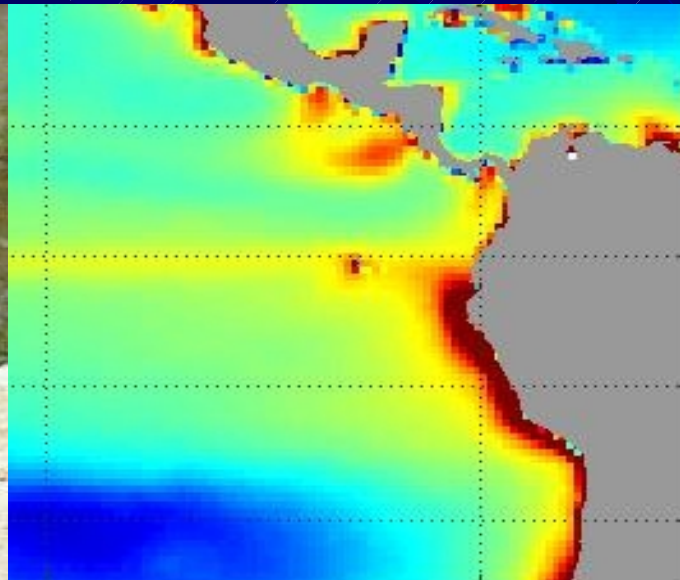
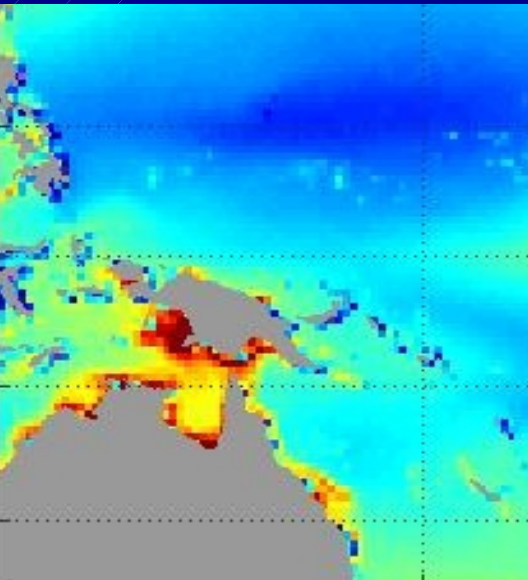




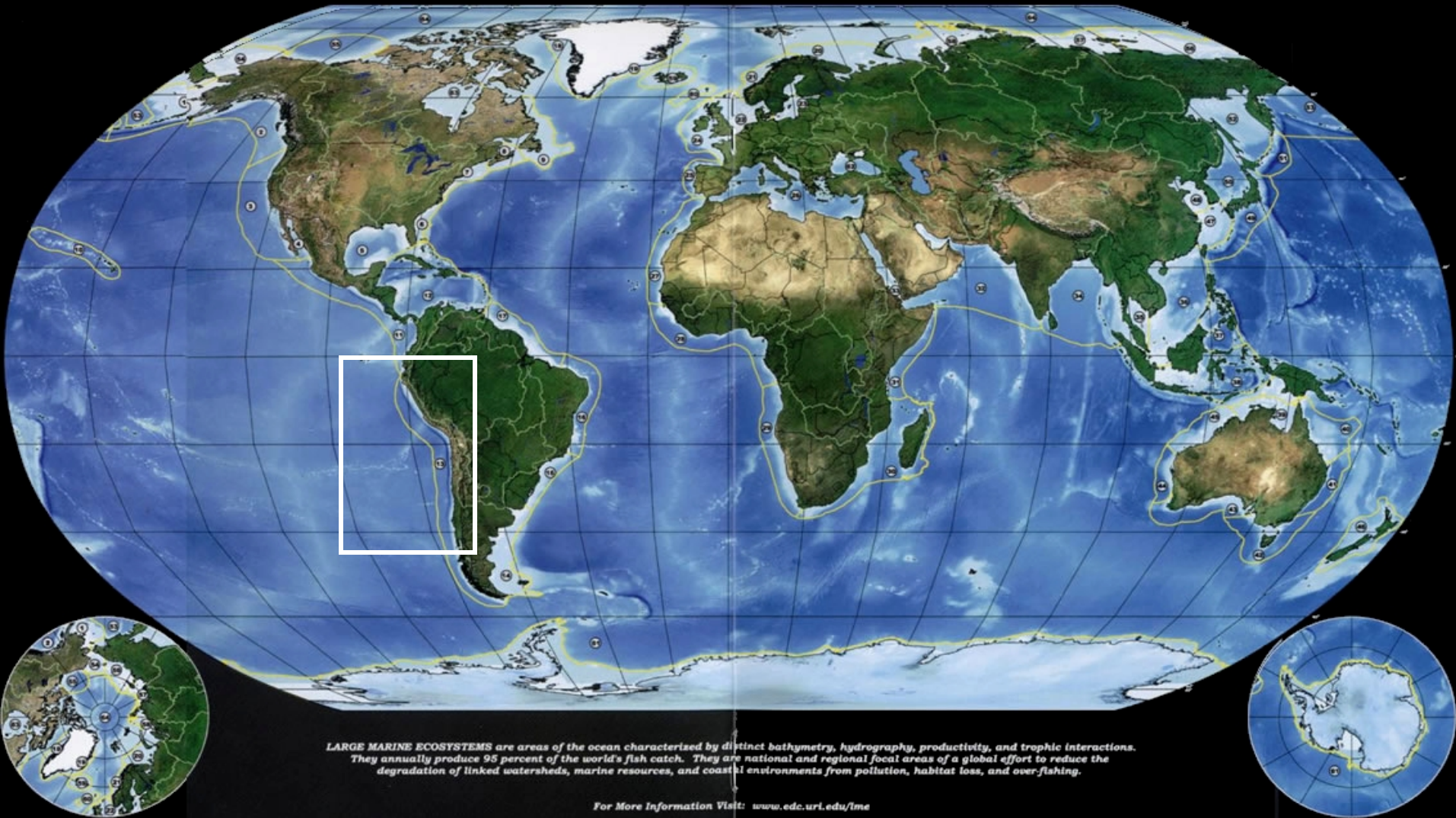
Perú/Chile Large Marine Ecosystem Program (LME)

Adm. Hector Soldi
President
Instituto del Mar del Peru

Towards ecosystem management of the Humboldt Current Large Marine Ecosystem (GEF Project)



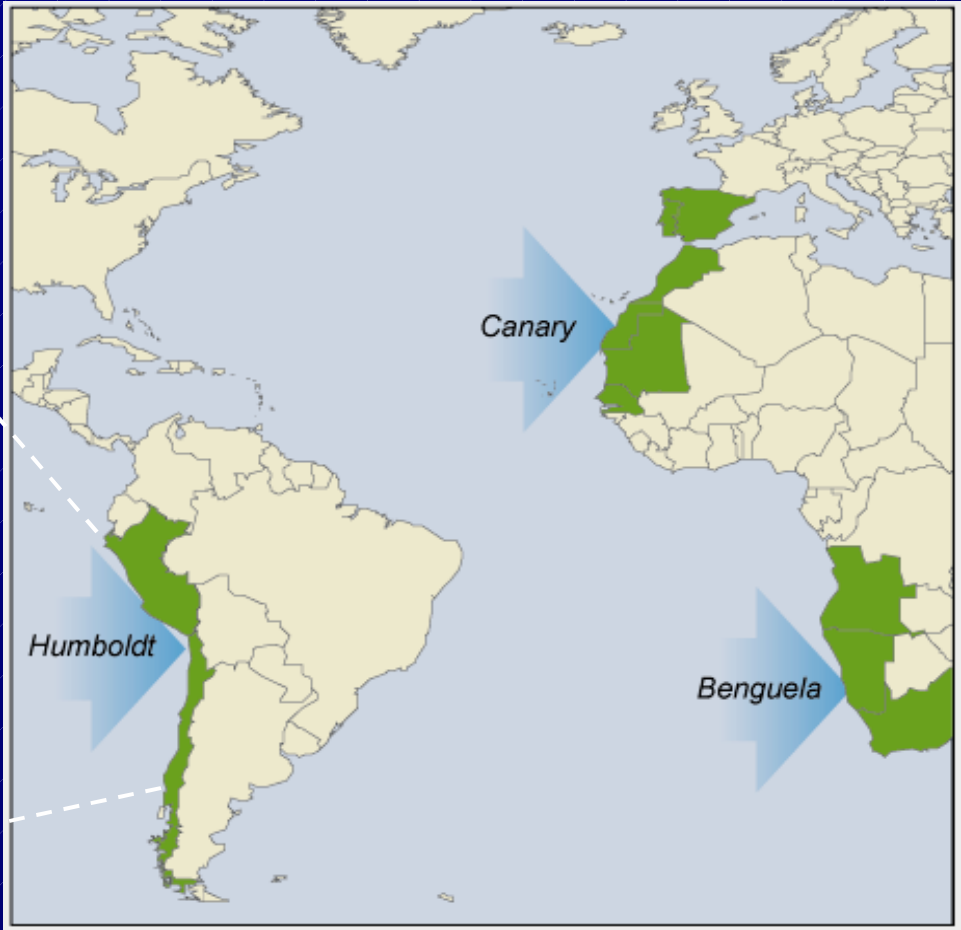
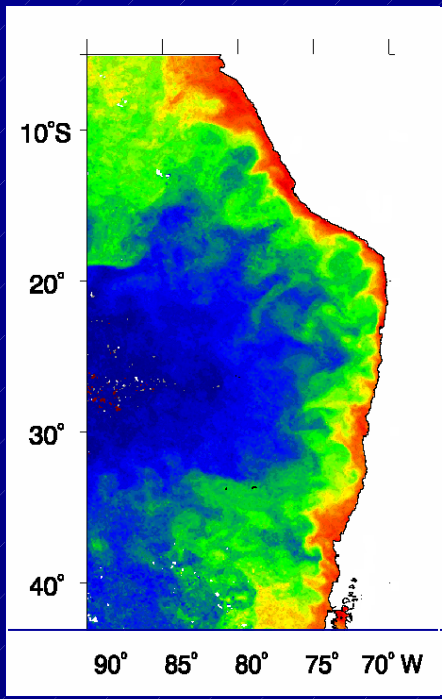
LARGE MARINE ECOSYSTEMS OF THE WORLD (LME)



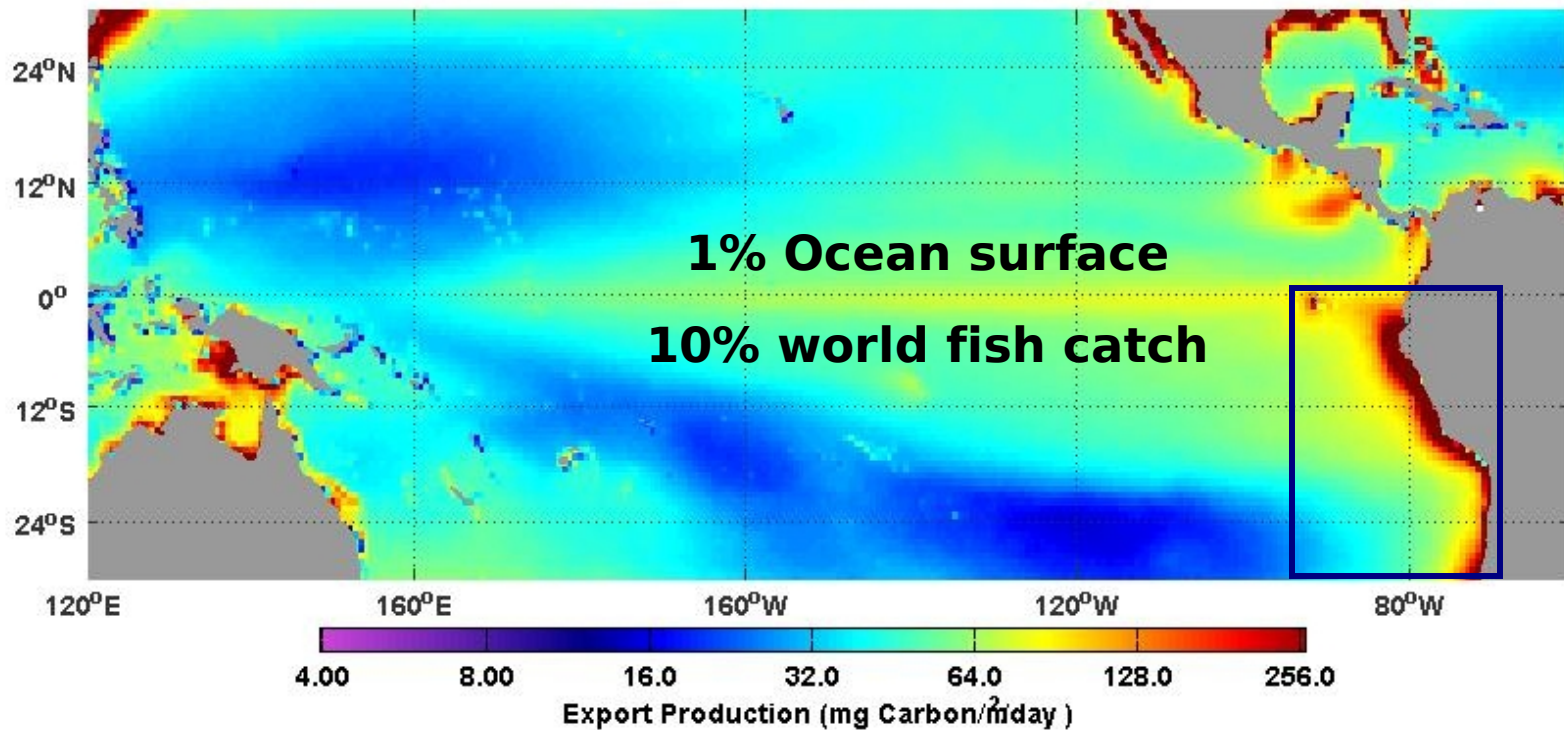
LARGE MARINE ECOSYSTEMS are areas of the ocean characterized by distinct bathymetry, hydrography, productivity, and trophic interactions. They annually produce 95 percent of the world's fish catch. They are national and regional focal areas of a global effort to reduce the degradation of linked watersheds, marine resources, and coastal environments from pollution, habitat loss, and over-fishing.

For More Information Visit: www.edc.uri.edu/lme

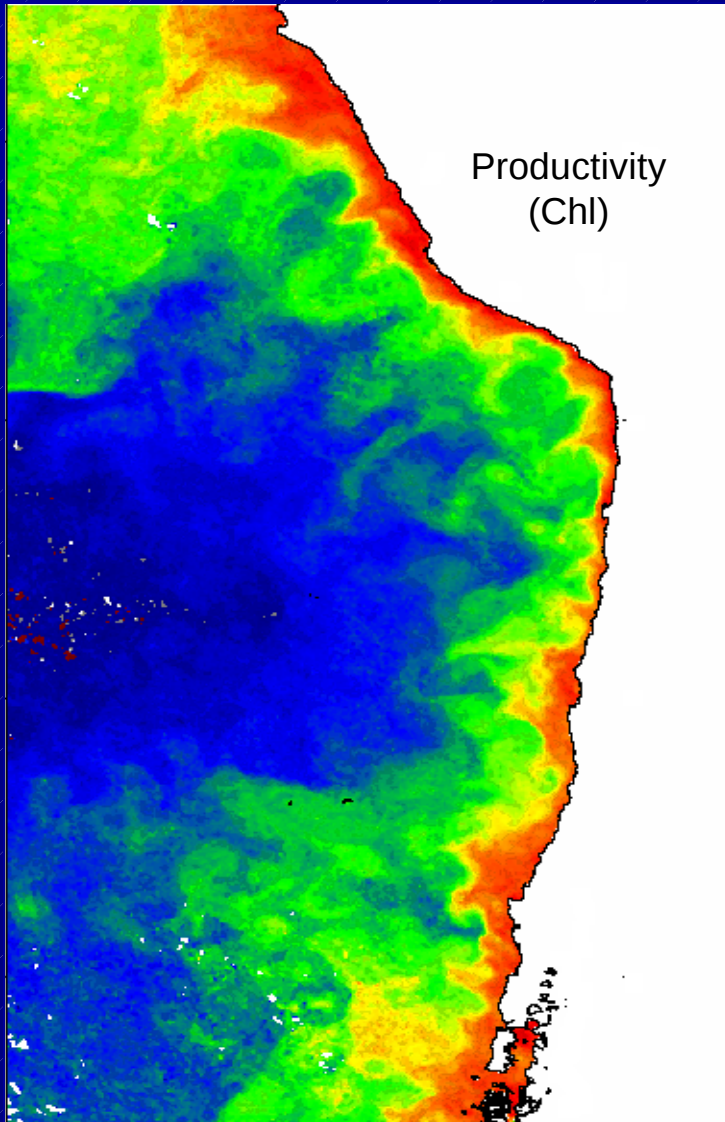
MOST IMPORTANT UPWELLING AREAS



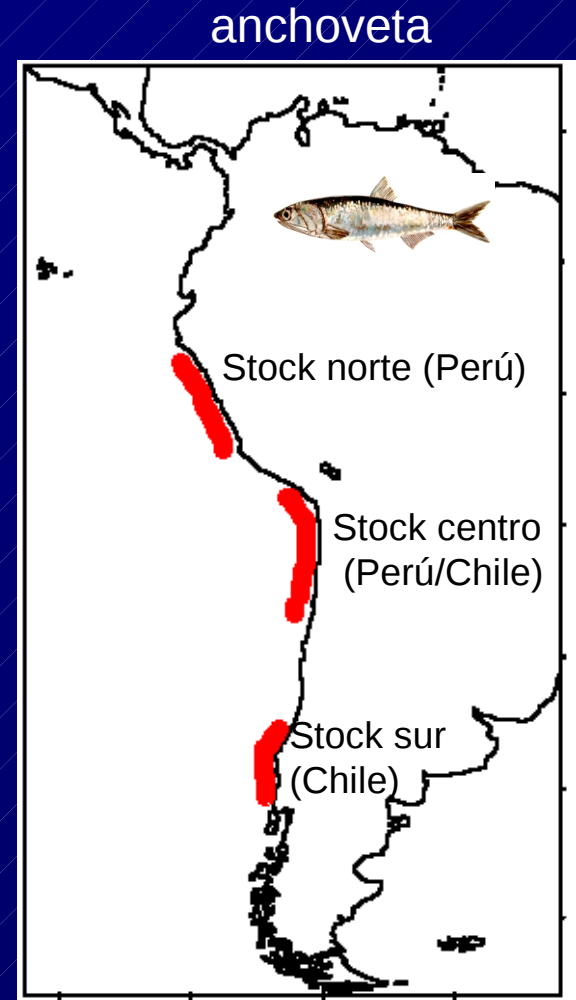
Humboldt LME Productivity



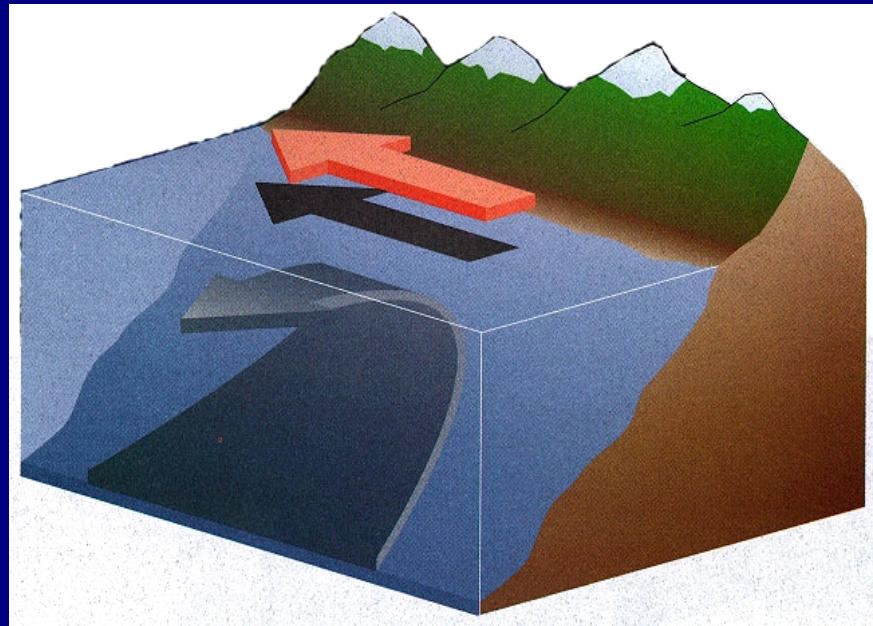
Fisheries Management

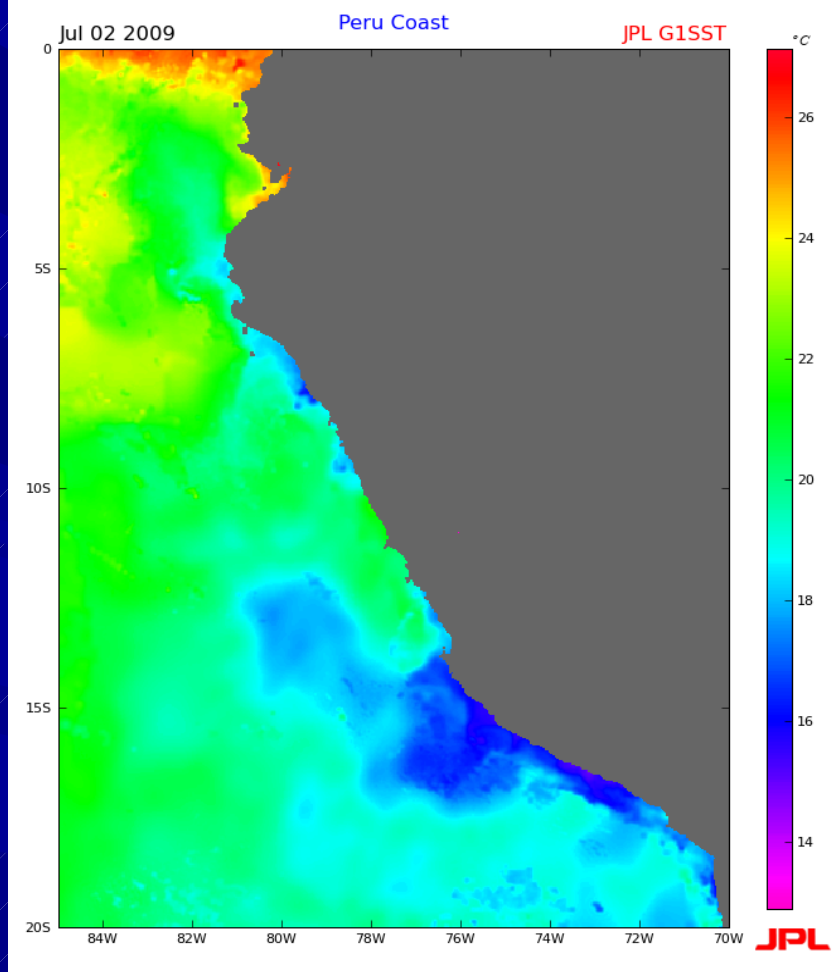


Need: High
Resolution
Productivity

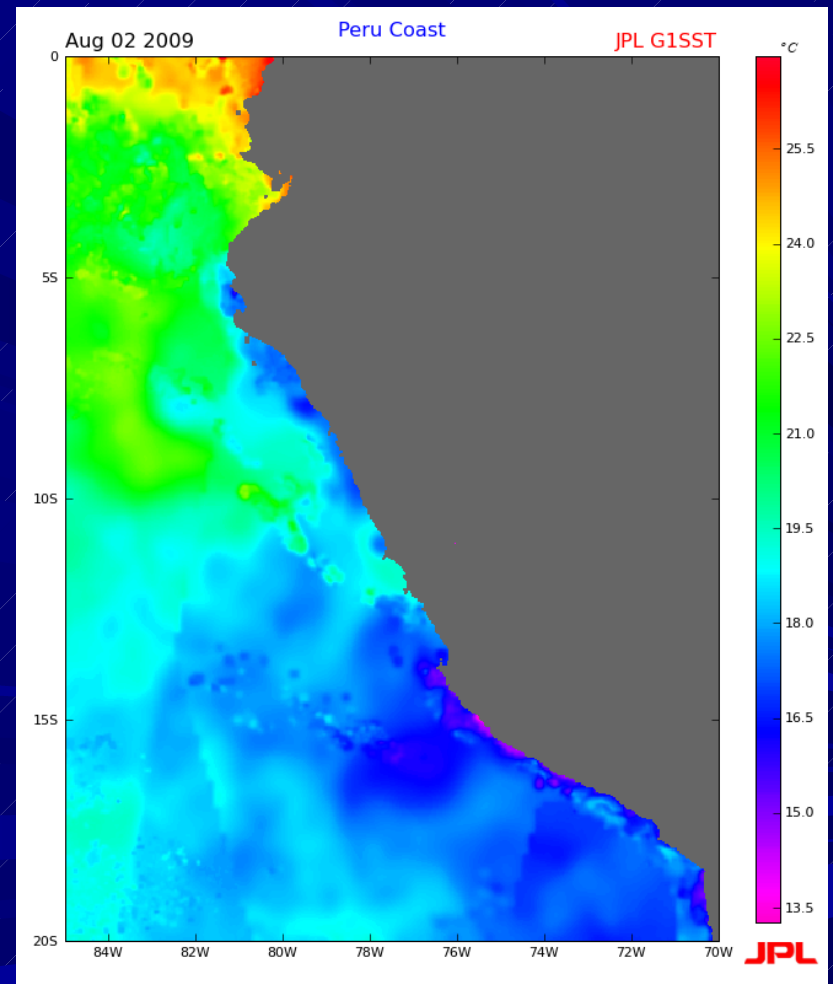


Strong and persistent
upwelling of rich nutrient
Highly productive water

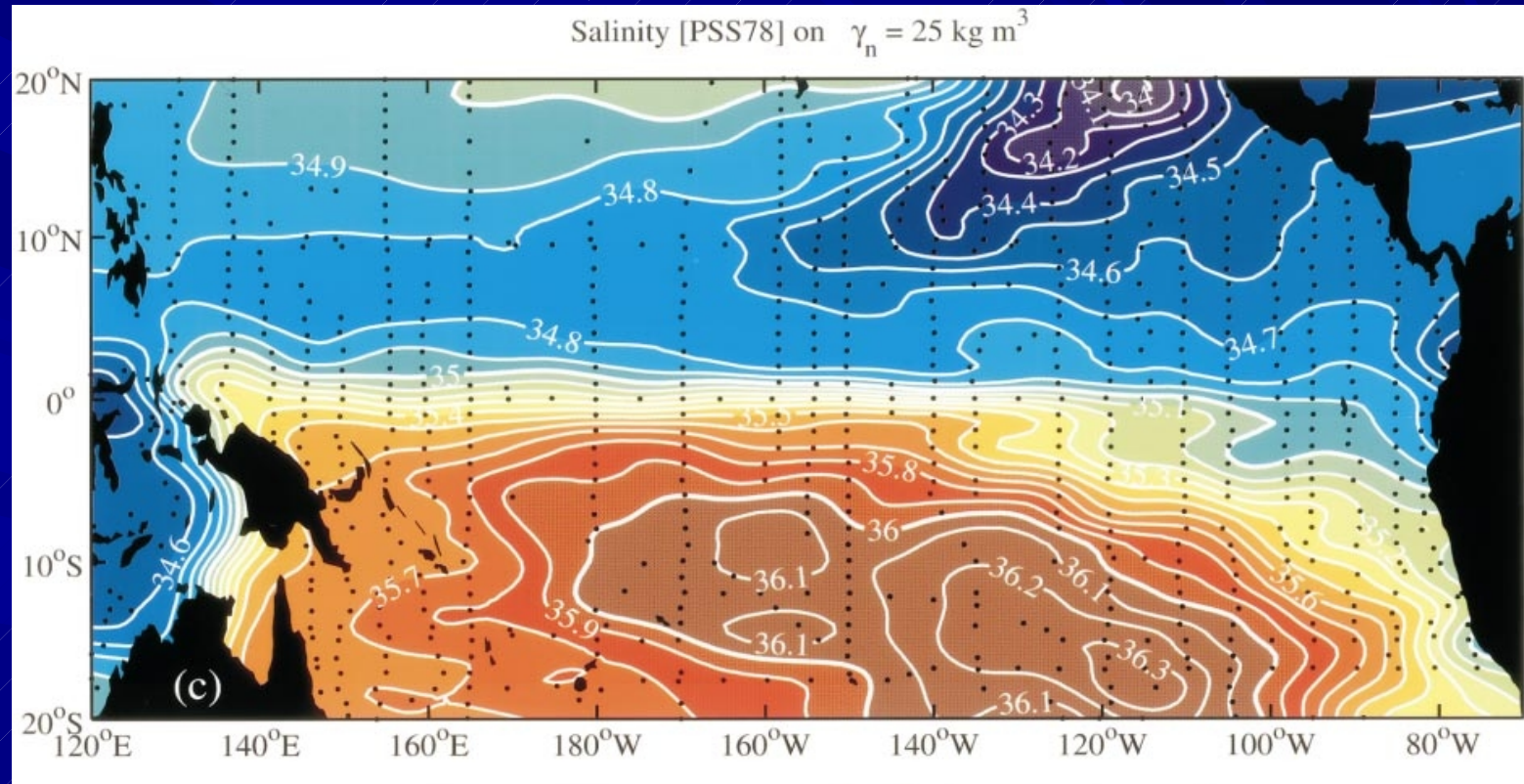




Need: High resolution SST

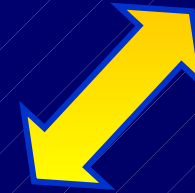
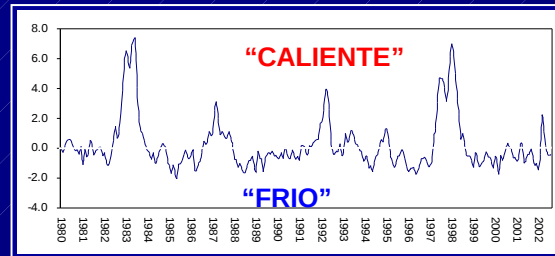


Water mass indicators



**Need: High resolution
surface salinity**

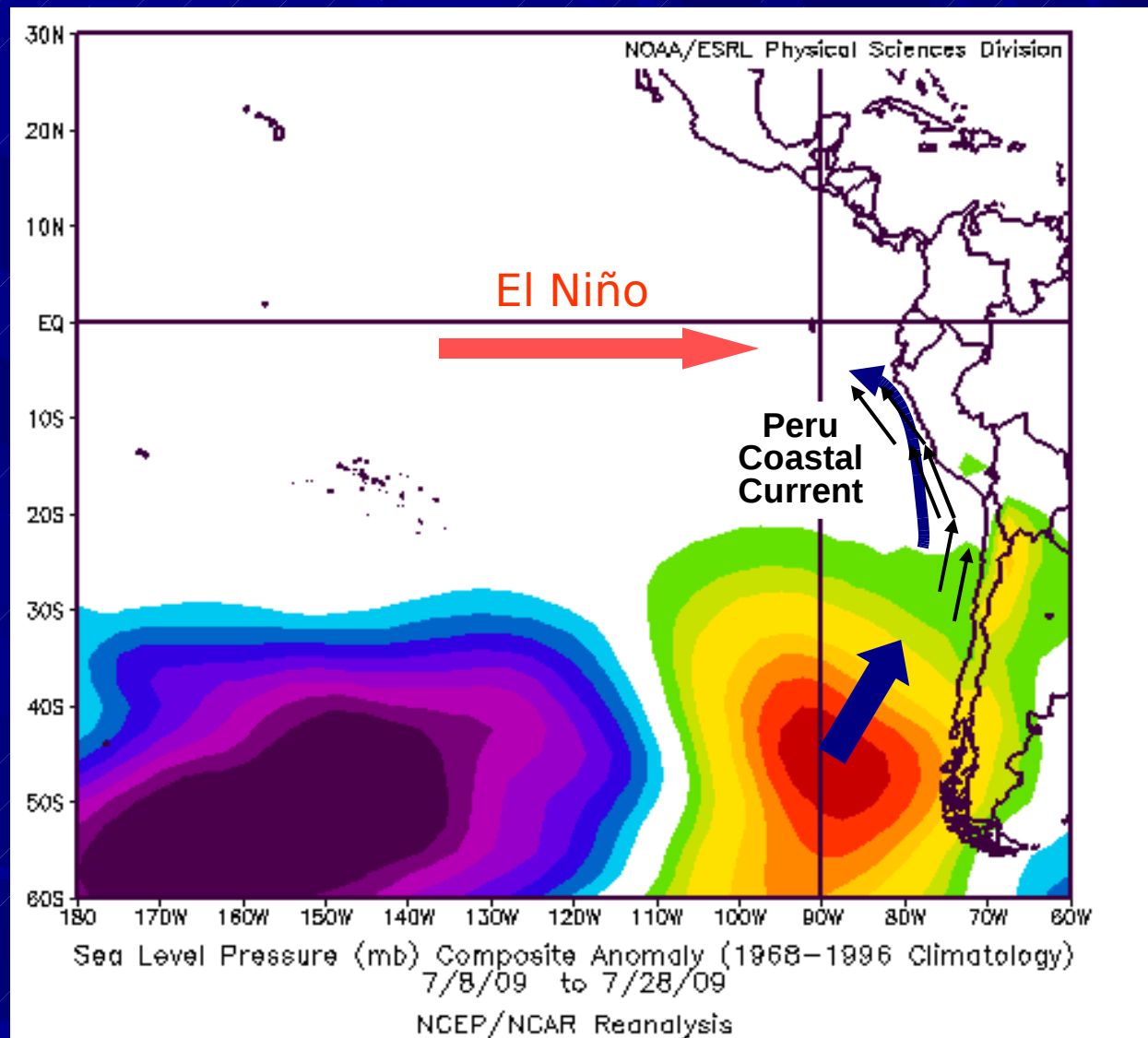
Interannual climate variability



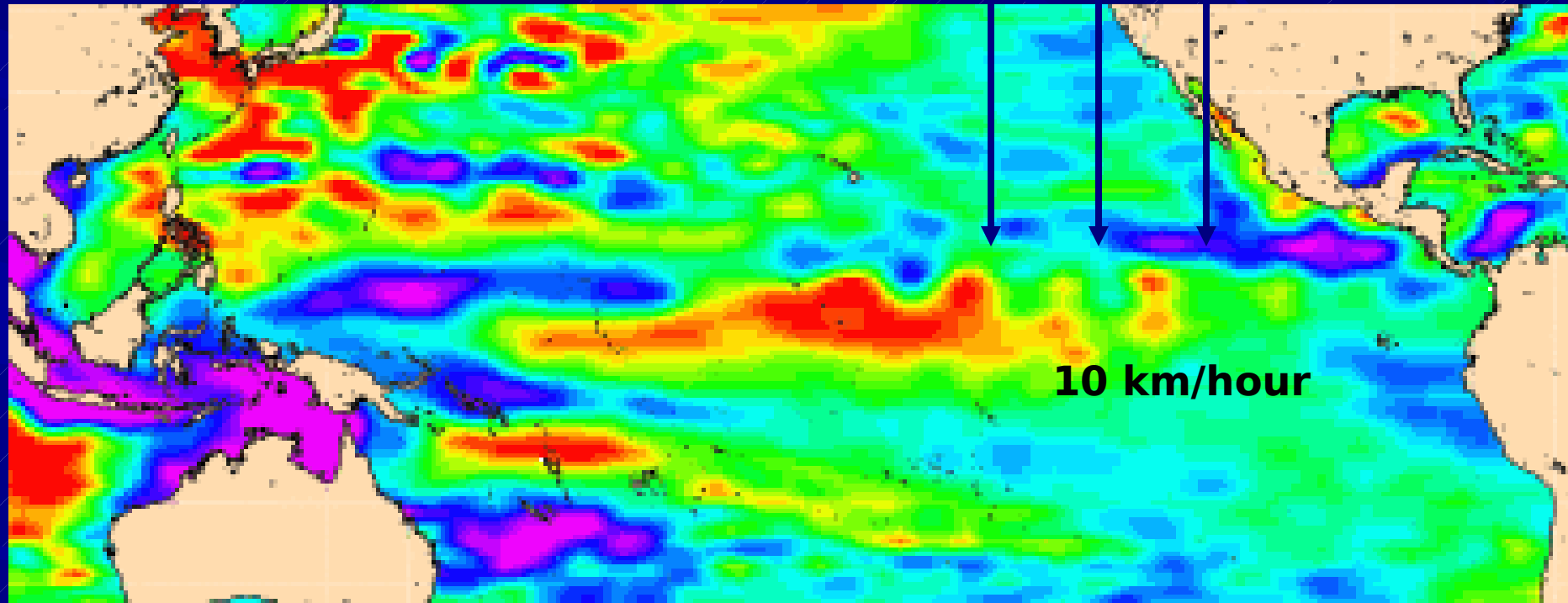
South East Pacific High

Need: High Resolution surface winds and SLP

Need: Better Resolution of surface wind in coastal areas

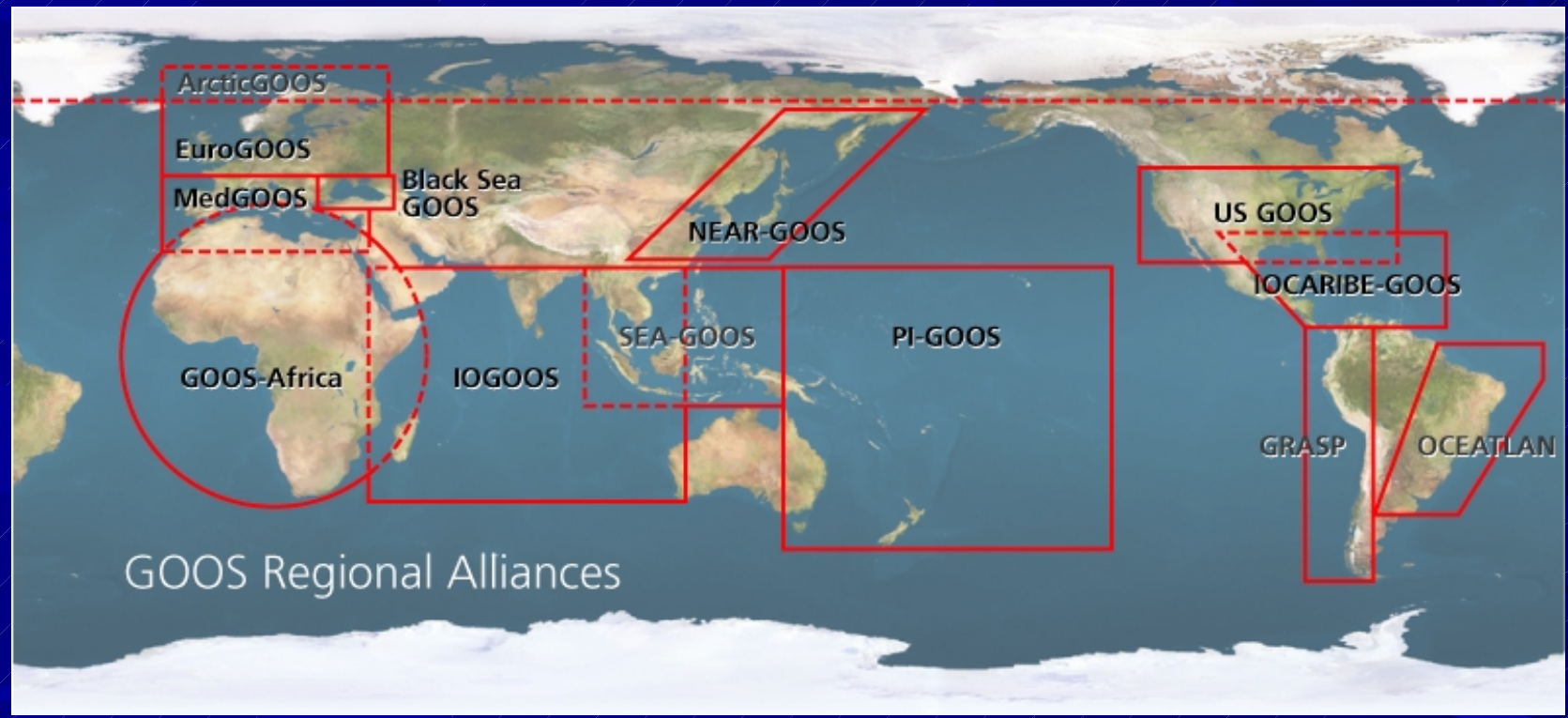


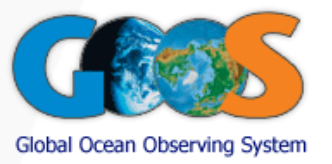
Kelvin wave propagation



satellite altimetry

GOOS - GRASP





IOCARIBE-GOOS
IOCARIBE Office



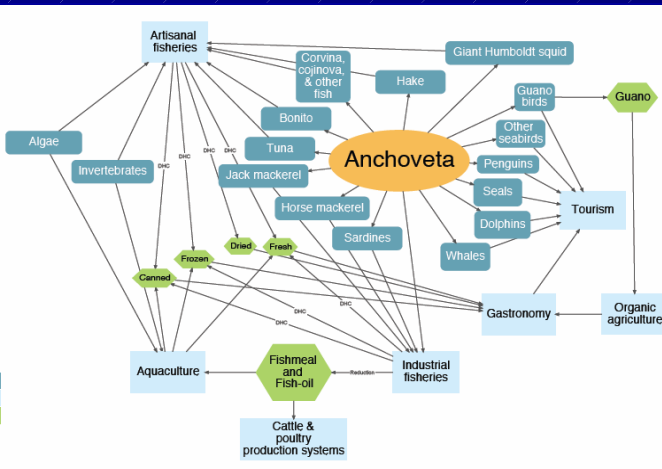
GRASP
CPPS

OCEATLAN
GOOS Rio Office

GOOS
REGIONAL
ALLIANCES

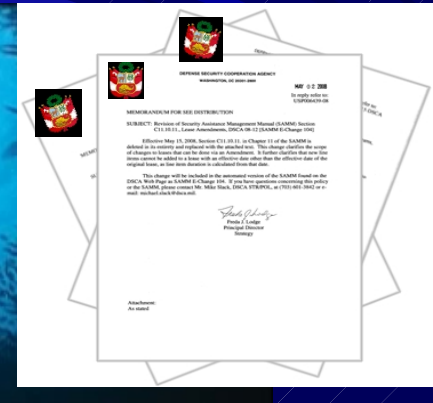
Project Objective

Towards an Ecosystem Base Management approach of the Humboldt Large Marine Ecosystem



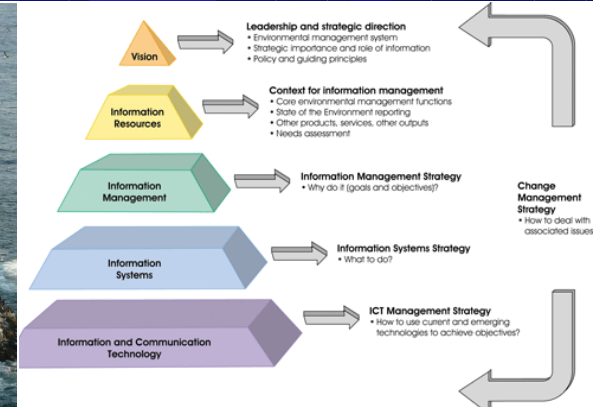
Outcome 1

- Implementing Planning and policy instruments for ecosystem-based management (EBM) of the HCLME at regional and national levels



Outcome 2

- Capacity building for implementation and up-scaling the results of pilot interventions to the systems level



Outcome 3

- Implementation of measures for MPA & fisheries regulation for enhanced protection of the HCLME.

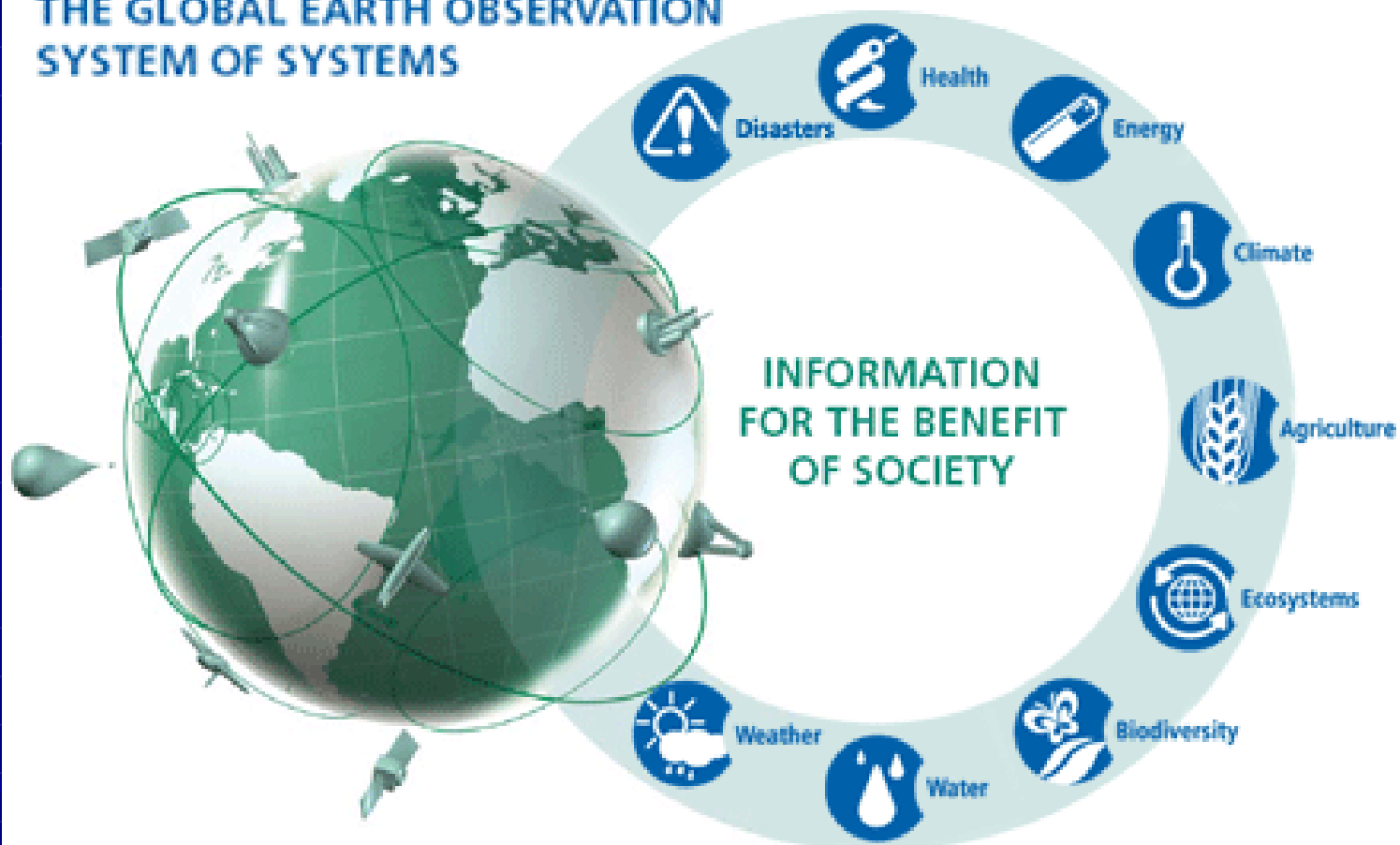


Outcome 4

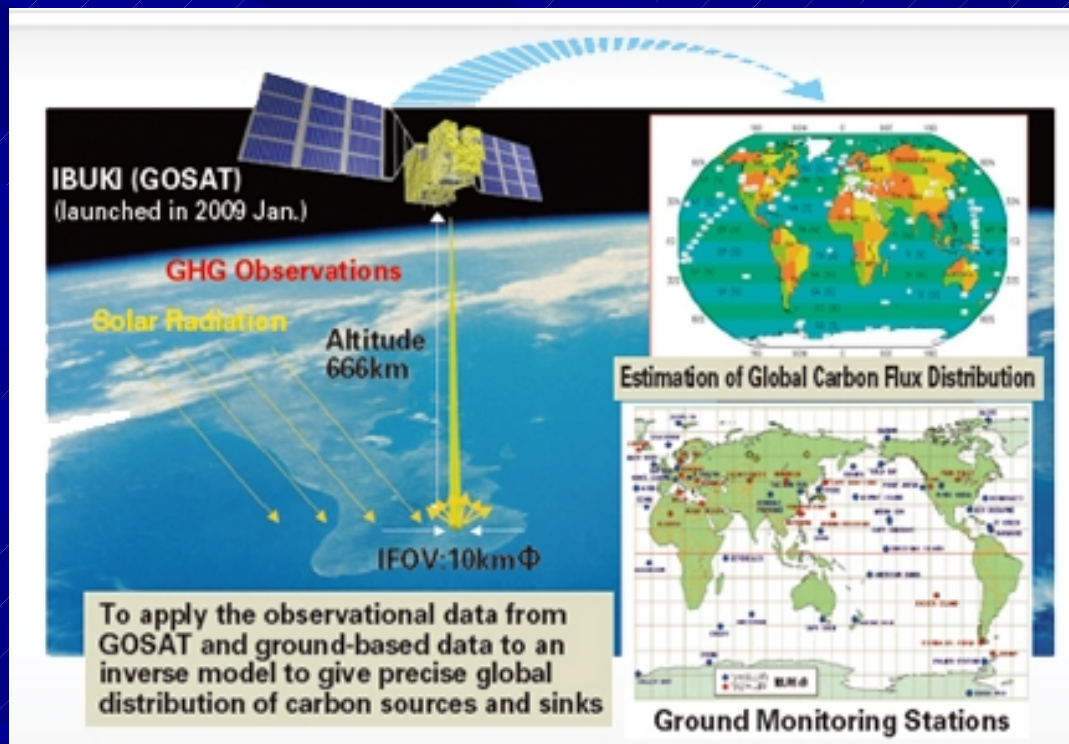
- Implementation of Pilot Projects on Marine and coastal protected areas for conservation and sustained ecosystem productivity.



THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS



The need for Carbon Observations (Climate Change)



Sinks of Carbon

Atmosphere	56%
Land	29%
Ocean	26%

Change in Wind Stress

Change in

Global Warming

Global Warming

Global Warming

Cha
Precip
Evap

Increase in
Temperature

Decrease in
Zoo. Biomass

Decrease in
Phy. Biomass

Shift in the Dominant
Zooplankton Group

Shift in the Dominant
Zooplankton Group
Shift in the Dominant
Phytoplankton Group

Increase in
Stratification

Large (Diatom) → Small (Cocolith.)

Global

Decrease in
Nutrient Supply

Shift in the Dominant
Zooplankton Group
Shift in the Dominant
Phytoplankton Group

Increase in
Stratification
Decrease in
Winter Mixing

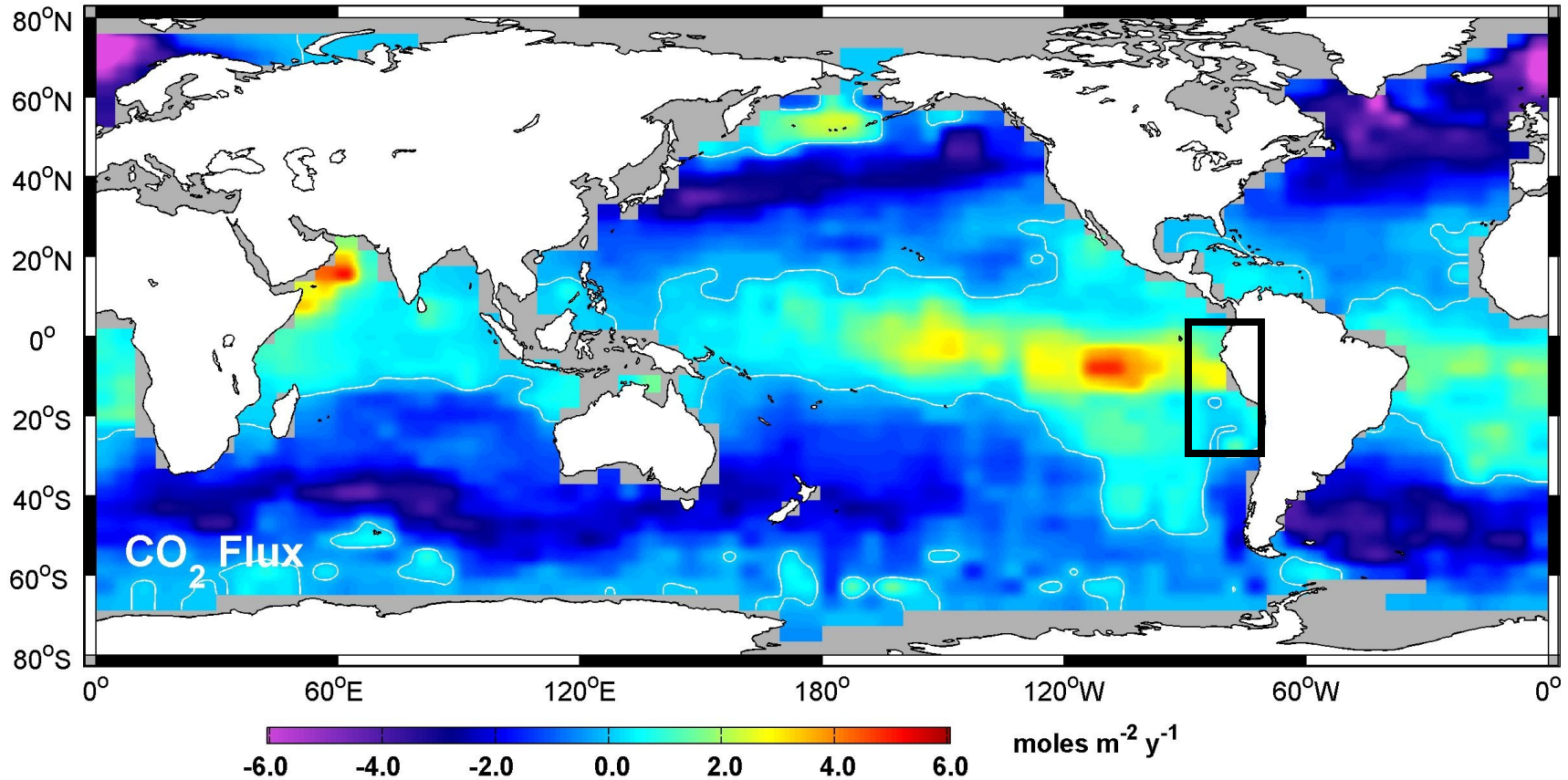
Large (Diatom) → Small (Cocolith.)

Global

Decrease in
Nutrient Supply

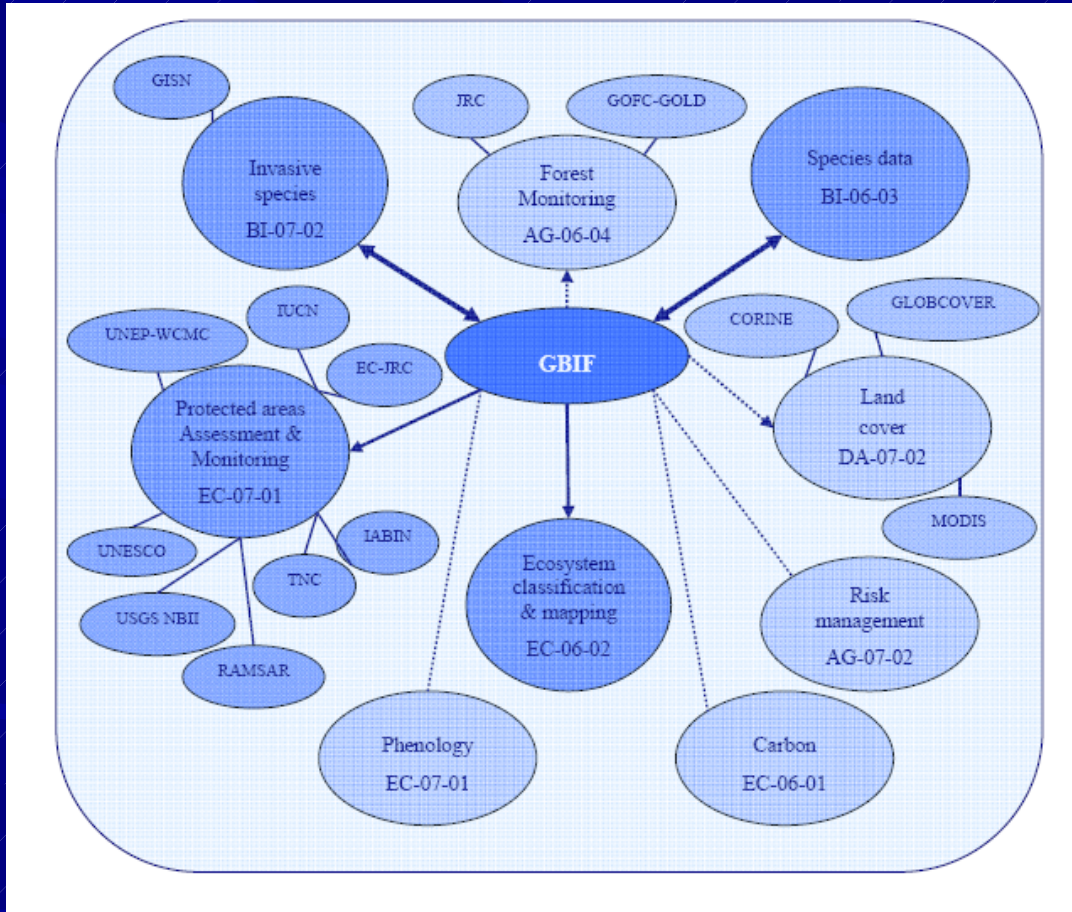
Shift in the Dominant
Zooplankton Group
Shift in the Dominant
Phytoplankton Group

The need for Carbon Observations

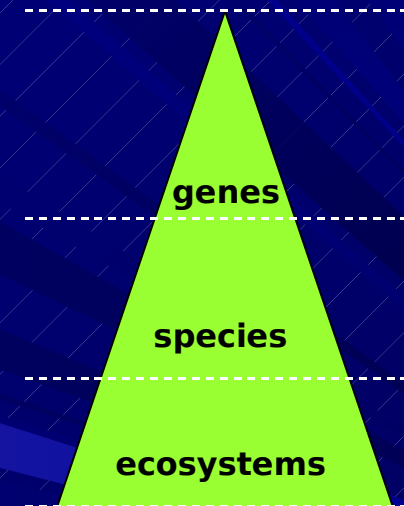


GEO BON

Group on Earth Observations
Biodiversity Observation Network



Components of GEO BON



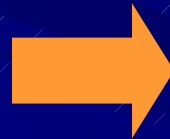
Ecosystem Base Management

Single species approach



Ecosystem approach

Management based on scientific information



Adaptive Management

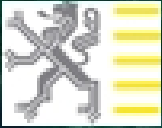
Commodities management



Sustainable system of goods and services

Needs for the future

- High resolution SST and Salinity
- High resolution costal winds and altimetry
- High resolution productivity
- Global and regional carbon fluxes
- High resolution ocean color
(biomass/harmful algal blooms)
- High resolution water quality nearshore
- Sound biodiversity indicators



Government of Flanders
Vlaamse Gemeenschap



Southeast **P**acific data
and Information
Network in support
to **I**ntegrated **C**oastal
Area **M**anagement
(SPINCAM)

*Project Proposal for submission to the Government of
Flanders (FUST 2007)*

Prepared by IOC of UNESCO

October 2007

OTHER INITIATIVES

SPINCAM

Southeast Pacific
Data and Information
Network in support to
Integrate Coastal Area
Management

IOC/CPPS

(Funding: Government of Flanders)

end

