Tasman Sea Buoy Deployments



29 Technocean SVPB deployed in Tasman Sea since 2002

- 29 Buoys finished with average Lifetime* of 20.6 months.
Max 40.2 months, Min 0.0 months
- 5 SVPB operational at 1/09/11 buoys aged from newly deployed to 25 months

* Lifetime counted until Pressure data removed from GTS, transmission or battery failure

SOBP Deployments – Summer 10/11

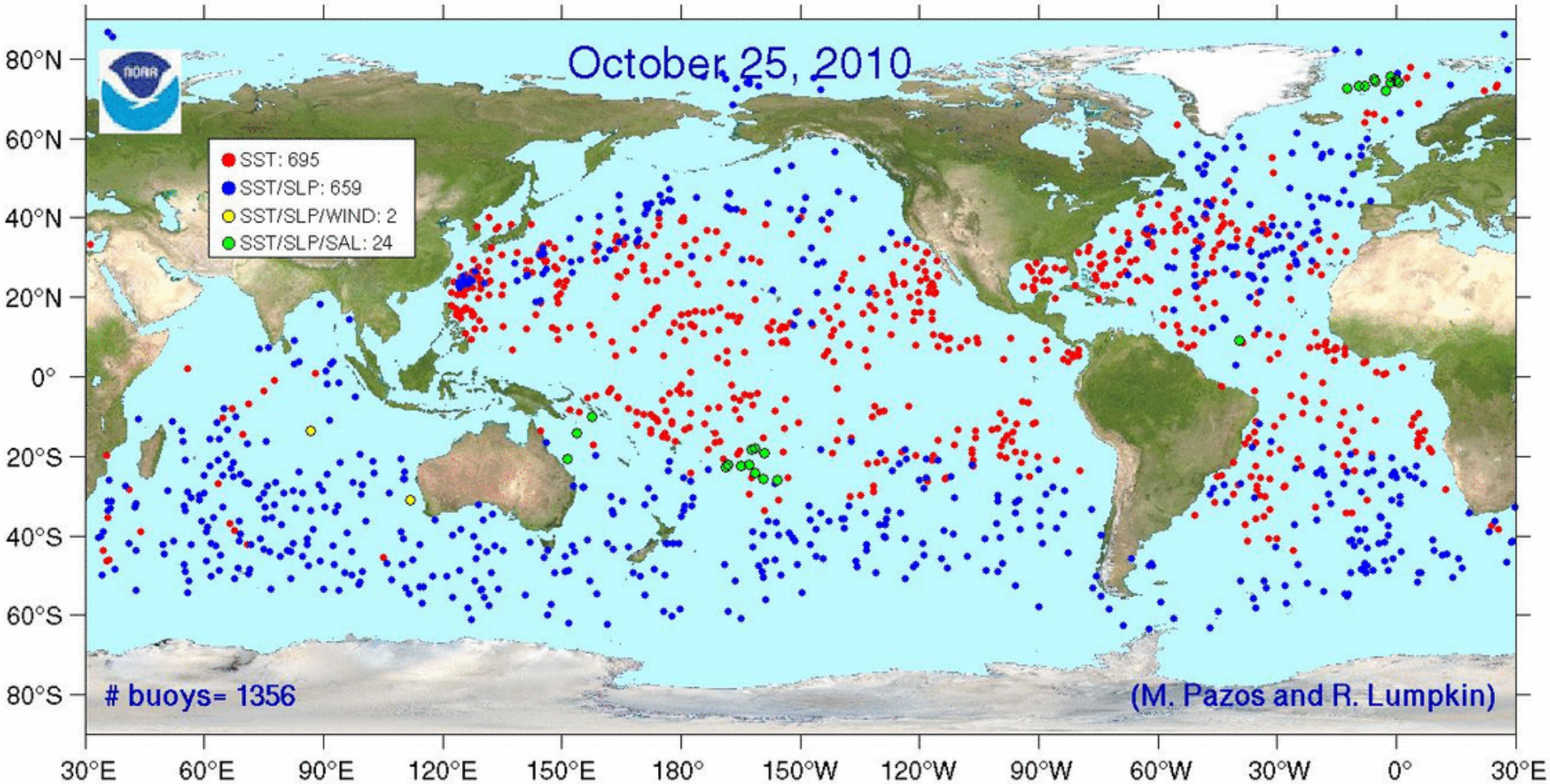
- 10 Technocean Upgrades deployed
 - 19 Technocean GDC SVPB deployed
- RV KAHAROA on Argo11 voyage presented opportunity to deploy 10 buoys
- Sensor data & transmission to satellite checked pre-deployment

Poor Performance :

- AP from ONLY 8 buoys still on GTS 1 September 2011
- 8 Upgrades lasted only average of 1.7months (min 07. max 3.1)
- 13 GDC dead at average 3.5 months (min 0.6 max 7.3months)

Result = large holes in the network

STATUS OF GLOBAL DRIFTER ARRAY



STATUS OF GLOBAL DRIFTER ARRAY

February 7, 2011

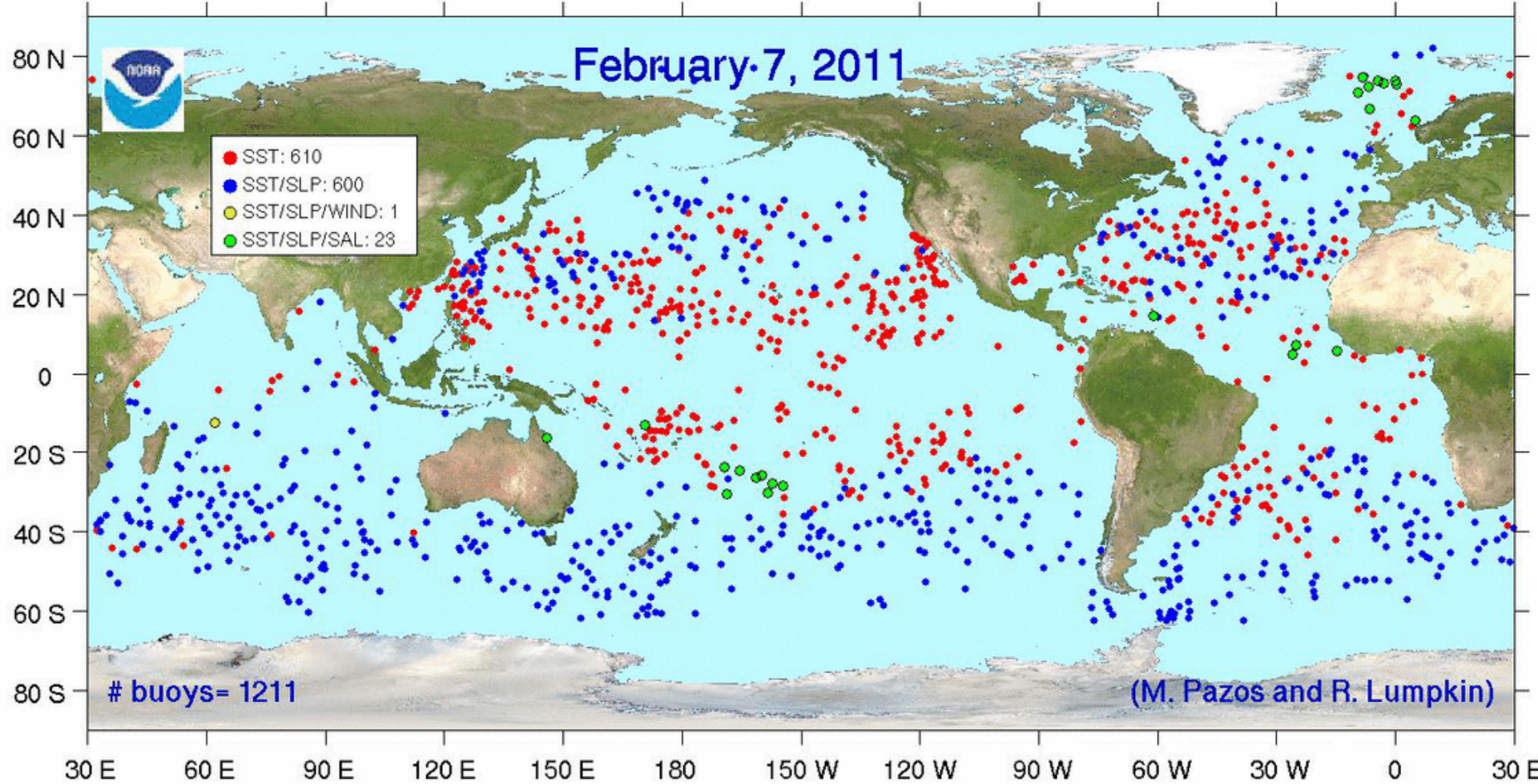


- SST: 610
- SST/SLP: 600
- SST/SLP/WIND: 1
- SST/SLP/SAL: 23

buoys= 1211

(M. Pazos and R. Lumpkin)

30 E 60 E 90 E 120 E 150 E 180 150 W 120 W 90 W 60 W 30 W 0 30 E



STATUS OF GLOBAL DRIFTER ARRAY

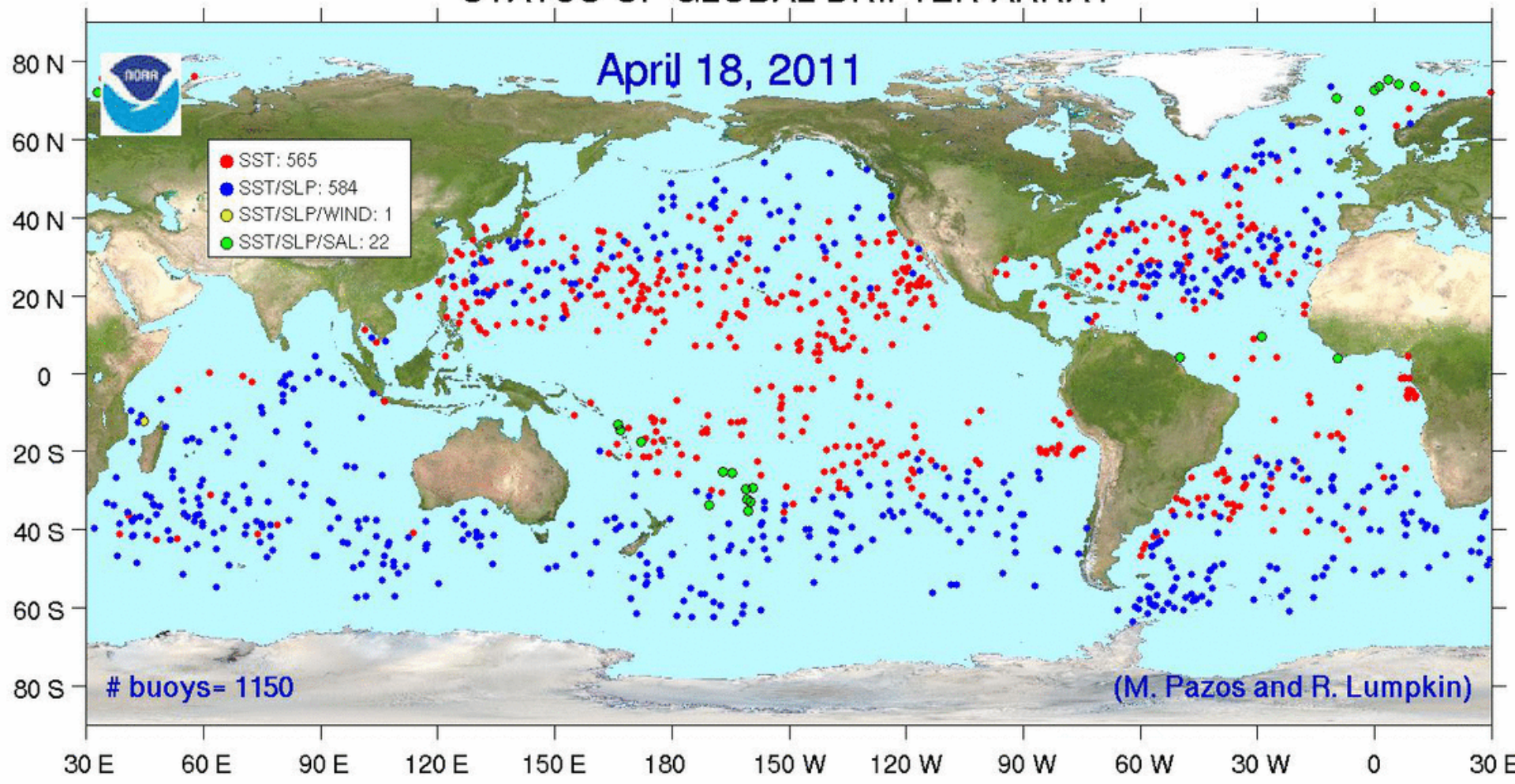
April 18, 2011



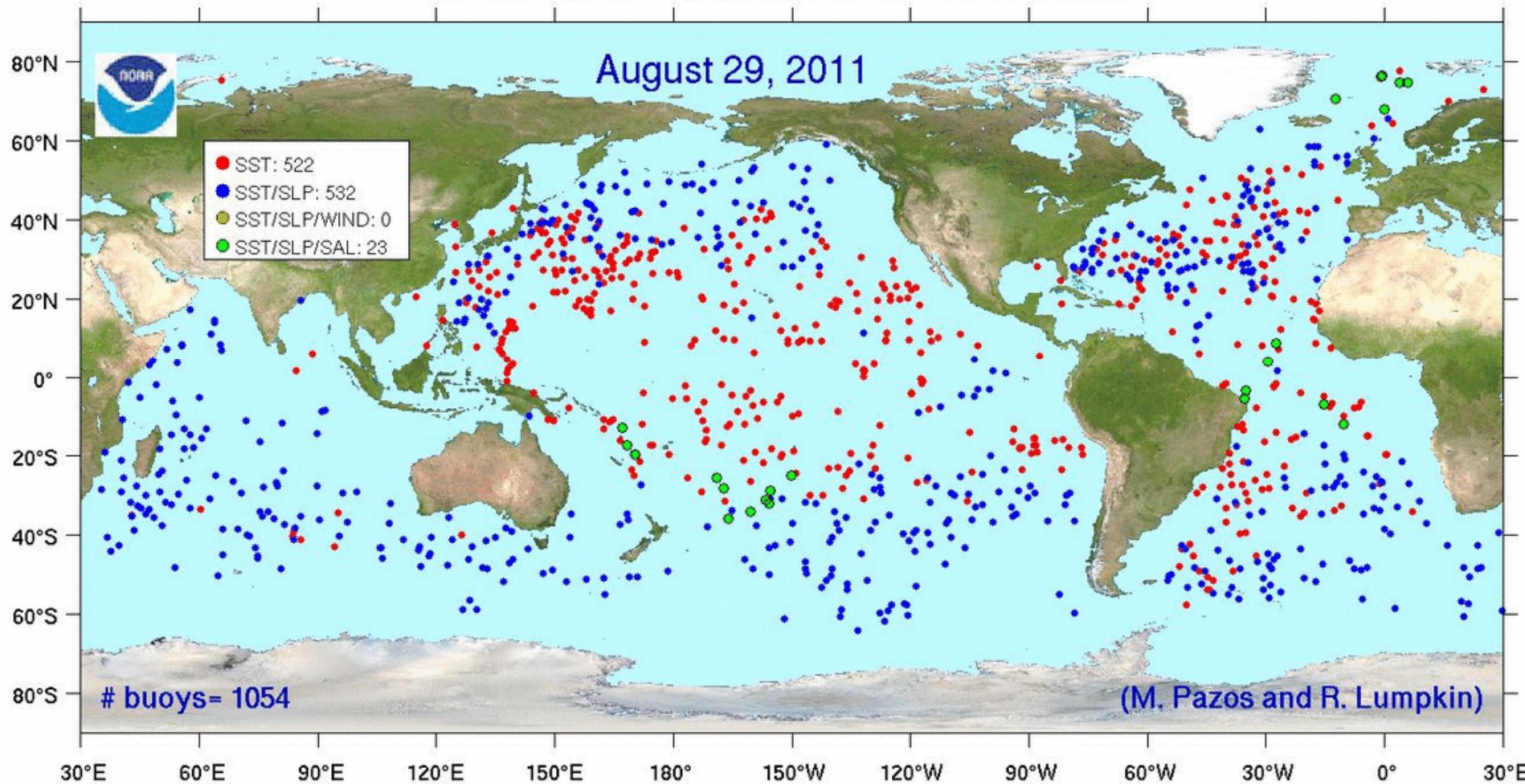
- SST: 565
- SST/SLP: 584
- SST/SLP/WIND: 1
- SST/SLP/SAL: 22

buoys= 1150

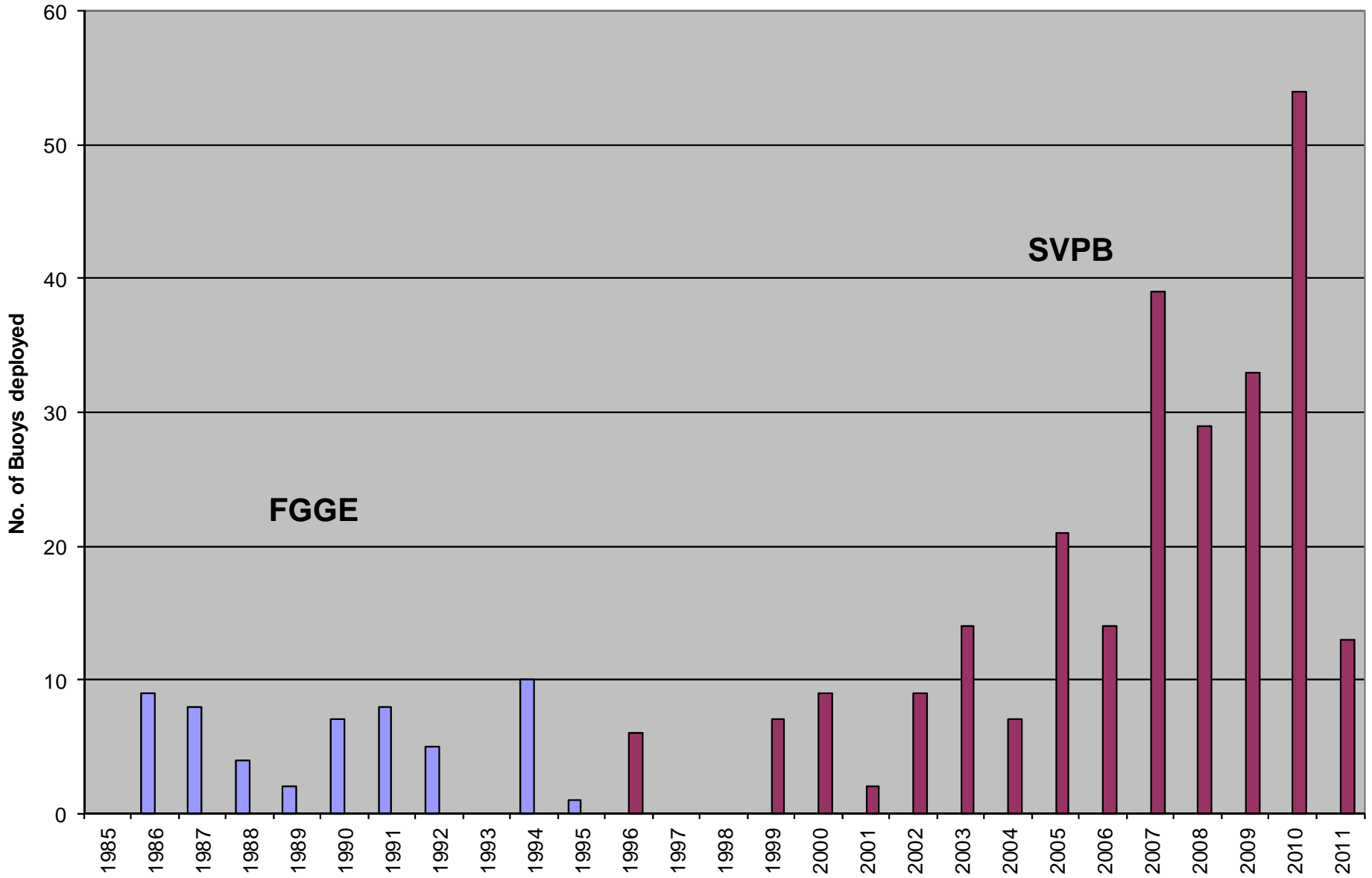
(M. Pazos and R. Lumpkin)



STATUS OF GLOBAL DRIFTER ARRAY



MetService Southern Ocean Buoy Deployments



ARGOS-3 Pilot Project

- 6 Marlin-Yug Argos-3 buoys deployed Sept –Nov 2010
- 4 still operational at 1 Sept 2011
- 1 buoy recovered recently – being examined

- Assisted Marlin-Yug with editing buoy manual and deployment information
- Provided comment on Marlin-Yug report on Buoy Air Pressure Measurements
- The quality of AP from 41cm hulls is good with or without drogue
- The 41cm buoy is preferred option for higher latitudes

IRIDIUM Pilot Project

- 2 MetOcean Iridium Buoys deployed July 2011
- Both operational 1 Sept 2011
- Data very timely H +12



Buoy Recoveries

3 operational buoys recovered in last 12 months

- MetService buoy found Queensland Oct 10 – redeployed Dec
- GDC buoy found NZ east coast Feb 11 – redeployed in March
- 1 Marlin-Yug Argos3 buoy found west Auckland July 11 – to be redeployed
- All were evaluated and tested before redeployment



Summer Deployments 11/12



- Planning underway for the Oct - Mar deployment period
- 5 SVP and 5 SVPB recently deployed by KAHAROA during ARGO12
- Plan to deploy 15 Upgrades + 10 GDC buoys into Southern Ocean
- Possibly assist with ships for IR deployments in South Pacific

Future Challenges



- Regain confidence in buoy performance + quality
- Restore Tasman Sea + Island Buoy network
- Find suitable ships to deploy in Southern Ocean
- Continue to seek improvements to barometer spiking issue
- Gain more experience with IRIDIUM buoys
- Monitor the Argos3 + Iridium Pilot Project outcomes
- Monitor progress on wave measurement from buoys

Questions?