

PML

Plymouth Marine
Laboratory

Marine Matters

Linking ChloroGIN to GEOSS

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GEO

EUROPEAN
PROJECTS'
WORKSHOP-7

Barcelona
15-16 April 2013

 GROUP ON
EARTH OBSERVATIONS

- What is the ChloroGIN partnership?
- Objectives and capabilities
- How does GEOSS improve the offering?
- Ongoing developments
- Value of ChloroGIN as a demonstration

“ChloroGIN is an international network to assess the state of marine, coastal and inland-water ecosystems for the benefit of society; promoting for that purpose in-water observations in synergy with ocean-colour and related satellite observations.”



Chlorophyll
Global
Integrated
Network

ChloroGIN



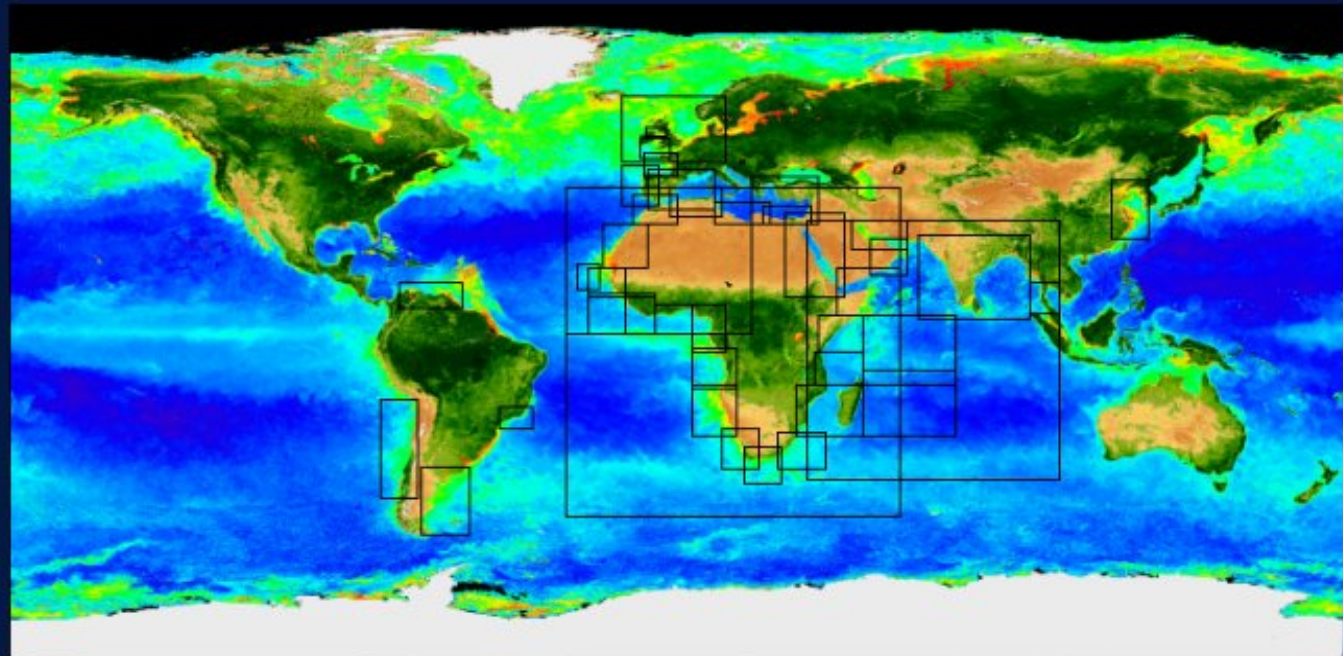
- **Vision**
- **Objectives**
- **In Situ**
- **Documents**
- **Partners**
- **Related Projects**
- **Contact**

Vision

ChloroGIN is an international network to assess the state of marine, coastal and inland-water ecosystems for the benefit of society; promoting for that purpose in-water observations in synergy with ocean-colour and related satellite observations.

Data Portals

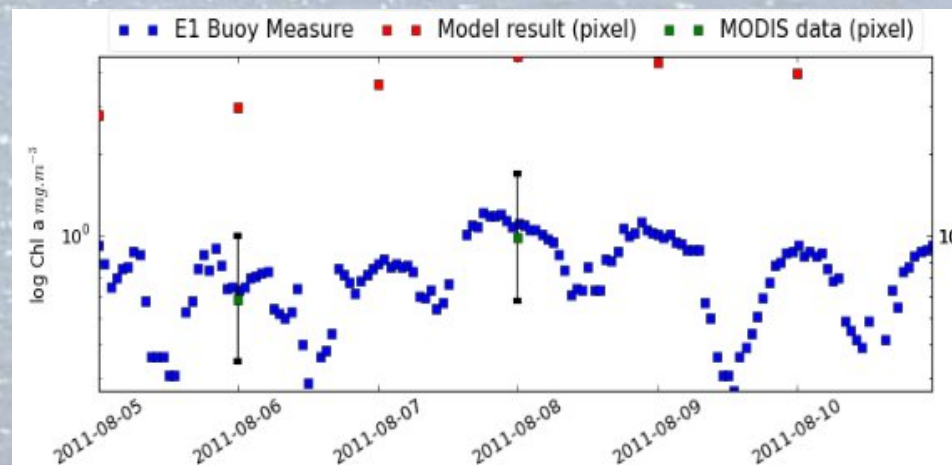
- ChloroGIN Africa
- ChloroGIN Europe
- ChloroGIN Lakes
- ChloroGIN Latin America
- ChloroGIN World



ChloroGIN Coverage

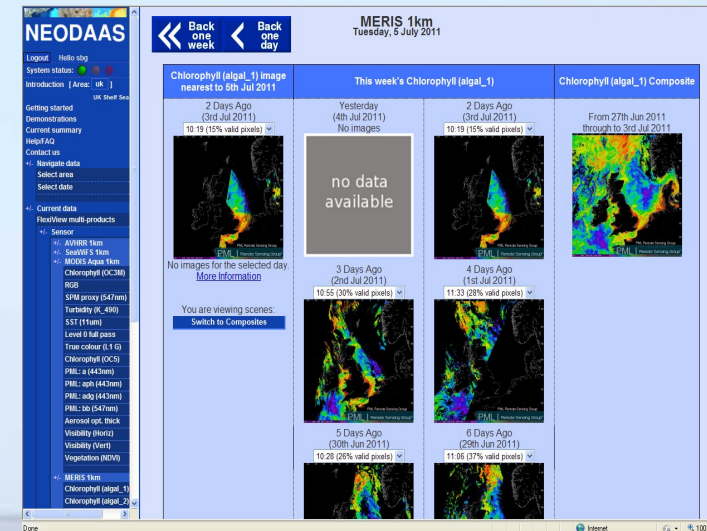
The project was initiated following recommendations of the "Plymouth Chlorophyll Meeting and Workshops (Extended Antares Network)" sponsored by GOOS, GEO, IOCCG, PML and POGO 18 - 22 Sept 2006 and was inspired by the Antares network that provides satellite coverage over Latin America. The ChloroGIN portal is maintained by Plymouth Marine Laboratory.

- A network of networks
 - Inspired by the Antares network, now the Latin American regional branch of ChloroGIN
 - Sponsored by GOOS, GEO, IOCCG, POGO and PML
- Consists of data providers and users with in-situ or EO data
 - In-situ and satellite data equally valued

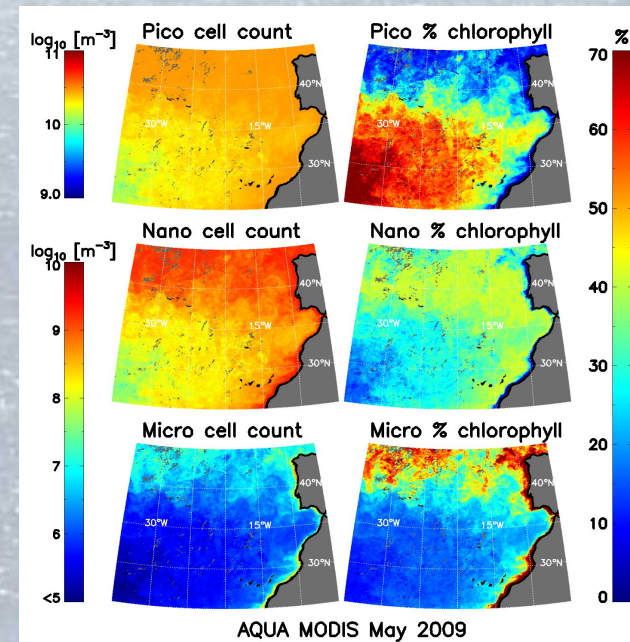
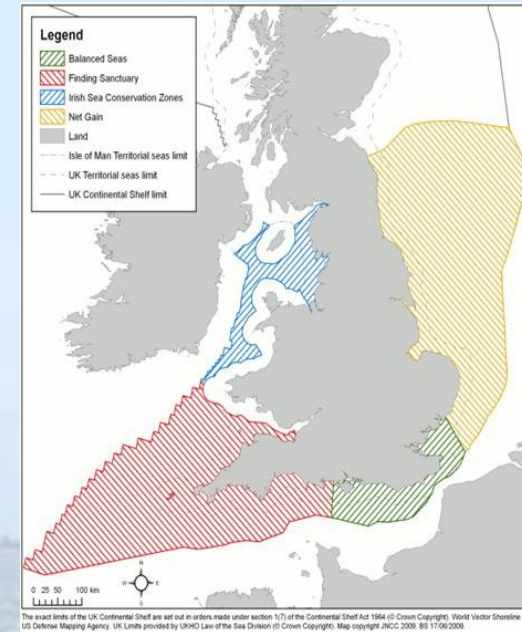


- Provide high resolution (1km) **EO data** from regional suppliers
 - Internet
 - GEONETCast (EAMNET)

- Enhance **in situ observations** to characterise local conditions, including sub-surface water properties for assessing water quality, ecological status and potential for human use, and for validation of EO data.

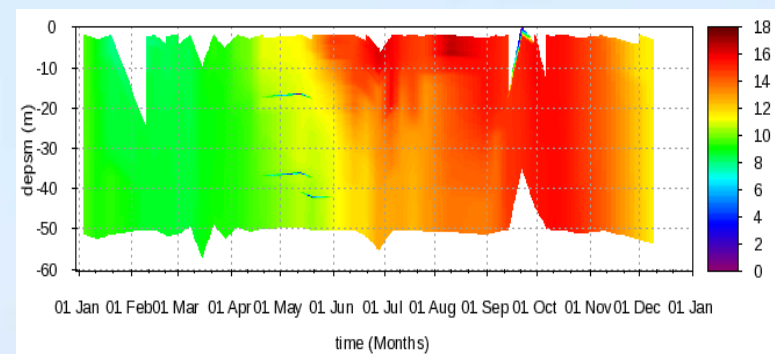


- Develop and supply **value-added products** needed for management by local authorities, regional and national governments.
- Provide **time series of ecosystem indicators** for management of fisheries, aquaculture, coastal zones and inland water bodies.
 - e.g. phytoplankton size classes

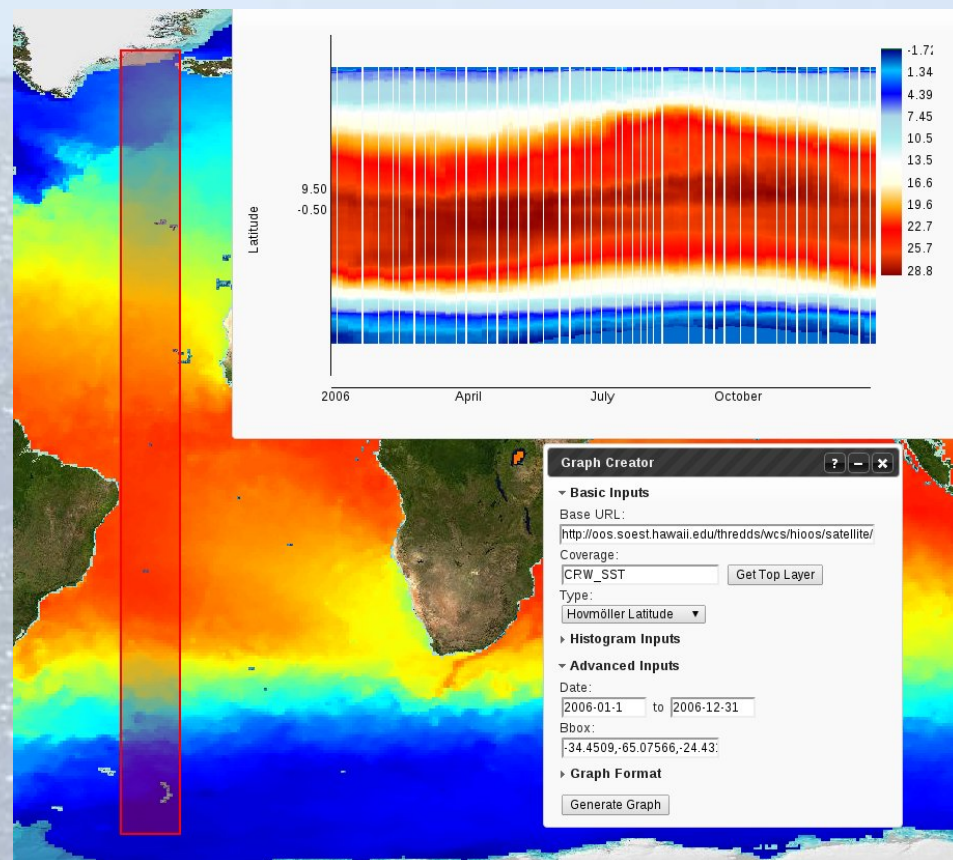


Brotas et al 2013 (poster)

Develop **tools and techniques** for analysis of ChloroGIN products for assessing regime shifts, climate change and climate variability, and the status of fisheries, ocean, coastal and inland water ecosystems, as a basis for policy implementation.



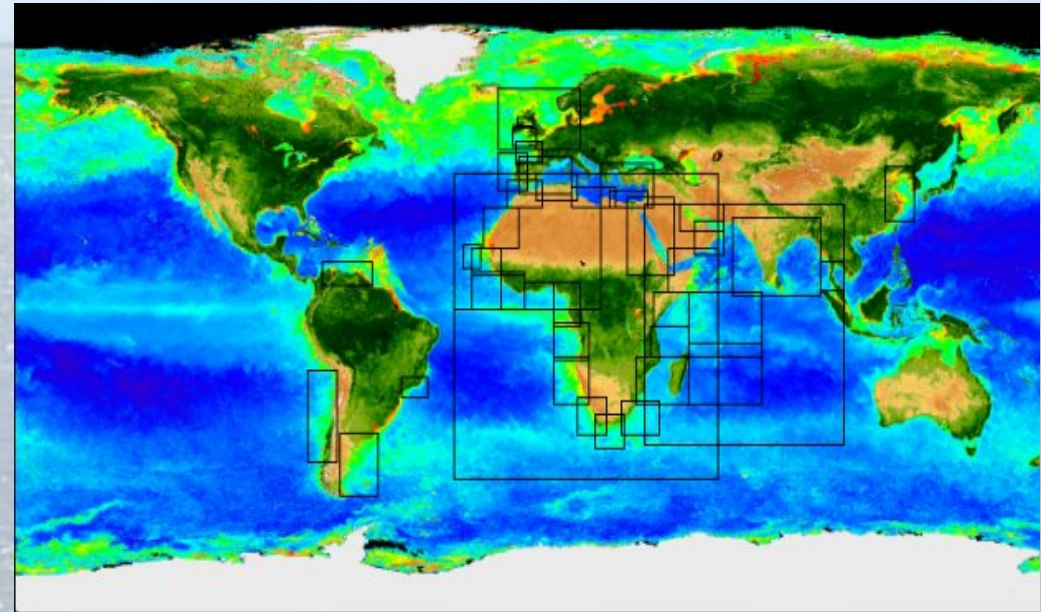
Temperature at depth over a year



Hovmöller plot: latitude vs time

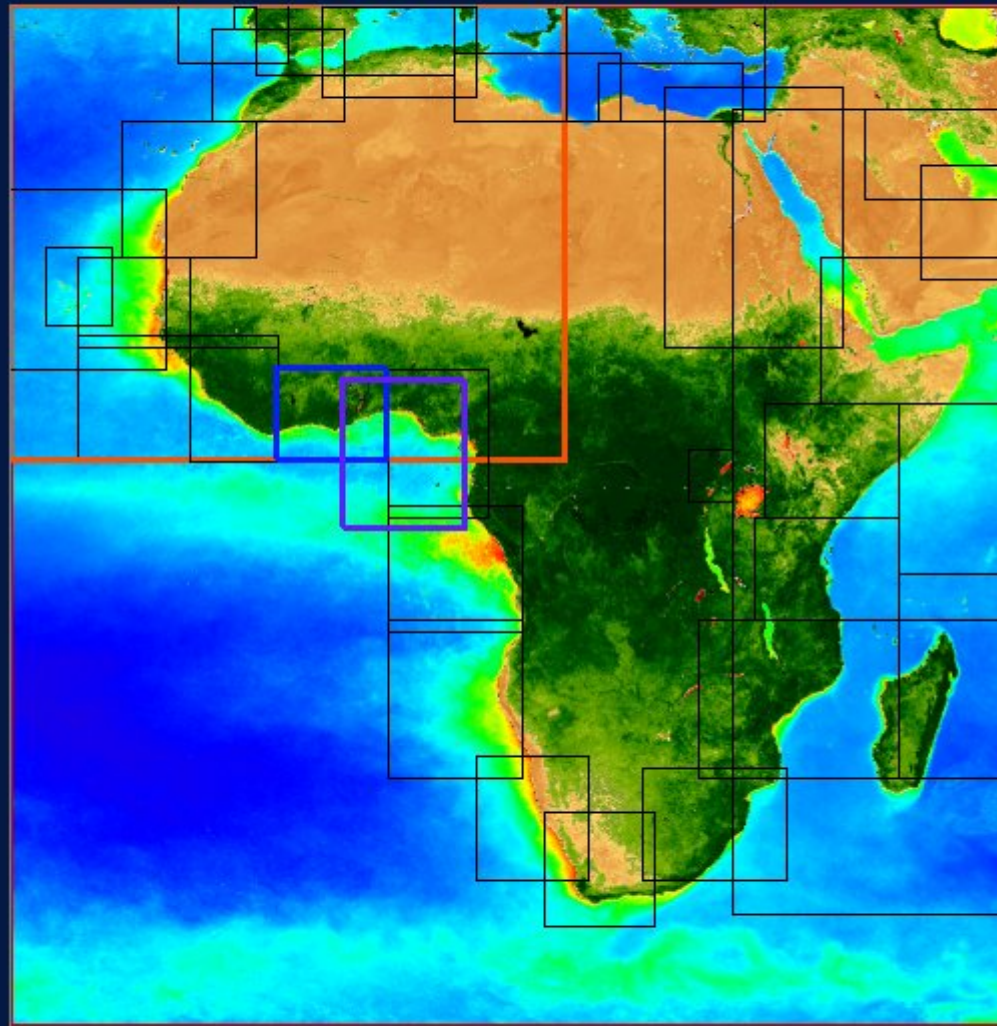
- Help **train and develop** a new generation of scientists with the skills to develop and maintain the ChloroGIN vision (POGO, EAMNET)
- Achieve these objectives by means of an international network of both **developed and developing countries**.
- **Communicate** ChloroGIN products of ecosystem state widely to potential users in society and in policy-making bodies.
- **Liaise and cooperate** with other Earth Observation groups nationally, regionally and internationally.

- Simple “portal” webpages directing visitors to relevant data providers for specific regions and specific products
- World view, and sub-regions:
 - Africa (EAMNET)
 - Europe
 - South America (Antares)
- Lakes
 - Demonstrator of GEO 2012-15 Water task on pre-operational monitoring of some key lakes



ChloroGIN Africa

Earth Africa Europe Lakes Latin America



Areas selected:

Choose date (YYYY-MM-DD) and press 'Apply':

2013 04 15

[Select today]

Name:	Provider:	Boundary:	
AMIS	JRC	40N -> 50S 30W -> 60E	<input type="button" value="View"/>
EAMNet: Ghana	PML	8N -> 0N 6W -> 4E	<input type="button" value="View"/>
Cape Verde Large 4km	PML	40N -> 0N 30W -> 20E	<input type="button" value="View"/>
Cote d Ivoire	UCT	8N -> 0N 6W -> 4E	<input type="button" value="View"/>
EAMNet: Nigeria	PML	7N -> 6S 0E -> 11E	<input type="button" value="View"/>

Supported by the EC



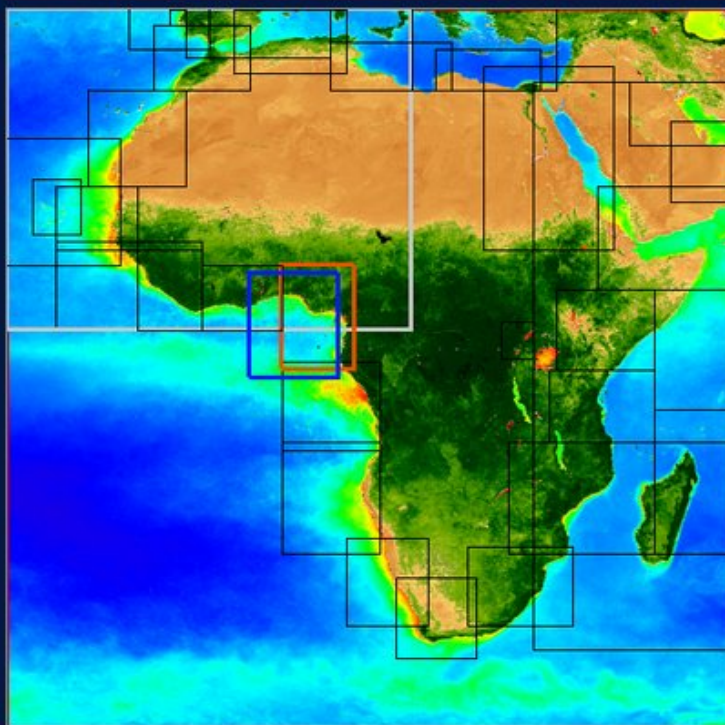
- Main problem is **limited (in-situ) data availability** from the core providers
 - More data available outside the partnership, which should also be easily visible
- **Solution:** add search on GEOSS datasets
- Using Discovery and Access Broker (GEODAB) via the Opensearch interface
 - Simple keyword + geographic area
 - Very easy to integrate; hard work done by GEODAB
 - Yields 1000s of results

ChloroGIN Africa

Earth Africa Europe Lakes Latin America



This is a demonstration of interoperability between ChloroGIN and the GEOSS Data Catalogue. After selecting an area a GEOSS data link will be shown and a sample of results will be shown at the bottom of the page. If you click on the link you will be shown data that is available in the GEOSS catalogue for your chosen geographic area.



Areas selected:

Choose date (YYYY-MM-DD) and press 'Apply':

2013 04 15 Apply

[Select today]

Name:	Provider:	Boundary:		
AMIS	JRC	40N -> 50S 30W -> 60E	View	Geoss
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EAMNet: Nigeria	PML	7N -> 6S 0E -> 11E	View	Geoss

Relevant GEOSS Discovery and Access Broker records

MODIS/Aqua Level 3 Global Mapped 9 KM Daily Fluorescence Line Height Data

This data set consists of global ocean Fluorescence Line Height (FLH) data derived from the Moderate Resolution Imaging Spectroradiometer (MODIS), in orbit on the Aqua (formerly EOS PM) platform. MODIS ocean products are processed and distributed by the Ocean Biology Processing Group (OBPG). Processing details can be found at http://oceancolor.gsfc.nasa.gov/DOCS/MODISA_processing.html The fluorescence line height product (parame

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MODIS/Aqua Level 3 Global Mapped 9 KM Seasonal Fluorescence Line Height Data

This data set consists of global ocean Fluorescence Line Height (FLH) data derived from the Moderate Resolution Imaging Spectroradiometer

3552
results

ChloroGIN GEOSS broker results



Earth Africa Europe Lakes Latin America

Total result:3552 Showing : 11 - 20

MODIS Ocean Products

The Moderate Resolution Imaging Spectroradiometer (MODIS) is the key instrument aboard the Terra (EOS AM) and Aqua (EOS PM) satellites. It is an optical scanner that views the Earth in 36 channels with spatial resolution ranging from 250 meters to 1 kilometer. MODIS-Aqua Level-2 and Level-3 Ocean Color and Sea Surface Temperature (SST) data products are processed and distributed by the Ocean Biology Processing Group (OBPG) at <http://...>

World Ocean Atlas 1998 on CD-ROM from NOAA National Oceanographic Data Center's Ocean Climate Laboratory

The Ocean Climate Laboratory of NOAA's National Oceanographic Data Center (NODC) has completed the multivolume World Ocean Atlas 1998 and technical reports describing the data quality control and processing procedures. The atlas contains historical in situ temperature, salinity, oxygen, phosphate, nitrate, and silicate data, and global, objectively analyzed fields of these parameters on a one-degree latitude-longitude grid for selected stand...

MODIS/Aqua Level 3 Global Ocean Mapped 9 KM Monthly Ocean Color Products

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MODIS/Aqua Level 2 Local Area Coverage (LAC) Geophysical Ocean Color Data Products

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MODIS/Aqua Level 3 Global Ocean Mapped 9 KM Daily Ocean Color Products

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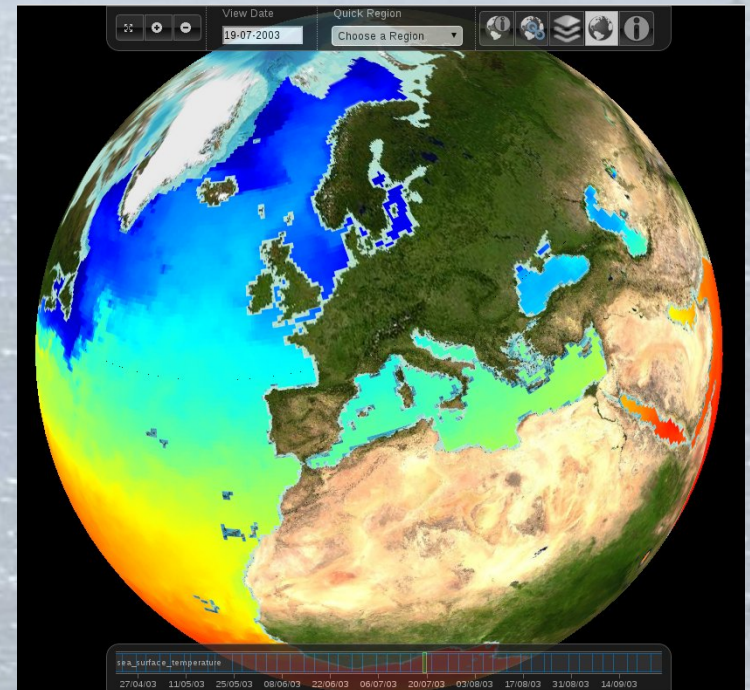
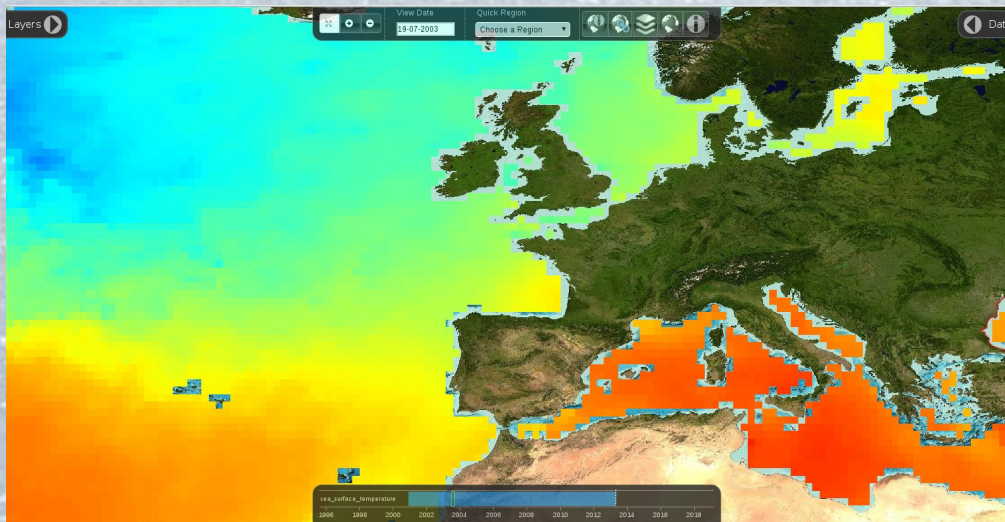
MODIS/Aqua Level 3 Global Ocean Mapped 9 KM Seasonal Ocean Color Products

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MODIS/Aqua Level 3 Global Ocean Mapped 9 KM Monthly Climatology Ocean Color Products

- **New problem:** too many results!
- Working with GEODAB to reduce numbers of results and improve relevance
 - More focused search terms
 - Limit to GEOSS DataCORE
 - Limit to sources with data available via OGC services
 - Smarter geographic match + multiple queries
 - Smarter search ordering
 - Aggregation of similar results

- Access broker would enable previewing data
 - Simplifies data interface by hiding complexity of different or poorly-adhered-to standards
 - > Integration of a preview therefore much easier



- ChloroGIN is a community with specific focus, limited by the existing internal resources
- Integration with GEOSS DataCORE via discovery brokering **vastly enriches** the available datasets
 - Provides direct links to relevant services
 - Brokering of discovery (and, later, data?) is a clear benefit
 - Community retains control and focus
- Illustrates **ease of integration** of GEOSS into a community at a simple level, with more complexity available