OceanSITES Report

Kelly Stroker
OceanSITES Project Office

Uwe Send, Bob Weller
OceanSITES Co-Chairs

projectoffice @oceansites.org

OceanSITES Overview

- International network of open-ocean time series

- Time series must be long-term, research-quality, stated goal must be high temporal resolution

- Part of Global Ocean Observing System (GOOS)

- Funding of sites by individual investigator(s)

- Project office at JCOMM (under the Observations Program Area)

- The growing network now consists of over 150 OceanSITES monitoring the global ocean

OceanSITES

- Organizational structure:
  - Executive Committee
  - Science Team
  - Data Management Team

- Data flow structure (cf. Argo):
  - Principal Investigator (PI)
  - Data Assembly Center (DAC)
  - 2 Global Data Assembly Centers (GDACs: NDBC/Ifremer)

Executive Committee

Chairs:

- Uwe Send, Scripps Institute of Oceanography

- Robert Weller, Woods Hole

Members:

- Antje Boetius, Alfred Wegener Institute (*New Member**)

- Makio Honda, JAMSTEC

- Rick Lampitt, National Oceanography Centre

- Roger Lukas, University of Hawaii (*New Member**)

- VSN Murty, NIO, India

- Tom Trull, UTAS, Australia

- Doug Wallace, Dalhousie University

* New members were nominated and confirmed at the 2011 OceanSITES Meeting
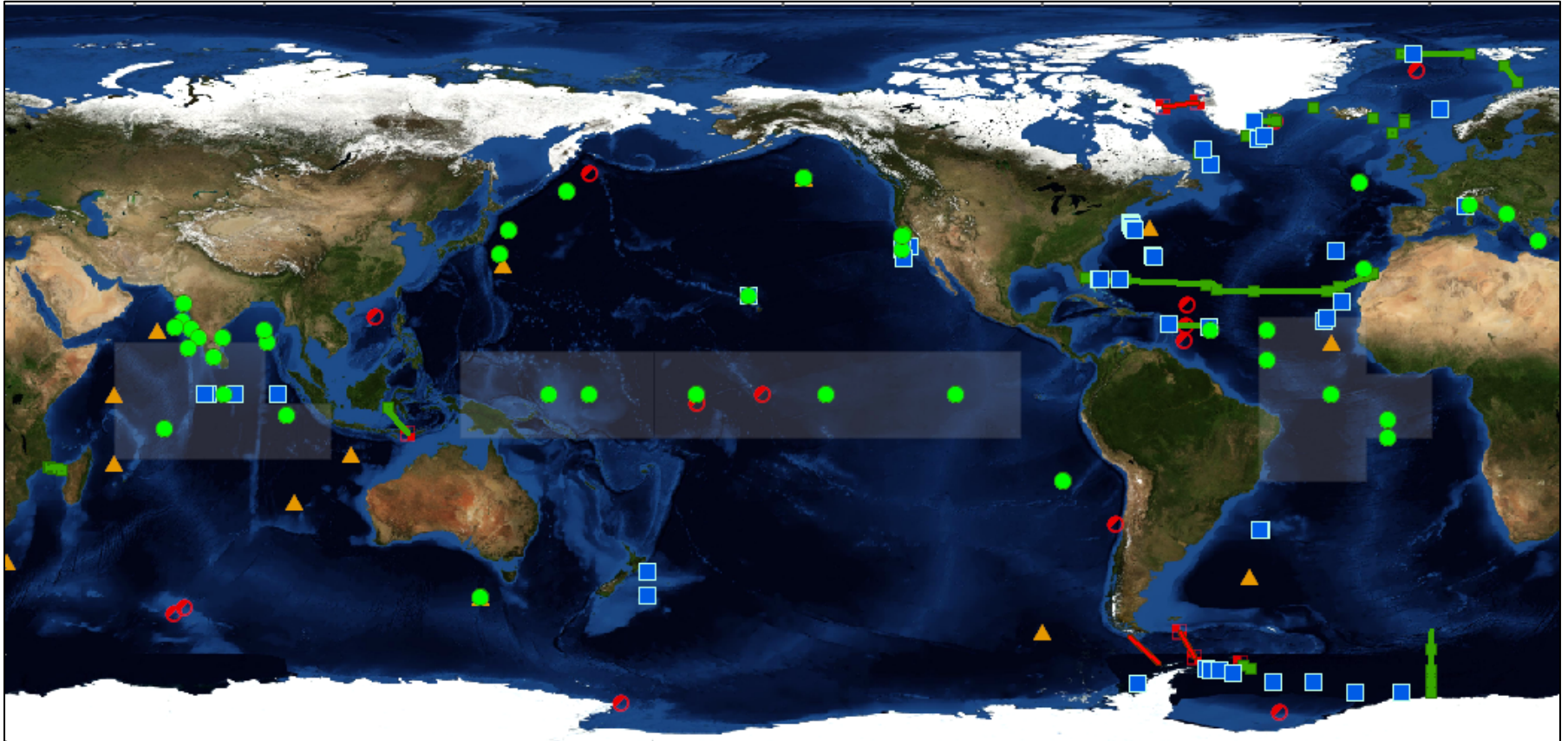
OceanSITES Achievements

- Data format well-defined
  - Site nomenclature with unique identifiers
  - Sophisticated data format description
  - Strong emphasis on metadata

- Data distribution system fully operational
  - GDACs synchronized since late 2010 / early 2011
  - > 1500 files online at GDACs
  - but only ftp-based data access at present

OceanSITES Outlook (needs refresh)

OceanSITES Status

May 2012
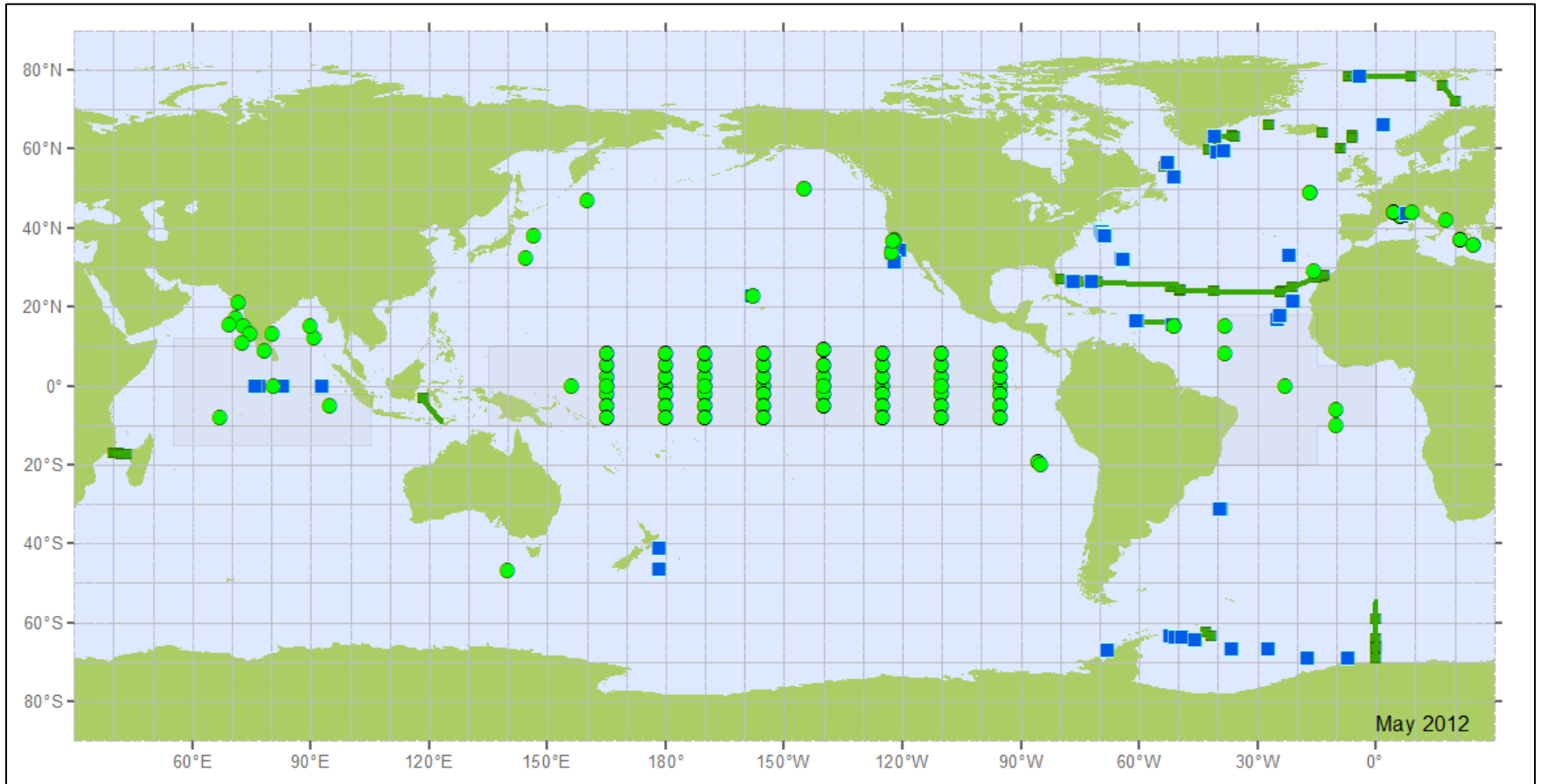
Project Office Tasks

- Provide technical assistance and support to OceanSITES members

- Follow guidance of the Co-chairs of OceanSITES.

- Assist the OceanSITES Steering Committee to:

  – ensure that data is shared and used

  – consider system resources, logistics, data delivery (real-time, delayed-mode)

  – collate documentation for new sites and ensure updates to OceanSITES maps.

  – update and contribute to website content (general information, news, etc)

- Assist the OceanSITES Data Management team to:

  – Document data sources, in a centrally accessible Metadata Catalogue

  – Develop and improve data formats

  – Assist in assigning site NAMES for the data system and ensure that data flows are correct for new sites and address any problems to GDACs and responsible parties

Progress in 2011-2012

- OceanSITES Steering Committee and Data Management Team (DMT) meetings held concurrently in December, 2011 at Scripps.

- OceanSITES website migrated to JCOMMOPS

- Progress made on new OceanSITES Google Earth layer (in conjunction with other JCOMMOPS Programs)

- The DMT started using Mantis and Alfresco for action tracking and document storage.

- DMT is working with NOAA/NGDC on ISO metadata interface to geoportal

- OceanSITES has begun discussions with NOAA/NODC and World Data Center for long-term archive

- TAO/Rama data to GDACs

- DMT drafted a generic paragraph for Scientists to use in proposals discussing the data management of OceanSITES

Ocean Acidification Community

- Good interaction with global OA community, attended international meeting in Seattle Jun'12

- Endorsed OceanSITES deepwater reference stations network (~30 OA sites – roughly 13 already have OA sensors, another 5 are expected, another 12 are recommended for global and regime coverage)

- Existing gaps: high latitudes, Labrador Sea, BATS, South Pacific gyre (e.g. near New Caledonia), need to keep Japanese site at 60S operational

- High vulnerability areas with insufficient coverage:
  - Arctic (esp. under or through ice), Southern Ocean, Coral Triangle, off Peru
  - Try to collaborate with international Antarctic vessels to operate a Pacific Southern Ocean site

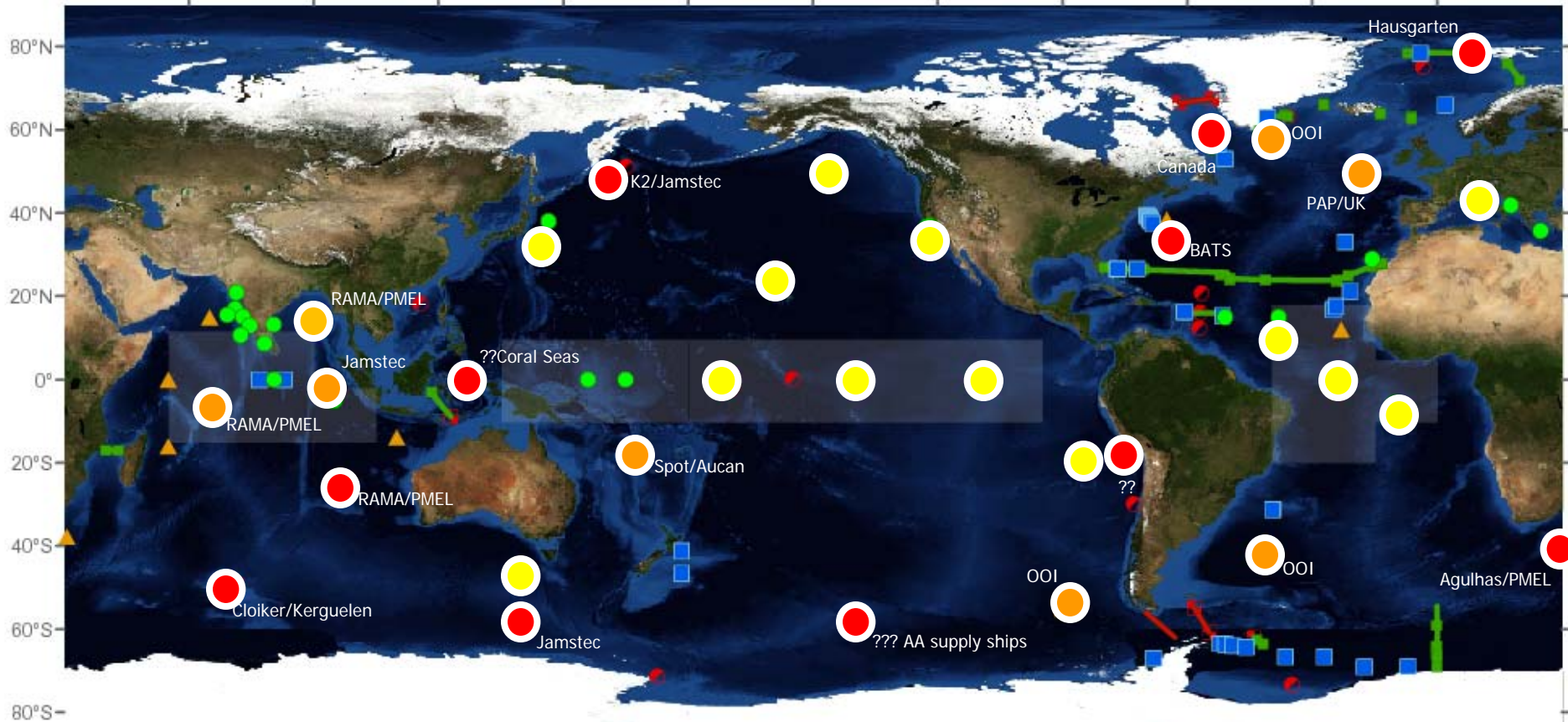- An excellent potential partnership if both sides can contribute and collaborate.

Potential OA observing system, building on OceanSITES:

Yellow: collecting SOME OA parameters already
Orange: likely to happen in next years
Red: unlikely to happen without strong push from this community

A partnership with the OA community for shared resources, including ship time and other operational efforts.

Data Management Team

- The data management team continues to meet almost every month via Webex teleconference.

- Due to the departure of the previous DMT Co-chairs, the DMT has been without leadership for the past year. However, the DMT formed a small "group of chairs" to fill in during the interim.

OceanSITES Data Example I

OceanSITES Top Level Directory (ftp://data.ndbc.noaa.gov/data/oceansites)

oceansites_index.txt
DATA Directory:

Platform Directory:
LINE-W
MBARI
NTAS
Stratus
T0N140W
TR0N156E
WHOTS

File Naming Convention 1.2:
OS_PlatformCode_DeploymentCode_DataMode<_OptionalParam>.nc, e.g.:
OS_T0N140W_DM011A_R_AIRT.nc
OS_T0N140W_DM011A_R_TEMP.nc
OS_T0N140W_DM011A_R_PSTN.nc
OS_T0N140W_DM011A_R_OCUR.nc
OS_T0N140W_DM011A_R_FLUX.nc
OS_T0N140W_DM011A_R_WIND.nc

OceanSITES have designated site codes and platform codes for each of
DACs and deployment codes are determined by corresponding DACs.

OceanSITES Data Example II

All NetCDF data files follow CF 1.x standards and OceanSITES
User Manual 1.2 requirements at http://www.oceansites.org. The following
are some of global attributes from OceanSITES NetCDF data files. Parameter
variables have standard names, units, valid_min/valid_max, accuracy,
sensor names and serial numbers, cell methods, ancillary variables etc.

data_type: OceanSITES time-series data
format_version: 1.2
platform_code: T0N140W
site_code: T0N140W
date_update: 2010-11-09T12:10:00Z
wmo_platform_code:51350
source: Mooring observation
history: where original data came from
data_mode:R
Conventions: CF-1.5, OceanSITES 1.2
title: TAO Refresh Mooring Data
summary: Real-time transmitted data
naming_authority: OceanSITES
Id: unique file identification
update_interval: D

area: North Atlantic Ocean
geospatial_lat_min: 0.0
geospatial_lat_max: 0.0
geospatial_lon_min: -140.0
geospatial_lon_max: -140.0
geospatial_vertical_min: -4.0
geospatial_vertical_max: 500.0
time_coverage_start: 2010-04-11T02:22:00Z
time_coverage_end: 2010-11-05T00:10:03Z
institution_references: http://www.ndbc.noaa.gov
data_assembly_center: NDBC
contact: Bill.Burnett@noaa.gov
pi_name: Bill Burnett
distribution_statement: Follows CLIVAR …
citation: These data were collected and made
Freely available by the OceanSITES project and
The national programs that contribute to it.

Real-Time Data
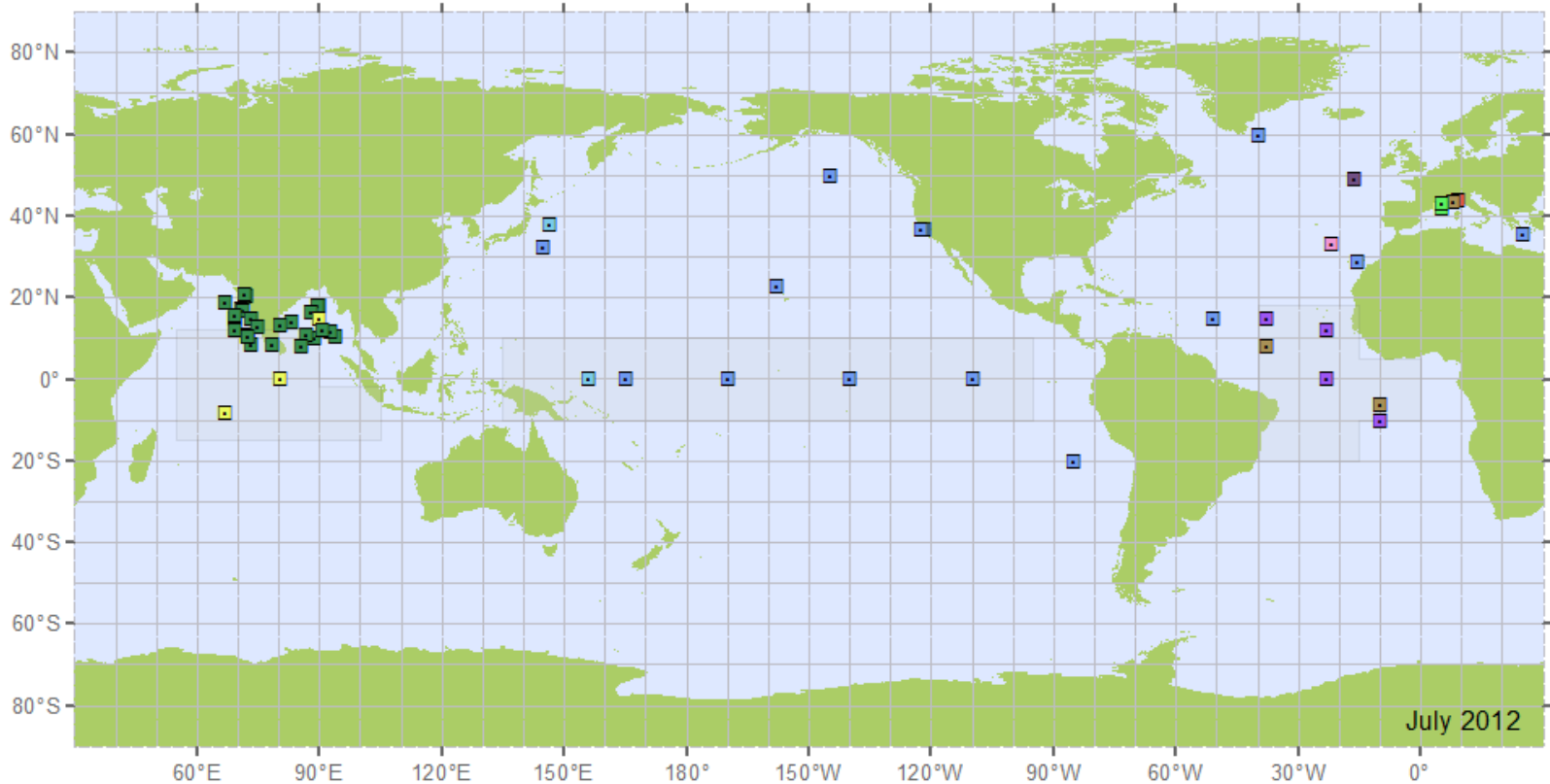
OceanSITES Support

- Funding support for OceanSITES has increased this year.

- Continued support from US/NOAA and AU/BOM.
  New sources below, mostly one-time (except Ifremer hopefully)

Program	Country	Invoice	Organization	US$	€
OCEANSITES	FRANCE	JCOMMOPS COORDINATOR - OCEANSITES	IFREMER - FR		5,000
OCEANSITES	AUSTRALIA	JCOMMOPS COORDINATOR - OCEANSITES	IMOS - AU	5,000	4,167
OCEANSITES	USA	JCOMMOPS COORDINATOR - OCEANSITES	SIO - USA	5,000	4,167
OCEANSITES	USA	JCOMMOPS COORDINATOR - OCEANSITES	WHOI - USA	5,000	4,167
OCEANSITES	ALL	JCOMMOPS COORDINATOR - OCEANSITES	POGO (2011/2012)	10,000	8,333

- This support will allow for continued work in the project office as well as additional support from JCOMMOPS IT Team.

- Still hoping for others (Korea, Brazil, EuroSITES)

Deep-Ocean T/S Challenge

- Deep-ocean observations are recognized as an important gap in the global ocean observing system (OceanObs09*)

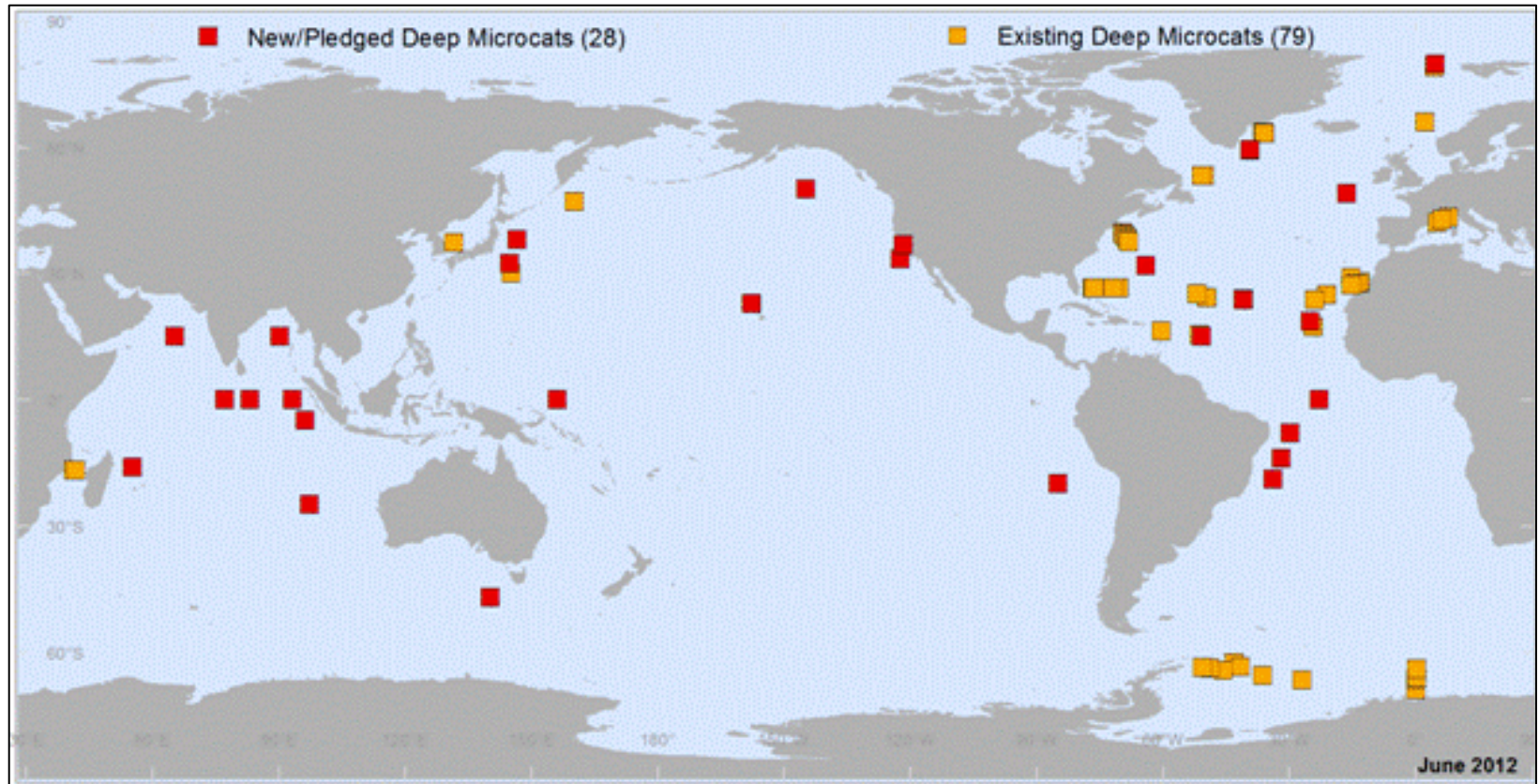- At the Dec 2011 OceanSITES Meeting, the "deep-ocean observing strategy" was developed. The goal:

  "To make use of the many existing OceanSITES platforms in deep water to make an instant contribution towards this need and goal."

*http://www.oceanobs09.net/proceedings/cwp/cwp34/

Deep-Ocean T/S Challenge
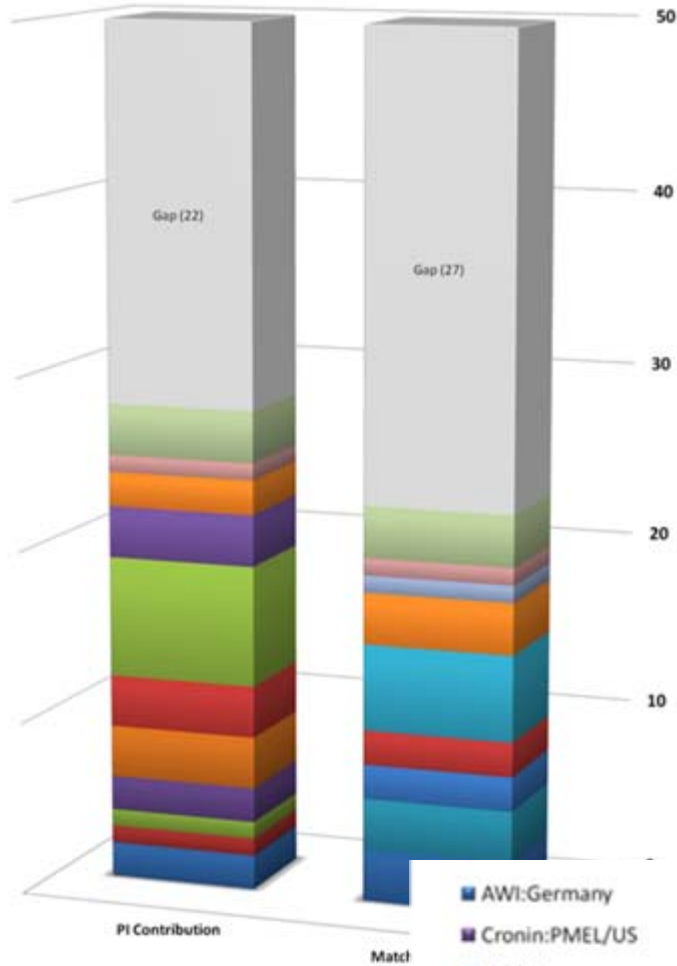## add deep T/S sensors on existing open-ocean moorings

Current status of the existing and new or planned microcats. The goal is to obtain another 50 during the year.

Deep-Ocean T/S Challenge
will match each PI-contributed sensor with a free one from donor pool

Deep Ocean Observing Strategy

Contribution : Details		
Lead	PI Contribution	Matching Contribution
AWI:Germany	2	3
Chavez:MBARI/US	1	
Conte:MBL/US	1	
Cronin:PMEL/US	2	
Geomar		3
Honda:JAMSTEC/Japan	3	
KORDI		2
Lampitt:NOC/UK	3	2
Murty:NIO/India	7	
PIRATA:Brazil	3	
Sea-Bird		5
Send:SIO/US	2	3
SNU		1
Trull: IMOS/AU	1	1
Weller:WHOI/US	3	3
Gap to Goal	**22**	**27**

- AWI:Germany
- Chavez:MBARI/US
- Conte:MBL/US
- Cronin:PMEL/US
- Geomar
- Honda:JAMSTEC/Japan
- KORDI
- Lampitt:NOC/UK
- Murty:NIO/India
- PIRATA:Brazil
- Sea-Bird
- Send:SIO/US
- SNU
- Trull: IMOS/AU
- Weller:WHOI/US

Deep-Ocean T/S Challenge

- Looking for more PI contributions or donations to matching pool

- Sea-Bird (makes Microcats) has offered free calibrations and will provide an "aggregate" volume discount to OceanSITES members (still discussing what that means)

- OceanSITES will set up rotation system for sensors amoung institutions/Pis to assure uniform calibrations, and a working group for best practices for these

*http://www.oceanobs09.net/proceedings/cwp/cwp34/

2013 Meeting

- The OceanSITES Data Management and Steering Team will plan to meet again in April 2013, and has accepted an invitation from the Seoul National University

Future Tasks

- Finalize and publish the "How to Become and OceanSITES" document

- Improve compliance with data submission policy

- Enhance sharing (making available) of platforms for sensors from others

- Get more buy-in and sharing of effort from other communities

- Increase data holdings (including more data types/variables)

- Develop rationale and goals/metrics for each community (climate, carbon, ecosystem, air-sea flux, etc)

- Reorganize the OceanSITES Website with the JCOMMOPS redesign

- Add more functionality to the Google Earth layers

- Continue to seek support for the Deep ocean Observing Strategy

Thank you!

www.oceansites.org

Kelly Stroker
projectoffice@oceansites.org