

OOPC-10

- **Welcome from WMO**
- **Meeting Logistics**
- **Intro & Meeting Goals**
- **Approve agenda; OOPC-9 report**
- **Overview of activities since OOPC-9**
- **Overview of ocean climate state**

Meeting Logistics

- **Break for lunch before 1230**
- **Morning and afternoon coffee breaks**
- **Both on 8th Floor – “Atrium” cafeteria**

- **WMO reception tonight /Lake sale on 8th**
- **Wed evening beer?**

- **Please put your PowerPoints on the mtg machine, and supply brief paragraphs of key points before leaving, if possible.**

- **Local Meeting Support from GCOS**
THANK YOU!

Ocean Observations Panel for Climate - Terms of Reference

- Develop **recommendations for a sustained global ocean observing system**, in support of WCRP, GOOS and GCOS climate objectives, including phased implementation.
- Help develop a process for **ongoing evaluation and evolution** of system and recommendations.
- Support **global ocean observing activities** by involved parties, via liason and advocacy for agreed observing plans

Sustained Global Ocean Observing System for Climate

Data & Information Products to serve:

Climate Forecasting

Climate Assessment

Climate Research

Also is the foundation of global
operational oceanography

Status of Recommendations for Initial Global Ocean Observing System

- Strategy & specifics in GCOS-IP have been endorsed also by GOOS, WCRP and UNFCCC
- Overarching goal - attain global coverage with composite, integrated surface and subsurface networks (satellite & in situ)
- Additional effort needed on standards, the data system, ocean products, enhancements.

HOW WILL IMPLEMENTATION PROCEED?

- **Global module lacks national commitments; nations often lack organizational structures and everyone lacks budgets sufficient for sustained implementation**
- **Global module depends heavily on research community undertakings**
- **“Transition to operations” is elusive when there is no entity to transition to or commitment to continue**
- **Thus “Sustain” and enhance existing arrangements is our short term strategy.**

Evaluation/Evolution Strategies

- **Evaluation** based on uncertainty in estimates of desired ocean information, relative to the relevant ocean climate signals.
- **Evolution** based on successful Pilot Project deployment of new sensors, results from ocean climate product sensitivity studies, progress against initial recommendations

Meeting Goals

? Actions re:

- **Plans for South Pacific Workshop**
- **GSOP & Ocean products & climate info**
- **Issues for & questions from JCOMM**
- **Subsurface indices**
- **Ocean Satellites**
- **Data System, ID tagging & QC**
- **Evolution of recommendations**
- **Biogeochem & ecosystem variables**
- **Future directions for OOPC**

June 7-12	COOP-7 Tokyo
June 23-27	CLIVAR Conf Balt
June 27-29	CLIVAR SSG, Balt
July 5-9	2AR IP-Chairs GVA
July 20-22	IGST9 Paris
Aug 16-19	2AR IP GVA
Aug 30- Sept 1	US IOOS Planning
Sept 8-9	US GODAE DC
Sept 23-24	SCOR Coordination Meeting
Sept 27 or 28	SCOR Assembly
Sept 20-Oct 1	GODAE SSchool
Nov 1-3 2nd	GODAE Symp (StP, FL)
Nov 3-5 US	GOOS SC Dallas
Nov 3	JCOMM Products subgroup St. Pete
Nov 8-12	GSOP-1, Boulder
Nov 30-Dec3	POGO/IOC, Brest/Paris,
Dec 6-9	Carbon Coordination, IOC/Paris
Feb 9-12	JCOMM MAN4, Paris
Feb 21-23	GOOS SC8...Melbourne
March 7-9	SOT-3 Brest
March 14-18	JSC26 Guyaquil,
April 11-15	AOPC-11 GVA
Apr 25-28	NOAA OCO Annual Review

***Meeting list since
OOPC-9***

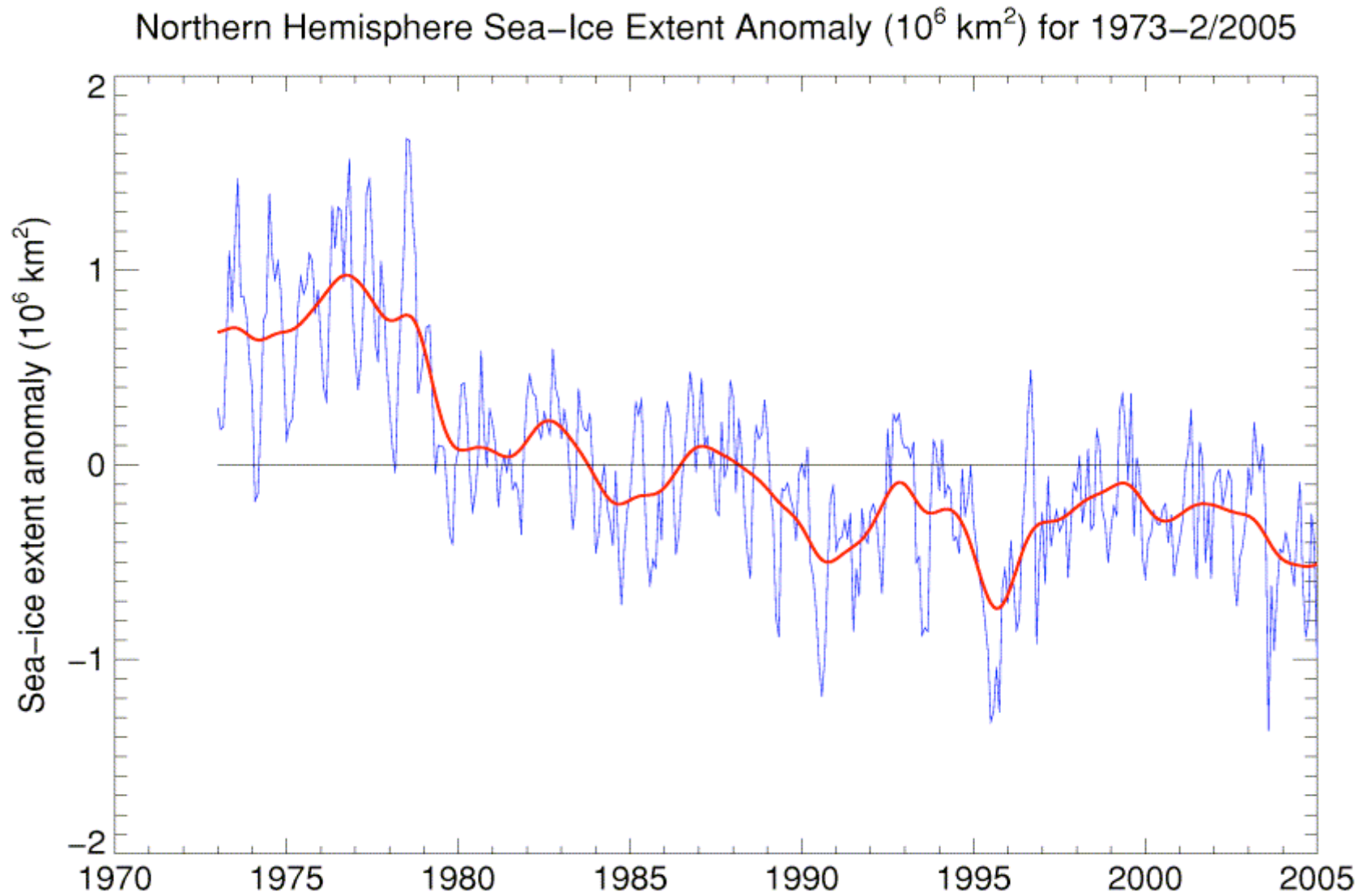
***need to complete
for OOPC-10 report***

GOCS Implementation Plan

- A major activity since OOPC-9
- GCOS Director will brief status.

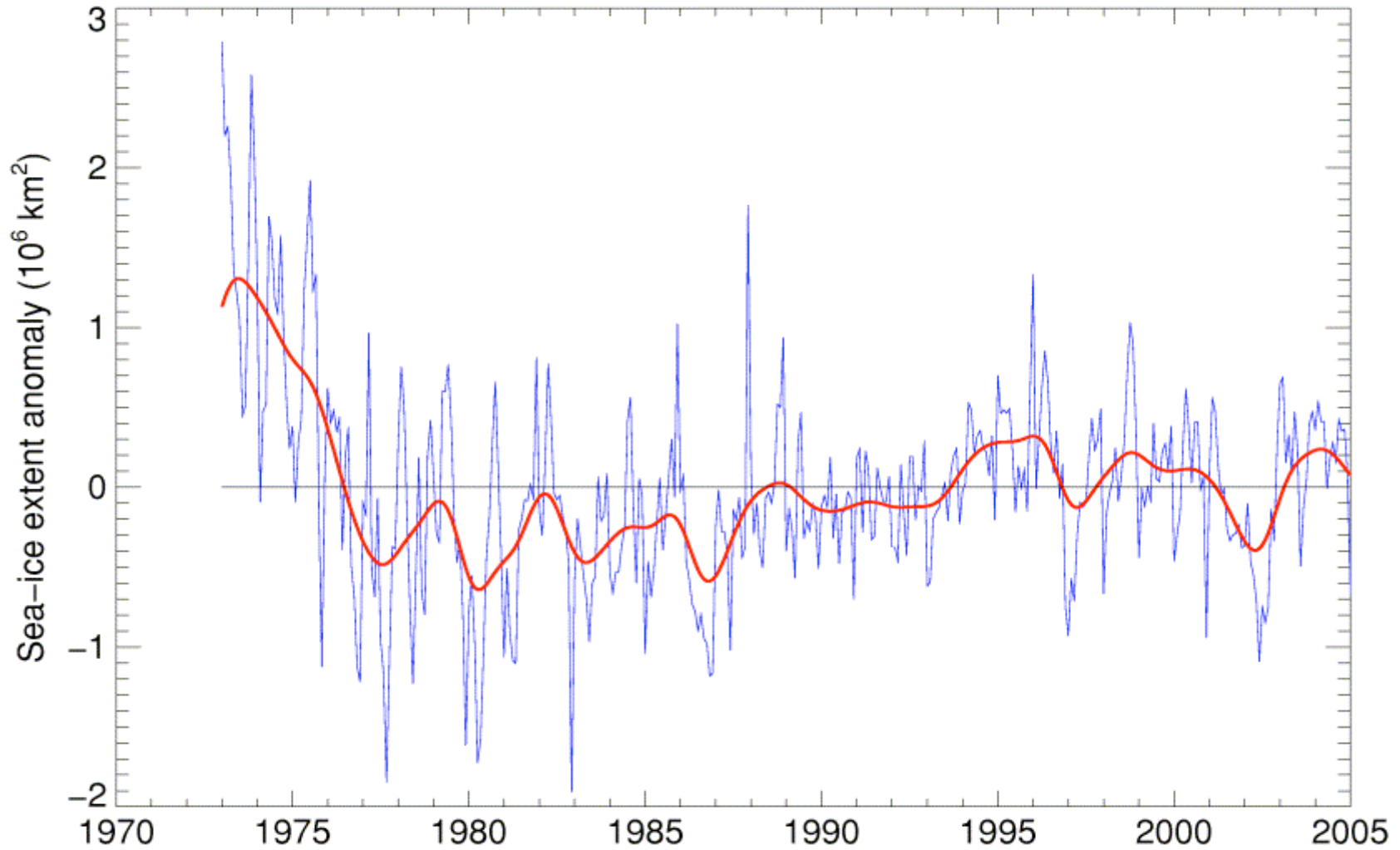
Continuing w. Ocean Indices

- Albert will brief on ocean status 2004-05
- Harrison will brief on:
 - Updated sea ice extent time series
 - Brief look at Tropical Pacific 2004-05
 - Brief look at subsurface ocean temperature trends challenges



From Rayner, Hadley Centre, HADIST as used in IPCC TAR

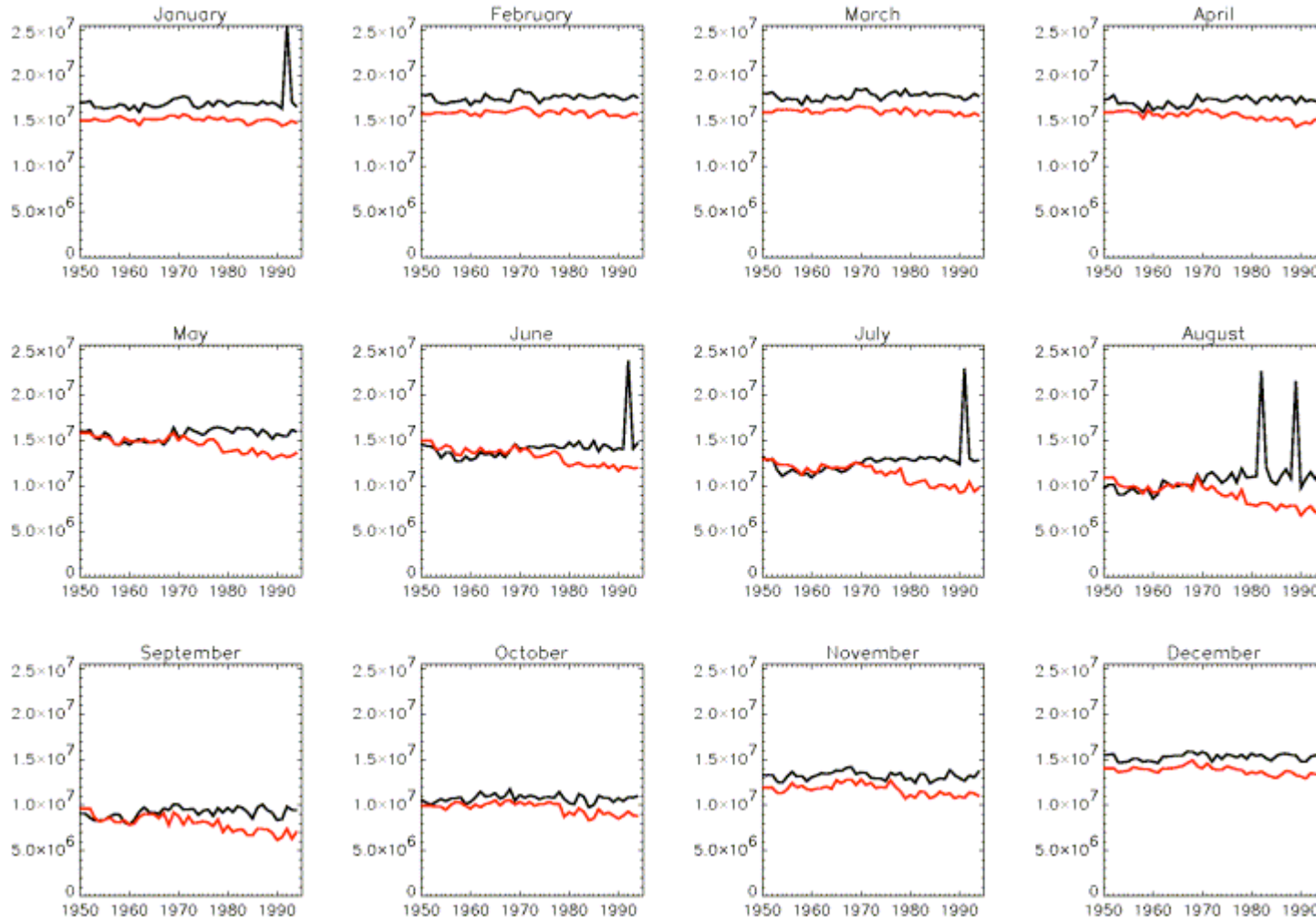
Southern Hemisphere Sea-Ice Extent Anomaly (10^6 km^2) for 1973–2/2005



From Rayner, Hadley Centre, HADISST as used in IPCC TAR

Comparing HadISST1 (red) and blended GDSIDB data set (black)

Northern Hemisphere sea ice extent



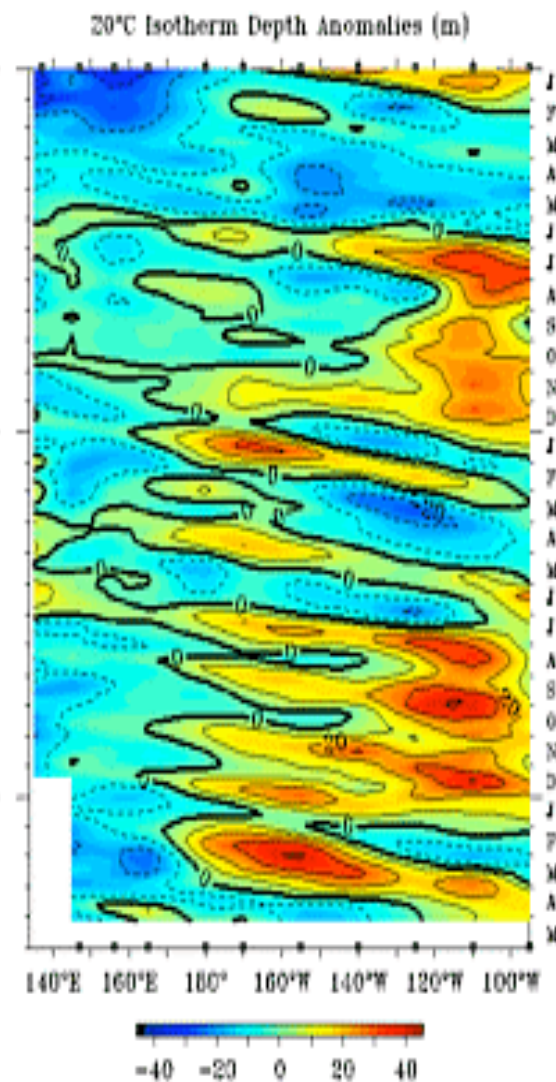
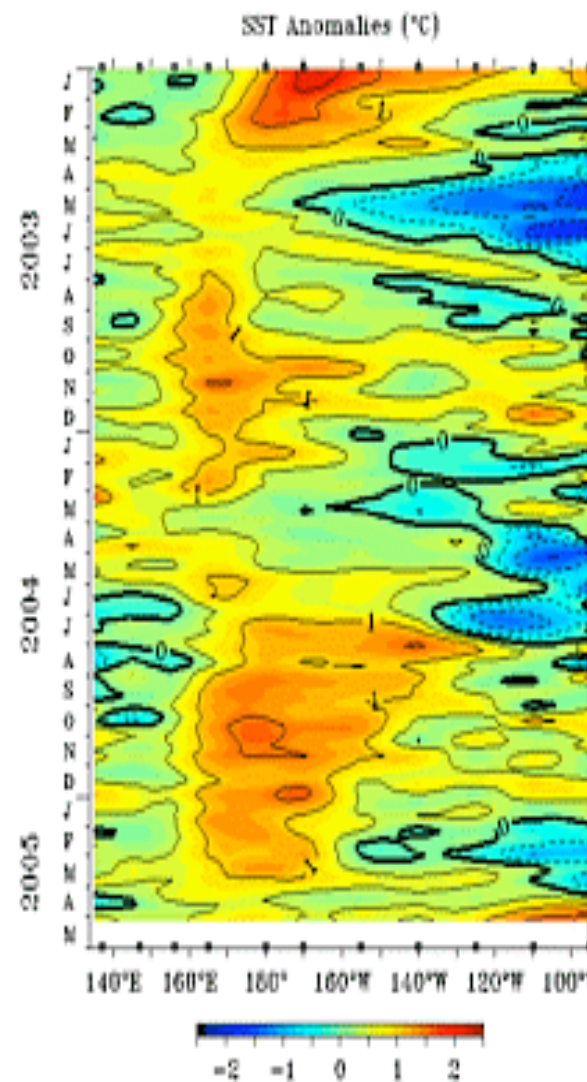
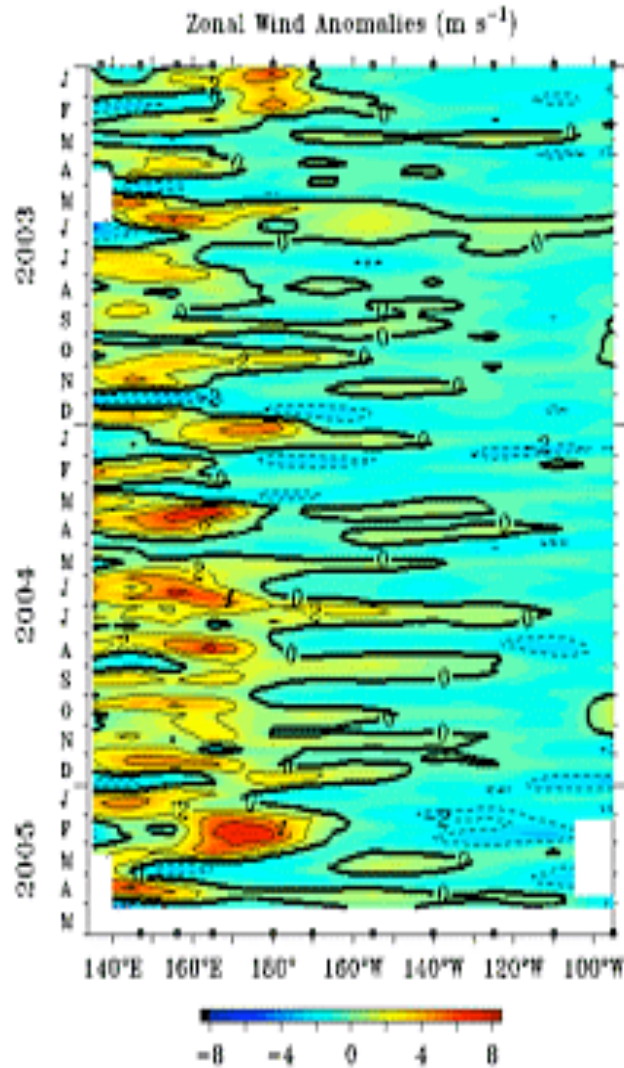
From
**Nick
Rayner,**
Hadley
Centre
@
OOPC-9

2004-05 Eq. Pac. Situation

- NOAA stated “El Nino returned” when NINO3.4 exceeded 0.5C in 2005, using a definition recently adopted by NOAA.
- This is an anomaly of less than one standard deviation.
- All conventional El Nino indices had small normalized values.

Five-Day Zonal Wind and

Five-Day SST and 20°C Isotherm Depth 2°S to 2°N Average



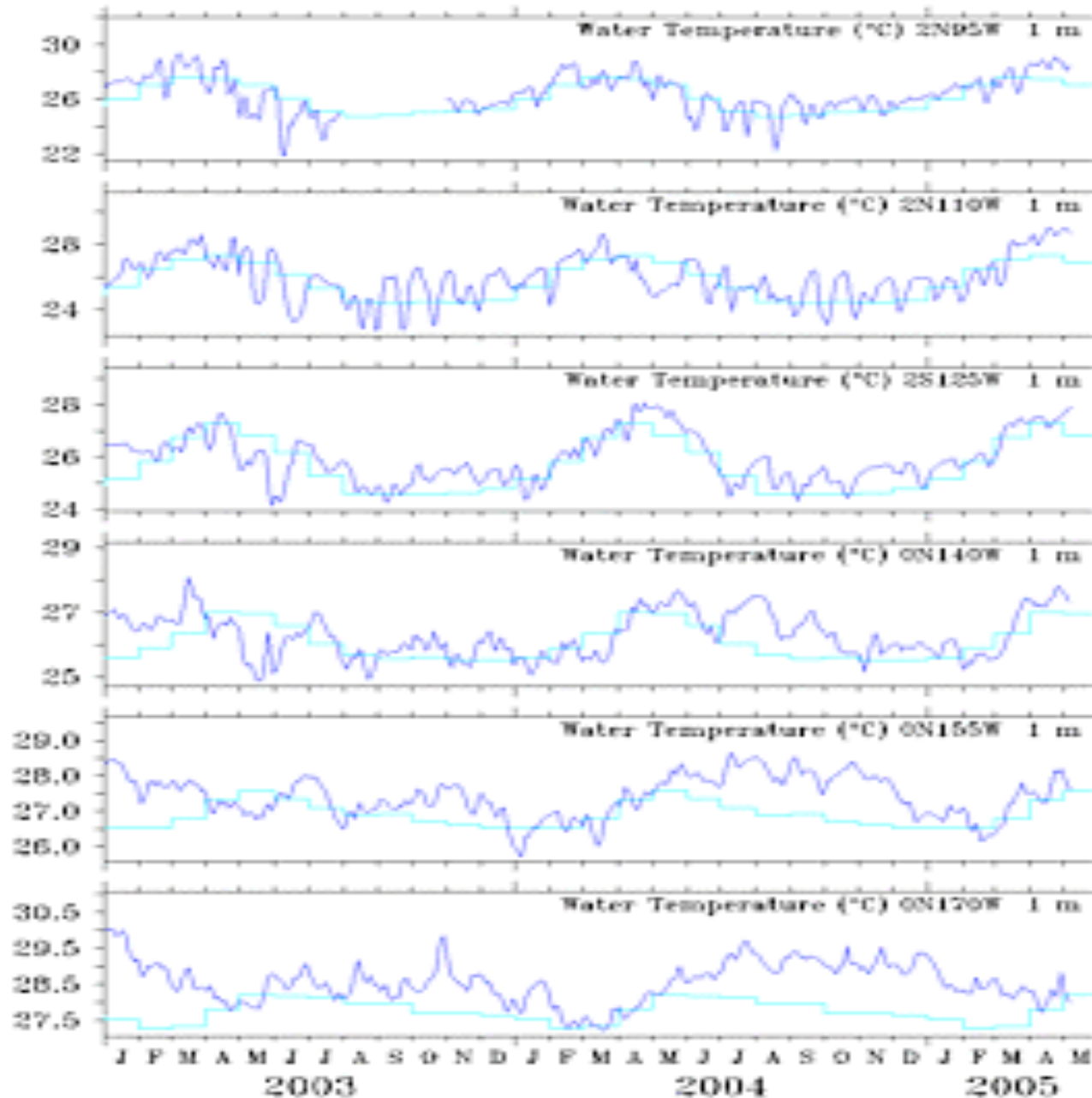
TAO Project Office/PMEL/NOAA

TAO Project Office/PMEL/NOAA

May 5 2005

Equatorial Pacific UA, SSTA and Z20A 2003-present

Five-Day Data



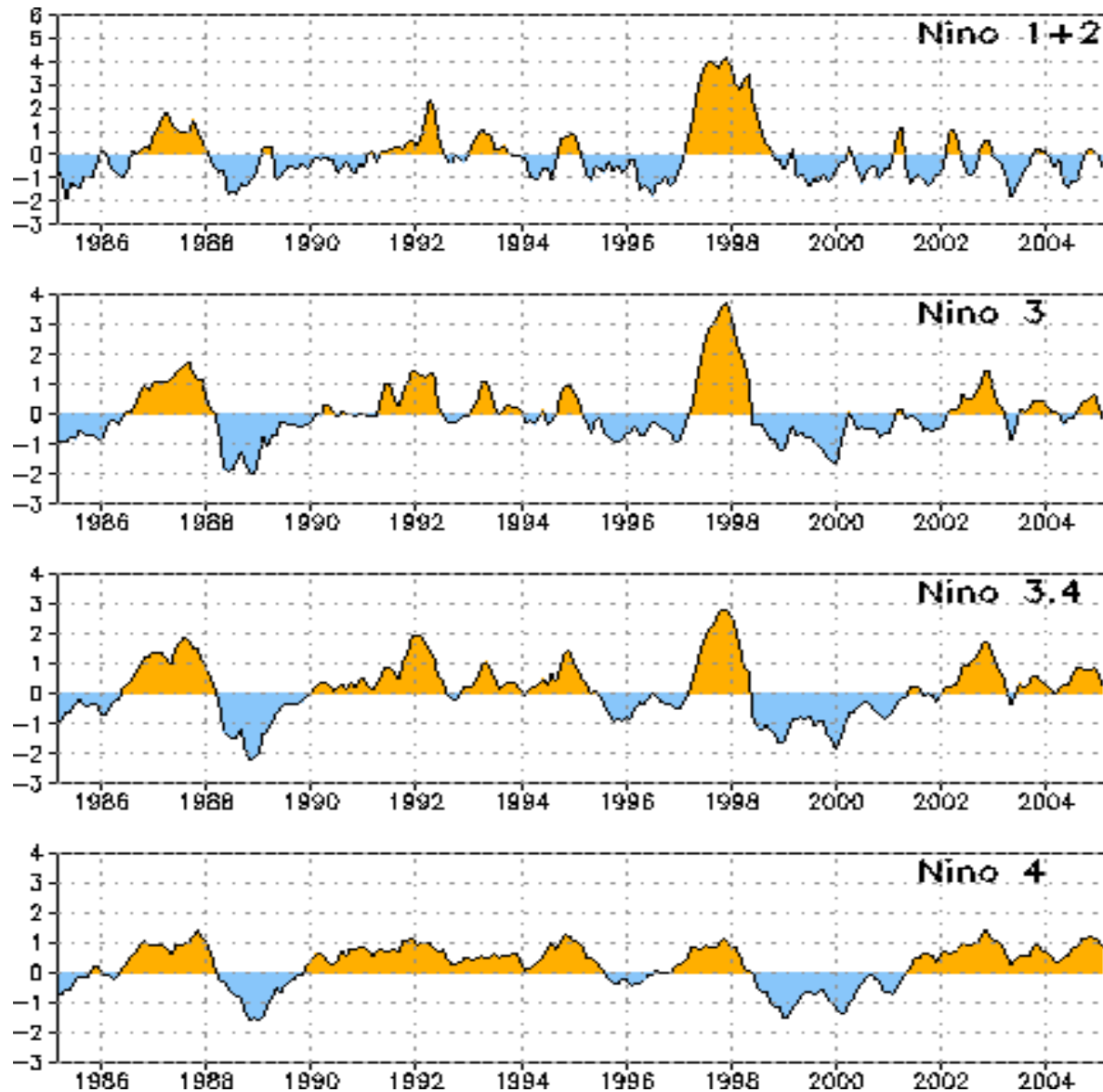
**Equatorial Pacific
SST time series:**

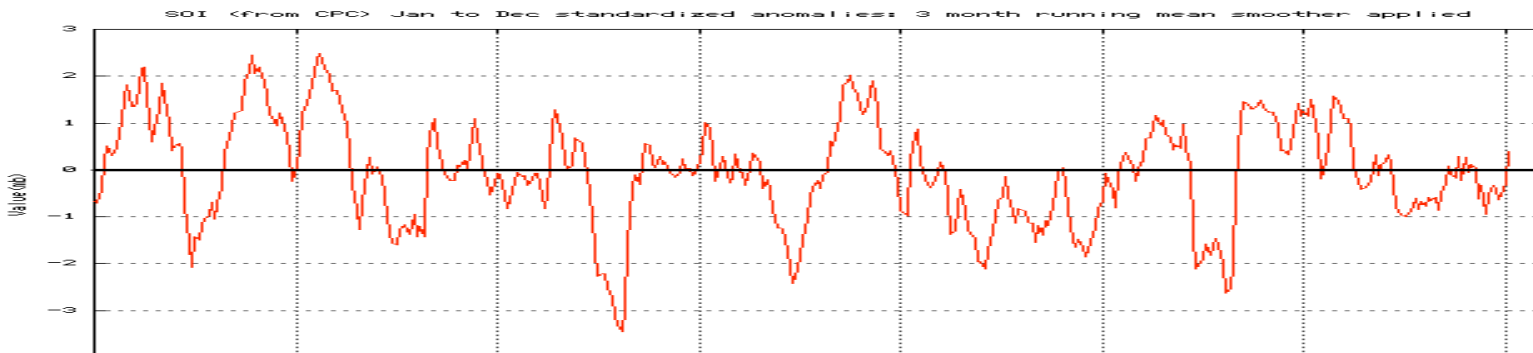
1 Jan 2003

to

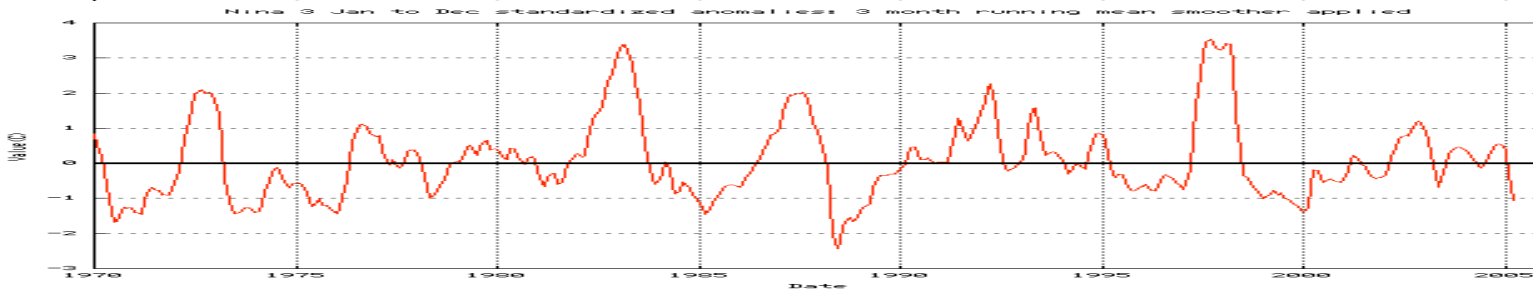
8 May 2005

“NINO” SST Indices, 1985-date (CPC)



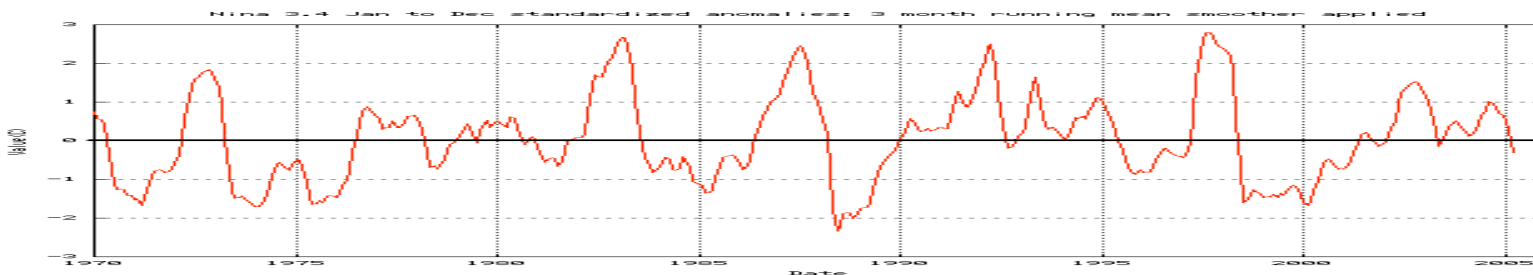


SOI



Niño 3

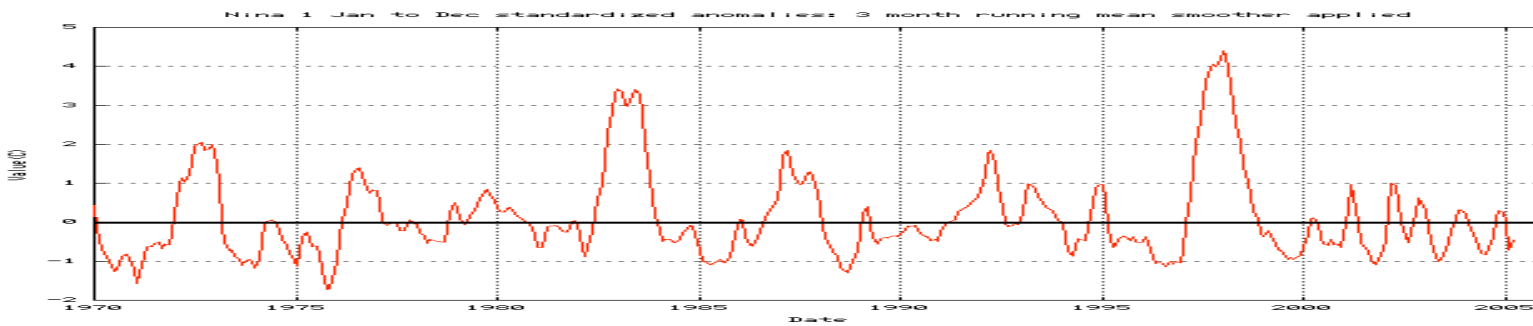
SSTA



Niño 3.4

SSTA

1970 1980 1990 2000 (3-mo Run Ave.)



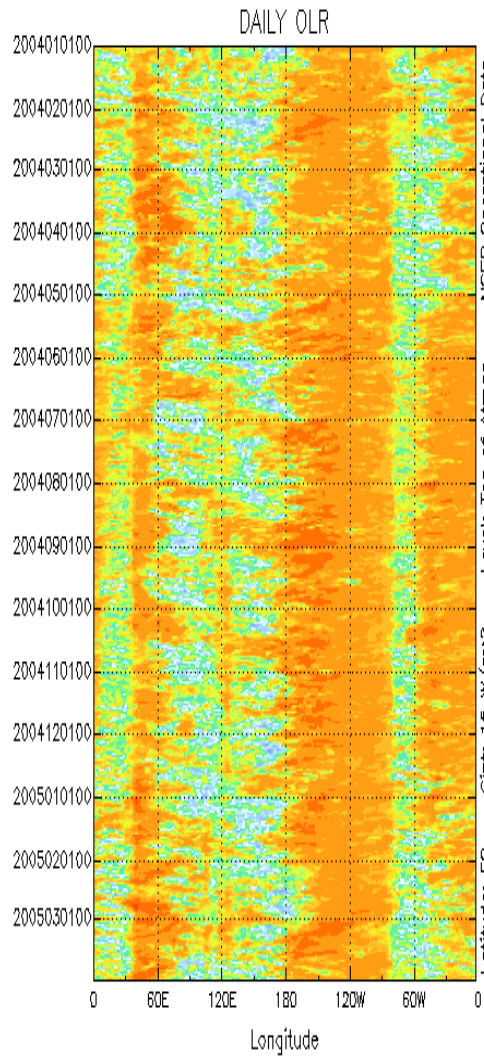
Niño 1 S.Am

SSTA

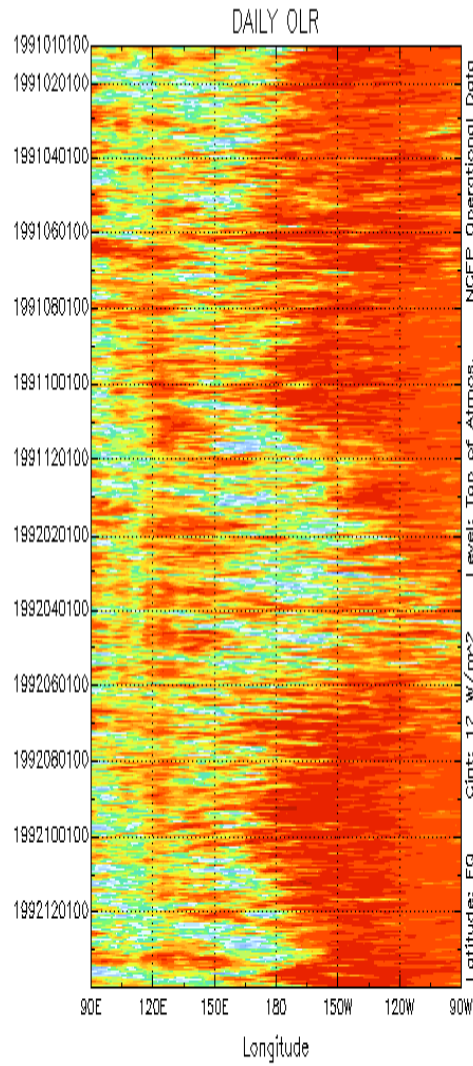
'04-05

'91-92

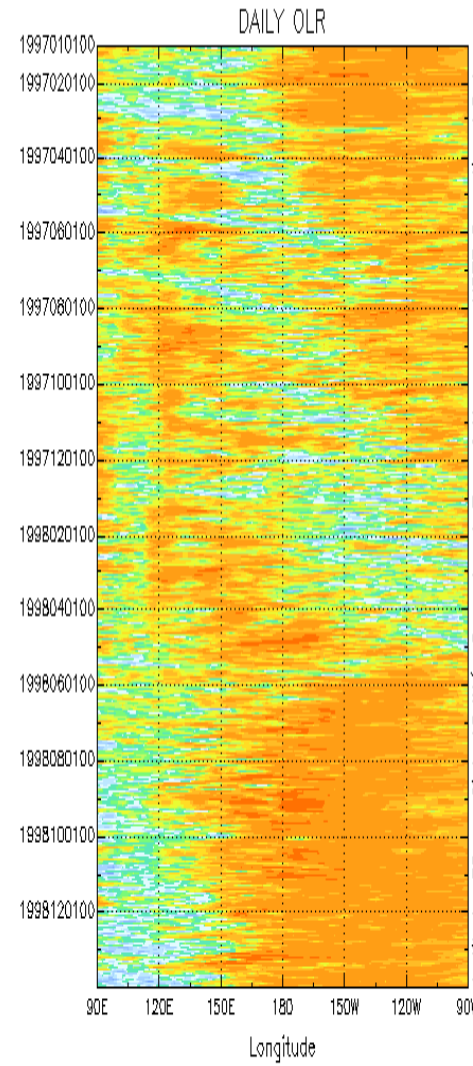
'97-98



NOAA-CIRES/Climate Diagnostics Center



NOAA-CIRES/Climate Diagnostics Center



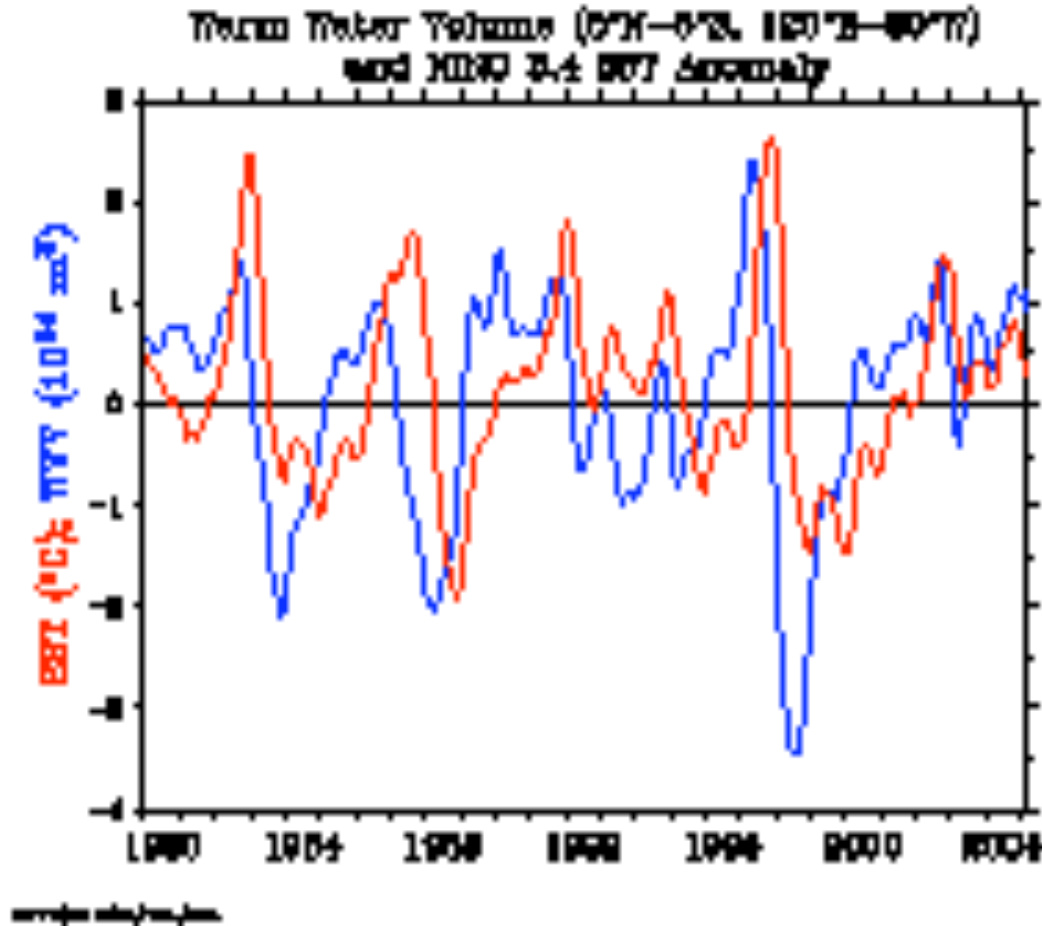
NOAA-CIRES/Climate Diagnostics Center

DAILY

OLR

**Different
scale for
'91-'92**

Tropical Pacific Warm Water Volume Index (blue)



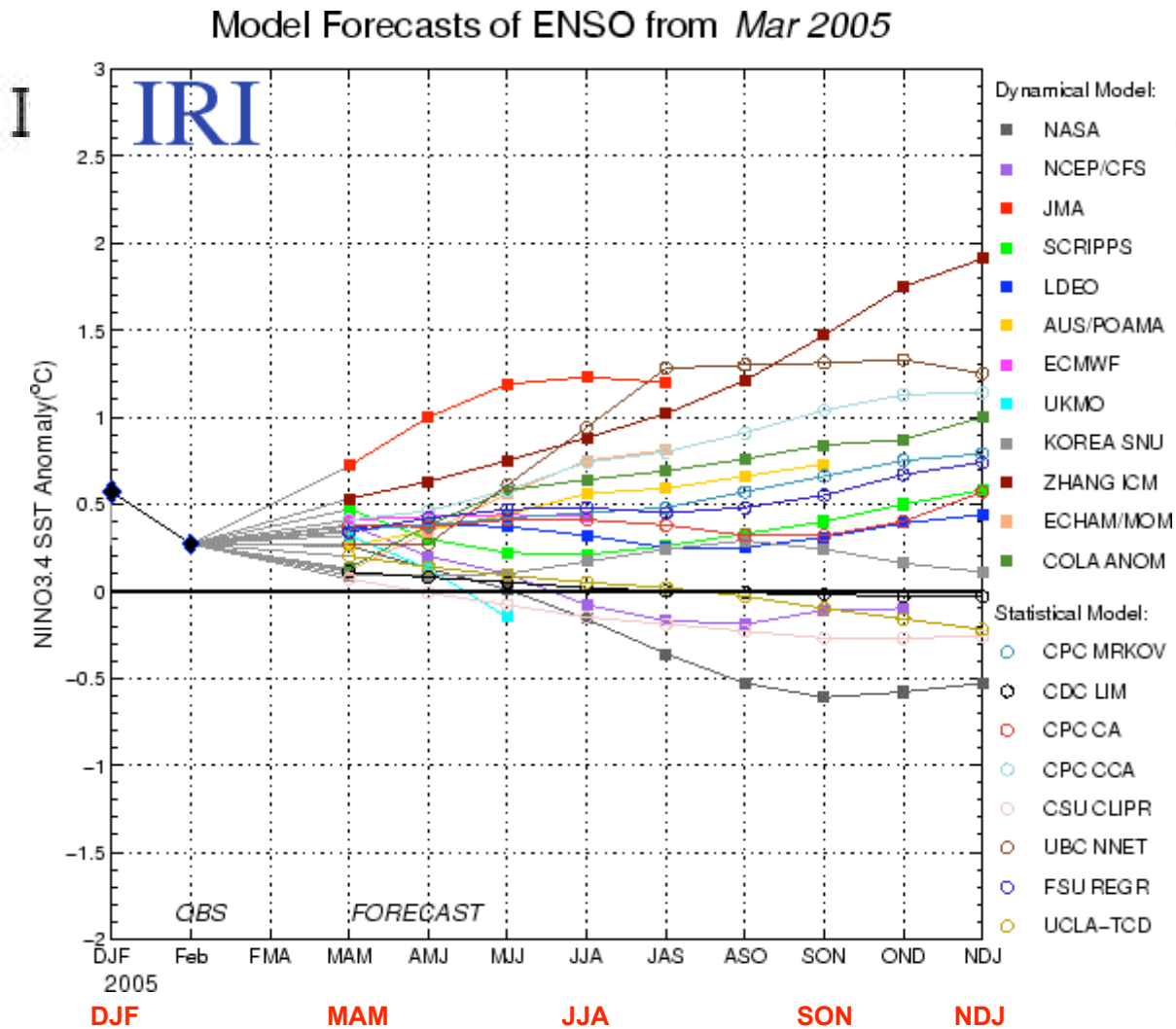
Niño 3.4 SSTA (red)

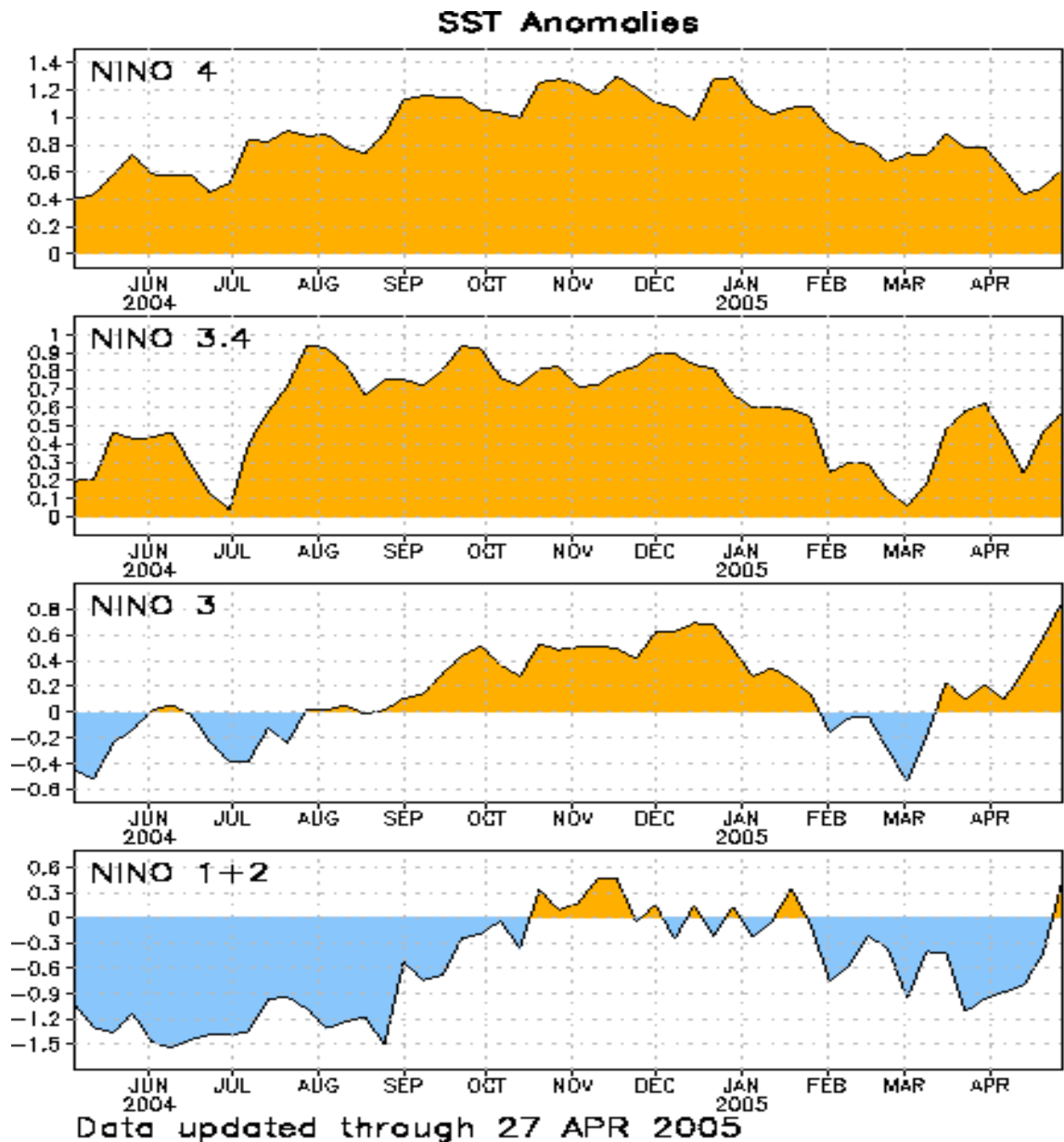
McPhaden, TAO website

What's Coming in '05-'06?

- Forecasts differ a good deal (IRI site)
- A significant number say Autumn '05 will be warmer than did forecasts for Autumn '04
- Using the new NOAA El Nino definition, about half say El Nino by SON '05.
- EEq SSTA is warm and warming as this is written

NINO3.4 SSTA





**Time series
of weekly
NINO SST
May 04-May
05**

Subsurface Temperature Trends

Work-in-Progress

(Harrison & Carson 2005)

- Identify 1degx1deg grid boxes with:
 - at least 10 observations per decade
 - at least 4 of 5 decades since '50(WODB 2000)
- Compute linear trends
- Estimate those significant at 90%

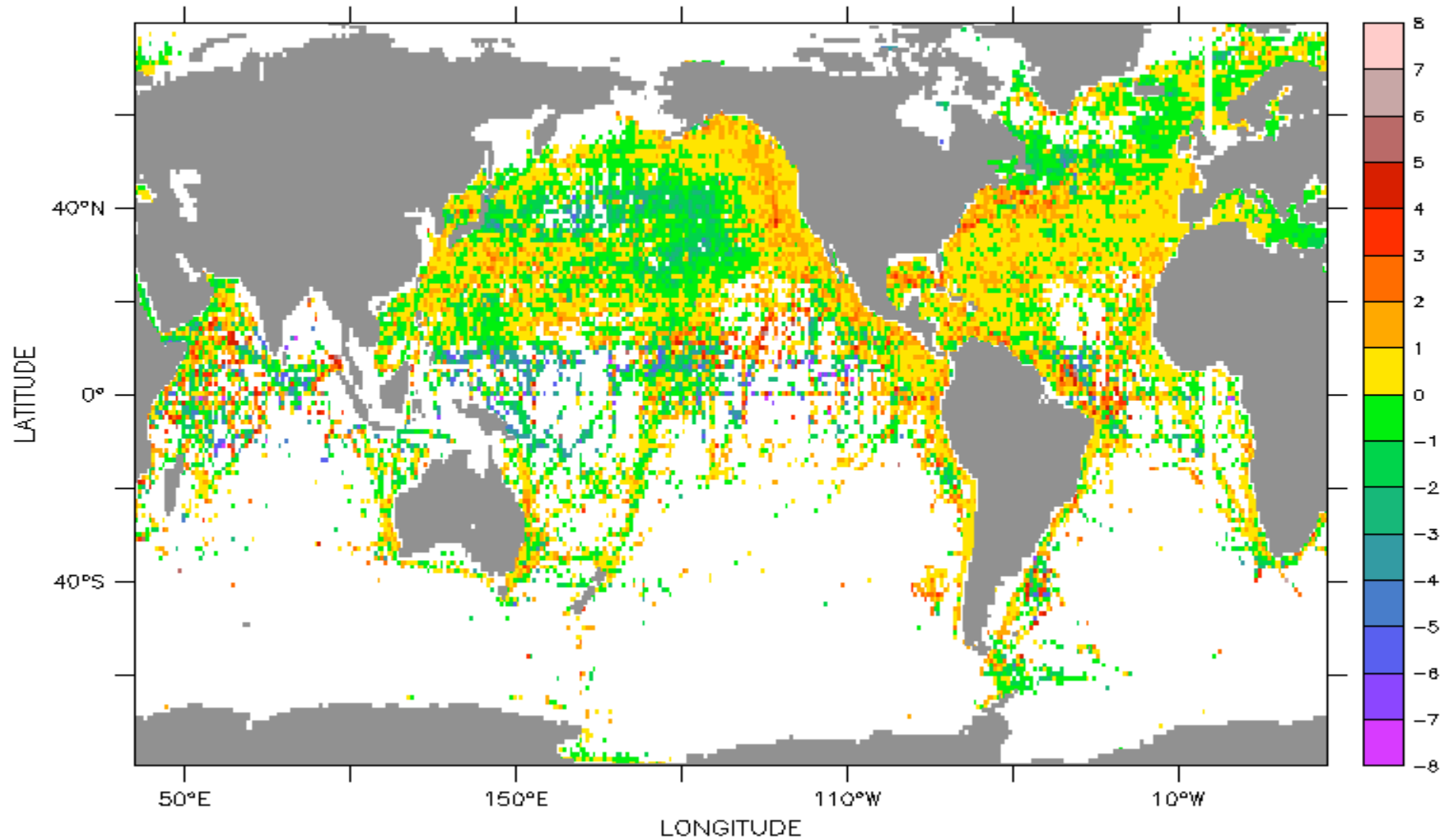
Note: No interpolation or smoothing. No climatology has to be removed

100m, 4 of 5 w. >10obs/decade, All boxes

FERRET Ver 5.51
NOAA/PMEL TRAP
Jul 13 04 17:28:12

DATA SET: 1--79-100

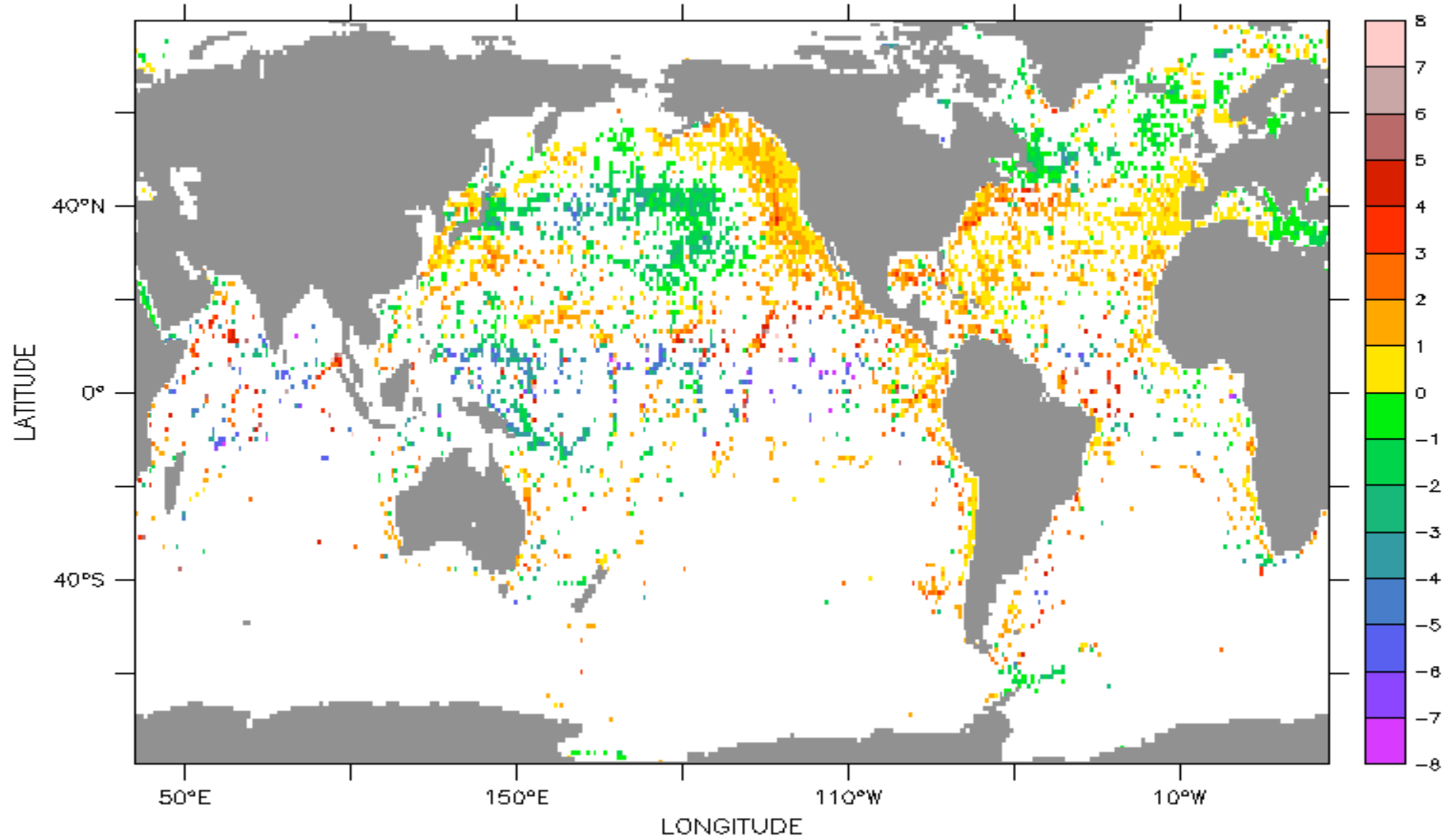
1x1 boxes



Magnitude of trend (all) (deg C)

100m, 4 of 5 w. >10obs/decade, 90% sig. trend

1x1 boxes

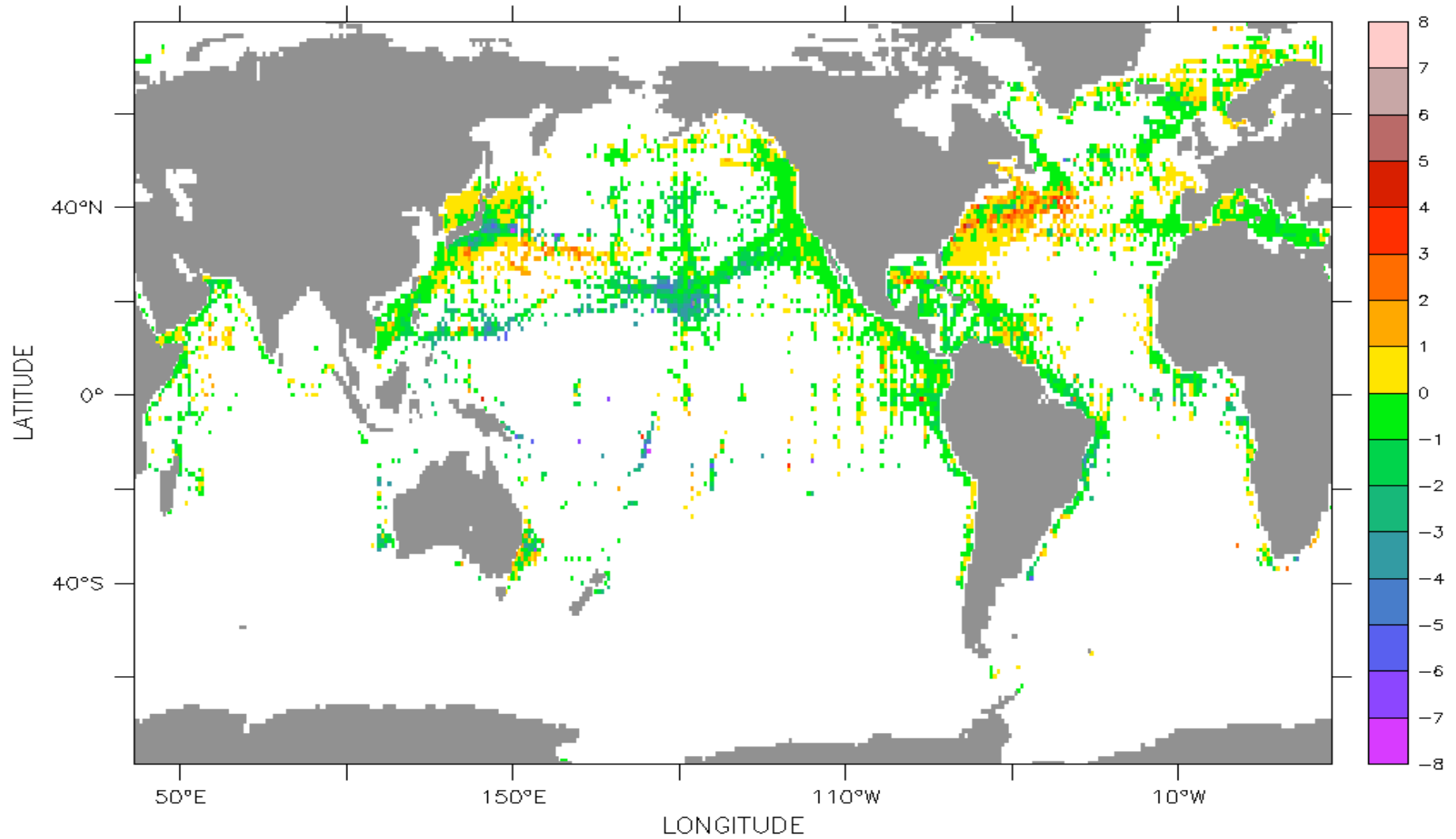


Magnitude of trend (deg C)

300m, 4 of 5 w.>10obs/decade, all boxes

1x1 boxes

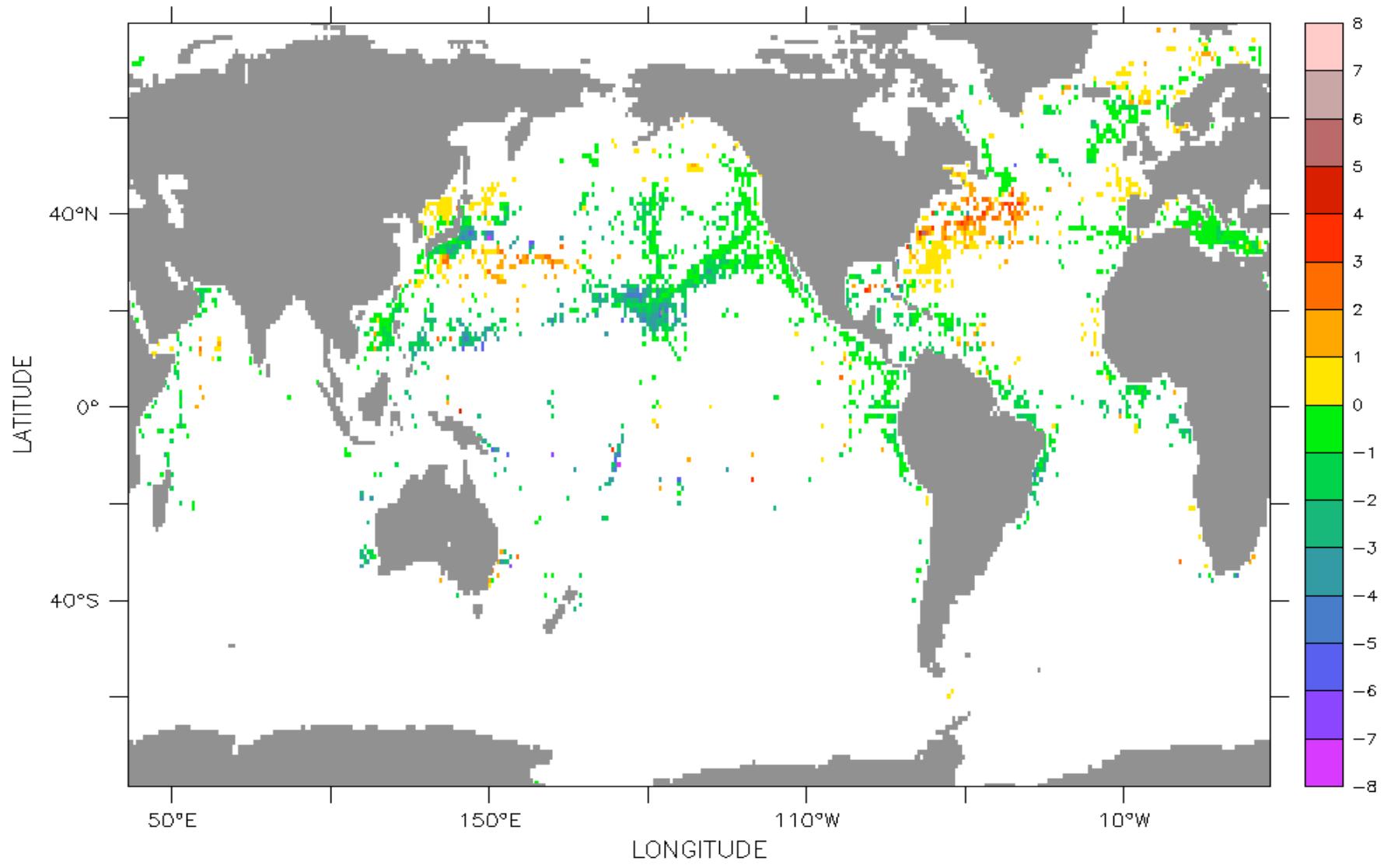
DJF SST -78-300



Magnitude of trend (all) (deg C)

300m, 4 of 5 w.>10obs/decade, 90% sig. Trend

1x1 boxes

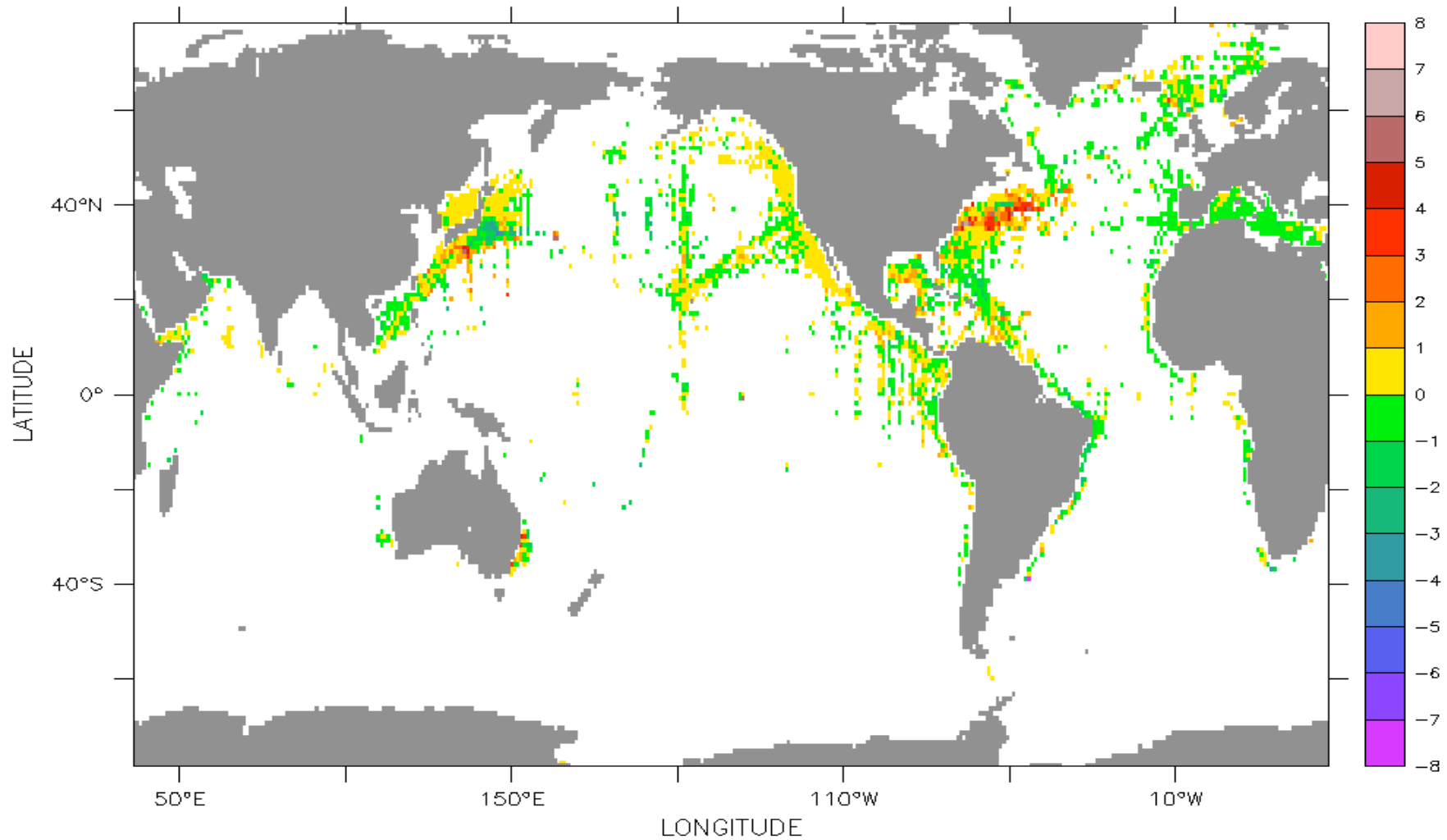


Magnitude of trend (deg C)

500m, 4 of 5 w.>10obs/decade, all boxes

DATA SET: 1--78-500

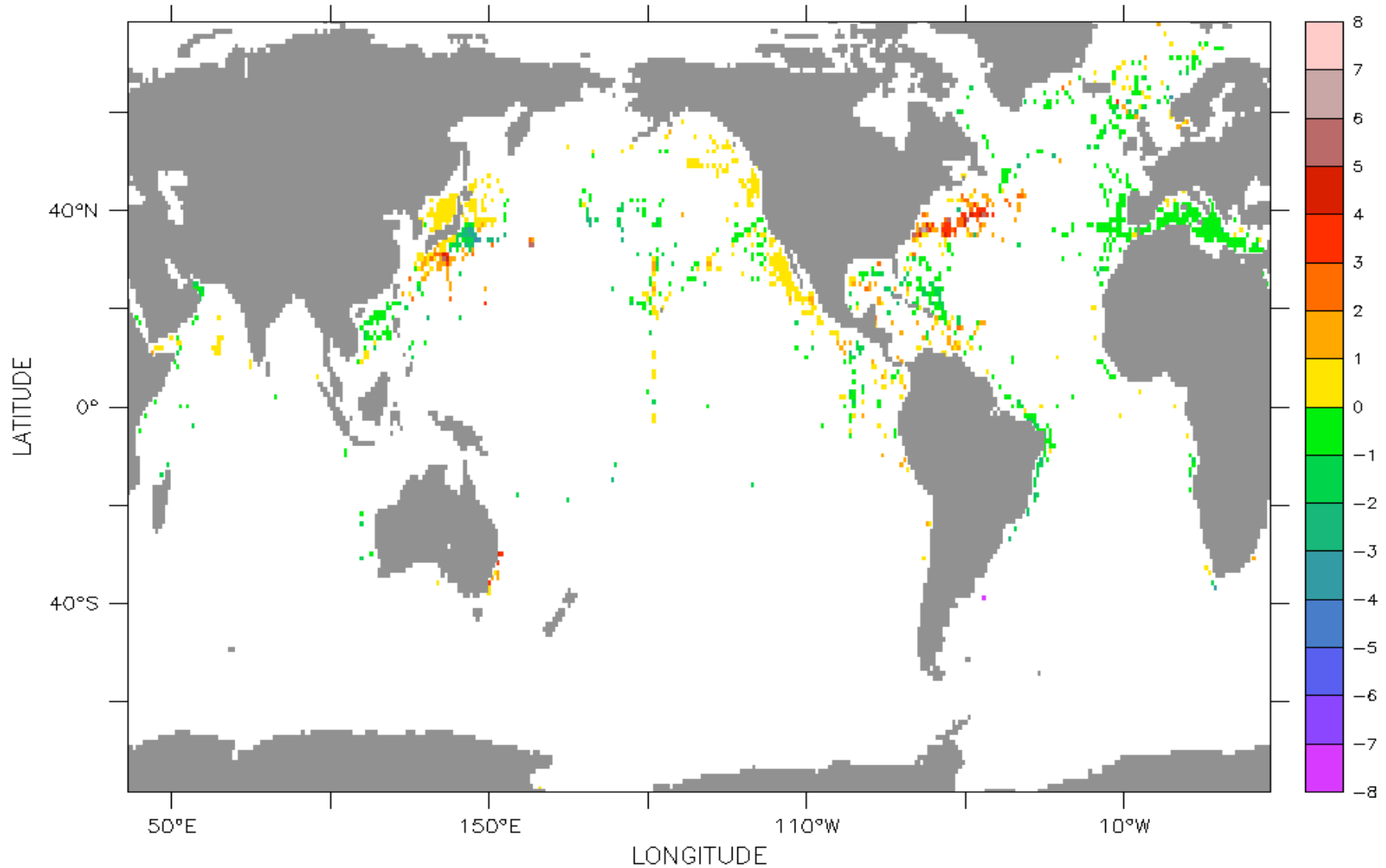
1x1 boxes



Magnitude of trend (all) (deg C)

500m, 4 of 5 w. >10obs/decade, 90% sig. trends

1x1 boxes



Magnitude of trend (deg C)

Questions

- **With all the horizontal and vertical structure, how well do we know basin trends?**
- **How to estimate effects of expected (but largely unknown) decadal variability?**
- **What is the uncertainty associated with extrapolating to get a global-mean trend?**

The need for an improved OS is clear.

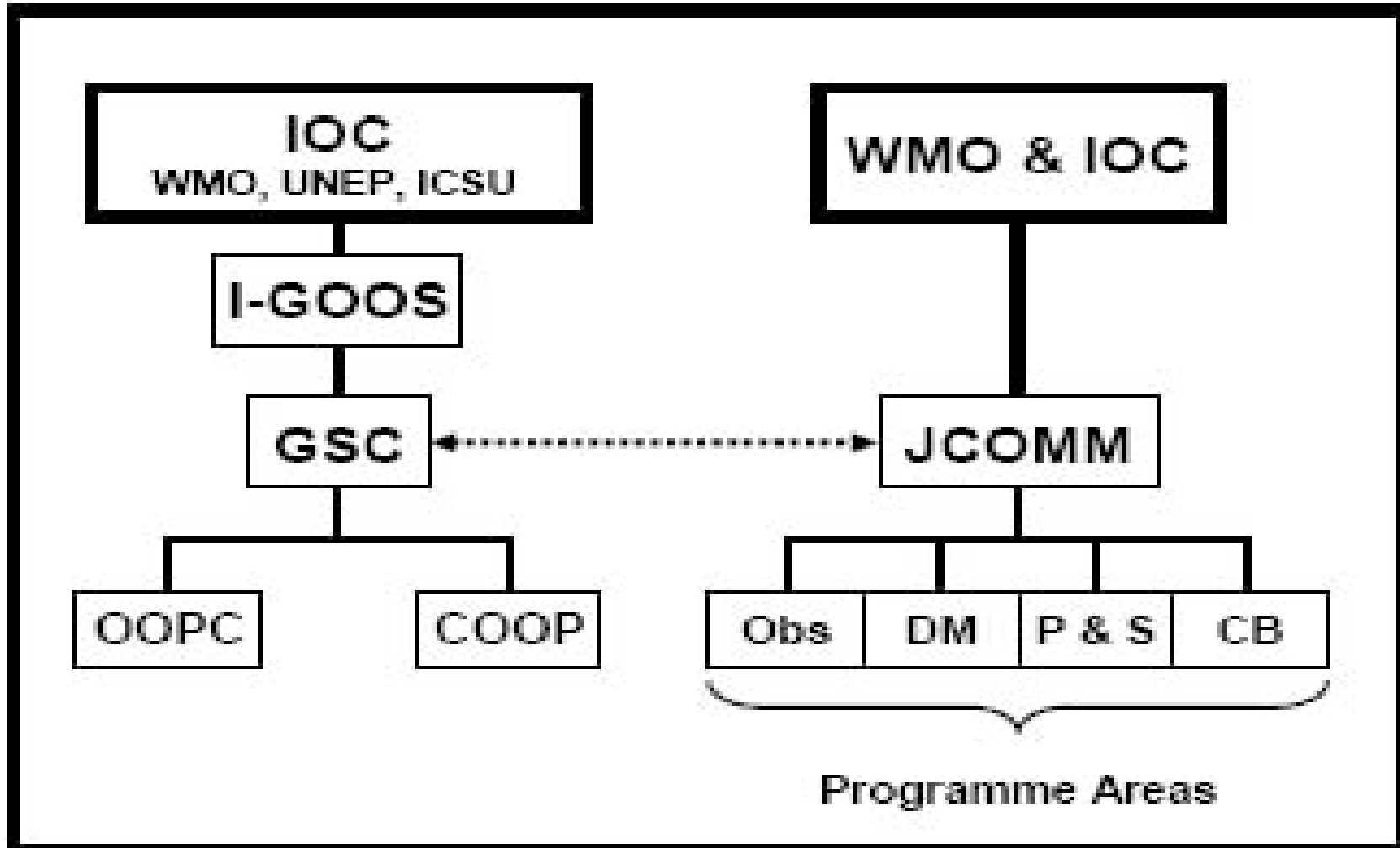
But even science return may be far off

How to make the case for the value of knowing the answer to a particular level of uncertainty?

GOOS SC-8

- New Director @ IOC – Keith Alverson
- Incoming New Chair – John Field
- COOP - Implementation Strategy;
Proposed that Panel will disband and that
GSC will include a coastal subgroup
- OOPC – GCOS IP, GODAE, Satellites,
Data System, global deployment
challenge
- I-GOOS proposed to be steering body;
establish GOOS Regional Federation
- Capacity building by IOC (Deser)

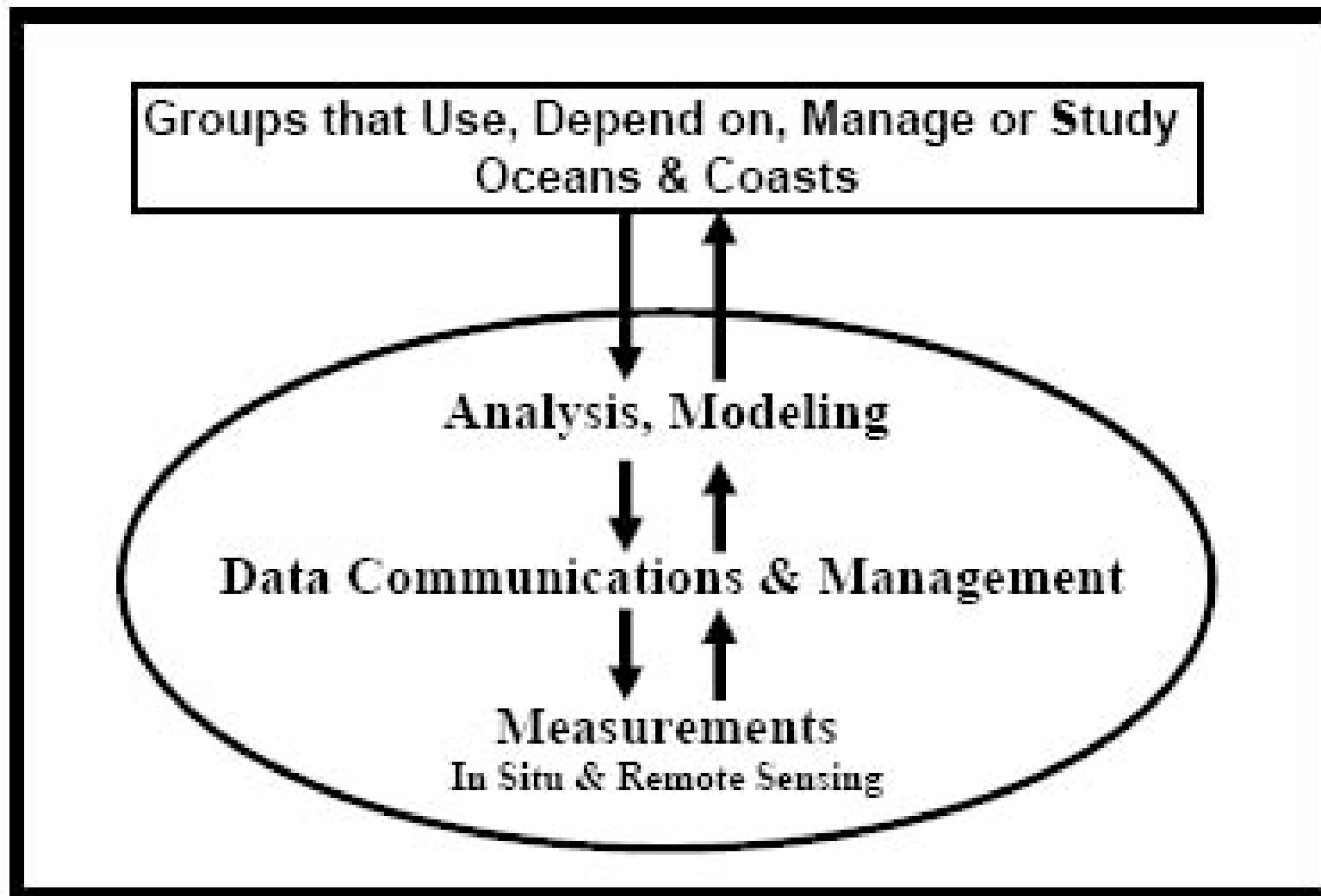
GOOS Wiring Diagram, 2004



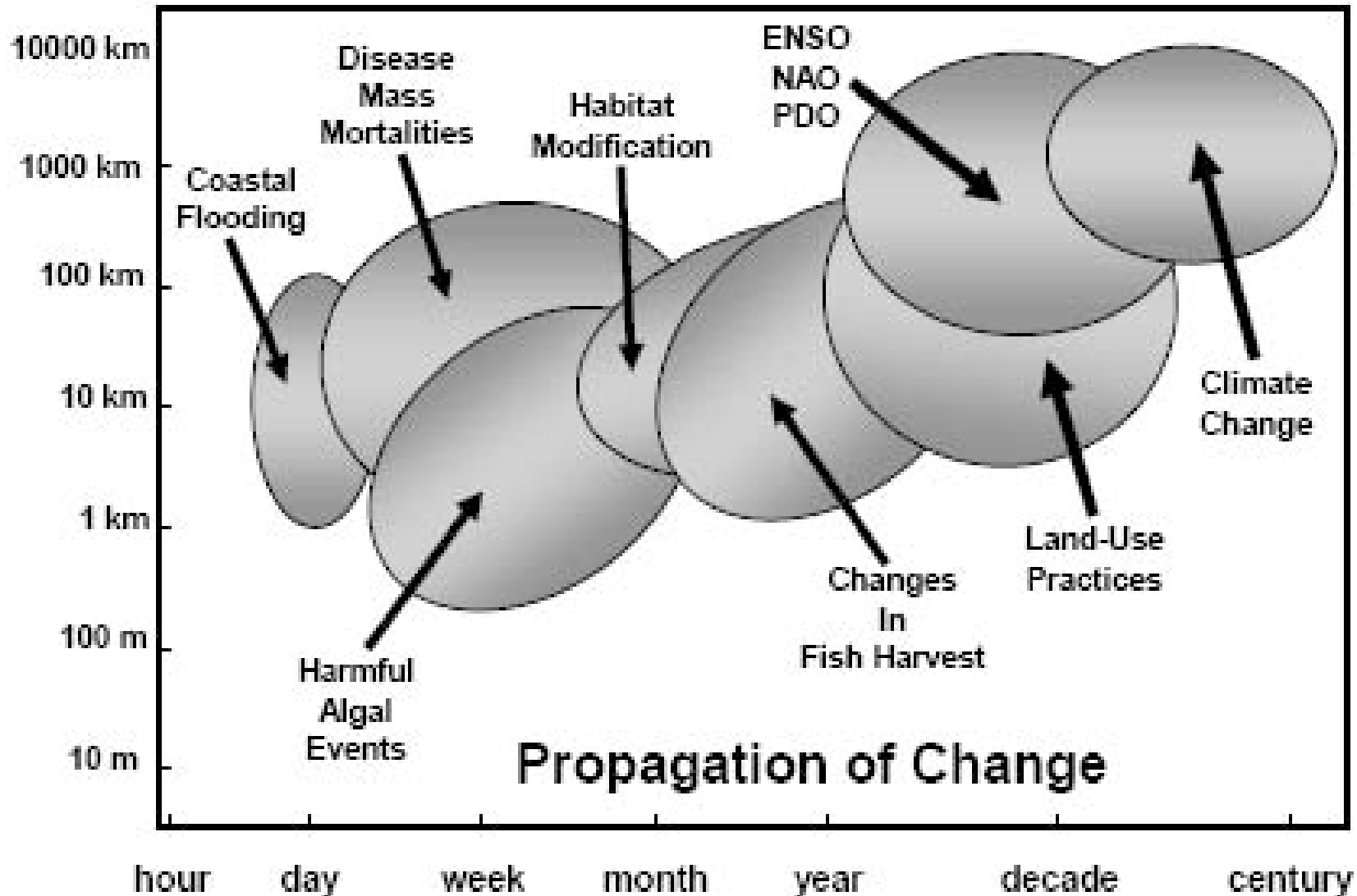
Strategic Implementation Plan for the Coastal Module of GOOS Jan 2005

- Meeting Societal Needs
- Sustained Observing Needs
- Implementing the Observing SubSystem
- Implementing the Data Mgmt SubSystem
- Implementing the Modeling & Analysis SS
- Developing and Improving Capacity
- Developing the Coastal Module Thru PPs
- Performance Evaluation

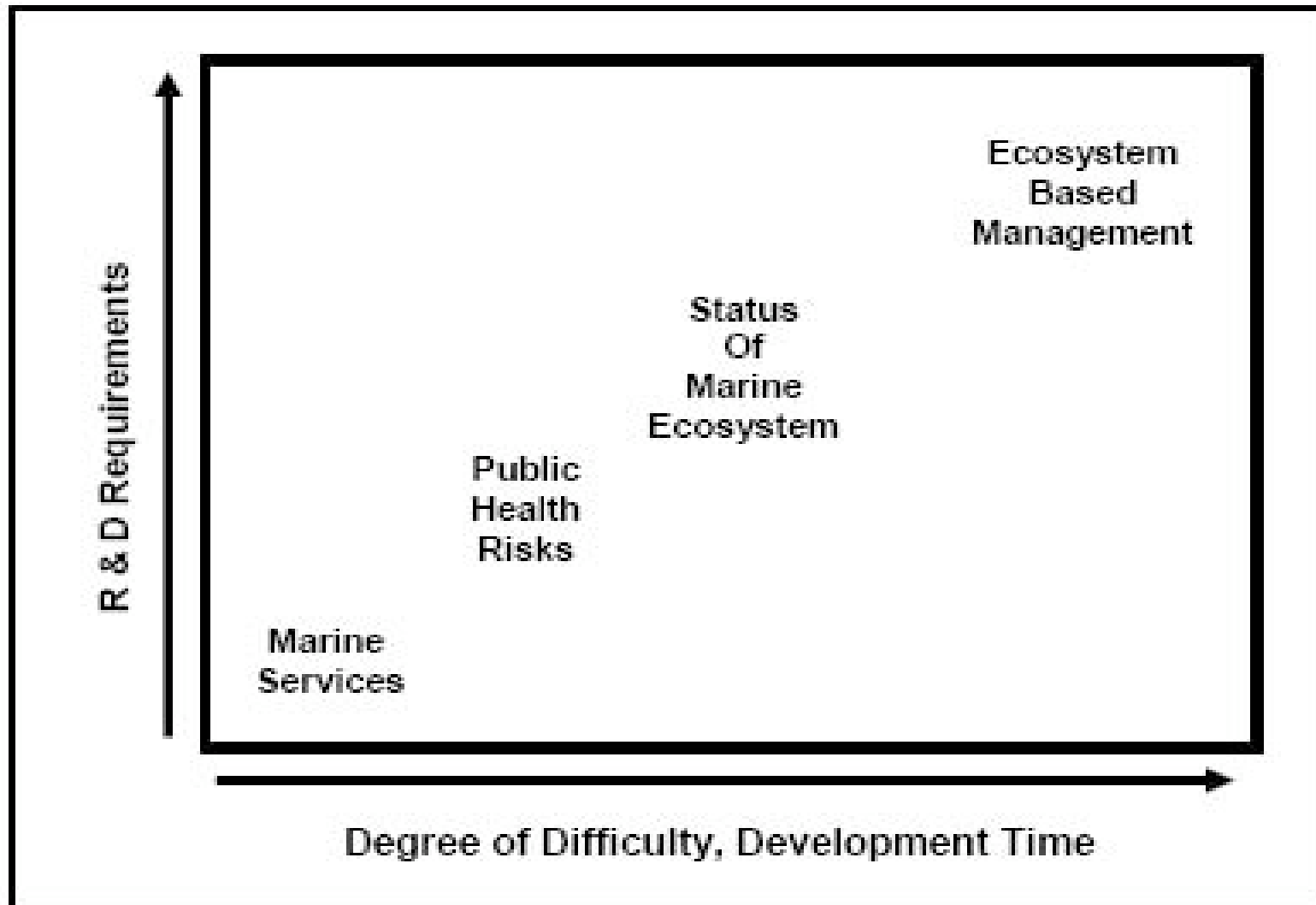
Subsystems & Interactions



Relationships - from small scales to large scales



*R&D– Schematic of Difficulty & Development Time
for various goals*



Regional Alliances & National GOOS Programs, late 2004

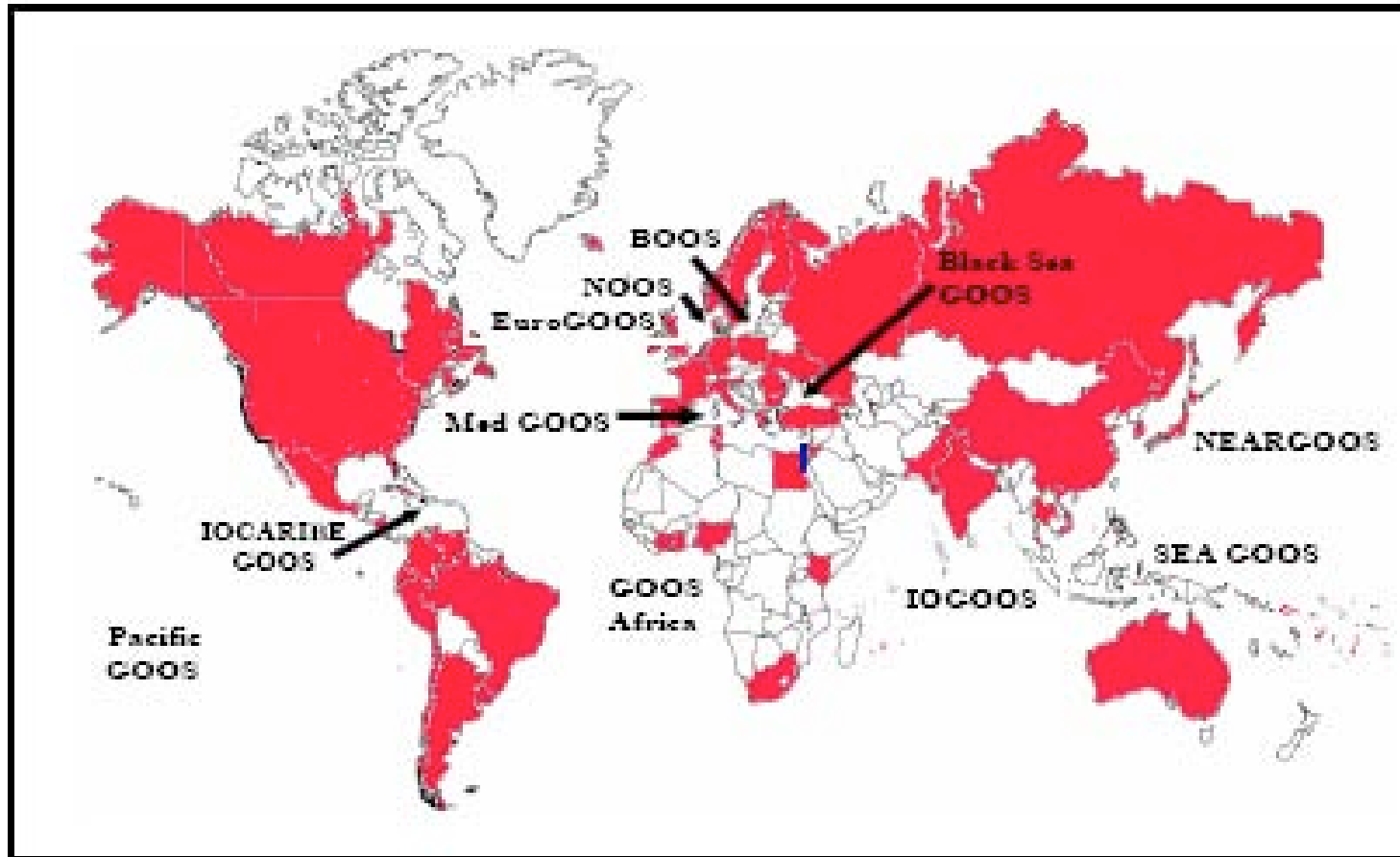


Figure 2.3. GOOS Regional Alliances (black labels) and National GOOS Programmes (red) are forming to establish the global ocean and coastal modules of GOOS worldwide. The list of contributing countries and descriptions of GRAs can be found at <http://ioc.unesco.org/goos/key3.htm#reg>.

POGO 2004

- **Reviewed need for global module obs**
- **Reported on GCOS IP & OS Implementation Progress**
- **Global Deployment Issues & Access to ship schedules**
- **Advantages of Real Time data approach**
- **Need for advocacy for ocean satellites**
- **Desire to increase comprehensiveness of global observations**
- **Links to GEO Implementation Plan**

WCRP Observations & Analysis Panel - WOAP

- Part of JSC COPES (Comprehensive Observations & Predictions of the Earth System) Strategy
- WCRP Modeling Panel (WMP) is sister panel
- Trenberth Chair
- First meeting June 2005

WOAP Members -1

- CliC - Jeffrey Key
- CLIVAR - Detlef Stammer
- GEWEX - Bill Rossow
- SPARC - Bill Randel
- WGCM - Greg Flato
- WGNE - Andrew Lorenc
- WGSF - Elizabeth Kent
- CEOP - Toshio Koeiki

WOAP Members - 2

- Reanalysis Centres - Adrian Simmons
- GEO – Guy Duchossois
- AOPC – Mike Manton
- OOPC – Ed Harrison
- TOPC – Alan Belward
- IGBP – TBD
- WMP – J. Shukla (ex-officio)

WOAP-I Agenda

- TORs, JSC expectations
- GEOSS, GCOS – Coordinate; minimize overlap
- Reanalyses
- Data set preparation & Products
- Satellite missions & agency relations
- CEOP
- Reports on Data Assimilation in Projects
- Data issues
- Next Steps

GODAE since OOPC-9

- GODAE Comparison Projects progress
- GODAE Servers progress
- GODAE Second Symposium – User Focus
- GODAE Summer School – Capacity Building
- GHRSSST Products availability

GODAE Second Symposium – GODAE in Operation; Demonstrating Utility

www.bom.gov.au/GODAE/Symposium%20II/

Break out session topics:

Nat. Hazards & coastal impacts

Integrated coastal management

Marine Ecosystems mgmt: fish & biogeochem

Crisis Mgmt: SAR & emergency response

Risk Mgmt: Industry, engineering & other at-sea ops

Climate: Assess & predict climate var & change

