

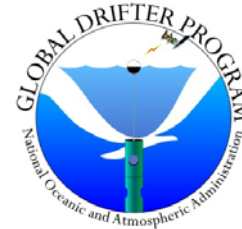
# ADB Comparison Study, Argos-3, Iridium

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NOAA/AOML/GDP

Miami, Florida

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Geneva, Switzerland

# **AOML Drifter Buoy (ADB) Comparison Study**

Compare drifters from different manufacturers, deployed in clusters (at the same time and at the same location), in different regions of the world.

The goals of the ADB Comparison Study are:

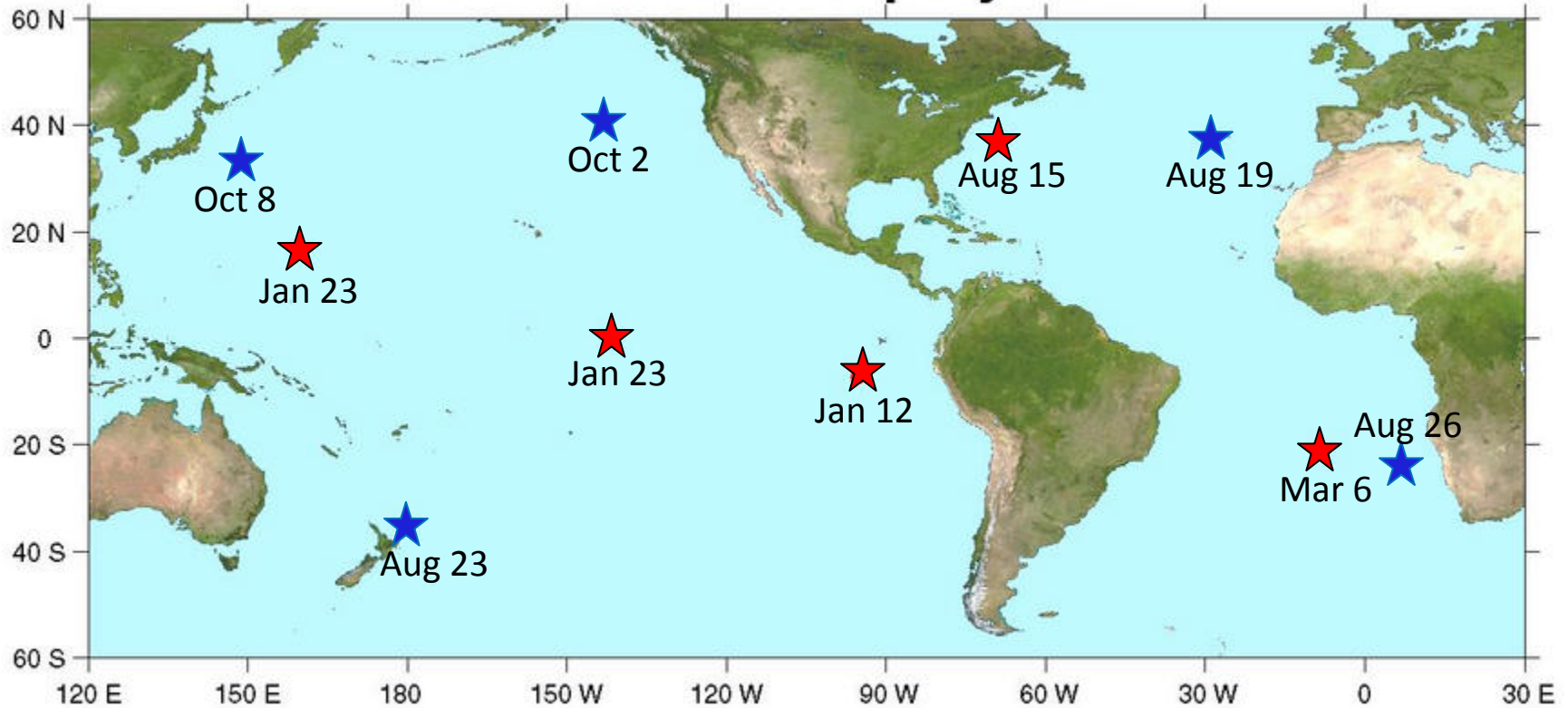
- Determine how well drifter transmitters are surviving in varying ocean conditions.
- Compare actual transmitter lifetimes to the 450 day requirement.
- Examine drogue presence detection.
- Determine drogue lifetimes and compare this finding to the expected lifetime of 300 days.
- Evaluate packaging and ease of deployment.

# The History of the ADB Comparison Study



- 2005** – 8 clusters were deployed in the Atlantic, all SVPs
- 2006** – 8 clusters were deployed in the Atlantic, all SVPs
- 2008** – 5 clusters of SVPs, in different regions of the world
- 2010** – 5 clusters of SVPs from 4 manufacturers and  
5 clusters of SVPBs from 5 manufacturers

# 2010 Cluster Deployments



5 clusters each of 4 SVP drifters from 4 different manufacturers, total 20 drifters

5 clusters each of 5 SVPB drifters from 5 different manufacturers, total 25 drifters

# SVP Clusters

Cluster	1	2	3	4	5
<b>Manufacturer</b>					
<b>Clearwater</b>	261 111	227 135	473 254	7 7	<b>381*</b> 108
<b>Technocean</b>	294 72 delayed 32 d	F.O.D	F.O.D	85 85	F.O.D
<b>Metocean</b>	<b>596*</b> 66	502 502	<b>585*</b> 114	<b>543*</b> 170	194 66
<b>Pacific Gyre</b>	<b>596*</b> <b>596*</b>	90 90	297 297 grounded	<b>543*</b> 400	91 91
<b>Max. Days Possible</b>	<b>596</b>	<b>585</b>	<b>585</b>	<b>543</b>	<b>381</b>

Top number: Transmitter life, Bottom number: Drogue life

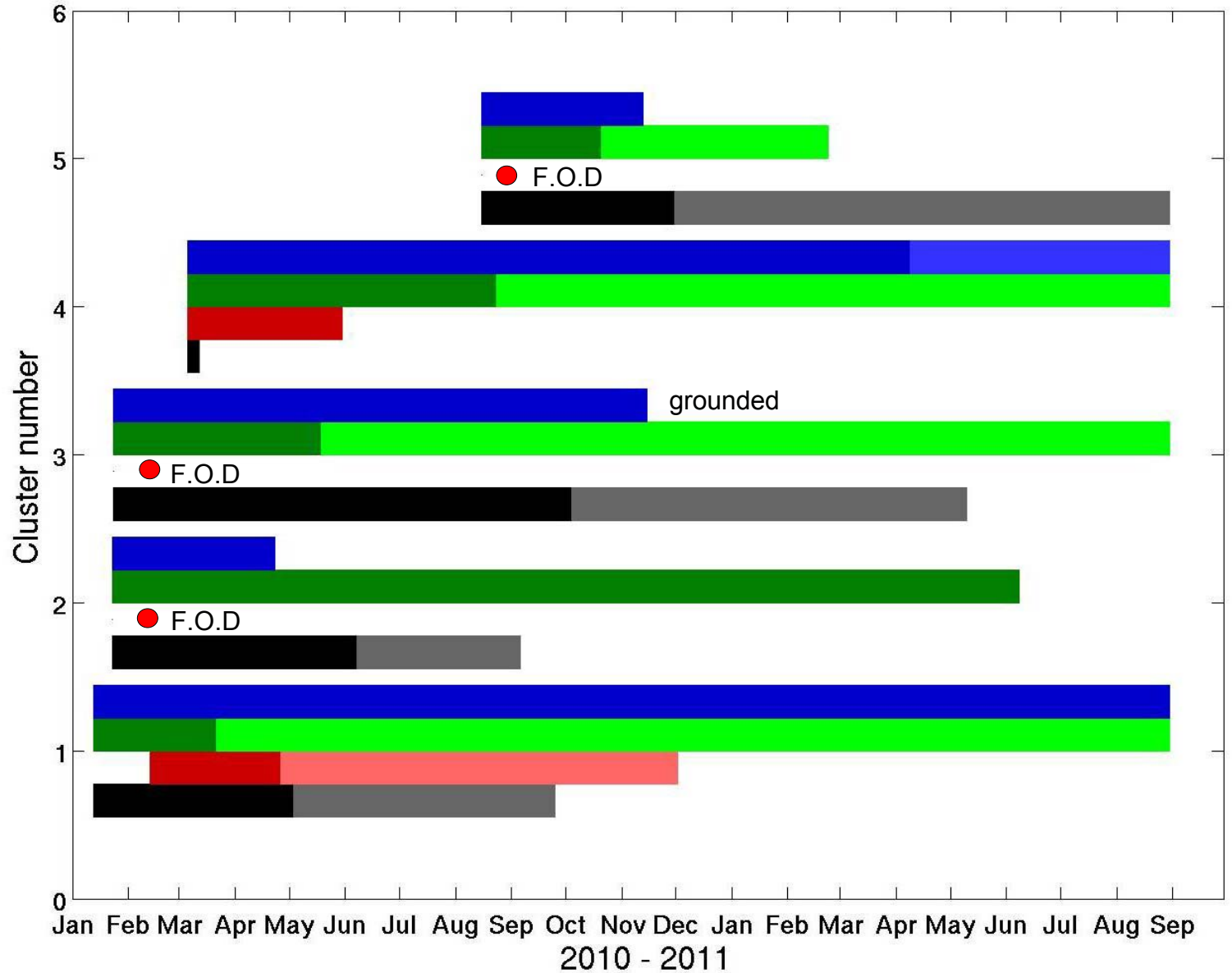
\* Alive or drogue on

Last updated: August 31, 2011

# SVP Clusters

Transmitter and drogue lifetimes, ADB 2010

- Pacific Gyre
- Metocean
- Technocean
- Clearwater



# SVPB Clusters

Cluster	1	2	3	4	5
<b>Manufacturer</b>					
<b>Clearwater</b>	92 92 Delayed 11 d	9 9 Delayed 2 d	370* 101 Delayed 10 d	F.O.D	F.O.D
<b>Technocean</b>	49 49	157 98	210 108	187 68 grounded	86 86 Delayed 17 d
<b>Metocean</b>	196 90	232 53	366 47	245 72	34 34
<b>Pacific Gyre</b>	377* 377*	181 68 grounded	370* 370*	333* 136	327* 244
<b>Marlin-Yug</b>	377* 377*	373* 69	370* 230	F.O.D	F.O.D
<b>Max. Days Possible</b>	<b>377</b>	<b>373</b>	<b>370</b>	<b>333</b>	<b>327</b>

**Top number: Transmitter life, Bottom number: Drogue life**

**\* Alive or drogue on -- Last updated: August 31, 2011**

# SVPB Clusters

Transmitter and drogue lifetimes, ADB 2010

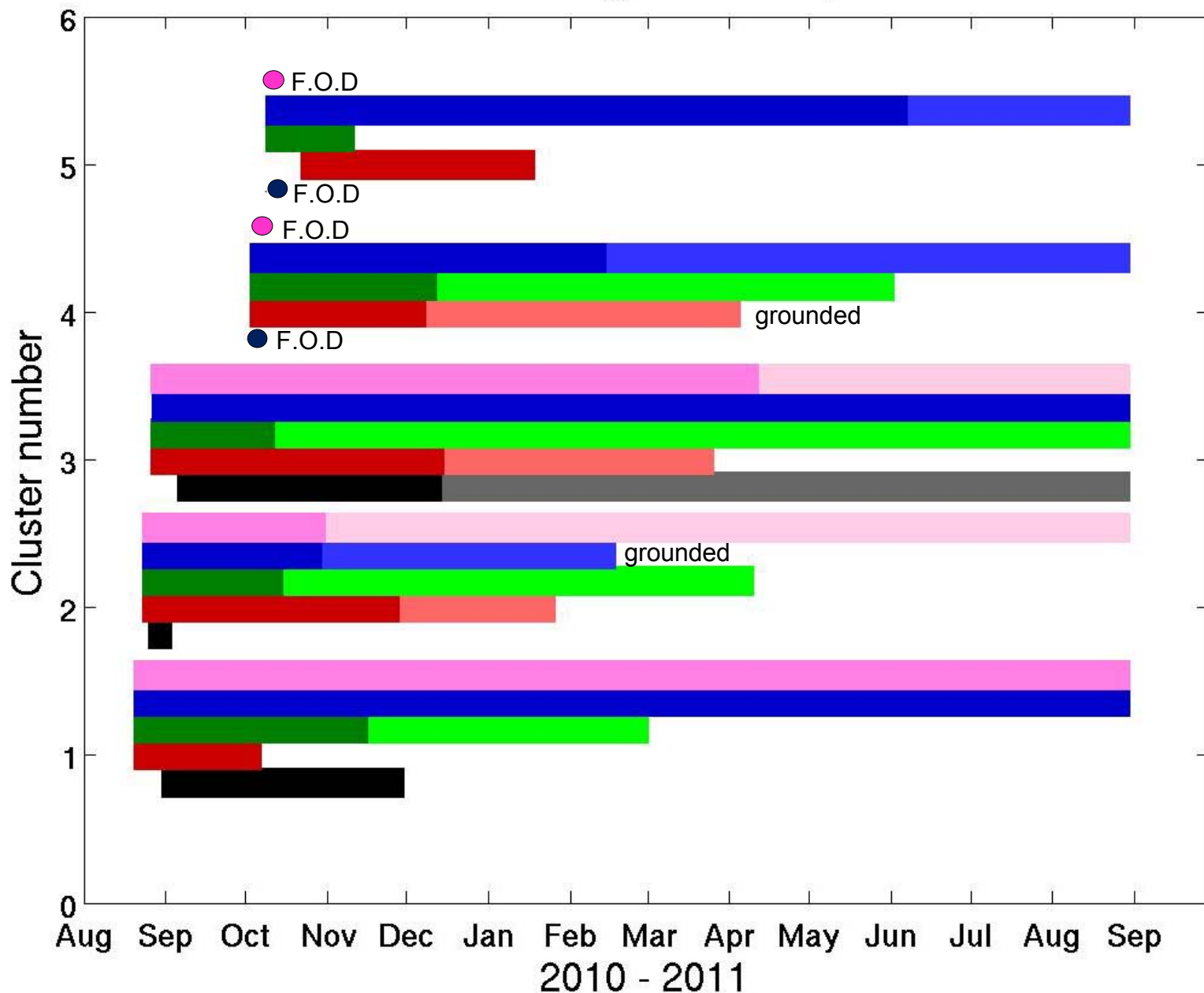
-- Marlin-Yug

-- Pacific Gyre

-- Metocean

-- Technocean

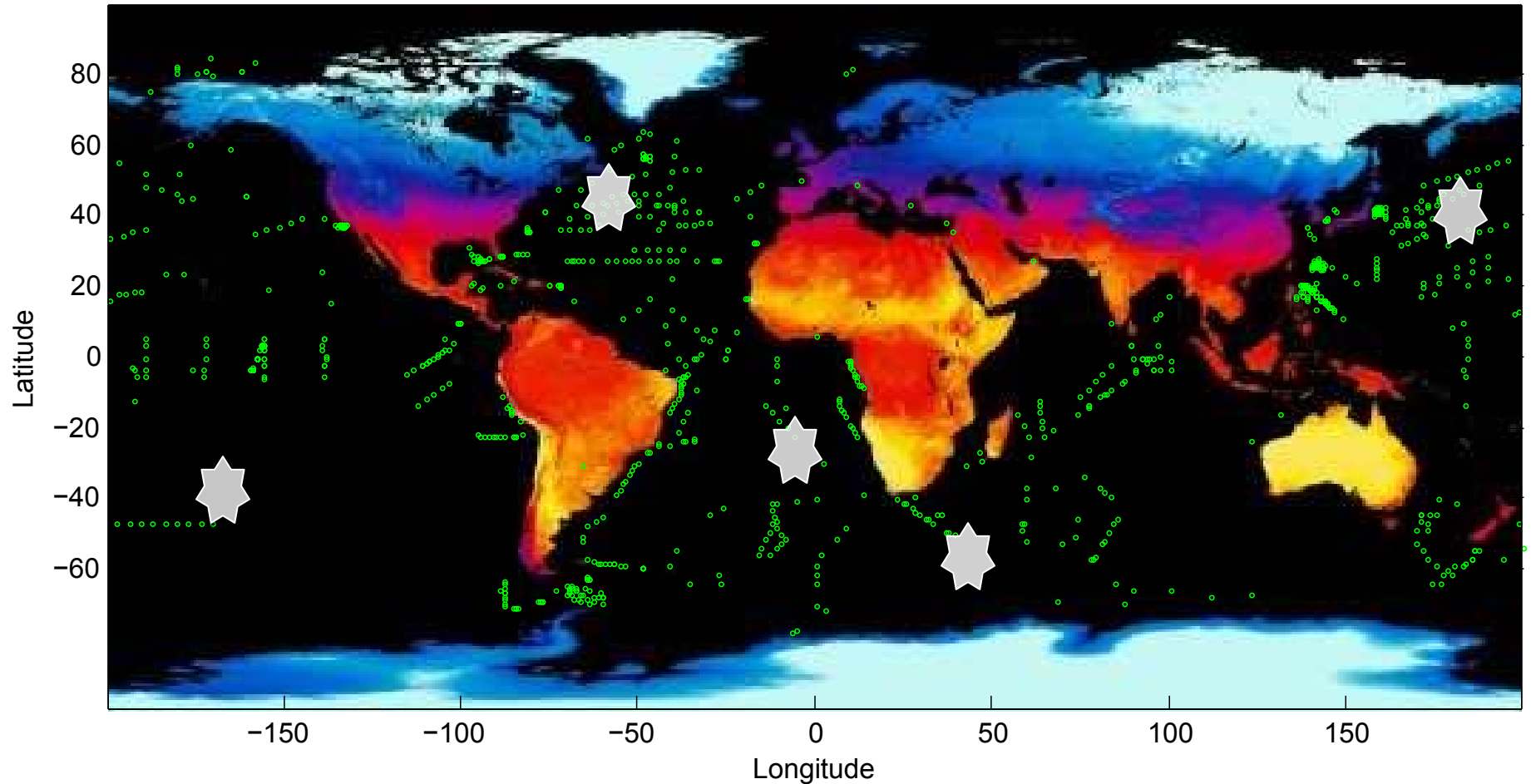
-- Clearwater





# 2011 ADB Cluster Deployment Plan

2011 Yearly Deployments  
(July 1, 2010 to June 30, 2011)



Total Deployments = 1030

# Additional Testing in 2011

- **What/Why:**

Test new and “old” drifters manufactured by Technocean, as well as test refurbished drifters manufactured by Clearwater.

- **When:**

January 11, 2011

- **Where:**

Gulf Stream, off the coast of Miami, FL



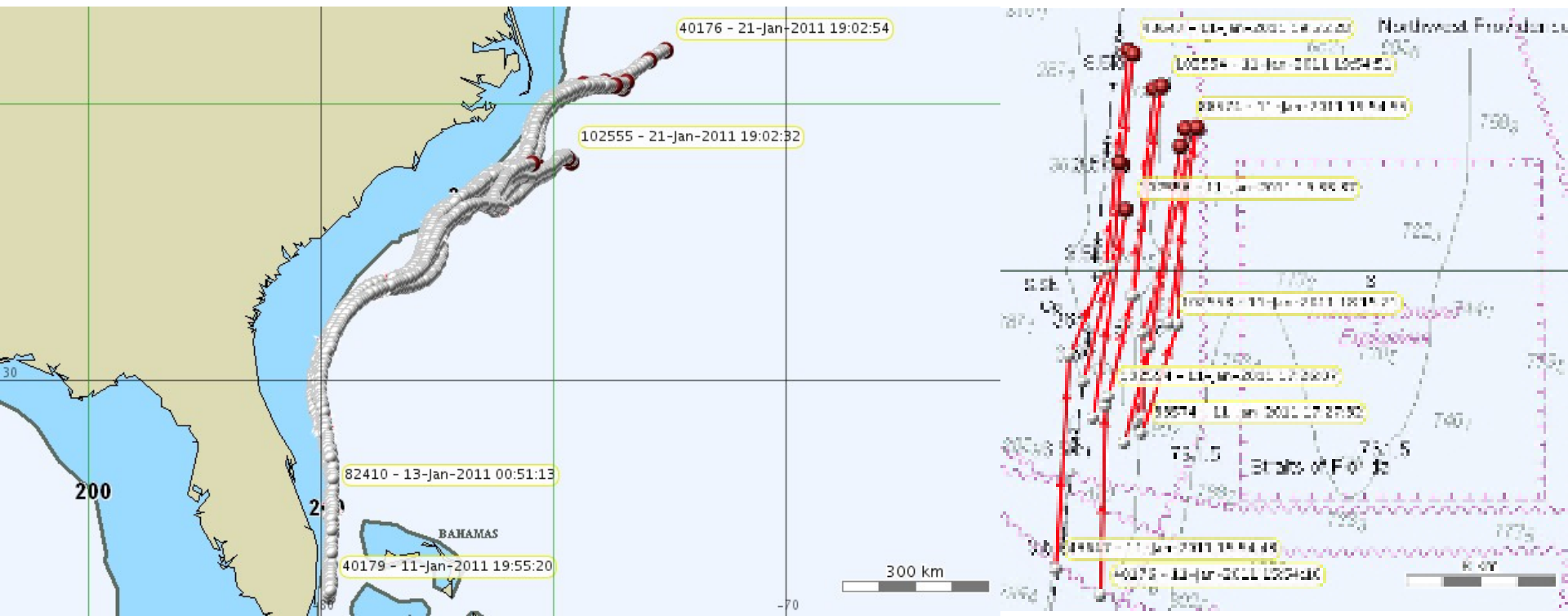
## Deployed:

- 6 “new” Technocean SVPB’s
- 3 “old” Technocean SVPB’s
- 6 refurbished Clearwater SVP’s
- 1 Metocean SVP



# Key Factors:

- Activation magnets were removed prior to deployment.
- Water soluble tape around the drogue and tether were removed to ensure drogues deployed, reduce the chances of buoys running aground.
- Deployments were made in pairs and trios.



# Results

Cluster	1	2	3	4	5	6
<b>Technocean</b> "old" -SVPB		40176 249* 249	40294 249* 133		40179 10 9	
<b>Technocean</b> "new" -SVPB	102553 249* 34	102554 207 207	102558 107 85	102555 34 34	102557 249* 46	102556 39 39
<b>Clearwater</b> -SVP	43647 249* 82	38595 186 68	43572 172 112	82410 121 59	82413 249* 249	82447 249* 140
<b>Metocean</b> -SVP			88574 249* 05			

Max. Days Possible = 249 days  
(as of 02 September, 2011)

Top number: Transmitter life, Bottom number: Drogue life  
\* Alive or drogue on

# Argos-3 Drifters

- There was a total of 24 Argos-3 drifters deployed from August 2010 through April 2011, all processed at AOML.
- All SVPB with no GPS
  - 9 Clearwater
  - 8 Marlin-Yug
  - 7 Pacific Gyre

# Argos-3 -- Summary Table as of August 31, 2011

## Manufacturer: Clearwater

Argos-3 ID	Man	Type	Days alive	Days Drogue on
82542	C	SVPB	595*	425
82544	C	SVPB	236*	236*
82583	C	SVPB	F.O.D	F.O.D
82545	C	SVPB	8	8
82546	C	SVPB	22	13
82547	C	SVPB	F.O.D	F.O.D
82549	C	SVPB	147*	24
82584	C	SVPB	F.O.D	F.O.D
82585	C	SVPB	147*	94

- A total of 9 SVPB Clearwater Argos-3 drifters were deployed in 2011
- 3 failed on deployment
- 4 are still alive, one of them with the transmitter still alive after 595 days
- One had drogue on for 425 days, and another one has drogue still on after 236 days

\* Star and green color mean transmitter is working, or drogue is on

# Argos-3 -- Summary Table as of August 31, 2011

Manufacturer: Marlin-Yug

Argos-3 ID	Man	Type	Days alive	Days Drogue on
41803	M	SVPB	354*	170
41882	M	SVPB	289 gr	3
42957	M	SVPB	303*	145
42961	M	SVPB	362*	186
42965	M	SVPB	168 gr	168
42973	M	SVPB	362*	329
42964	M	SVPB	F.O.D	F.O.D
41885	M	SVPB	F.O.D	F.O.D

- 8 Argos-3 drifters from Marlin-Yug were deployed between August – November 2010
- 2 failed on deployment and 2 ran aground after 289 and 168 days
- 4 are still alive after more than 300 days
- 4 had drogues on close to 6 months, with one drogue lasting only 3 days, and another one lasting 329 days

\* Star and green color mean transmitter is working, or drogue is on



# Argos-3 -- Summary Table as of August 31, 2011

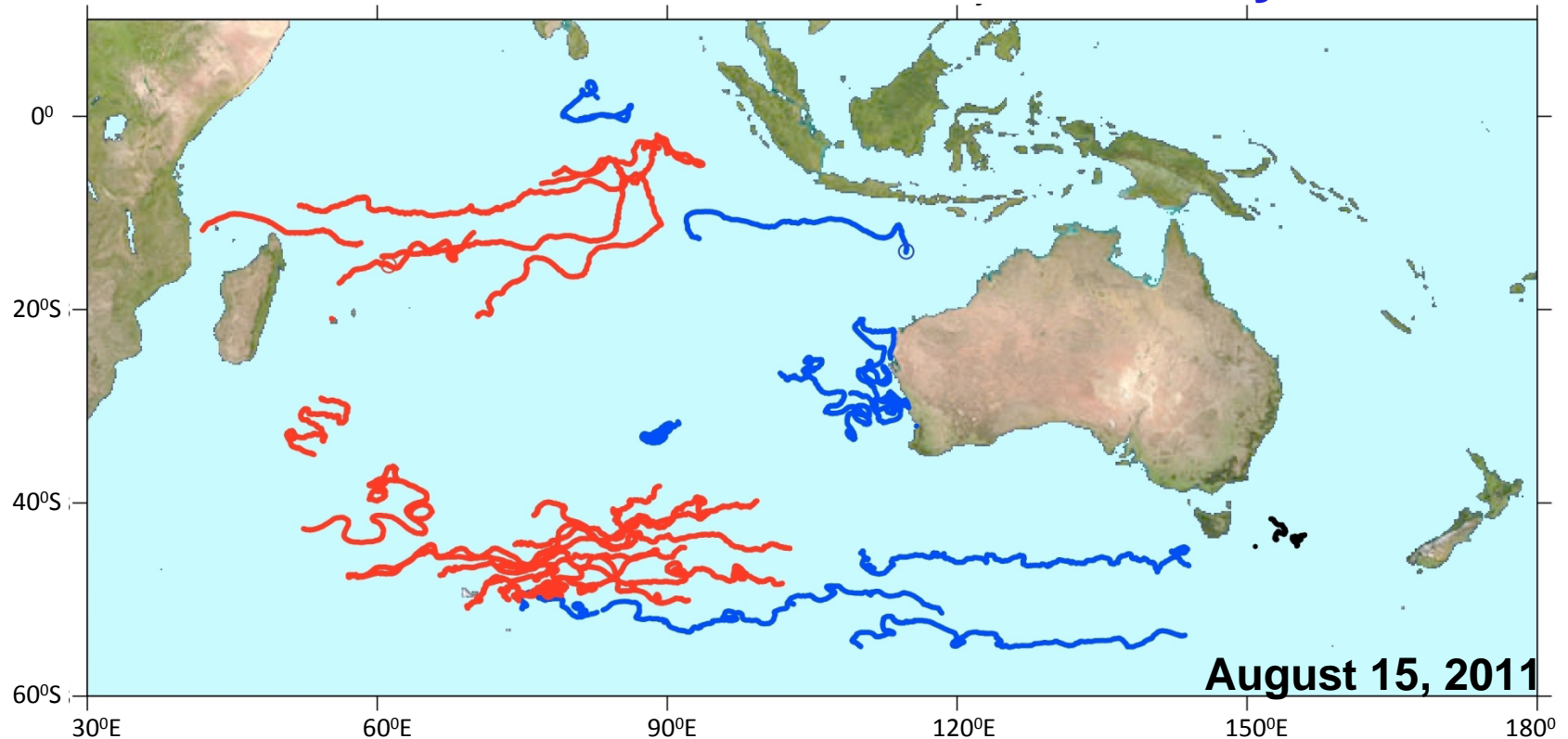
## Manufacturer: Pacific Gyre

Argos-3 ID	Man	Type	Days alive	Days Drogue on
42716	PG	SVPB	181*	170
42737	PG	SVPB	30	0
42750	PG	SVPB	181*	178
42755	PG	SVPB	182*	83
42757	PG	SVPB	180*	56
42758	PG	SVPB	240*	240*
42759	PG	SVPB	181*	112

- 7 Argos-3 drifters from Pacific Gyre were deployed in 2011
- 1 SST sensor lasted only 97 days
- none failed on deployment and 1 died after 30 days
- 6 are still alive after 180 days
- One has drogue on after 240 days

\* Star and green color mean transmitter is working, or drogue is on

# Metocean Iridium Drifters Processed by AOML



- AOML: 19 deployed between February – July 2011
  - 1 died after 13 days, all others are still alive
- New Zealand: 2 deployed in July both are alive and with drogues on
- Australia: 11 deployed between December 2010 – July 2011
  - 3 grounded after 28, 93 and 94 days, 1 died after 113 days
  - 2 died between 181-210 days and 2 died between 241-270 days
  - 3 are still alive, 1 deployed in April (> 120 days) and 2 in May (> 90 days)

Note: AOML drifters were upgraded by Meteo-France and DBCP

# Iridium Drifters Processed by AOML through August 15, 2011

## Drogue life

Days	0-30	31-60	61-90	91-120	121-150	>300 Still ON	Total
<b>AOML</b>	2*	1	6	7		3	19
<b>ABOM</b>	1**	4***	2	1	1	2	11

Number of buoys

\* 1 died with drogue on after 13 days, 1 had drogue off since the beginning

\*\* 1 grounded with drogue on after 28 days,

\*\*\*2 were grounded with drogue on

Manufacturer: Metocean. All drogues are strain gauge

*Drogue life needs improvement!*

# Iridium Drifters Processed by AOML

- **SST** had no problems
- **SLP**: Two AOML drifter's pressure sensors went bad and taken off GTS after 5 months
- **Voltage**: Voltage drops to near or below 10 volts after 6 months of operation
- Metocean communicated that a new Iridium SVP will be released by mid 2012 with a larger hull with ruggedized tether/drogue assembly, more batteries, etc. They believe the smaller hull configuration is just not suitable for the existing mini-SVP design

A vibrant sunset scene over a calm ocean. The sun is a bright, glowing orb on the horizon, casting a shimmering path of light across the water. The sky is filled with soft, golden clouds and numerous birds in flight, scattered across the upper half of the frame. The overall mood is peaceful and grateful.

THANK YOU!

MERCI!

GRACIAS!