

# OceanSITES

Taking the pulse of the global ocean

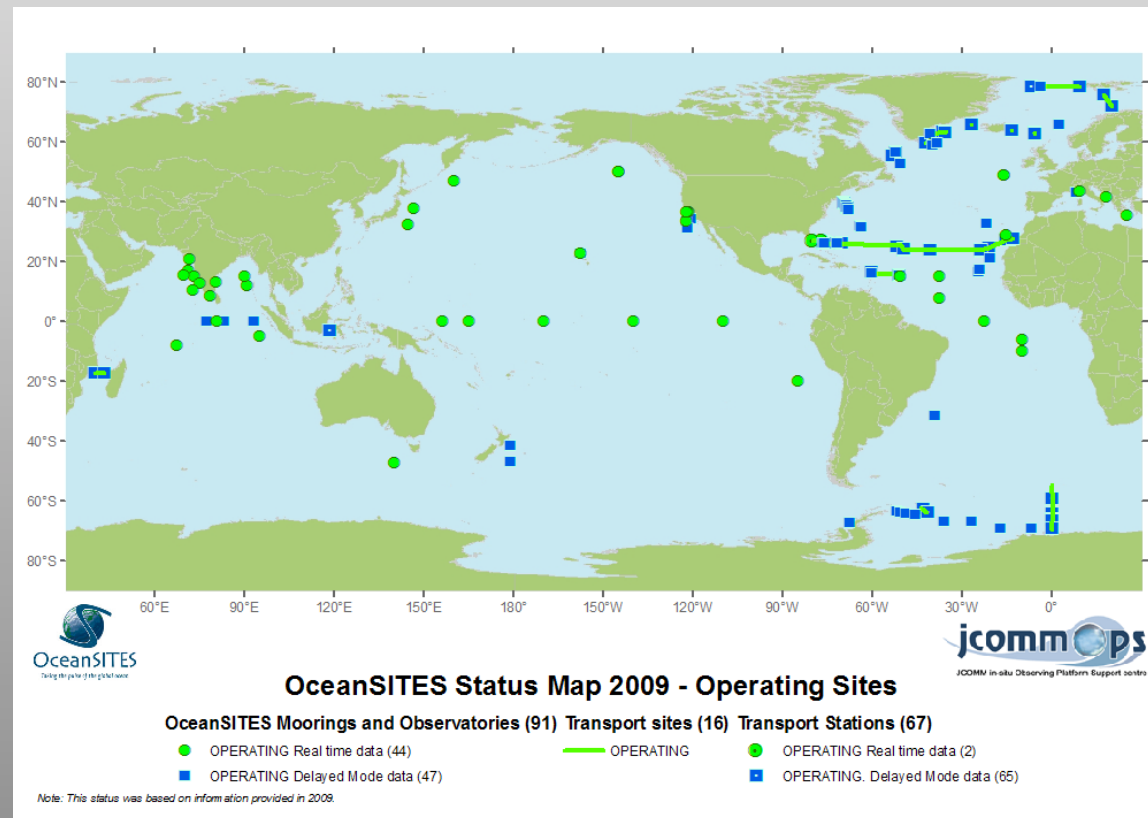
DBCP 26 Oban, Scotland, Sept 2010



Continuous measurements from  
the deep ocean in real time

## ... a global network of FIXED open-ocean sites, which

- collect timeseries of atmospheric, physical, biogeochemical, or ecosystem variables
  - are sustained or planned to be sustained
    - use mooring or ship-board (min. monthly) or cable or glider observations
      - share data freely and in real-time/with minimum delay
        - want to cooperate to be part of the network



## **2009-2010 milestones**

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- **2010 Data Management Team meeting in Paris, data management progress**
- **OceanObs09 – affirmation of sustained time series as a component of the global ocean observing system**
- **Venice OceanSITES meetings Sept 2009**
- **Exemplar international commitments**

## 2009-2010 Data Management

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4<sup>th</sup> face to face meeting in Paris 2010, monthly virtual meetings

Users Manual 1.2 – which makes major updates to the file names, directories and format of OceanSITES Data Management files. New 1.2 format on line fall 2010.

Confirmed a file name convention: OS\_XXX\_YYY\_T<\_PARTX>.nc

where

OS - OceanSITES

XXX - Platform code from the OceanSITES catalogue

YYY - Deployment code (unique code for deployment - date or number)

T - Data Mode (R: Real-Time, P: Provisional, D: Delayed Mode, M: Mixed)

<\_PARTX> - User defined field for identification of data (Parameters or nature of data)

Previous definitions of parameter names (TSVU etc) are now made optional and placed in the PARTX descriptor at the PI/DAC discretion.

Finalized the directory structure for the OceanSITES data.

Definitions of terms were developed and approved: Site, Platform, Deployment, Array

OceanSITES data providers and DACs described their data holdings and discussed observations that would be sent to the OceanSITES GDAC over the next year.

## OceanObs'09: Vision

Provision of routine and sustained global information on the marine environment sufficient to meet society's needs for describing, understanding and forecasting marine variability (including physical, biogeochemical, ecosystems and living marine resources), weather, seasonal to decadal climate variability, climate change, sustainable management of living marine resources, and assessment of longer term trends

## Venice OceanObs 09 meeting

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### Plenary Papers

- Sustained Eulerian Observatories – Richard Lampitt and Paolo Favalli
- In-situ Observing System – Uwe Send

### Community White Papers

- Observations to Quantify Air-Sea Fluxes and Their Role in Climate Variability and Predictability – C. Fairall et al.
- OceanSITES – Uwe Send et al.
- Monitoring Ocean - Atmosphere Interactions in Western Boundary Current Extensions – M. Cronin et al.

### Contributions

- Verification of Numerical Weather Prediction Marine Meteorology using Moorings: An OceanSITES Application - Eric Schulz

## Venice OceanSITES meetings

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### 7<sup>th</sup> steering team meeting before OceanObs09

- site approval process
- integration of biogeochemical data
- agreement to share carbon data in real time
- new executive committee

Uwe Send, Bob Weller co-chairs

Thomas Trull

Makio Honda

Vsn Murty

Richard Lampitt

Doug Wallace

Tony Knapp

Hestor Viola

Bill Burentt

Silvie Pouliquen

Thierry Carval

**Minimum set of sensors to have global impact for all disciplines:**

1. met sensors
2. Surface T/S and thermistors for mixed-layer depth resolution
3. 0-1500m T/S sensors for dynamic height → transport estimates
4. Near-surface currents, minimum one at 15m
5. Surface pCO<sub>2</sub> for flux calculations
6. Dissolved O<sub>2</sub> at 5 depths for productivity and gas exchange estimates (with PCO<sub>2</sub>)
7. Nitrate at 2 depths for mechanisms of forcing/limitation
8. Downwelling radiometer at 20-30m and at surface for total biomass estimates

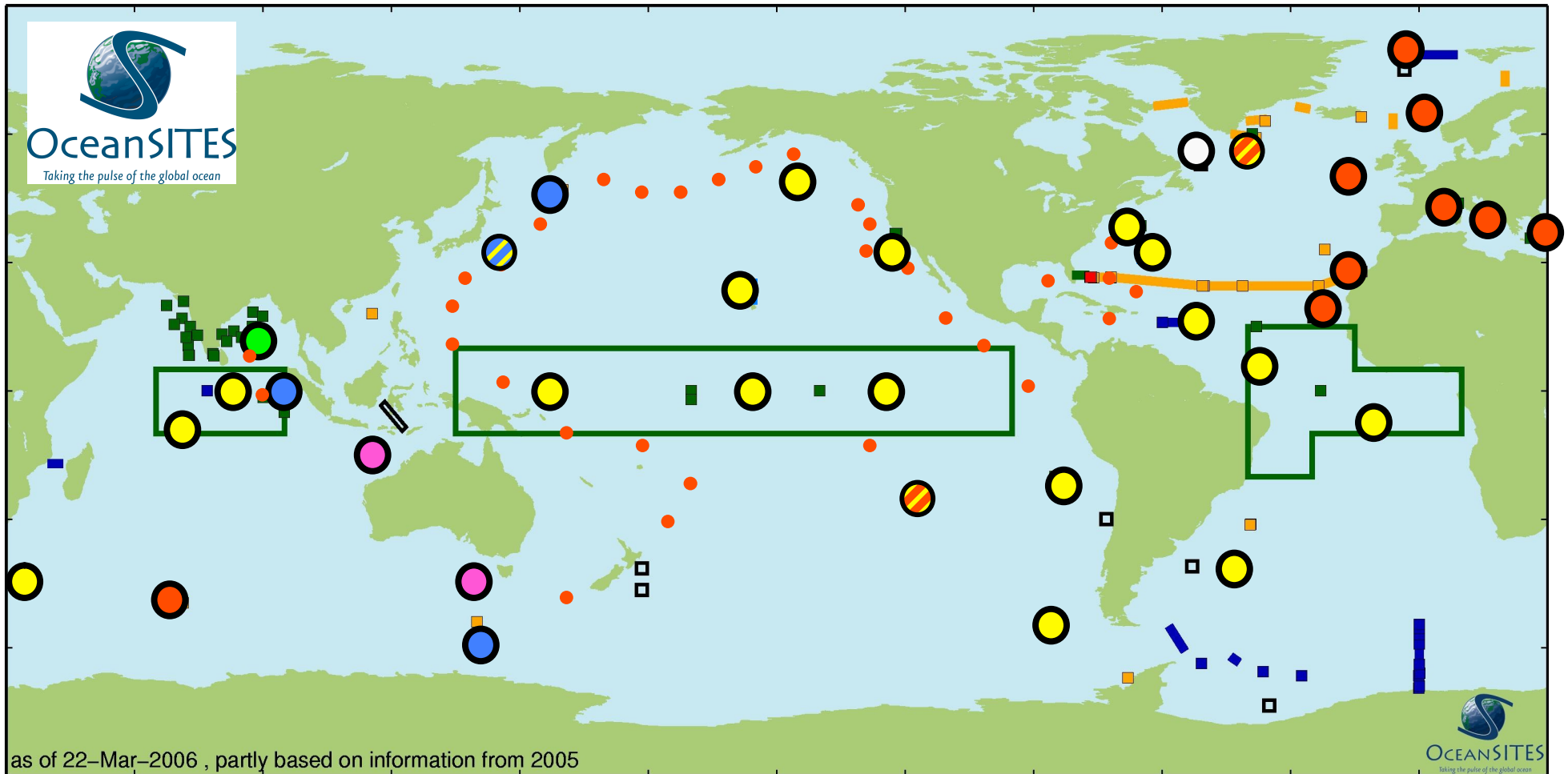
**Choose 10-20 sites that can be enhanced by adding some/all above sensors**

Typical cost: 200k\$ per site...

need about 2Mio\$ to make (initial) quantum leap



# OceanSITES vision of a multidisciplinary backbone array



● USA ● Europe ● Japan ● Australia ● India ■ OceanSITES ● DART

## 2009-2010 Exemplars of progress

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US NSF OOI

EuroSITES

Indian Ocean network

Australian Integrated Marine Observing System.

Other new sites under consideration

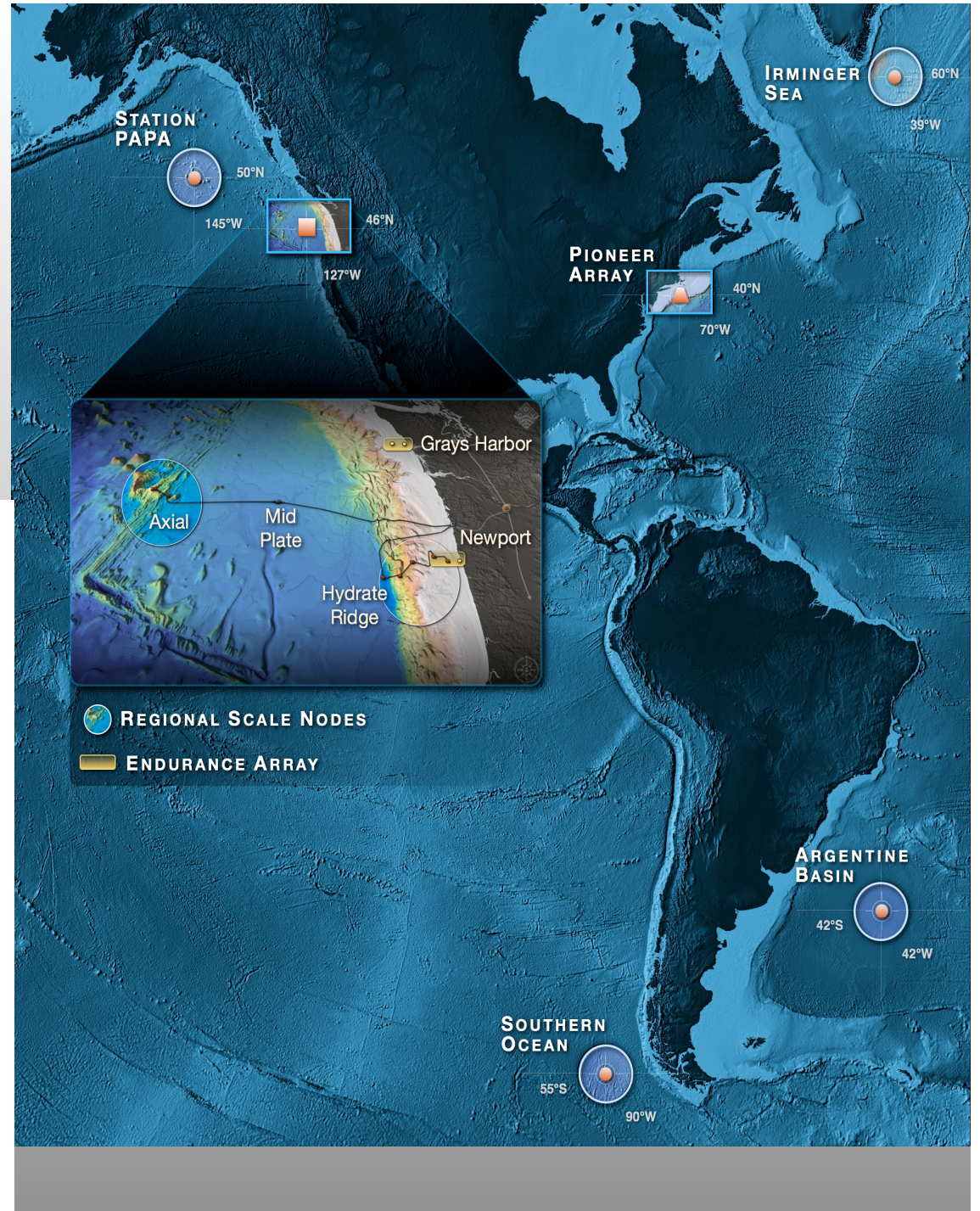
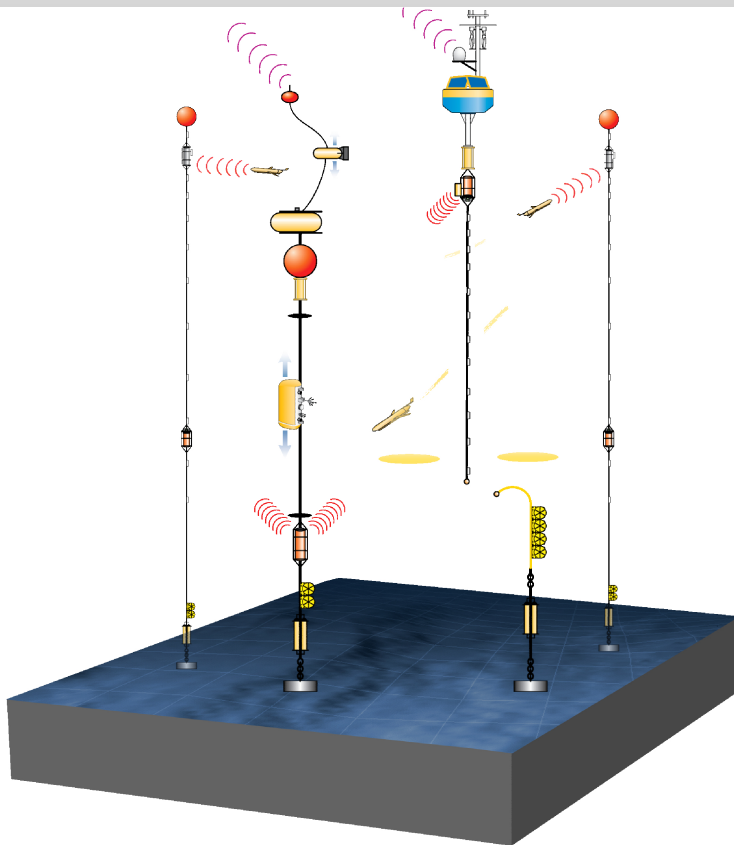
Agulhas Return Current (western boundary currents/extensions)

Indonesia – “Coral Triangle Initiative”

JAMSTEC: Plans for an Antarctic surface mooring

# OOI

Deployments begin in 2012;  
25-year support planned from US NSF.

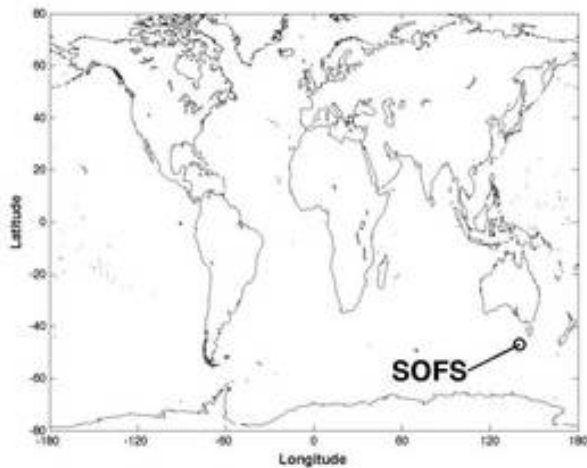
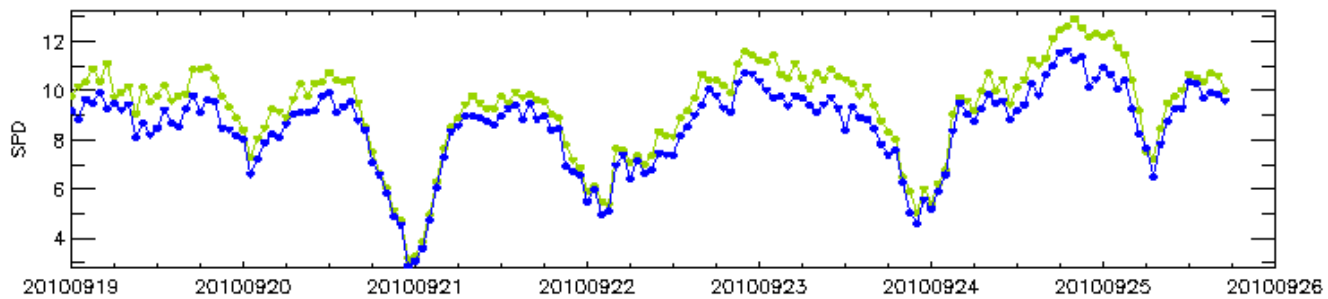




# IMOS Integrated Marine Observing System

## Southern Ocean Flux Station (46.75°S, 142°E)

SPD = **Wind speed** (m/s)



## 2009-2010 Exemplars of progress

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## Project Office

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Updating documentation to get a clearer Network status

Creating new map products to view network status

Updating websites

Updating contact details and user groups

Supporting the Data Management Team in getting data (and metadata) onto GDACs

Maintaining Site Catalog, monitoring data flows and GDAC structure

Seeking Sustained funding for the Project Office Support

## Challenges

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Sustained support for long time series stations remains a challenge, without a framework for getting long-term support for sites.

Is growing the notion of a common back-bone (same multidisciplinary observations at the same depths at a key subset of sites) the way to grow the appreciation for the impact of sustained ocean time series?

Sustained support for the project office remains a challenge.

Replacing Hester Viola.

## Hester Viola

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Many thanks, Hester!