

Future – ‘Going Global



GACS

**GLOBAL ALLIANCE OF CONTINUOUS
PLANKTON RECORDER SURVEYS**

...to meet the challenge posed by global problems.

Graham Hosie, Sonia Batten, Sanae Chiba and The GACS Board of Governance

Initiation of a Global Alliance of Continuous Plankton Recorder Surveys (GACS)

Global Alliance of CPR Surveys - GACS

1st Workshop: Plymouth, UK, 20-21 September 2011



- **GACS Scientists: (= Board of Governance)**

Name	CPR Survey	Country	Institution
Batten, Sonia	North East Pacific	Canada & UK	SAHFOS
Burkill, Peter	North Atlantic Arctic	UK	SAHFOS
Chiba, Sanae	North West Pacific	Japan	JAMSTEC
Edwards, Martin	North Atlantic Arctic	UK	SAHFOS
Fukuchi, Mitsuo	Japanese Antarctic	Japan	NIPR
Hall, Julie	New Zealand	New Zealand	NIWA
Hosie, Graham	Southern Ocean	Australia	AAD
Melrose, Chris	US East Coast	USA	NOAA
Muxagata, Erik	Proposed	Brazil	FURG
Richardson, Anthony	Aus CPR	Australia	CSIRO
Verheye, Hans	Benguela LME	South Africa	BCC

- **Stakeholders** - Reps from PICES, POGO, IOC, GOOS
- **Observers** - Reps from NIPR, POGO
- **SAHFOS** - Key staff (Dep. Dir., Admin., Database Man., IT Man., Process Man., Sen. Analysts)



GOAL

- To understand* changes in plankton biodiversity (and ecosystem status) at ocean basin scales through a global alliance of CPR surveys

*understand = characterize, interpret and analyse

Global Alliance of CPR Surveys - GACS

Signing of a **Draft M.o.U.** between GACS Partners: 21 Sept. 2011

1 **MEMORANDUM OF UNDERSTANDING BETWEEN PARTNERS**

2 **OF THE**

3 **GLOBAL ALLIANCE OF CPR SURVEYS (GACS)**

4 This Memorandum of Understanding (MoU) has been set up, and agreed, by the following nine
5 scientists:

6 Dr Sonia Batten of SAHFOS, 4737 Vista View Cr, Nanaimo, BC V9V 1N8, Canada;

7 Professor Peter Burkill of SAHFOS, Citadel Hill, Plymouth PL7 5HA, UK;

8 Dr Sanae Chiba of JAMSTEC, 3173-25 Showa-machi, Kanazawa-ku, Yokohama, 236-0001 Japan;

9 Professor Mitsuo Fukuchi of NIPR, 10-3, Midori-cho, Tachikawa City, Tokyo 190-8518, Japan;

10 Dr Graham Hosie of SCAR Southern Ocean CPR Survey c/o Australian Antarctic Division, 203 Channel
11 Highway, Kingston, Tasmania 7050, Australia;

12 Dr Julie Hall of NIWA, 301 Evans Bay Parade, Wellington, 6241, New Zealand;

13 Professor Erik Muxagata of Instituto de Oceanografia da FURG Av. Itália Km 8, Campus Carreiros, Caixa
14 Postal 474, 96201-900 Rio Grande RS, Brazil;

15 Dr Anthony Richardson of CSIRO Marine and Atmospheric Research, EcoSciences Precinct, PO Box 2583,
16 Dutton Park 4001, Queensland, Australia;

17 Dr Hans Verheye of Benguela Current Commission c/o Oceans & Coasts Research, Department of
18 Environmental Affairs, P.O. Box 52126, Victoria & Alfred Waterfront, Cape Town 8000, South Africa.

19 The following stakeholder organisations provided advice to the setting up of GACS and witnessed
20 signature of GACS partners agreeing to this Memorandum of Understanding.

21 The North Pacific Marine Science Organization (herein referred to as "PICES"), represented by Dr Hiroya
22 Sugisaki of the National Research Institute of Fisheries Science, Japan in his capacity as Chairman of
23 PICES Technical Committee on Monitoring (MONITOR) with his address Fisheries Research Agency, 2-
24 12-4, Fukuura, Kanazawa-ku, Yokohama, Kanagawa, 236-8648, Japan.

25 The Partnership for the Observation of the Global Oceans (herein referred to as "POGO"), represented
26 by Dr Trevor Platt FRS in his capacity of Executive Director with his address at Plymouth Marine
27 Laboratory, Prospect Place, Plymouth PL1 3DH, UK.

28 The Global Ocean Observing System (GOOS), a subsidiary body of the Intergovernmental Oceanographic
29 Commission (herein referred to as "IOC") of the UNESCO, represented by Dr Tom Gross, in his capacity
30 of Programme Specialist of IOC's Global Ocean Observing System (GOOS) with his address as
31 UNESCO/IOC, 1 rue Miollis, 75732 Paris Cedex 15, France.

Draft MoU:



Expresses a '*convergence of will*' between partner organisations and indicates an '*intended common approach and goal*'.

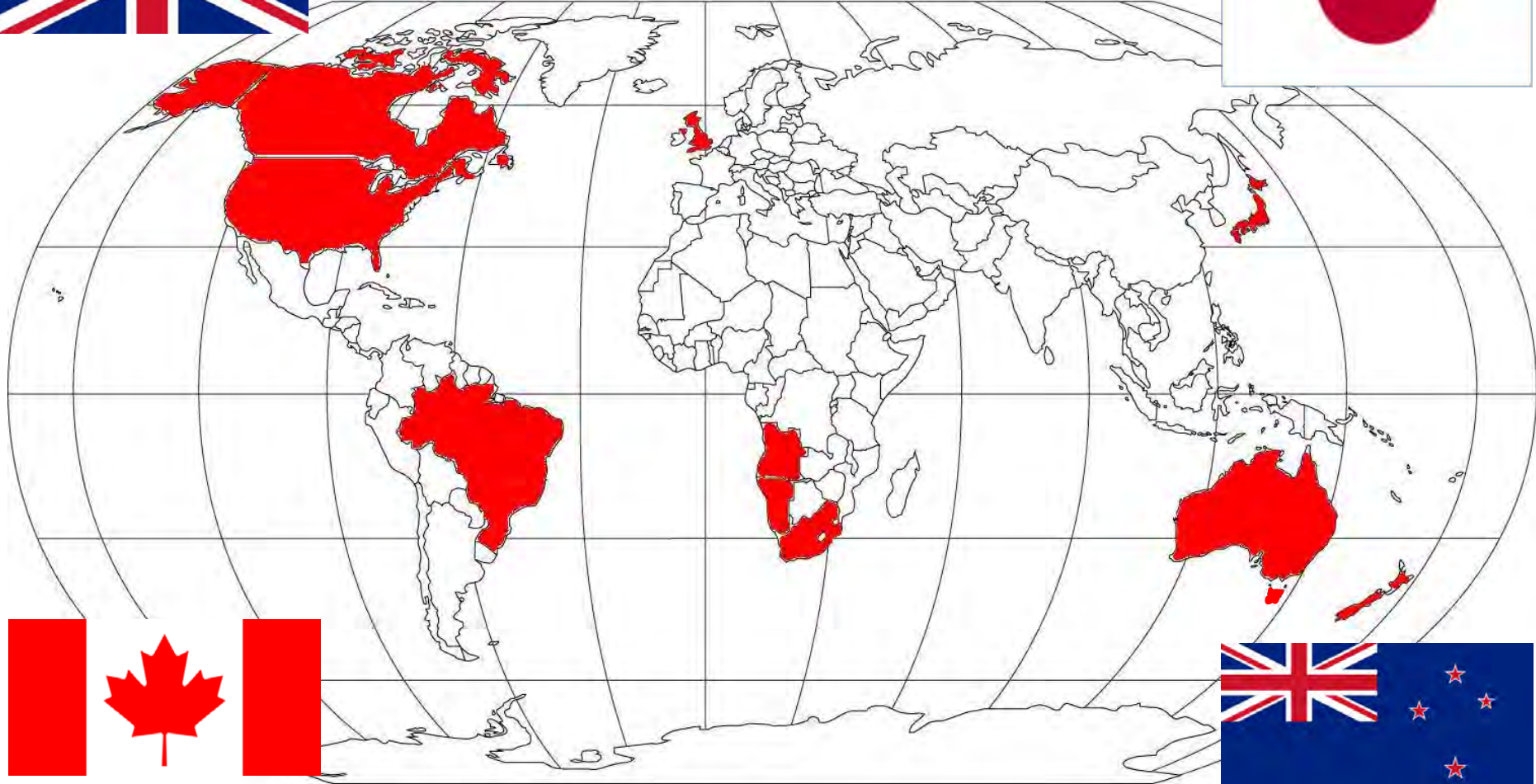
Dr Hans Verheye signing on behalf of the Benguela Current Commission

Is not - and is never intended to be - legally enforceable (it will always depend upon good-will of the signatories).

Partner institutions may need, for their own governance boards, to ratify the MoU before it can take full effect (before next WS in Sept./Aug. 2012).

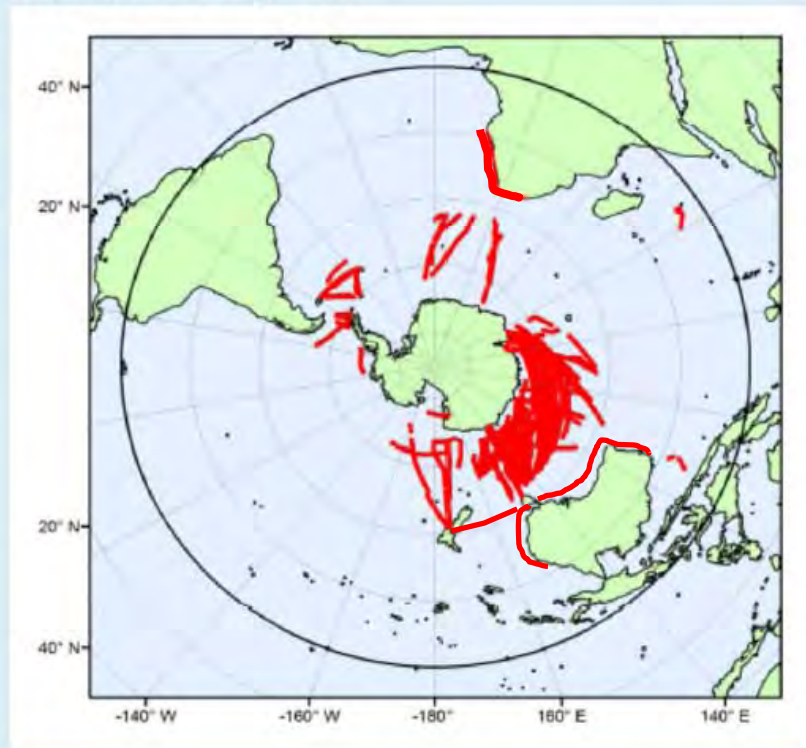
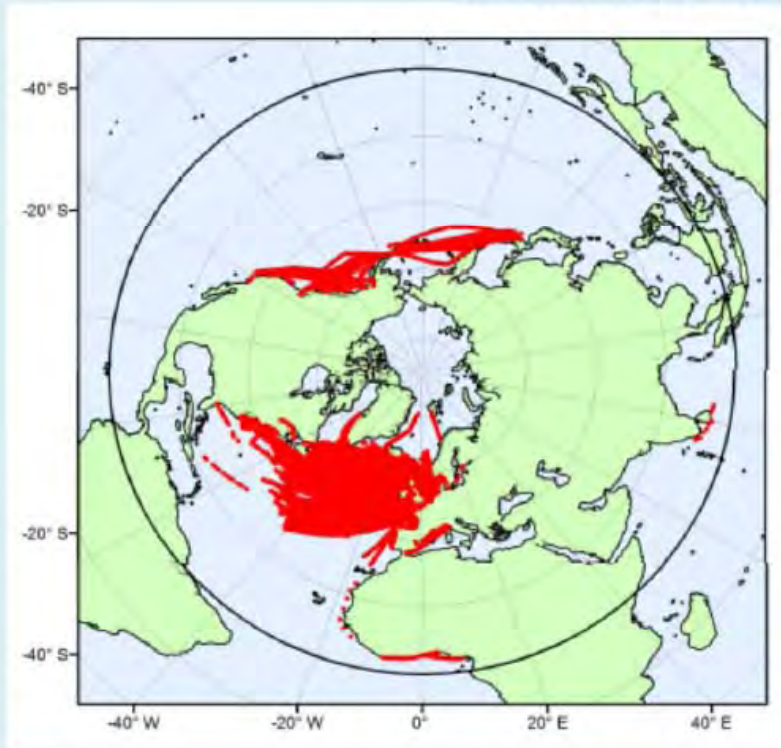


GACS Partnership 2011





**GLOBAL ALLIANCE OF CONTINUOUS
PLANKTON RECORDER SURVEYS**



Positions of CPR routes and samples collected in the Northern (1931 - present) and Southern (1991 - present) Hemispheres

GACS - brings together

- ~50 plankton experts - technicians and scientists,
- 12 laboratories for 9 regional surveys,
- using ~50 vessels (merchant, research, military),
- from nearly 40 shipping companies/agencies

Expertise in:

- maintenance and use of the CPR,
- plankton taxonomy,
- plankton ecology,
- genetic and molecular analysis,
- quantitative numerical analyses,
- ecological and predictive modelling,
- data management



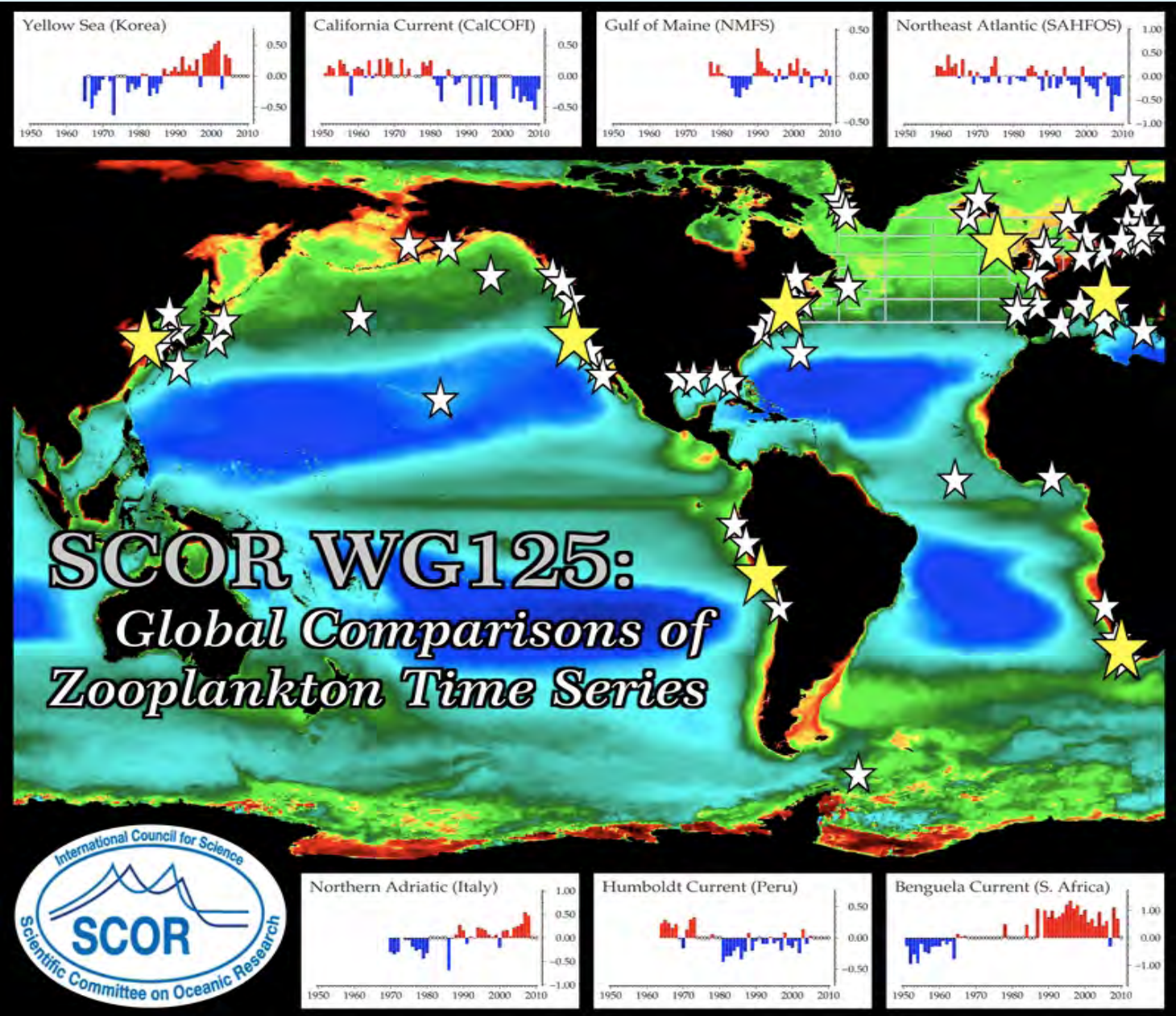
Global Alliance of CPR Surveys - GACS

KEY OBJECTIVES - first 3 years, 2011-2013 (then long term)

- maintain **common working standards** and **methodologies** for GACS;
- set up and maintain a **global plankton biodiversity database** based on CPR data;
- set up and maintain a website for **publicity and data access**;
- produce a regular **Ecological Status Report** for global plankton diversity;
- provide an **interface between plankton biodiversity** and other **global ocean observation programmes**;
- facilitate **new surveys** and develop **capacity building** procedures;
- facilitate secondments of CPR scientists between GACS institutions.



Global Comparison of LTL variation and its bottleneck



Why GACS

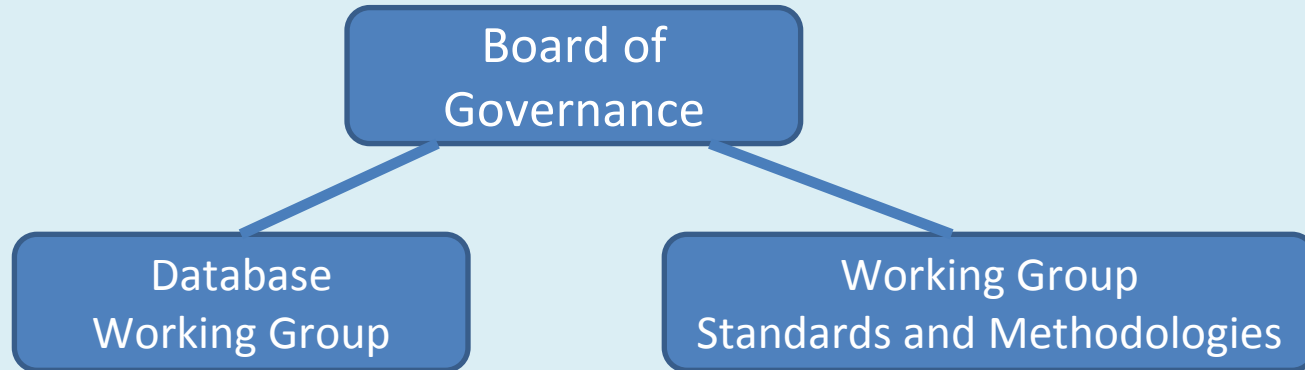
- We lack a global perspective on plankton biodiversity, in response to global change - global warming, ocean acidification.
- GACS will provide that global perspective using CPR data.

Why CPR

- The one **standardised** and **consistent** sampling method that can provide sustained observations of plankton biodiversity **at ocean basin scales**.
- **Cost effective**, well proven method and **robust**.



GACS Structure



overseeing



GACS@sahfos.ac.uk



GACS Activities - what is going so far

Strategy: Pick the lower hanging fruits

- Setting ecological indices for comparison (e.g. copepods size, diatoms/dinoflagellates, pteropod abundance, etc.)
- Updating results on Ecosystem Status Report (Annual) and GACS Newsletter (seasonal)

Website: <http://www.globalcpr.org/>

Next meeting: September 17-20, 2012, Paris