



# Earth Observation and Environmental Services

Satellite based water monitoring for maritime industry and agencies

Karin Schenk - Head of Water Quality

EOMAP GmbH & Co.KG  
EOMAP Australia Pty Ltd  
Germany | Australia  
[www.eomap.com](http://www.eomap.com)

# About EOMAP

- Service provider to coastal and offshore industry, governmental entities and academia
- Mapping & monitoring aquatic environments worldwide
- Founded in 2006 with HQ in Germany and office in Australia
- Award winning cutting edge technology & services



EU SME  
champion



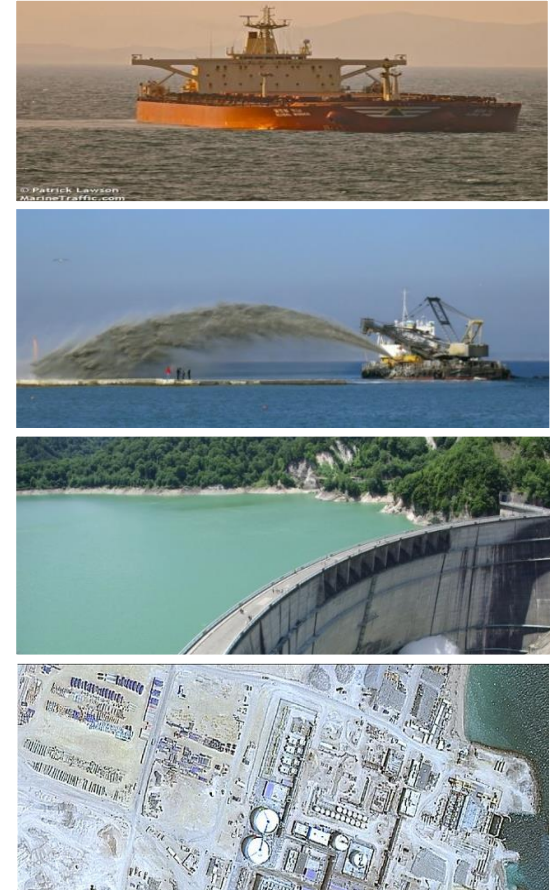
Copernicus awards for  
outstanding technology



Information  
Program Partner



Solution  
partnership



# Our product range

## EO Seafloor

High Quality Mapping of Shallow Water Bathymetry, Seafloor and Obstructions

## EO Water

Effective Water Quality Monitoring of Inland and Coastal Waters

## EO Software

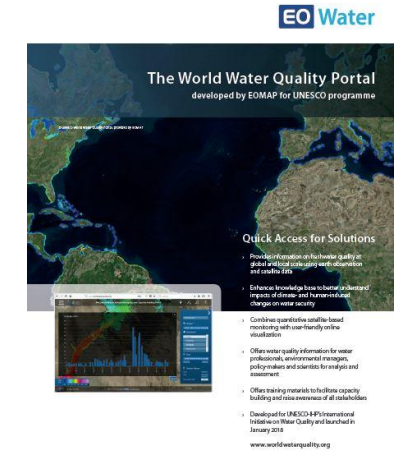
Software Solutions for Satellite-Derived Bathymetry, Water Quality Analysis, Web Applications and API's

## EO Services

Customized GeoIT and EO consultancy

## EO Store|Bathymetry

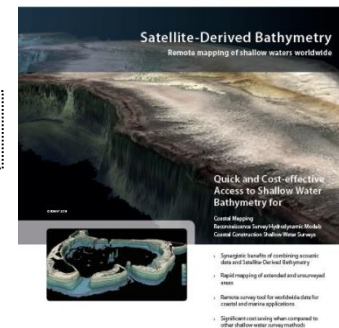
Accessing Shallow Water Bathymetry Worldwide



Earth Observations & Environmental Services  
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## EO Seafloor



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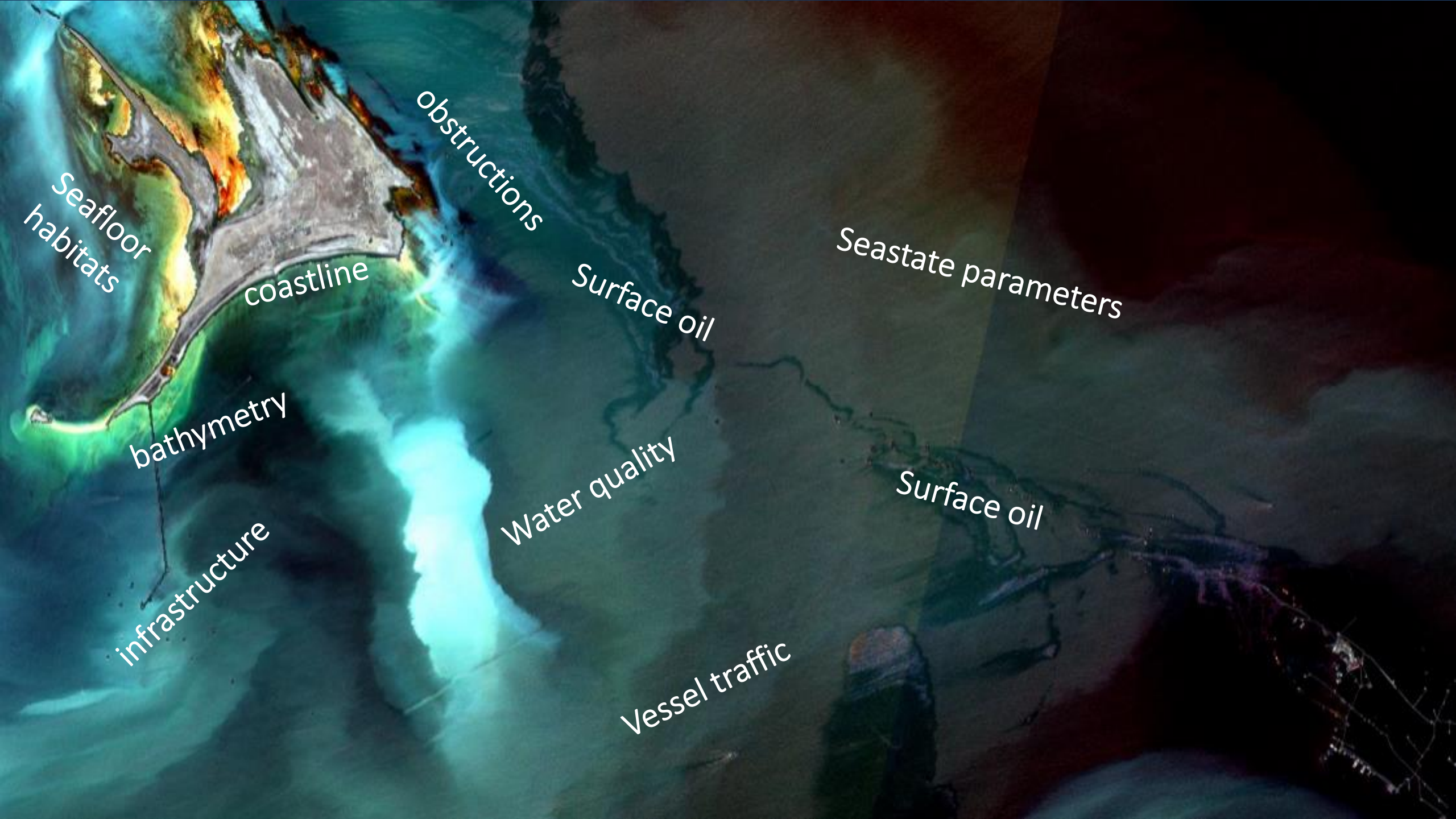


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Seafloor  
habitats

coastline

obstructions

Surface oil

Seastate parameters

bathymetry

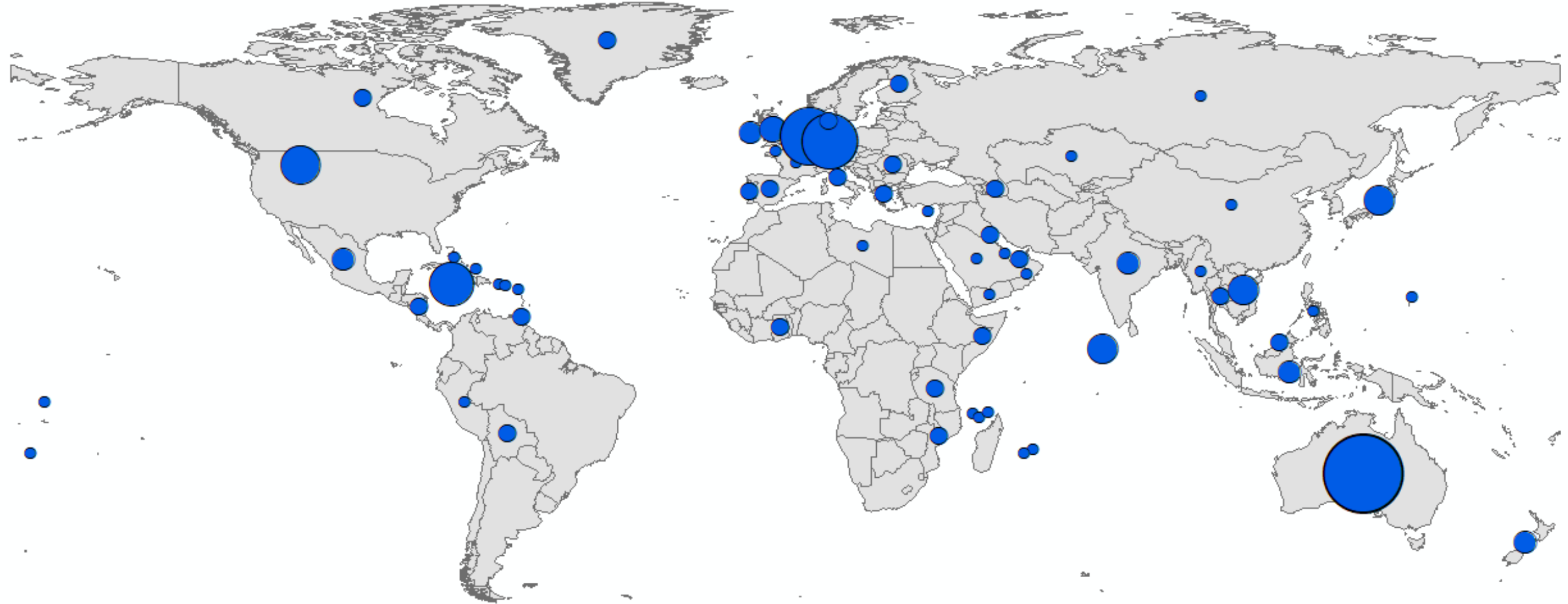
infrastructure

Water quality

Surface oil

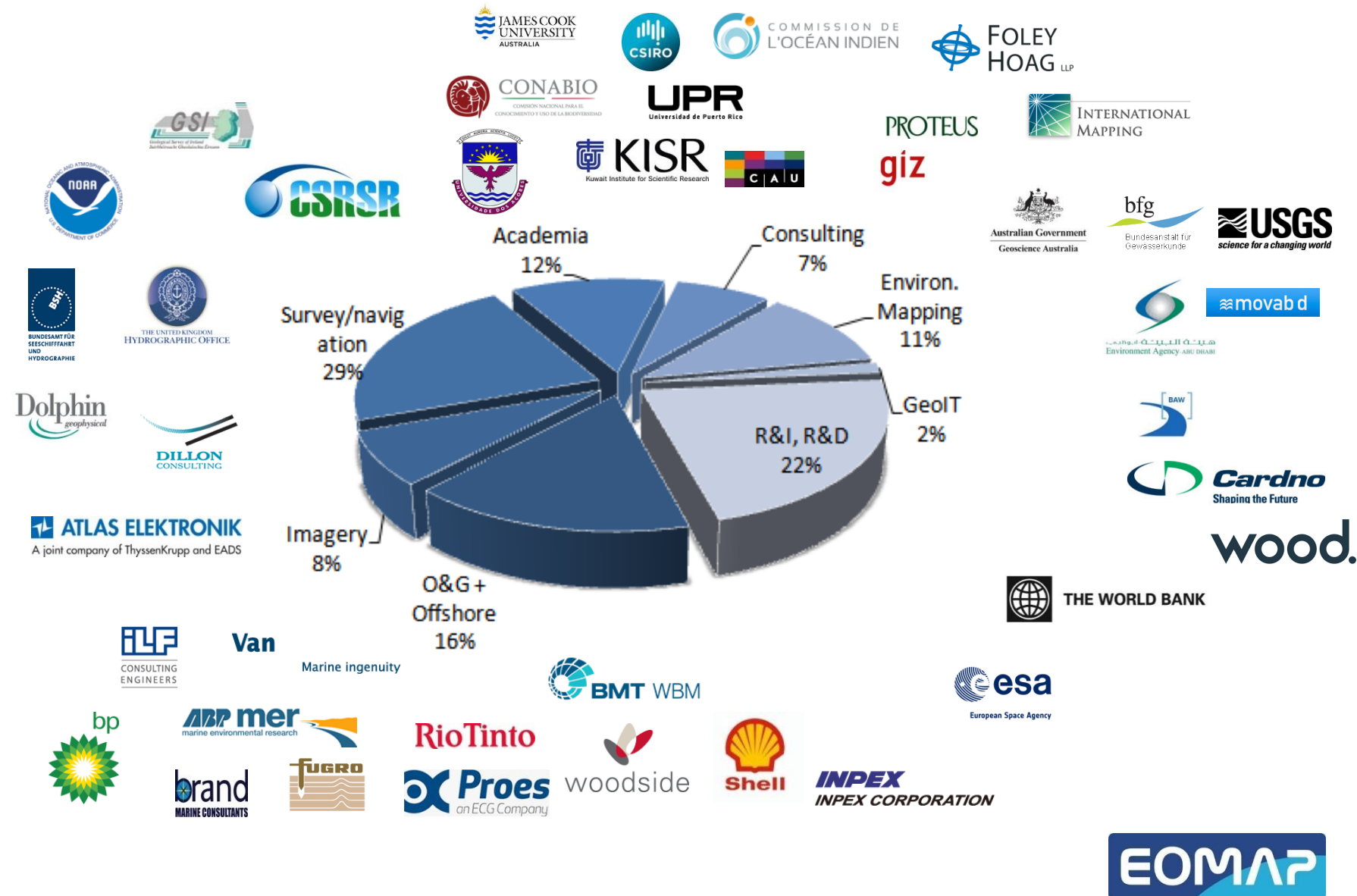
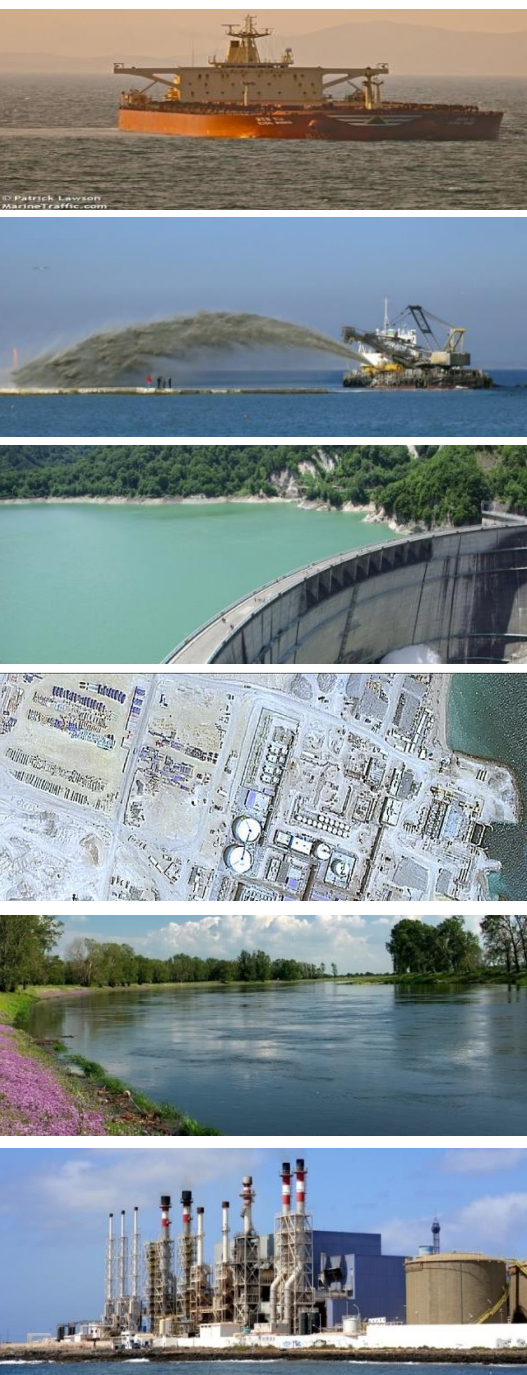
Vessel traffic

# EOMAP's project for marine and coastal industry and governmental entities





# Market and client groups





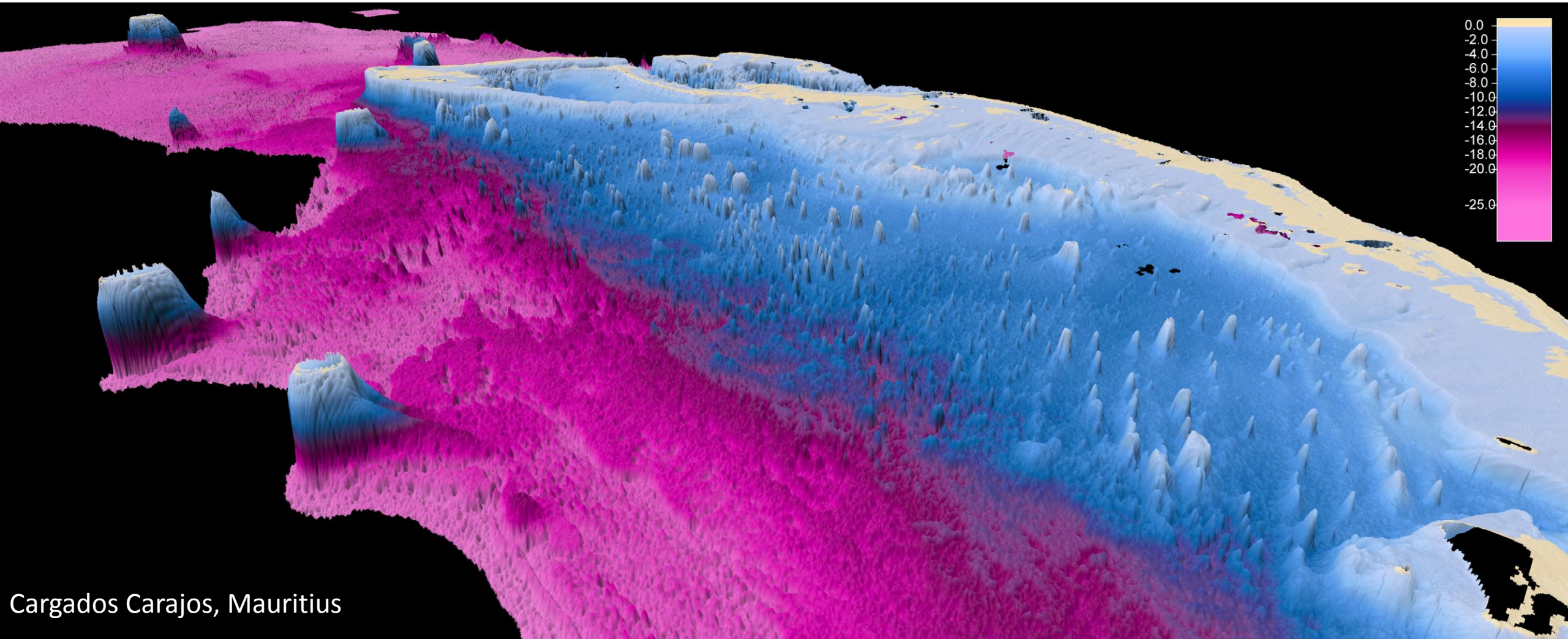
# eoSeafloor

## - Case studies and application -





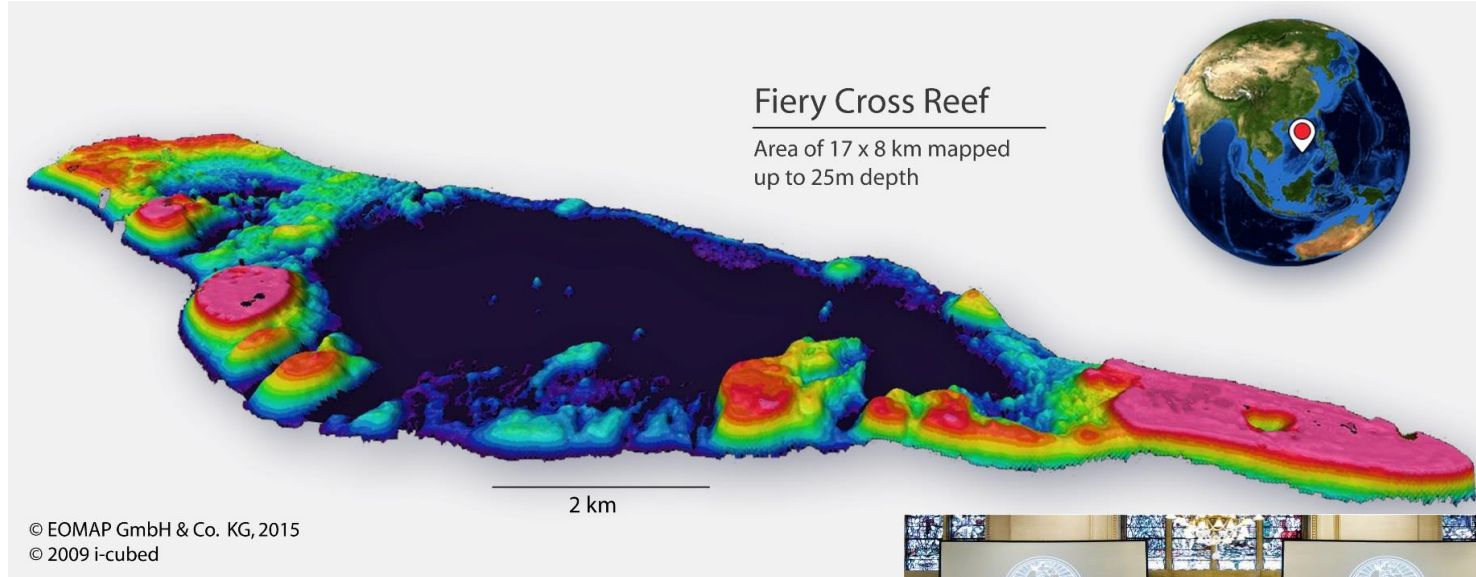
# Satellite derived bathymetry (SDB) with Sentinel-2





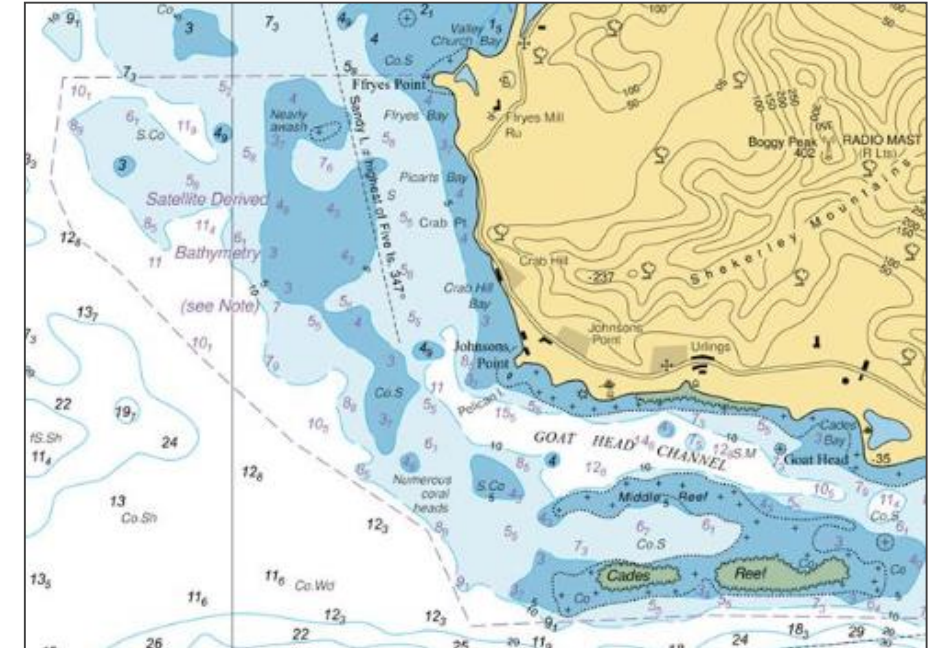
# Satellite derived bathymetry (SDB)

*Improving safety and coastal planning, updating navigation charts*



Application for marine security:

Mapping of South China Sea  
eoSDB available for hundreds of  
Islands in online archive



UKHO British Admiralty chart 2066

Southern Antigua

Satellite data source: EOMAP



# Coastal mapping for dredging projects, company Van Oord

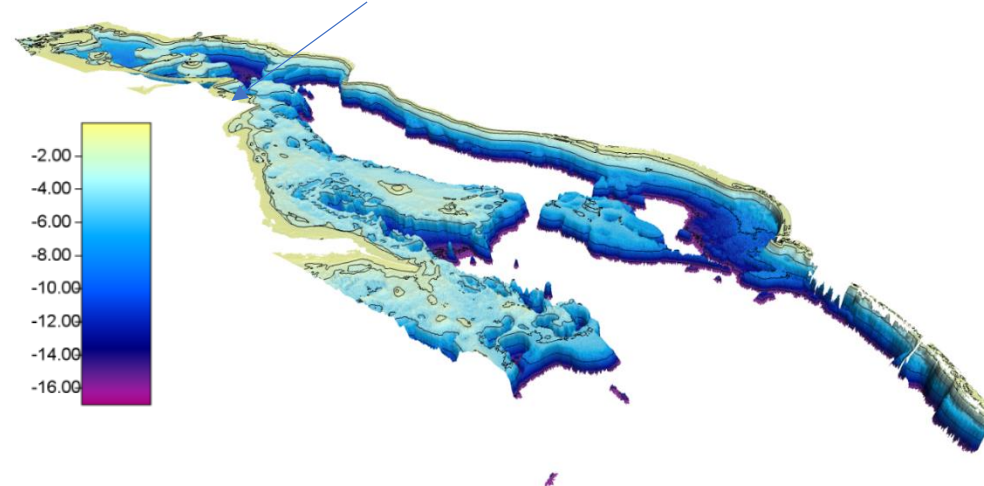
Presentation available at: [www.sdbday.org](http://www.sdbday.org) F. Pijpers 7.6.18



Self-propelled cutter suction dredger Athena

© EOMAP, 2018

*Can dredger Athena enter the area safely?  
Satellite derived bathymetry map*



**Example SFC – Seafloor and Habitat Classification**



**As provided by the contract**



**As delivered by EOMAP**



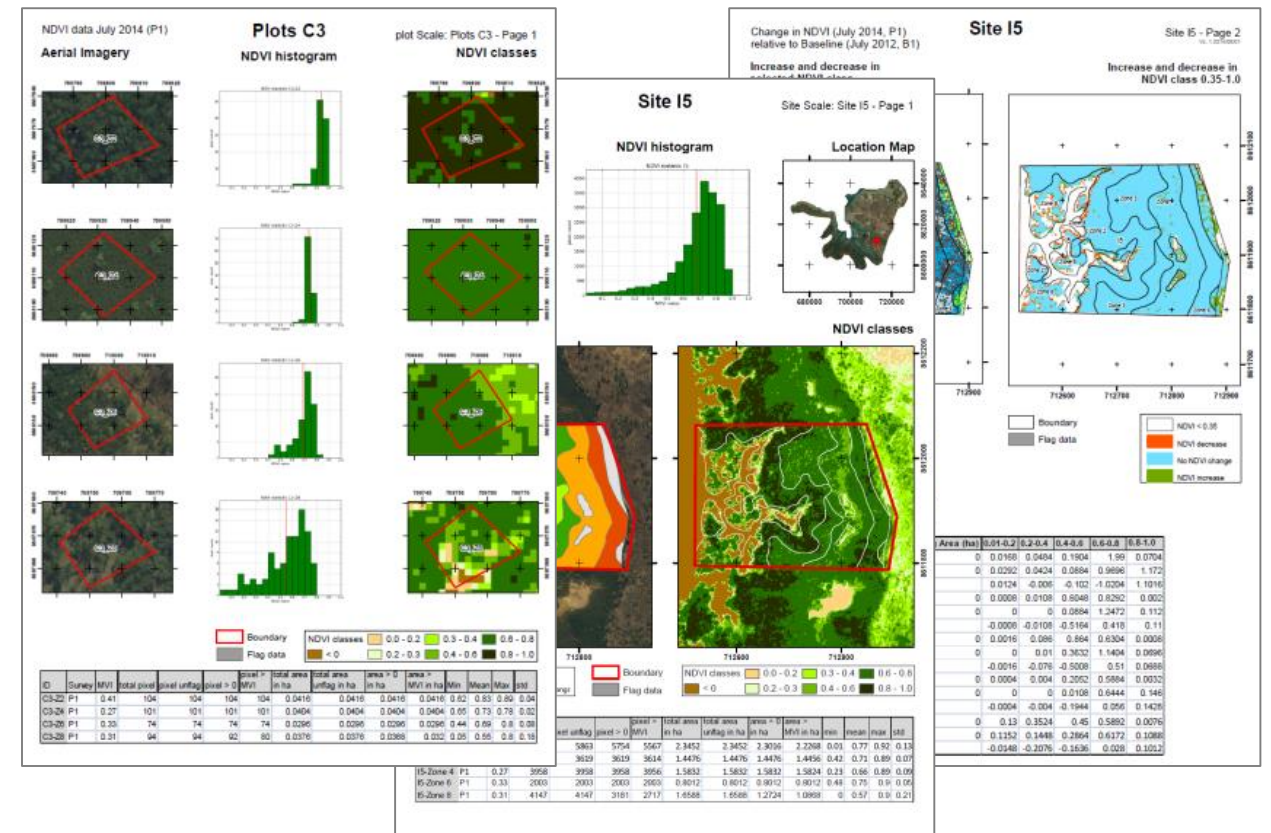
Figure 3: Habitat map of construction area, where green indicates seagrass field and red coral colonies.







- Multi-year mapping on vegetation health using satellite imagery and statistical analysis in combination with in-situ sampling





A vibrant underwater photograph of a coral reef. The foreground is dominated by a large, branching coral structure with a mix of yellow, orange, and pink hues. To the left, there are green, finger-like coral formations. The background shows a deep blue ocean with more distant coral structures and a few small fish swimming. The overall scene is rich in marine biodiversity.

# eoWater

## - Case studies and application -

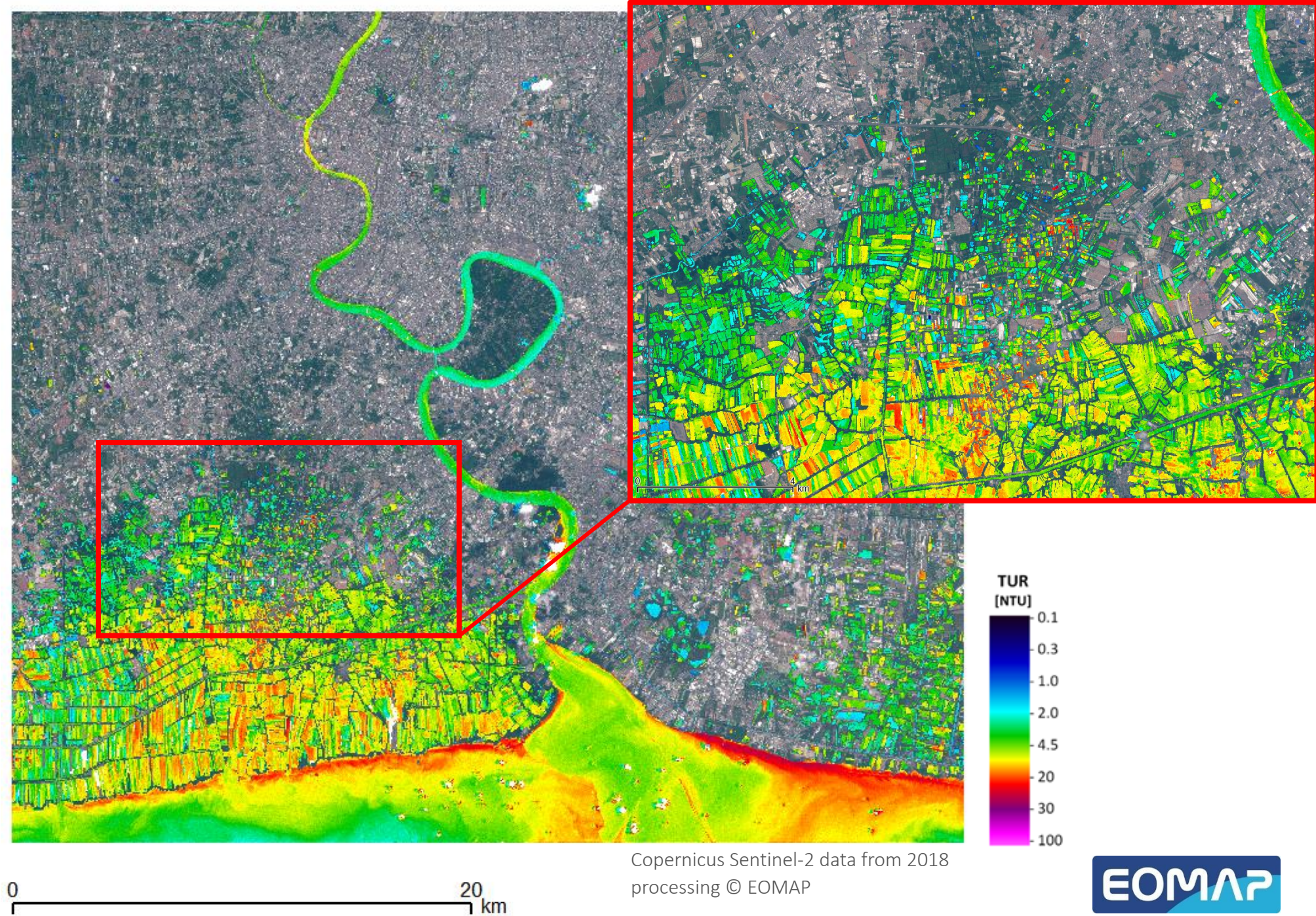


Bangkok Sentinel-2A  
RGB  
2018-04-12





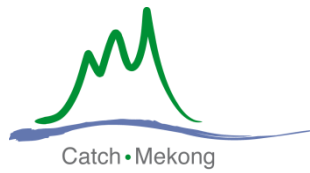
Bangkok Sentinel-2A  
Turbidity  
2018-04-12



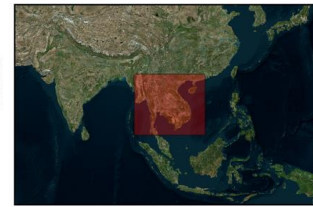
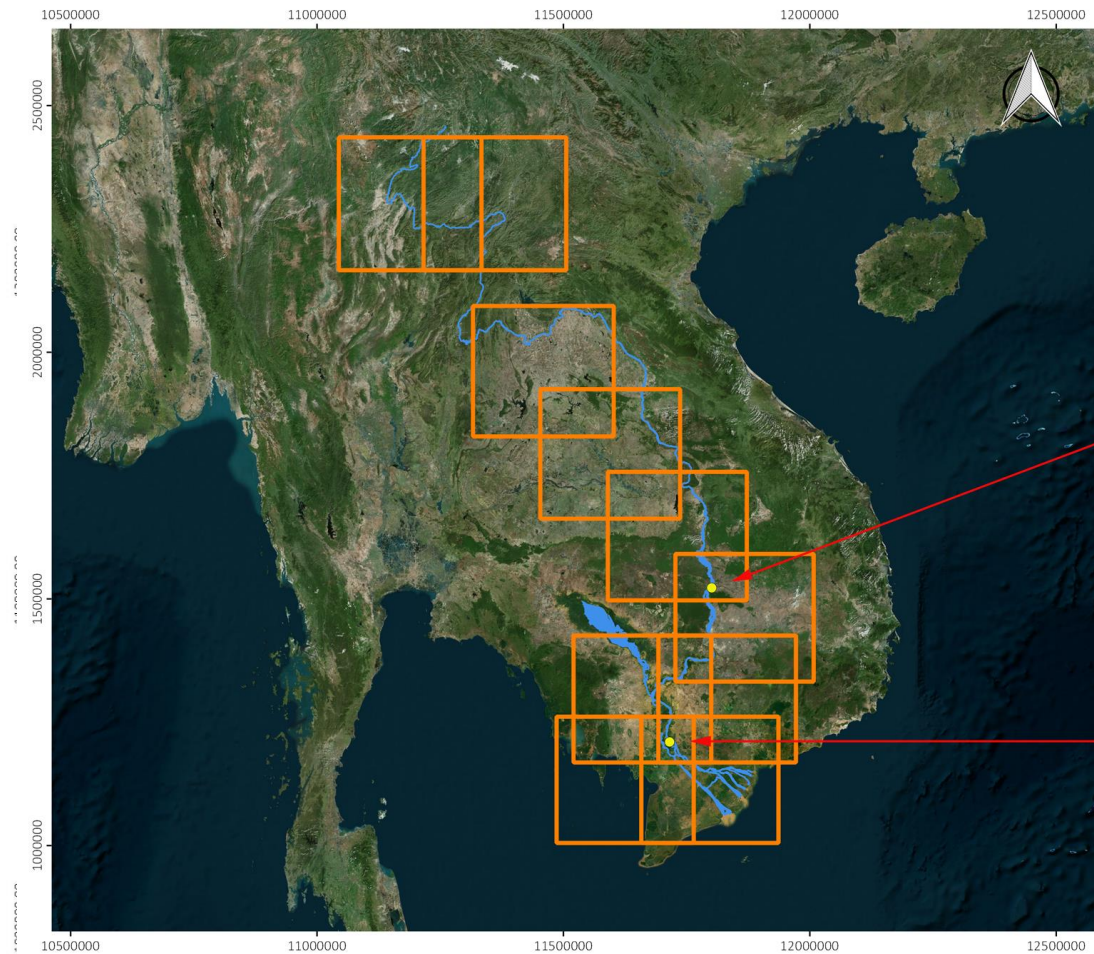


# Catch Mekong Project

*Sustainable management of natural water and land resources*



Catch-Mekong, Overview



Landsat tiles for data processing and time series extraction of Turbidity

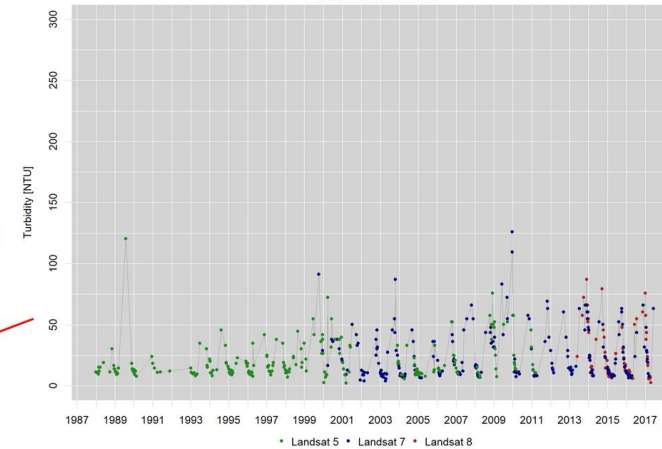
- Landsat tiles
  - Virtual Stations
  - Mekong river
- Basemap: Bing Satellite

0 125 250 375 500 km

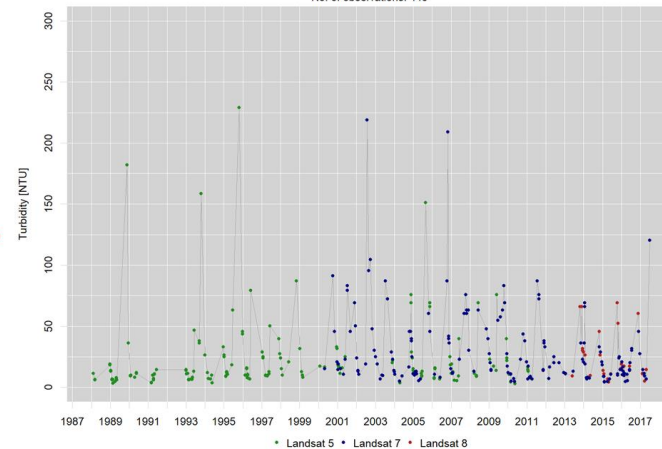
**Spatial Reference**  
Coordinate System: WGS 84 / Pseudo-Mercator  
EPSG: 3857  
Map Unit: Meters



Turbidity at station No. 2  
No. of observations: 502



Turbidity at station No. 10  
No. of observations: 443



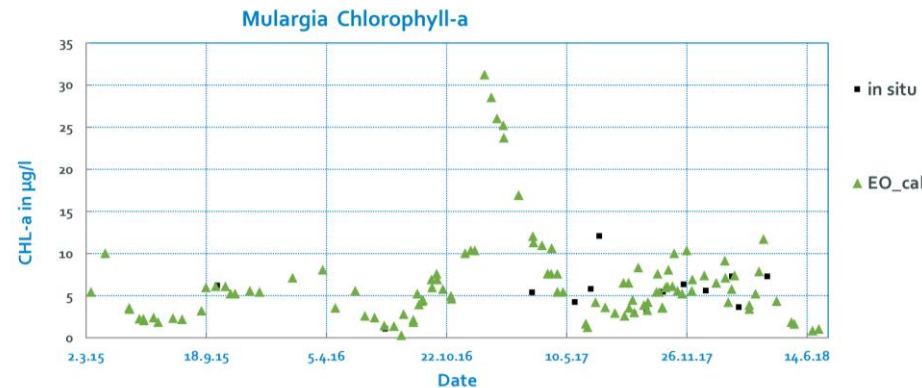
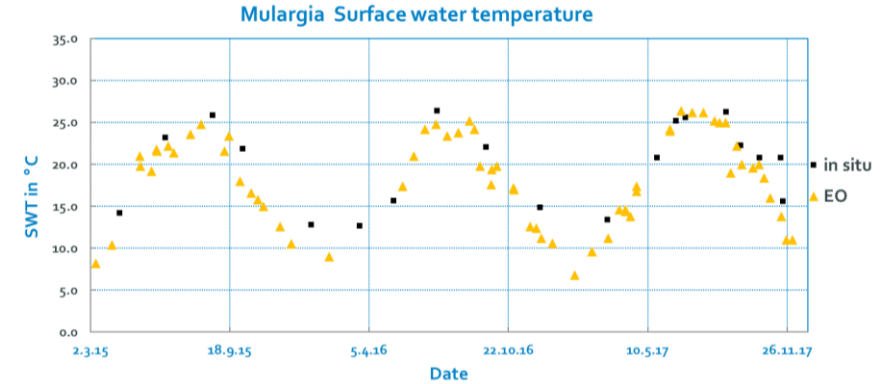
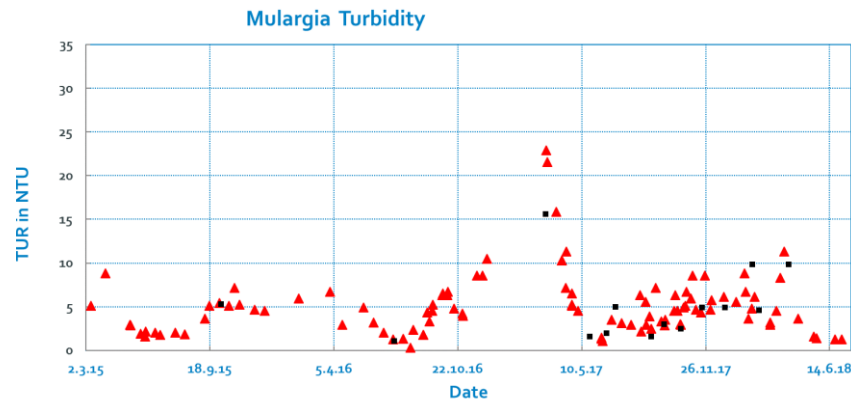
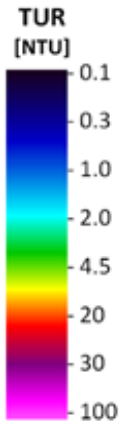
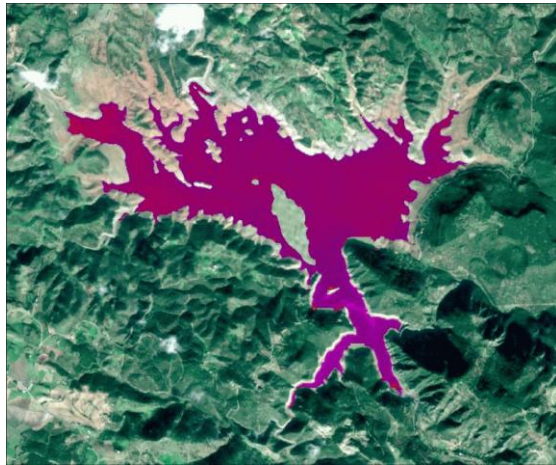
# Water Quality Monitoring

*Long-term, effective and harmonized monitoring solutions*



Algae bloom and turbidity monitoring in drinking water reservoirs in Germany, Italy and Greece for governmental agencies and dam managers

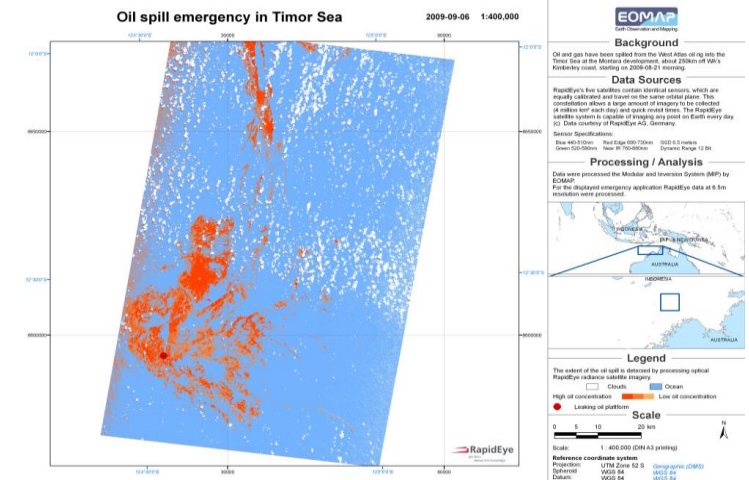
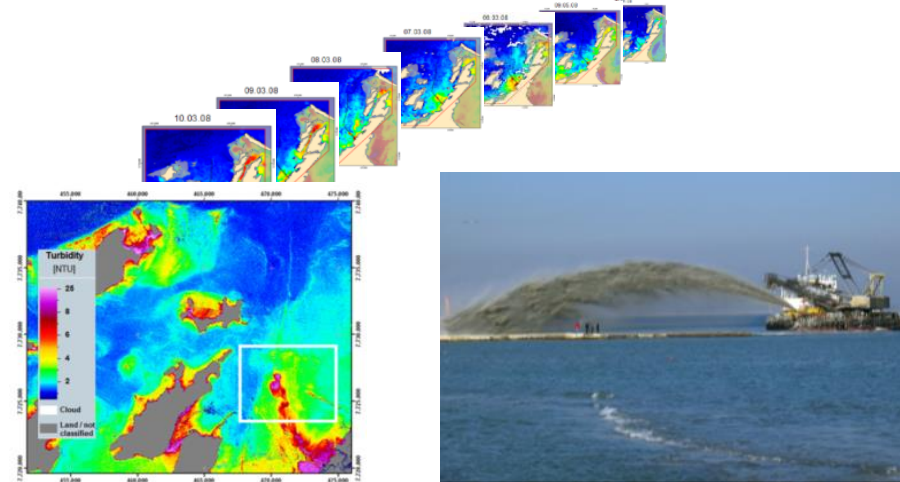
Timeseries Jan-Dec 2017





# Other case studies and applications

- **Dredge Monitoring** at dredging operations/ pipeline constructions for Oil & Gas industry
- **Environmental evaluation** of seasonal sediment flows for hydropower planing in Georgia
- **Disaster Impact assessment** of Rio Doce disaster for Lactec/Brazil
- **Oil spill monitoring** for Oil & Gas industry in Timor Sea





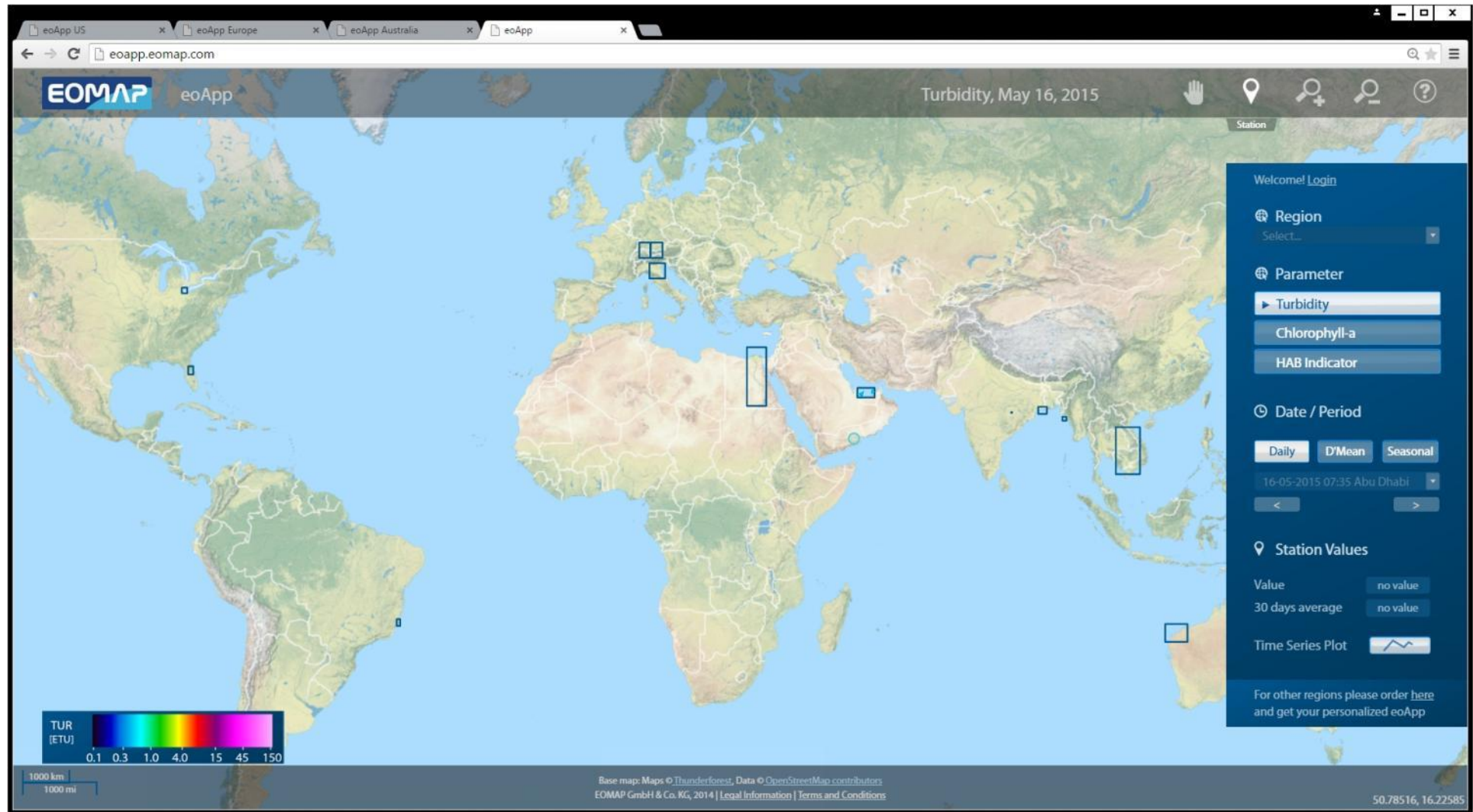
A vibrant underwater scene featuring a diverse coral reef. In the foreground, there are large, branching coral structures in shades of yellow, orange, and pink. The background shows a deep blue ocean with more coral formations and small fish swimming in the distance.

# eoServices

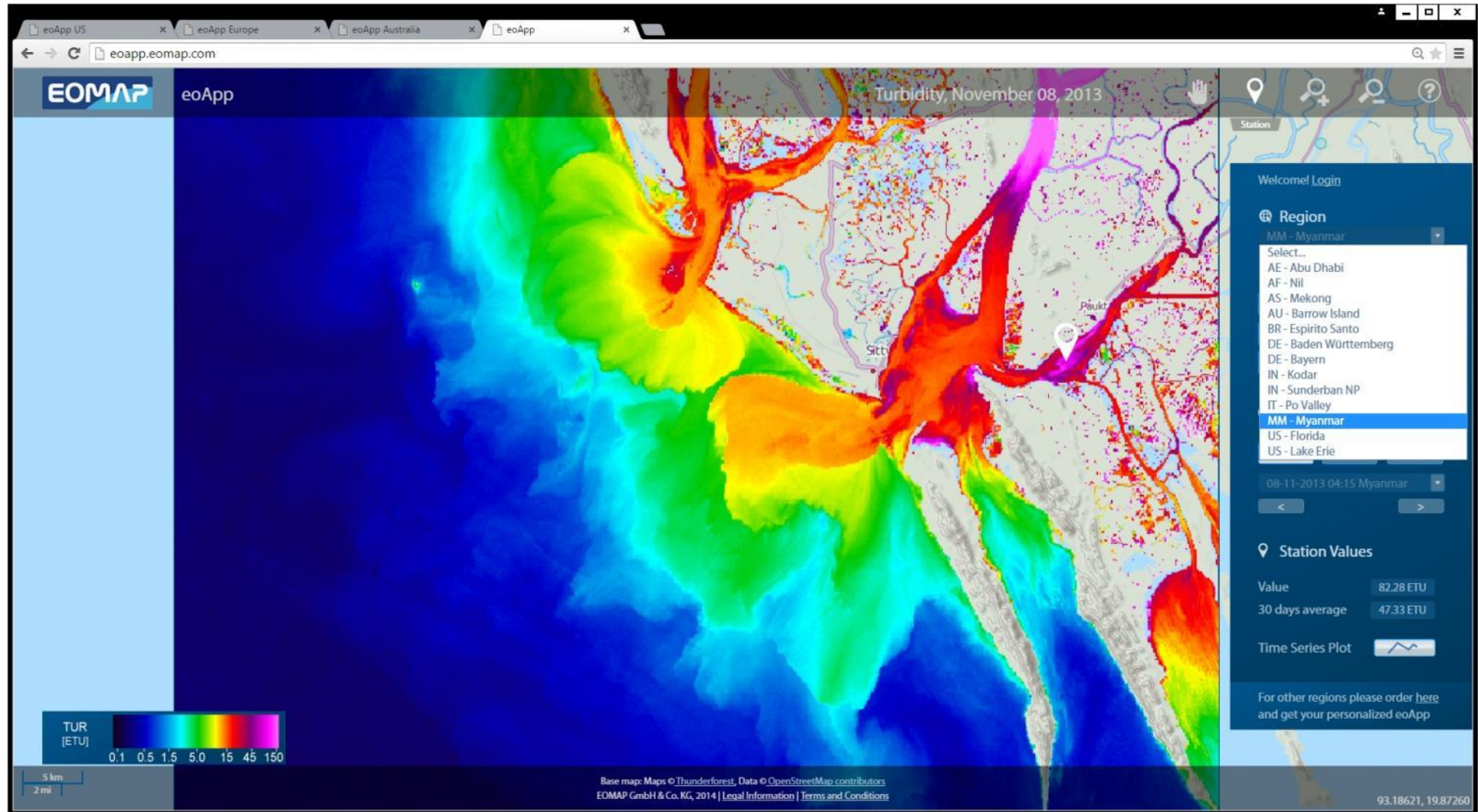
- data access mechanisms -



# Access and data analysis: Web- & Mobile applications

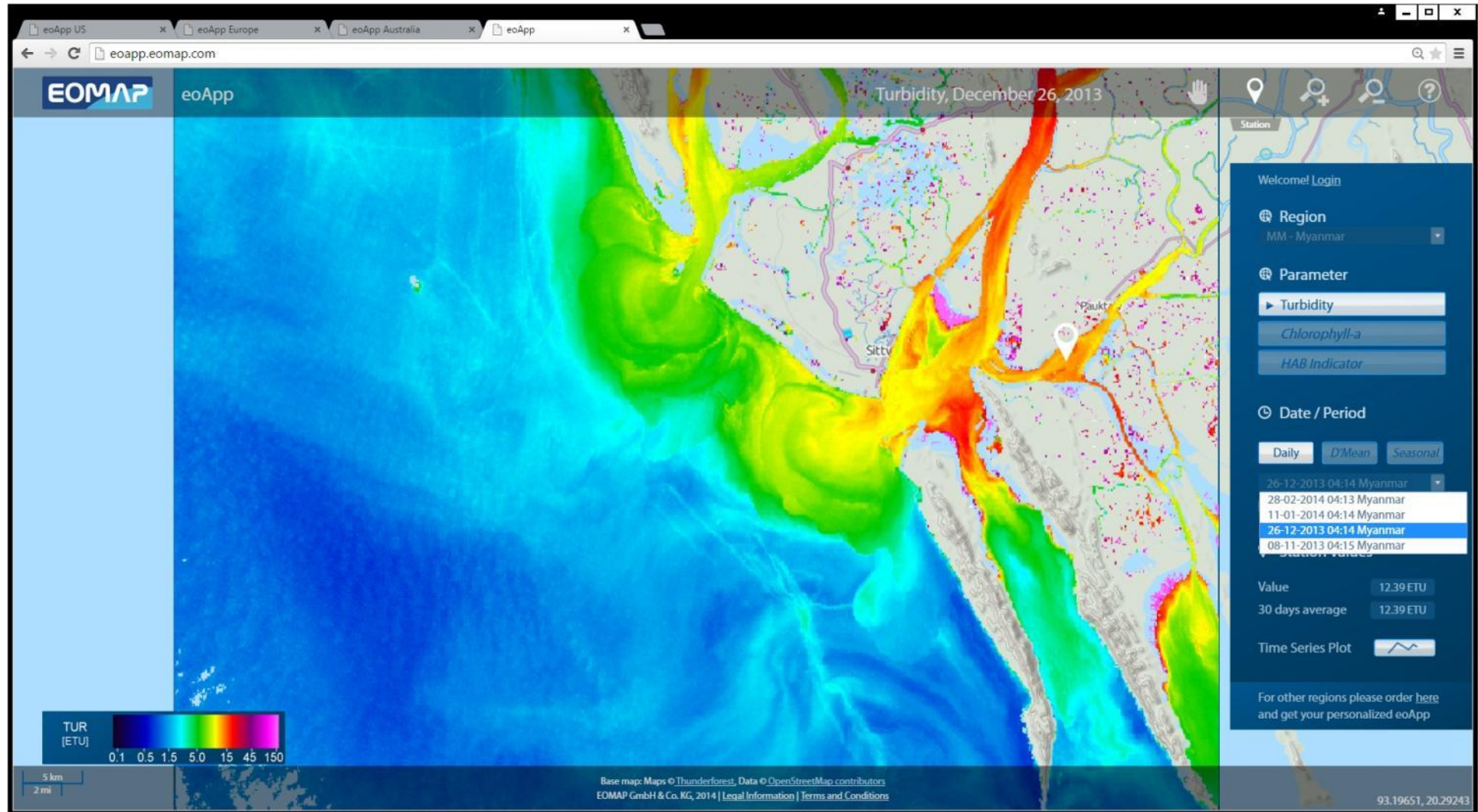


# Access and data analysis: Web- & Mobile applications

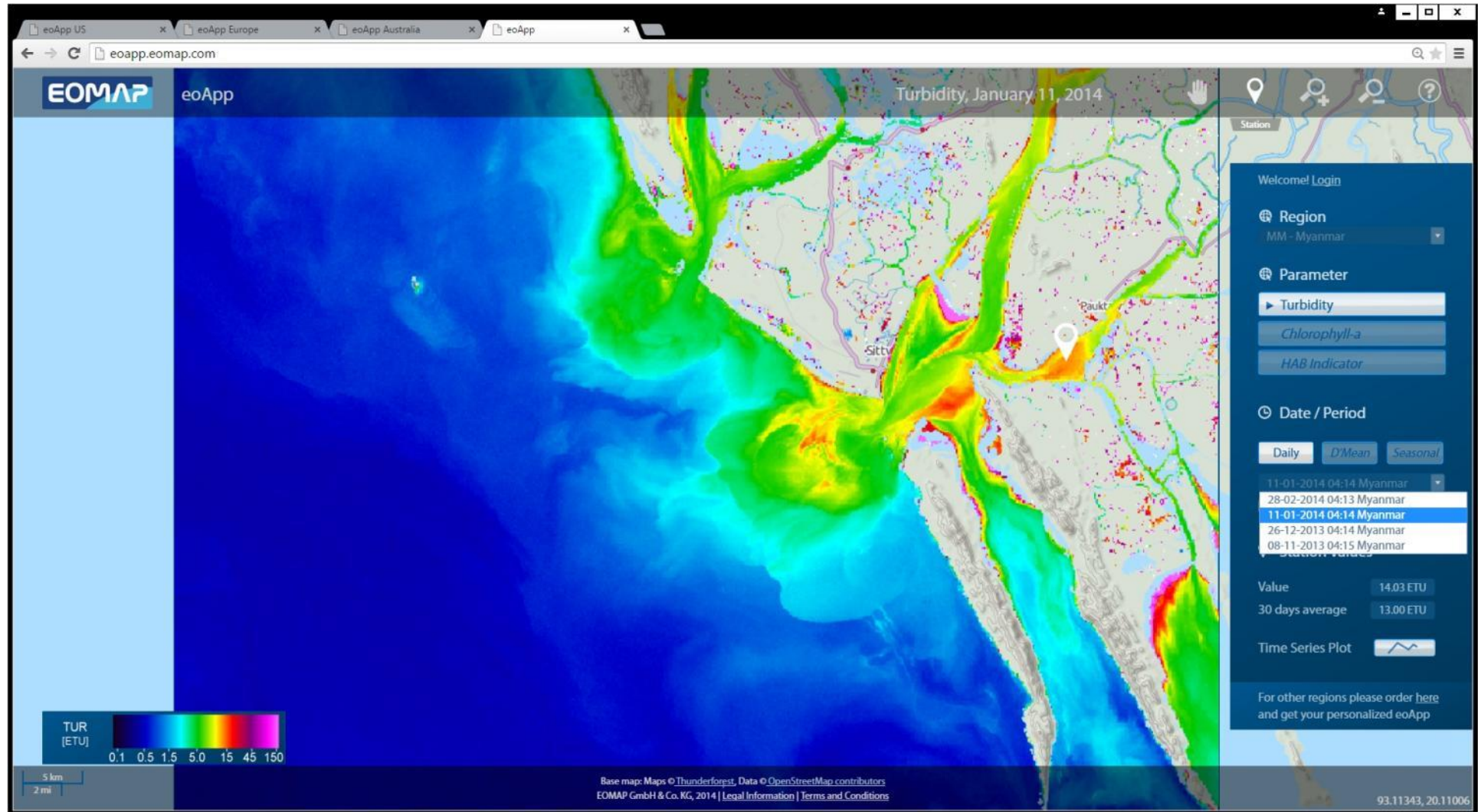




# Access and data analysis: Web- & Mobile applications

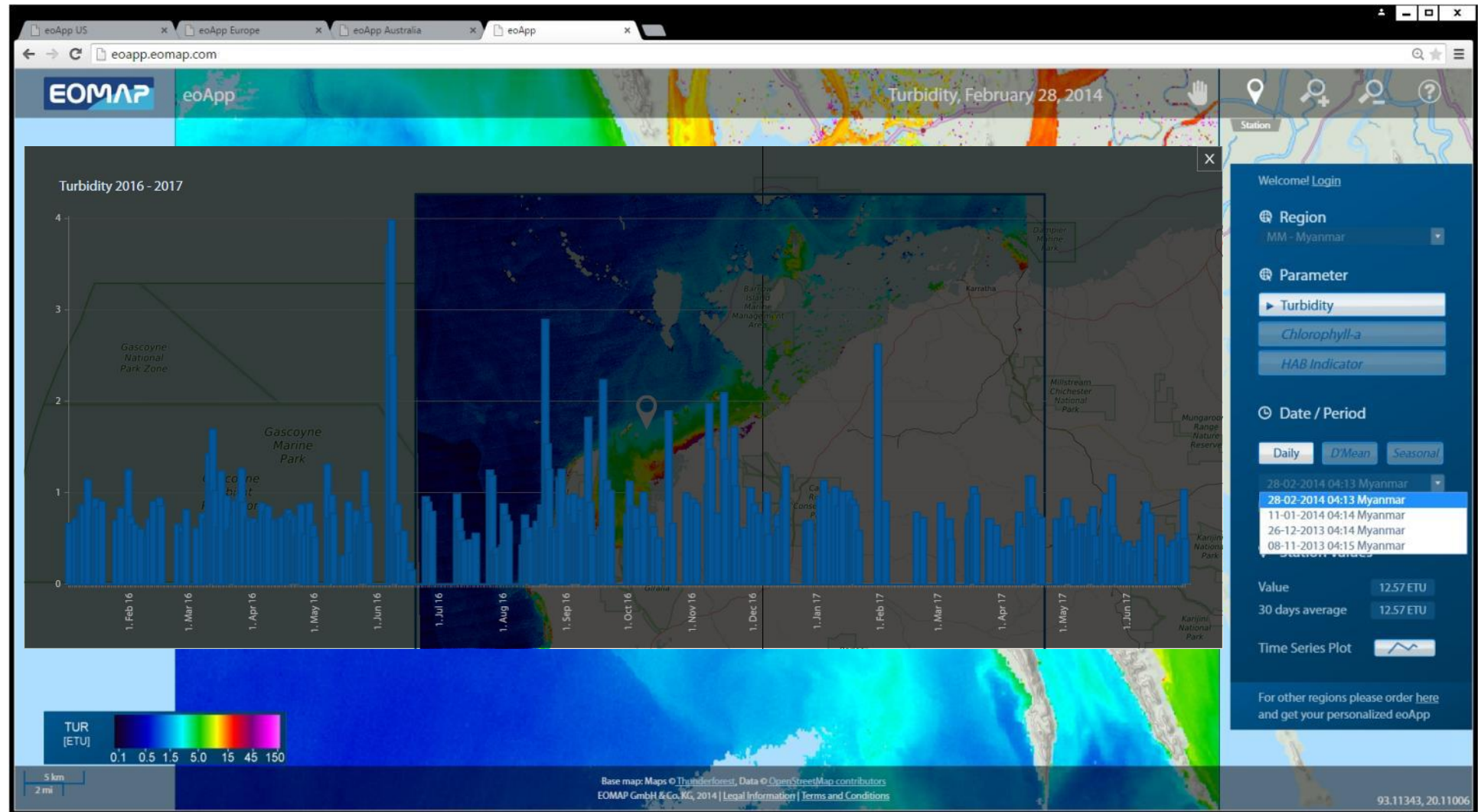


# Access and data analysis: Web- & Mobile applications



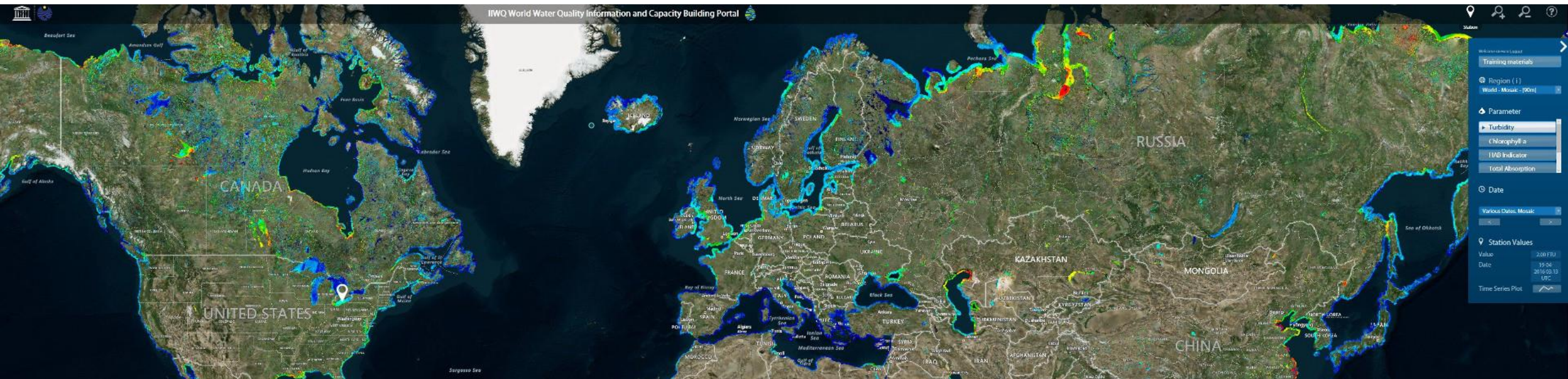


# Access and data analysis: Web- & Mobile applications

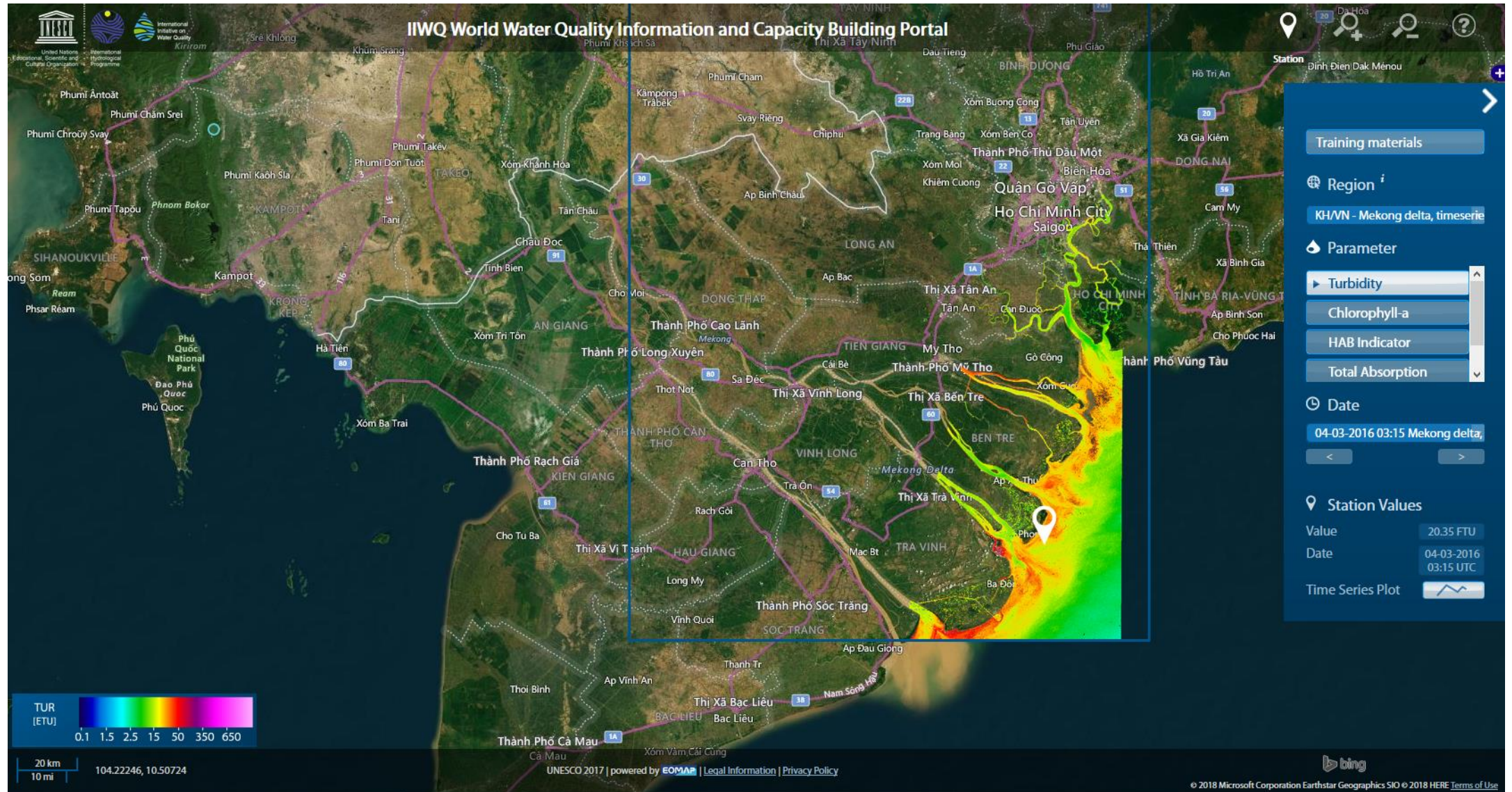


# Flagship: Global water quality portal for UNESCO

- First global water quality survey for lakes and rivers
- Capacity building for policy makers, agencies and water industry
- Demonstrating effective monitoring and reporting mechanism
- [www.worldwaterquality.com](http://www.worldwaterquality.com) [www.worldwaterquality.org](http://www.worldwaterquality.org)









# Bathymetry Store

The screenshot displays the Bathymetry Store website interface. The main map shows a bathymetric view of the Atlantic Ocean, with labels for the North Atlantic Ocean, North American Basin, Caribbean Sea, and South America. A sidebar on the left contains navigation links: About, Products, and Quick Tour. The main content area is divided into three sections: 1. Define regions (with Draw region and Upload region buttons), 2. Choose products, and 3. Proceed to checkout. A modal window is open over the map, displaying the 'Your defined region: 923.60 km²' and a list of product options: Most recent survey: 51.00 km², Acquisition: Most recent, 2 m grid, 6375.00 €, 10 m grid, 2750.00 €, and 15 m grid, 1500.00 €. The bottom of the page features a footer with contact information and legal notices.

Bathymetry Store | Global High X

https://www.bathymetry.store/#main

Suchen

About Products Quick Tour

EO Store | Bathymetry

Login EOMAP

1. Define regions

Draw region Upload region

2. Choose products

3. Proceed to checkout

1. Define regions

2. Choose products

3. Proceed to checkout

Your defined region: 923.60 km²

- Most recent survey: 51.00 km²
- Acquisition: Most recent
- 2 m grid, 6375.00 €
- 10 m grid, 2750.00 €
- 15 m grid, 1500.00 €

3. Proceed to checkout

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Leaflet | Powered by Esri | Map data © OpenStreetMap, DeLorme

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# Summary

- ✓ Accurate project planning and execution

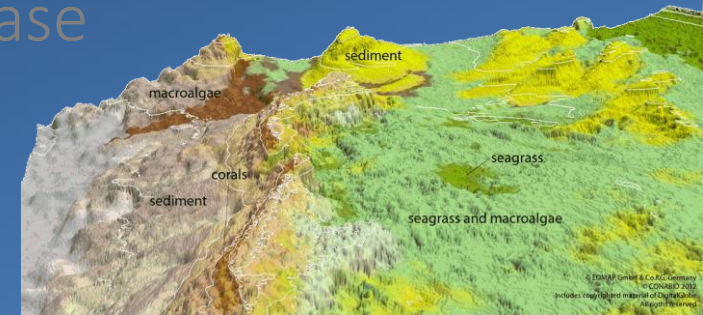
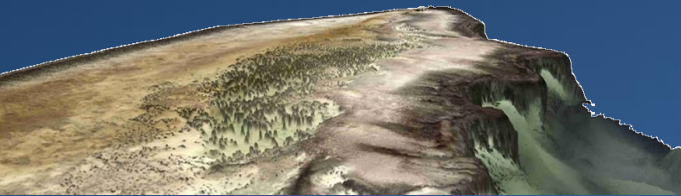
 using multiple EO based information layers

- ✓ Quickly and easy data access

 of high resolution data sets on web portals

- ✓ Most reliable aquatic products worldwide

 due to intensive validation proven by large customer base





# THANK YOU

## WELCOME TO EOMAP HQ near Munich



EOMAP HQ  
Schloss Seefeld, DE