

AOML Data Buoy (ADB) Comparison Study and Submergence VS. Strain Gauge Sensor Evaluation

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AOML Data Buoy (ADB) Comparison Study

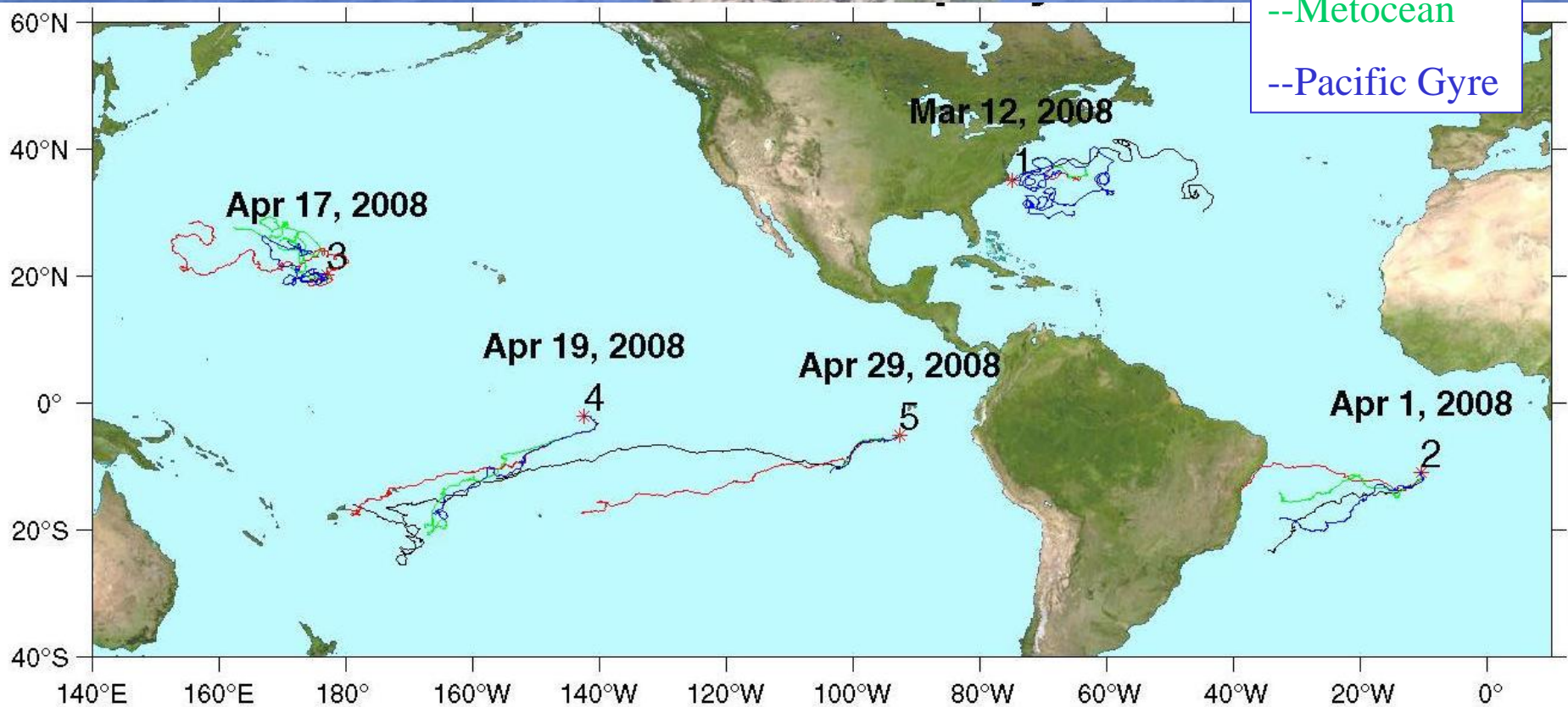
- The Global Drifter Program deployed five clusters of four SVP drifters, one each from **Clearwater**, **Technocean**, **Metocean**, and **Pacific Gyre**, in different oceans of the world, continuing a comparison study started in 2005.
- With data collected for over 1 year from the last deployment in 2008, we have evaluated how well these particular drifters' transmitters are surviving to the design lifetime of 450 days, how well we can detect drogue presence and how long are drogues lasting compared to the expected lifetime of 300 days.

ADB 2008 Cluster Deployments

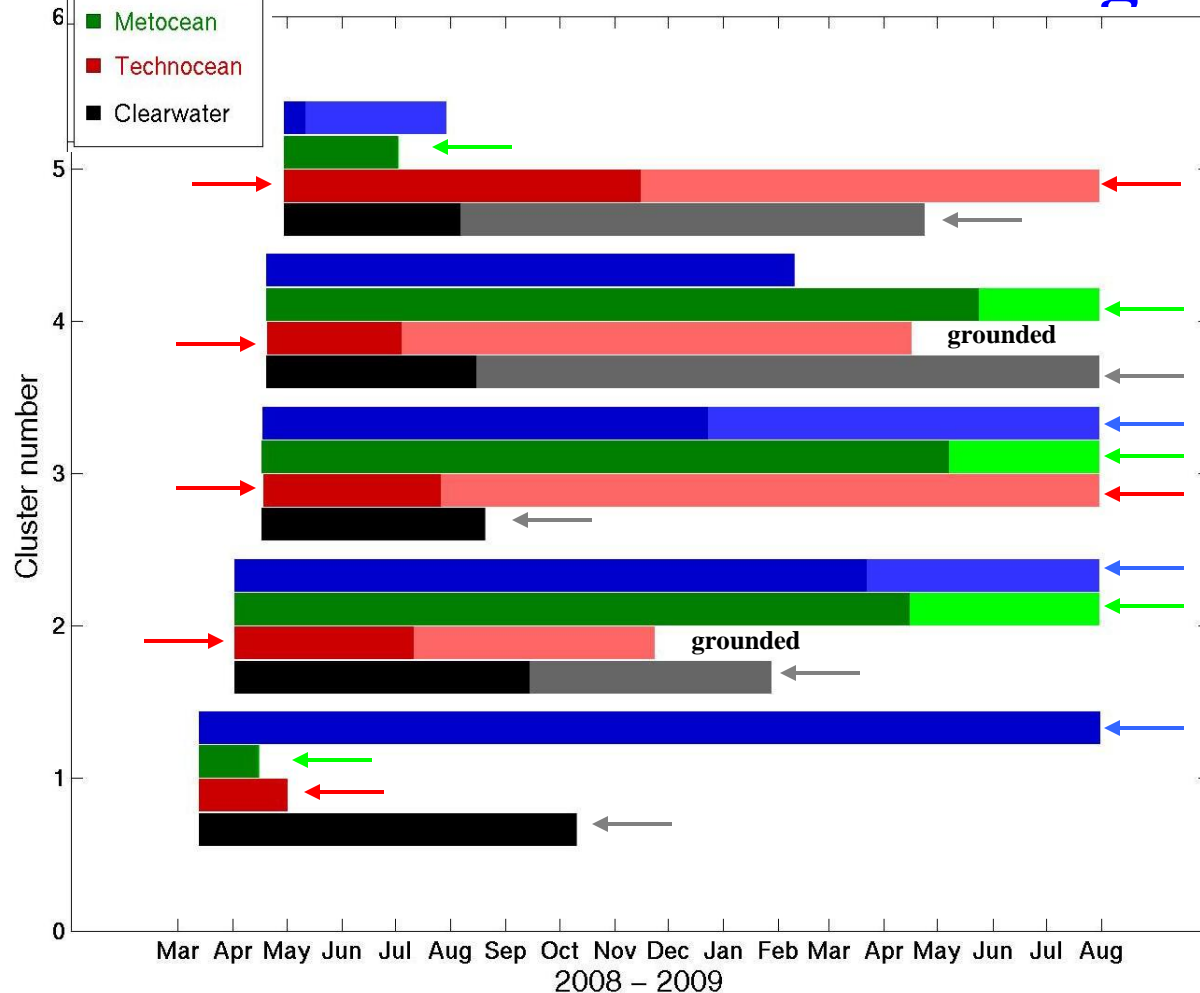
* Indicates cluster deployment location



-- Clearwater
--Technocean
--Metocean
--Pacific Gyre



Transmitter and drogue lifetimes



Latest update: July 31, 2009

Lighter shades of colors indicate transmitters' life

Darker shades of colors indicate drogues' life

Pacific Gyre and Metocean drifters had the best lifetime performance: 3 out of 5 each still alive after >450 days

Clearwater drifters died more rapidly, only one is still alive after >450 days.

None of the drifters failed on deployment but two from Metocean and one from Technocean ceased transmitting in less than three months.

Two Technocean drifters ran aground. Two still alive.

Four of Technocean drifters lost their drogues before dying, with a mean drogue lifetime of 120 days.

Both Metocean and Pacific Gyre had large average drogue lifetime

Summary Table of Transmitters' Life Times (days)

9 alive (passing life expectancy of 450 days, 11 dead)

Clusters

Manufacturers	1	2	3	4	5
Clearwater	212 (Quit)	301 (Quit)	125 (Quit)	*	359 (Quit)
Technocean	50 (Quit)	236 (Gr)	*	361 (Gr)	*
Metocean	34 (Quit)	*	*	*	64 (Quit)
Pacific Gyre	*	*	*	296 (Quit)	91 (Quit)
Max. Days Possible	506	485	469	467	457

* = OK until last update,
July 31, 2009

Clearwater:

One transmitter alive, four quit after 125, 212, 301, 359 days.

Technocean:

Two transmitters alive, one died after 50 days, two grounded after 236 and 361 days.

Metocean:

Three transmitters alive, two quit after 34 and 64 days.

Pacific Gyre:

Three transmitters alive, two quit after 91 and 296 days.

Summary Table of Drogues' Life Times (days)

(drogue life expectancy is 300 days)

Clusters

<i>Manufacturer</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Clearwater	212* (Quit)	166	125* (Quit)	119	99
Technocean	50* (Quit)	101	100	75	200
Metocean	34* (Quit)	379	385	400	64* (Quit)
Pacific Gyre	*	354	250	296* (Quit)	12
Max. Days Possible	506	485	469	467	457

Clearwater:

Two drogues attached until transmitter quit, three drogues lost after 99, 119 and 166 days.

Technocean:

One drogue attached until transmitter quit at 50 days, other drogues lost after 75, 100, 101 and 200 days.

Metocean:

Two drogues attached when transmitter quit, 3 drogues lost after 379, 385 and 400 days.

Pacific Gyre:

One drogue still attached after 506 days, 1 attached when transmitter quit and 3 drogues lost after 12, 250 and 354 days.

*** = OK until last update,
July 31, 2009 (or drifter death)**

SST Summary- All good except:

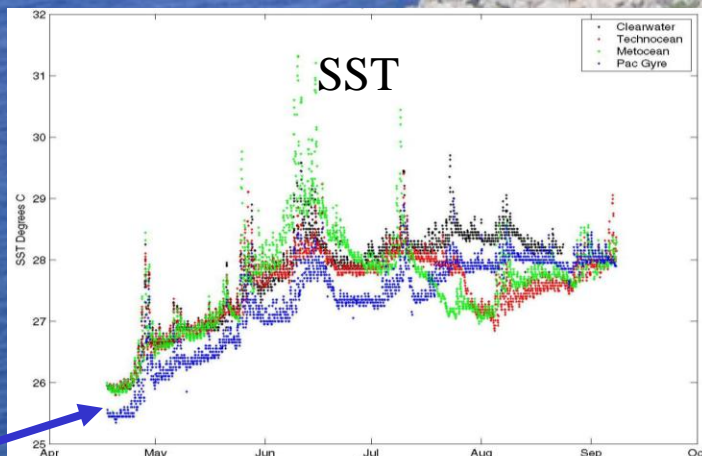
Pacific Gyre:

- One SST sensor failed after 30 days in the water.
- One drifter had SST too cold by 0.45° (confirmed that correct coefficient was being used).

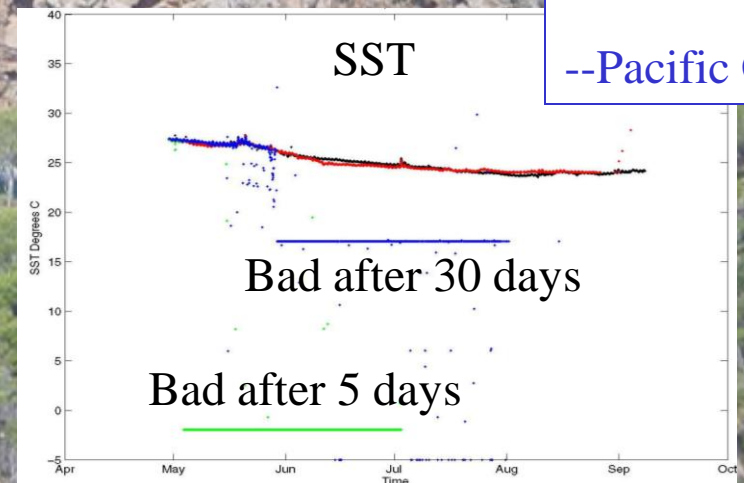
Metocean:

- One SST sensor failed after 5 days in the water.

- Clearwater
- Technocean
- Metocean
- Pacific Gyre

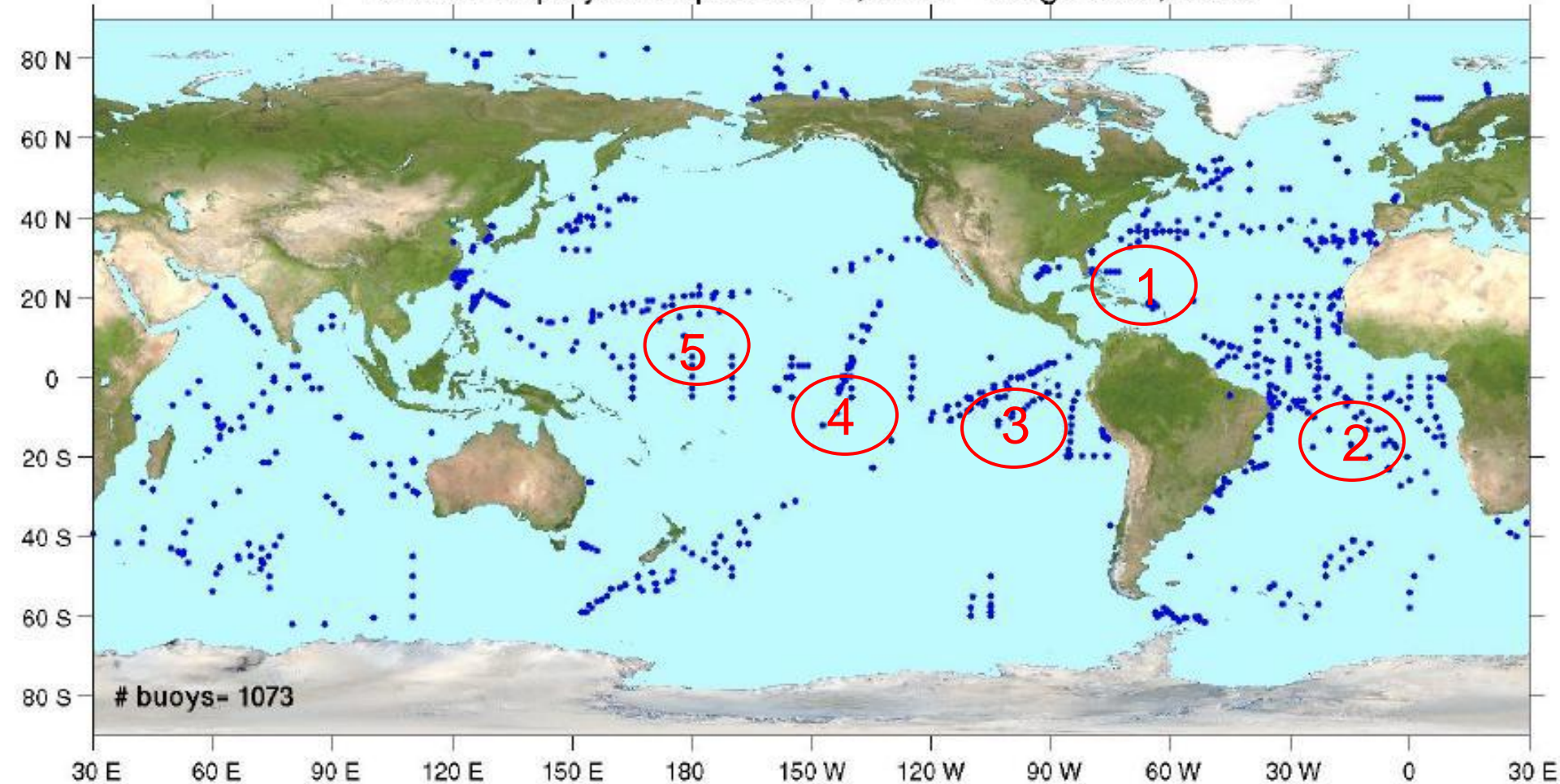


0.45 offset was added to correct SST



Plans for 2010 ADB Comparison Study Deployment Locations

Drifters Deployed September 1, 2008 – August 31, 2009



Submergence VS. Strain Gauge Sensor Evaluation

