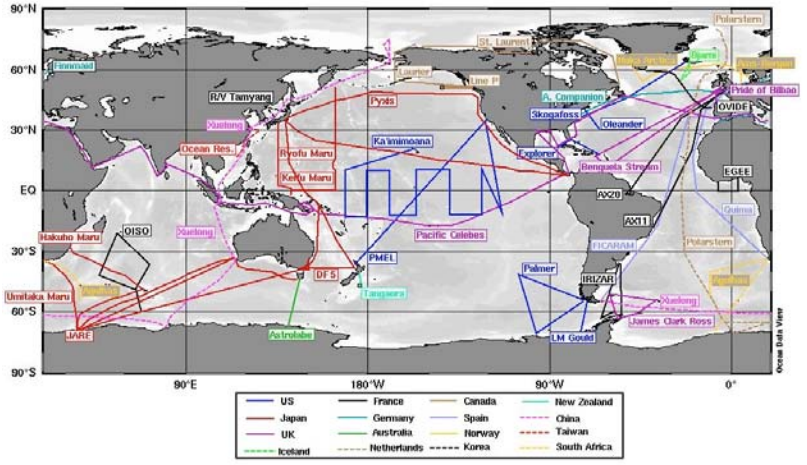
The International Ocean Carbon Coordination Project (IOCCP)

Presented by Gustavo Goni on behalf of the IOOCP (K. Tedesco and M.Hood, managers)

"The International Ocean Carbon Coordination Project is a communication and coordination service for the ocean carbon community"



Major IOCCP Activities

Funded by US NSF through grants to UNESCO - IOC and to SCOR and from the Intergovernmental Oceanographic Commission of UNESCO.(black, Of high relevance to this meeting; Gray less so)

1. **Underway Systems:** Contact the SCOR working group on commercial ship observations about collaboration and inclusion of carbon in this project. Develop a small informational document about CO_2 systems appropriate to provide to commercial shipping companies. Contact the JCOMM Ship Observations Team about the status of its liaison service for scientists looking for commercial ships / routes.

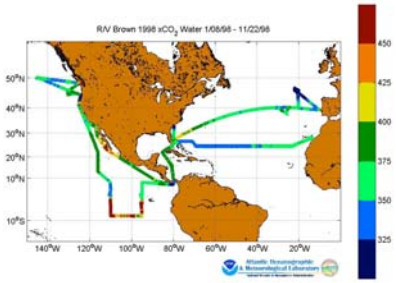
2. **SOCAT:** Surface Ocean Carbon Atlas- A global compliation of QC'd underway pCO_2 data carry out the 2nd level consistency checks on the SOCAT dataset.

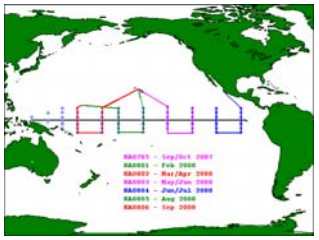
3. **Flux Maps Workshop**:Investigate possibility for SOLAS-IMBER Carbon Group to host a workshop to bring together groups making ocean carbon flux maps to compare methods. Ocean Carbon Sensors: Continue developing the inventory of most often used ocean carbon sensors on the IOCCP site.

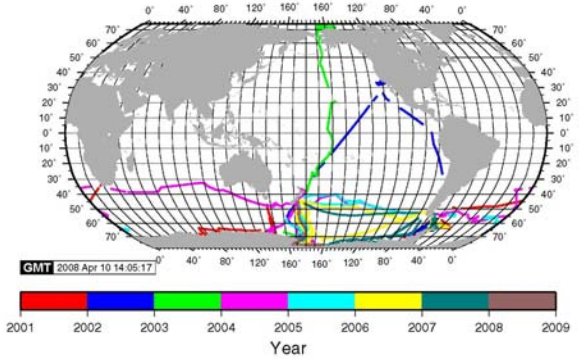
4. GO-SHIP: Continue revision of the 1994 WOCE Hydrographic Program Manual, development of a whitepaper for OceanObs09 on a strategy for a global survey,
5. Changing Times:Develop a multi-platform inventory of ocean biogeochemistry time series programs
6. Ocean Fertilization:Review the CBD database and CBD scientific synthesis document. Revise the IOC-SCOR Watching Brief on Ocean Carbon Sequestration by developing a Summary for Policymakers on Ocean Fertilization for the IOC Assembly and the London Convention (joint with SOLAS).

Major funded collaborations for underway pCO_2 work:

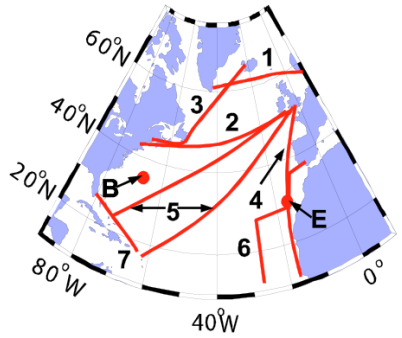
USA: NOAA pCO_2 on ships project
6 PI's , 11 ships global (research, polar supply vessels, commercial)
Status: Sustained







UE: CarboOcean: underway pCO_2 measurements
8 PI's, 9 ships N. Atlantic (mostly commercial)
Status: Projects ends in 2009, looking for avenues of continuation (e.g. ICOS)



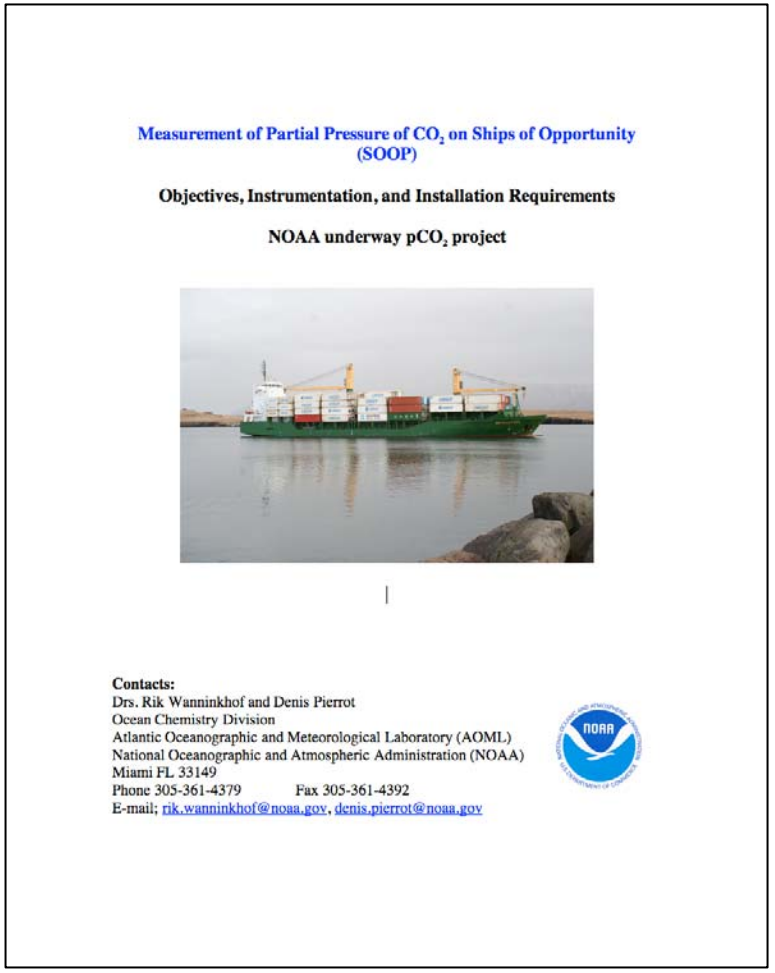
Examples of IOCCP Activities:

Operation of system on ships:
Recruitment of ships (see prospectus)
Exchange of information

Advocacy for uniform operation:
Technology transfer to commercial company (General Oceanics) for ready purchase of instrumentation
Best Practices
International intercomparisons

Uniform data reduction schemes:
Data reduction freeware

Collation of data:
Participation in SOCAT: 6 million + datapoints. Data served from CDIAC



Measurement of Partial Pressure of CO_2 on Ships of Opportunity (SOOP)

Objectives, Instrumentation, and Installation Requirements

NOAA underway pCO_2 project

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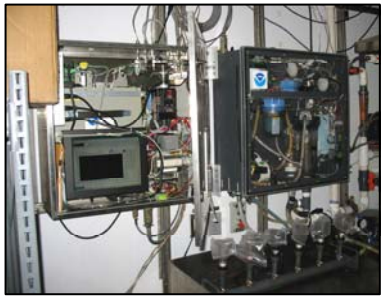


Potential Areas of collaborations with SOT groups:

1. **Recruiting ships:**
   UW pCO_2 is a "high maintenance" project
   Hull penetration, gas standards, monthly maintenance visits

2. **Real Time Data transmission from ships**

3. **Obtaining "calibrations samples" from ships**

4. **Collaboration on data QC and calibration** : We need SST and benefit from SSS

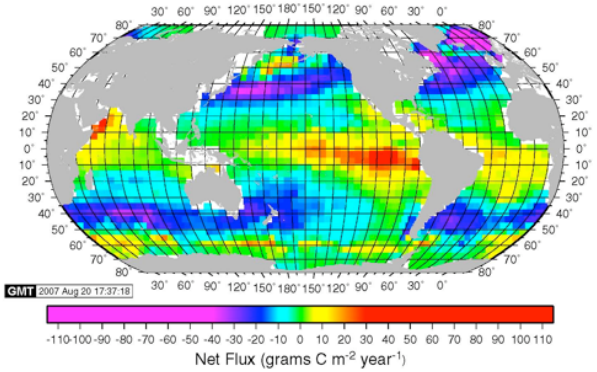
5. **Collaboration on expansion of efforts**: Biogeochemical sensors: O_2, chlorophyll, nutrients to better constrain parameters affecting CO_2 and ocean acidification

6. **Advocacy to allow operations in foreign EEZ's**

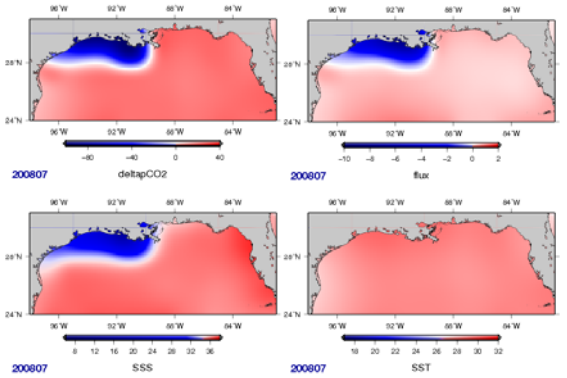
Examples of Products resulting from collaborations:

Global Air-sea CO_2 flux climatology
(Takahashi et al., 2009)

Blue=sinks
Red=sources



Flux maps- near real time seasonal flux estimates
(Wanninkhof, Pierrot, Trinanes, 2009)



Estimates of ocean acidification
(Gledhill et al. 2008)