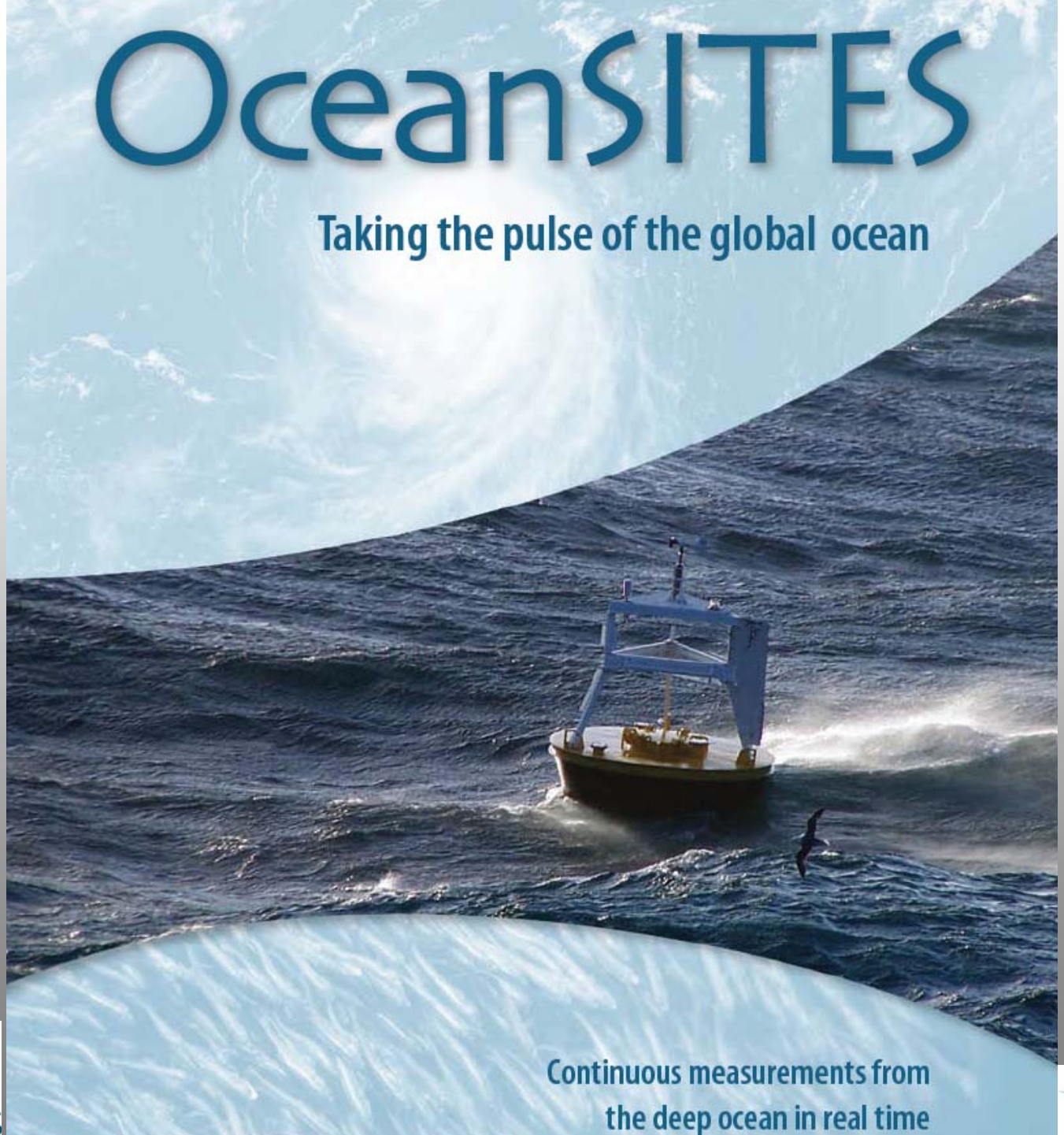
OceanSITES

Taking the pulse of the global ocean



Continuous measurements from
the deep ocean in real time

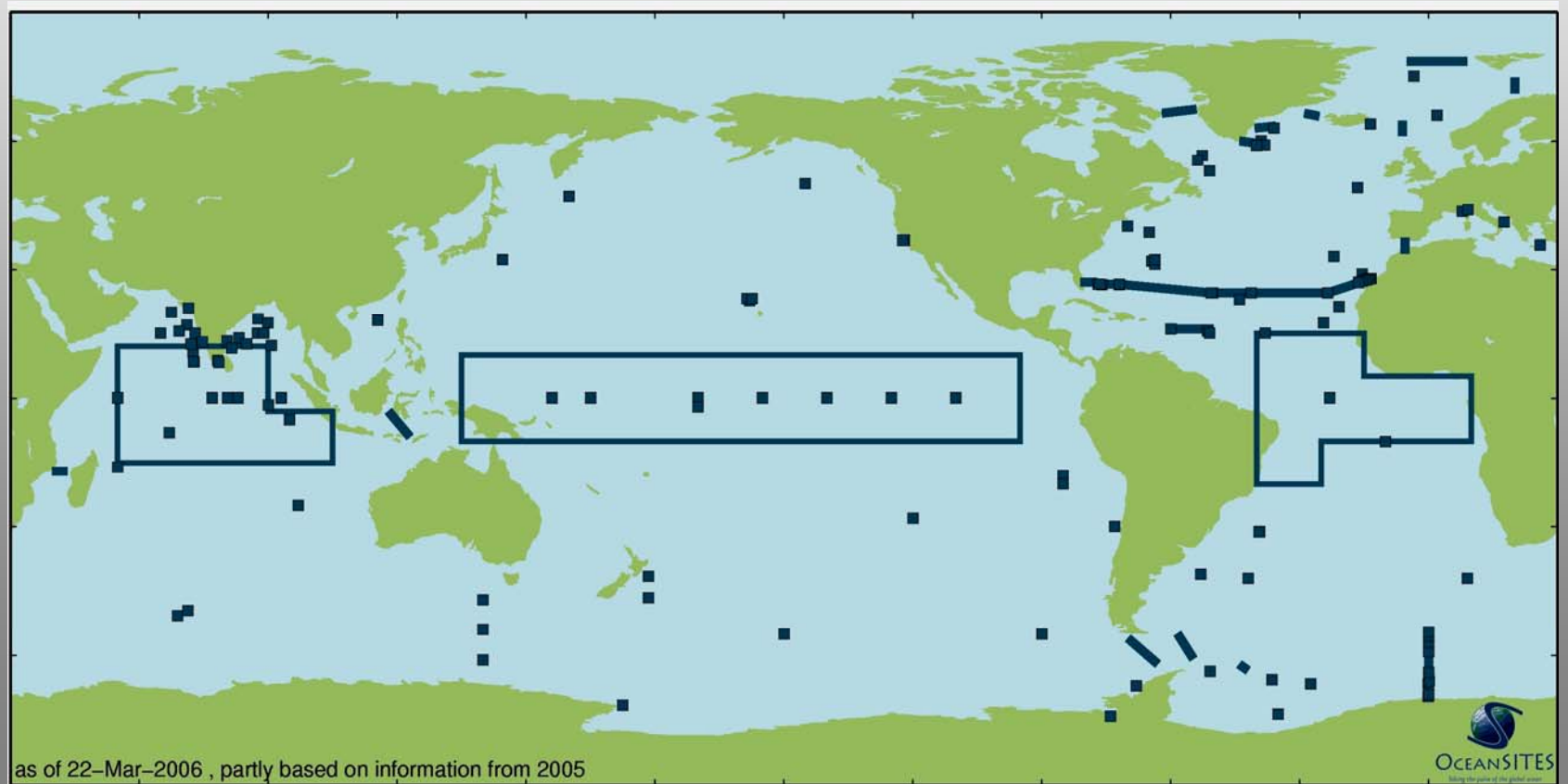
OceanSITES

jcomm
OCEANOGRAPHY & MARINE METEOROLOGY

OceanSITES
Taking the pulse of the global ocean

… 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



Changes since / catalyzed by DBCP23

- **Project Office started:**
  funding via NOAA and manpower through JCOMMOPS (Hester Viola)

- **Second GDAC now exists: NDBC (Bill Burnett)**

- **Re-invigorated Steering and Data Management Committees**

OceanSITES meeting Vienna, April'08

- Combined meetings of Steering Committee and Data Management Team
- Over 30 participants, with expertise from all disciplines
- infused additional capacity and energy from first-time biogeochemical attendees
- sense of opportunity and urgency, commitments from all members/operators

Meeting decisions, initiated activities

A) Assure data are useful and used by providing easy access

- 2 GDAC's now exist and cooperate: Coriolis/France and NDBC/USA
- national/regional DAC's have been defined and their roles agreed
- a unified data format (NetCDF) is under revision and test
- data from 12 timeseries site operators will flow routinely within 12 months, from ONE place in ONE format
- 2 working groups established to agree on unified QC and best practices

B) Increase interaction with other research communities

- carbon/biogeochemical community, e.g. joint carbon timeseries workshop
- participated in wave workshop

C) Facilitate sharing of platforms, shiptime, etc via OceanSITES website

D) Develop/provide products to a variety of users via www.oceanSITES.org, e.g.

- air-sea flux data from all flux sites for model validation
- 15m currents for validation of drifter and satellite current products
- sea surface salinities for remote sensing validation
- wave data measured by surface moorings for wave products/validation
- column integrated chlorophyll estimates for remote sensing/model validation
- more….

E) Provide global ocean timeseries indicators on www.oceanSITES.org, e.g.

- pCO_2 and pH from all the sites in the network measuring this
- boundary current transports
- assembled heat and freshwater content timeseries
- eddy energy timeseries where available
- geostrophic transports between pairs measuring dynamic height
- work towards ocean acidification and ecosystem indices

F) Make sites more similar and measurements more comparable

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_2 for flux calculations
6. Dissolved O_2 at 5 depths for productivity and gas exchange estimates (with PCO_2)
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

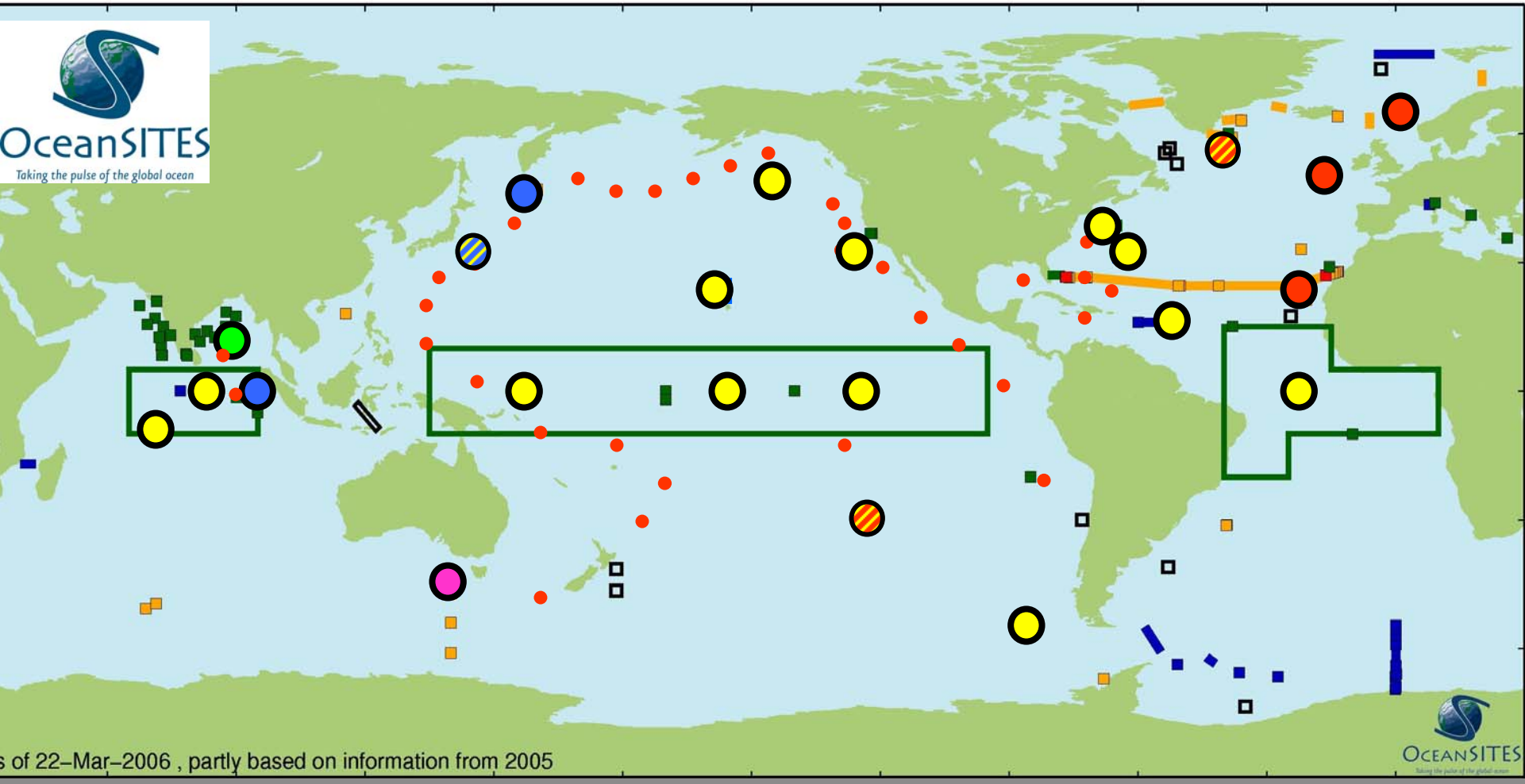
Additional “desirable” core/minimum sensors:

9. **Wave package**

10. **Deep (sub-ARGO) T and S (microcats)**

11. **Bottom pressure sensors/inverted echosounder**

Strawman set of sites that have the potential to become a truly integrated core timeseries system



Network status

- **Network information being updated now: new questionnaire for Metadata and site status**

- **some highlights:**
  - **Indian Ocean network growing, India and PMEL instrumental**
  - **Hawaii and Bermuda biogeochemical moorings discontinued**
  - **EuroSITES funded and running (only coordination, no new sites)**
  - **NSF OOI currently has 3 global sites**
  - **NOAA is committed to growing the OceanSITES network, possibly 3 more sites over next year, 50% of global sites overall**

Funding issues

- **Project Office funding: 50% contributed by NOAA, downpayment for first 2 years available. Remaining 30k$/year ideally from JCOMMOPS contributions. Slightly increase existing member's contributions ?**
  Decision and action (letter, etc) needed from DBCP/JCOMM !

- **not clear where POGO/Ocean United is going with funding pursuit**

- **have to depend on national contributions and possibly private foundations**

- **can JCOMM or GEO help national commitments ?**