



SWOS
 Satellite-based Wetland
 Observation Service



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Projet SWOS

Suivi de la qualité de l'eau par satellite

Rencontre Gestionnaires ZH Med (France)

Tour du Valat, 22/03/2018

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Water Quality monitoring

3 paramètres avec moyenne possible sur période donnée:

- concentration de chlorophylle a (CHL – $\mu\text{g/l}$)
- coloration des matières organiques dissoutes (CDOM – absorption/mètre)
- MES (TSM – mg/l)

Données satellites: Envisat-MERIS-Sentinel 3 ; Landsat 8/Sentinel-2

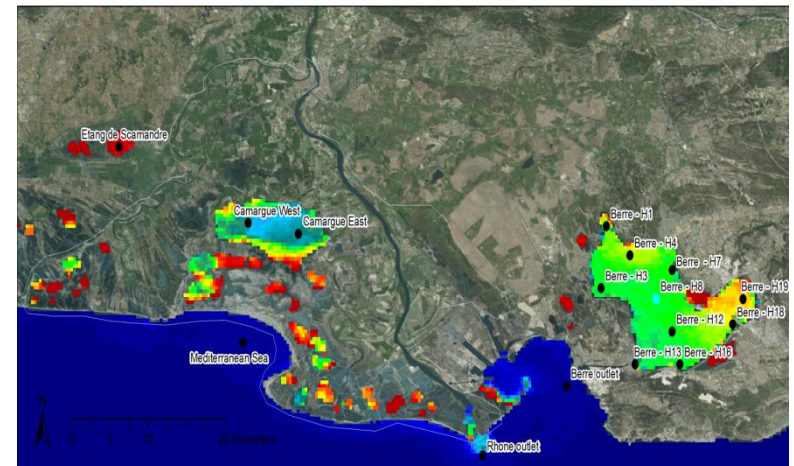


Caractéristiques :

- Minimum 3 km^2 (grandes masses d'eau)
- Taille du pixel : 300 mètres
- Profondeur > 1m ou 1.5m
- Résolution temporelle \sim mois (voir $\frac{1}{2}$ mois)

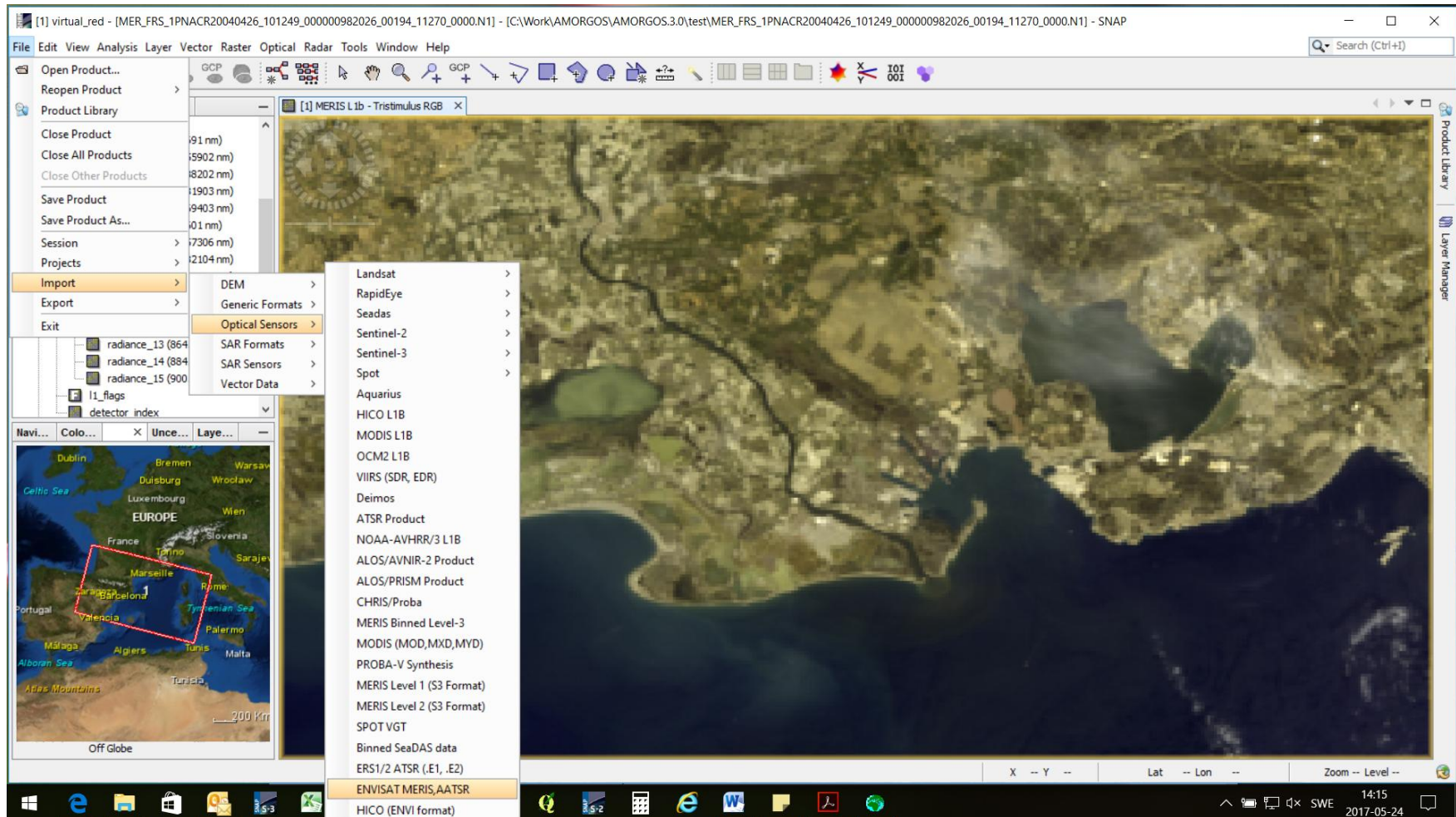
Données in-situ nécessaires:

- Profondeur de Secchi



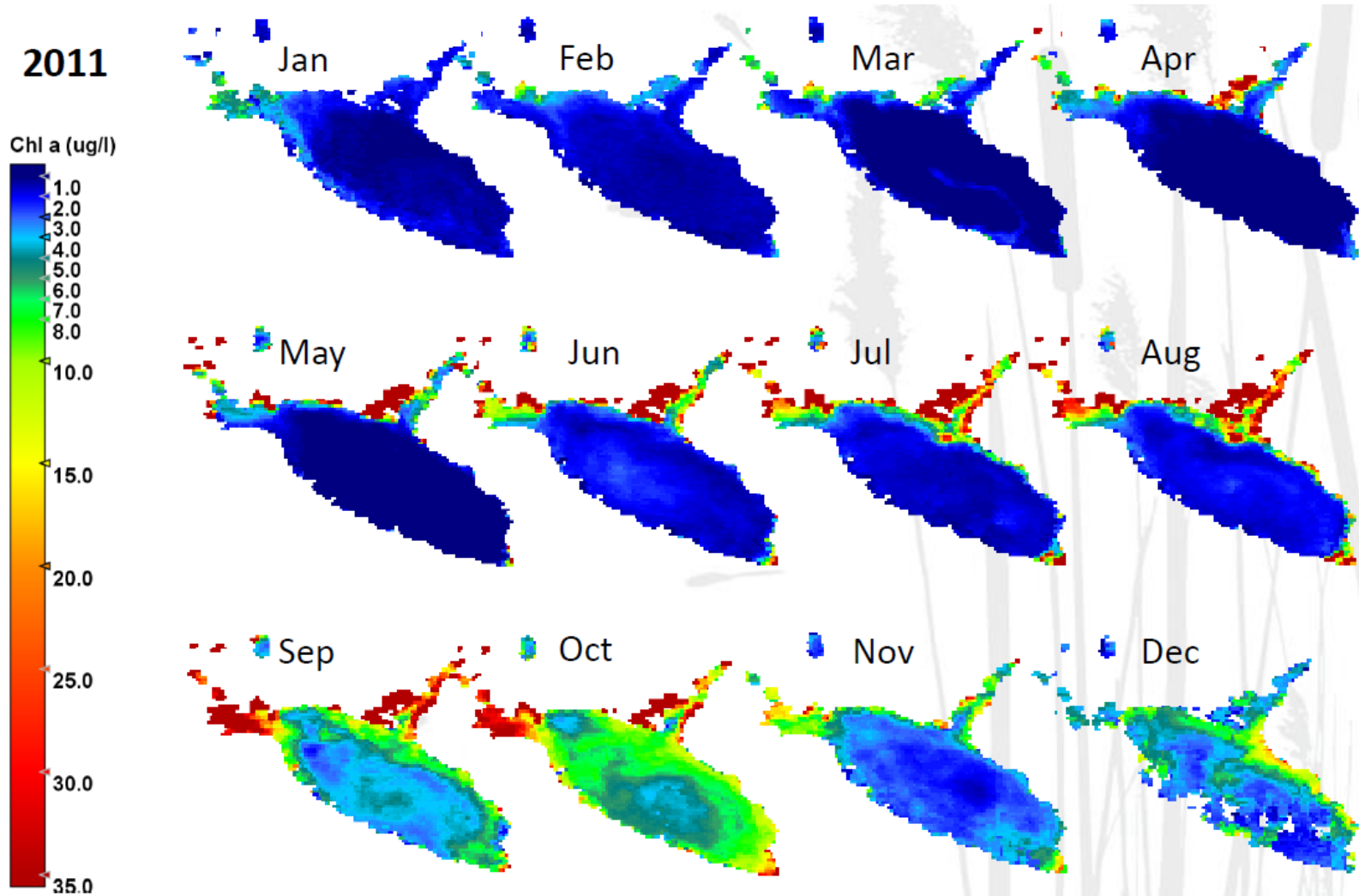
Camargue – Etang de Berre Chl-a

- SNAP / Import Envisat MERIS AATSR

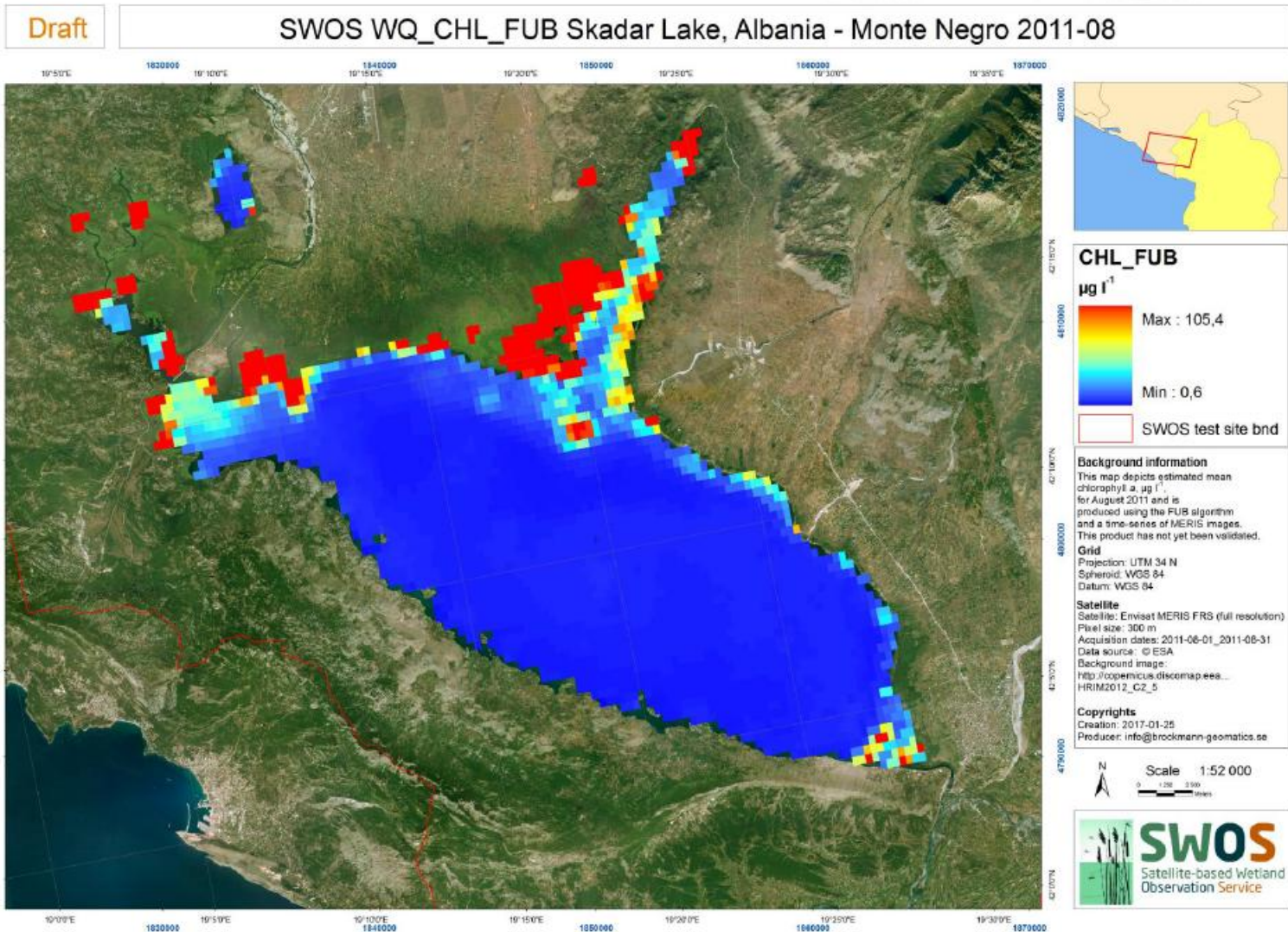


The screenshot shows the SNAP (Scientific Data Processing) software interface. The main window displays a satellite image of a coastal region. The 'File' menu is open, and the 'Import' option is selected, leading to a sub-menu where 'ENVIAT MERIS, AATSR' is highlighted. Other options in the 'Import' sub-menu include DEM, Generic Formats, Optical Sensors, SAR Formats, SAR Sensors, and Vector Data. The 'Product Library' on the left shows a list of products, including radiance_13 (864), radiance_14 (884), radiance_15 (900), I1_flags, and detector_index. The 'Navi...' window shows a map of Europe with a red box indicating the location of the satellite image. The status bar at the bottom shows the current product as 'ENVIAT MERIS, AATSR' and 'HICO (ENVI format)'. The system tray at the bottom right shows the time as 14:15 on 2017-05-24.

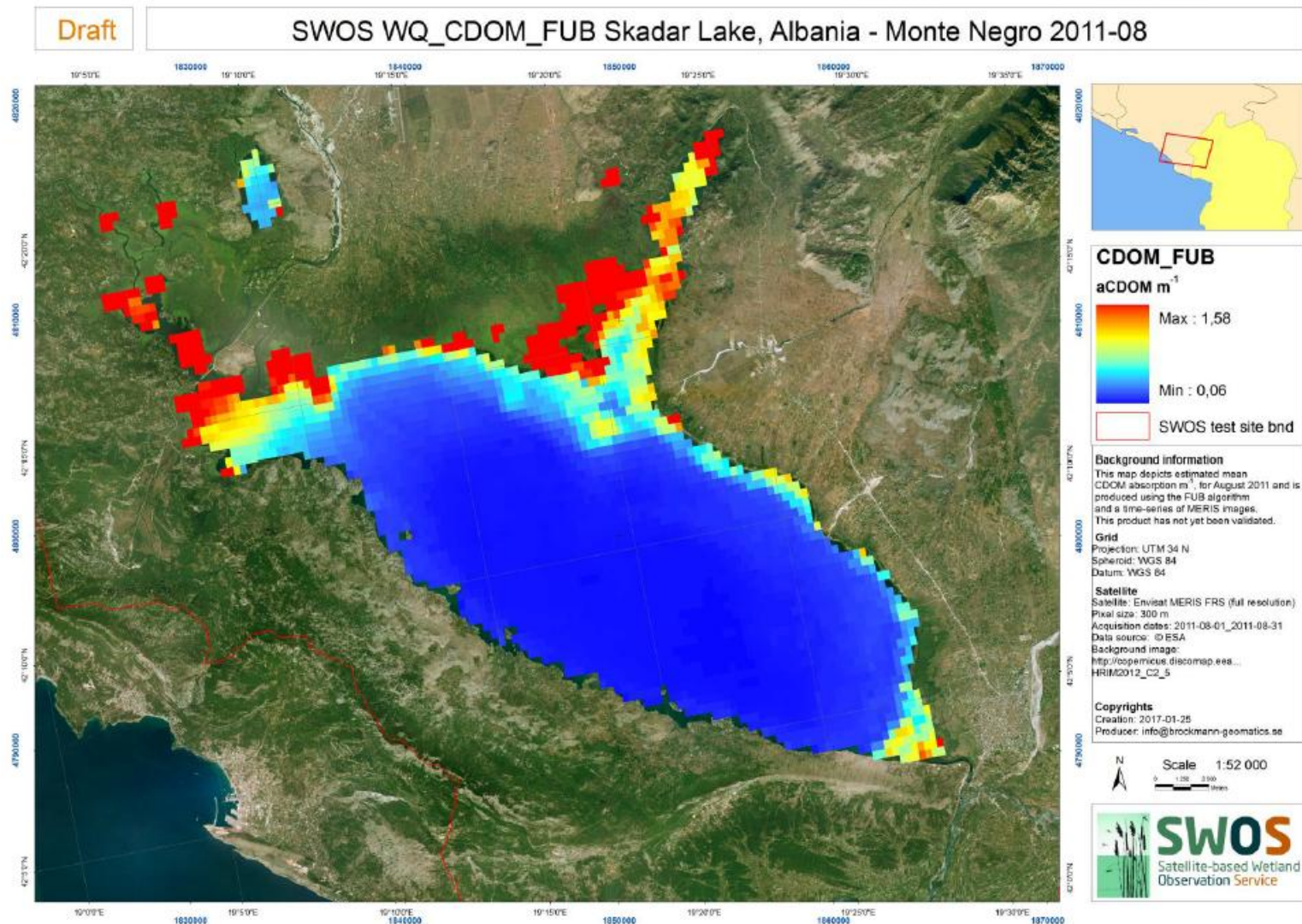
Water Quality monitoring



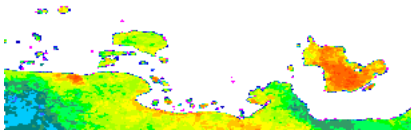
MERIS Chlorophyll a (August 2011)



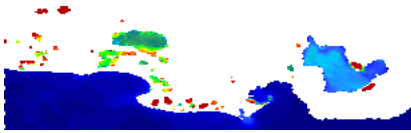
MERIS Coloured Dissolved Organic Matter August 2011



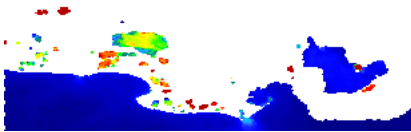
Initial products:



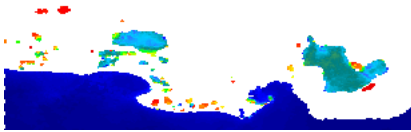
- Number of observations on which the monthly mean is based on.



- Chl a, Chlorophyll a ($\mu\text{g l}^{-1}$)



- TSM, Total Suspended Matter (mg l^{-1})

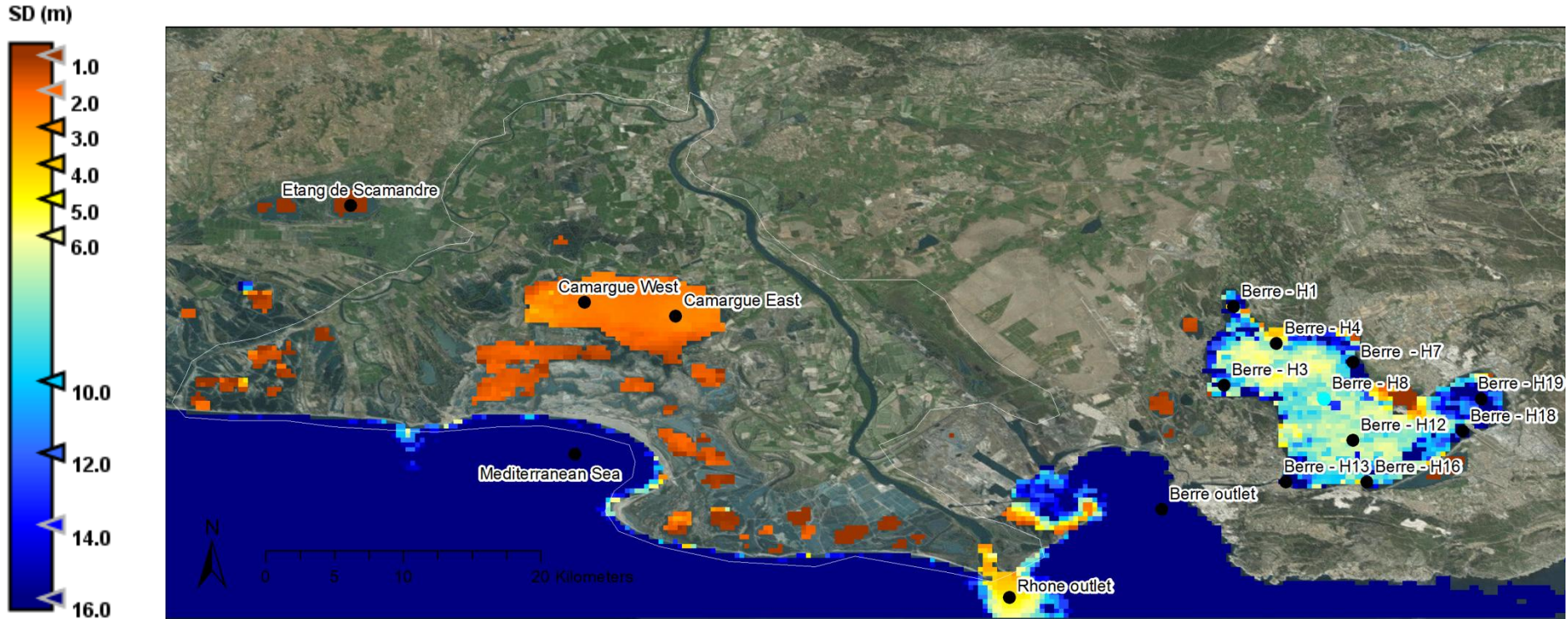


- CDOM, Colored Dissolved Organic Matter absorption (m^{-1})

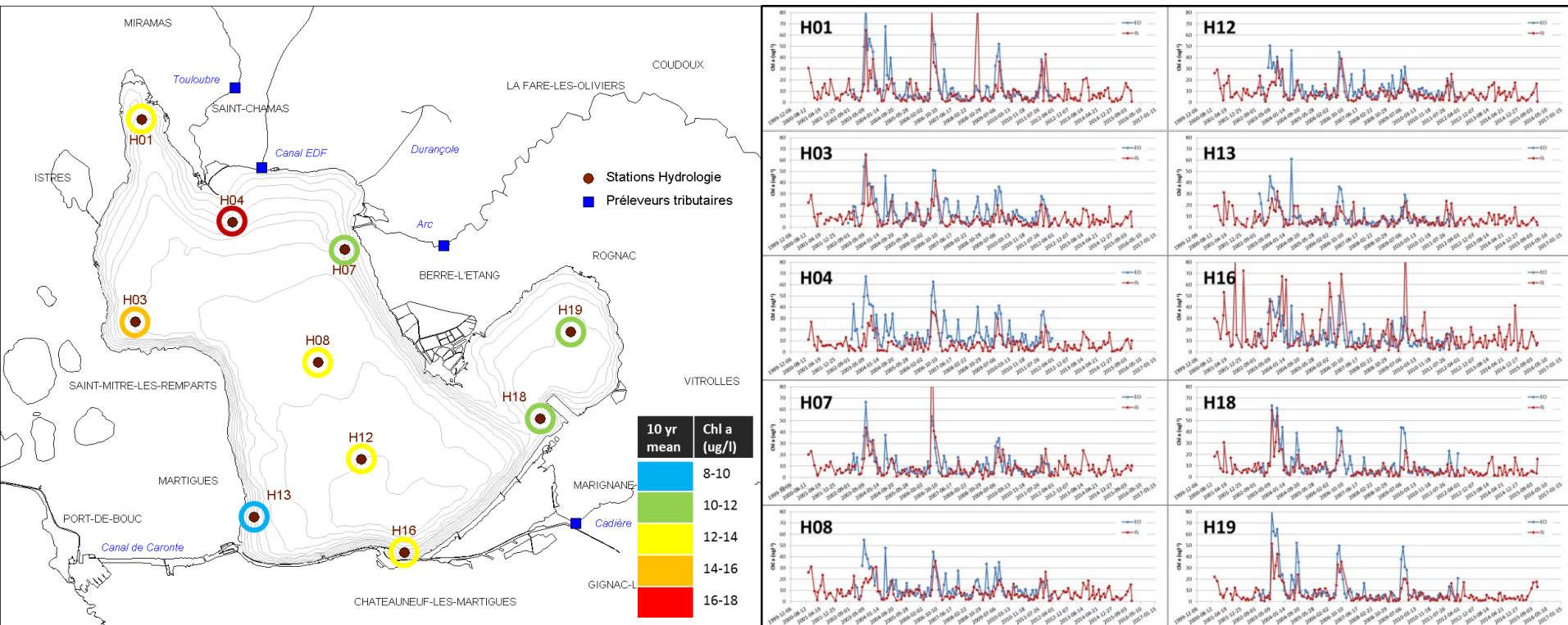


- SD, Secchi Depth (m)

Secchi depth, 2010-07-01 – 07-31

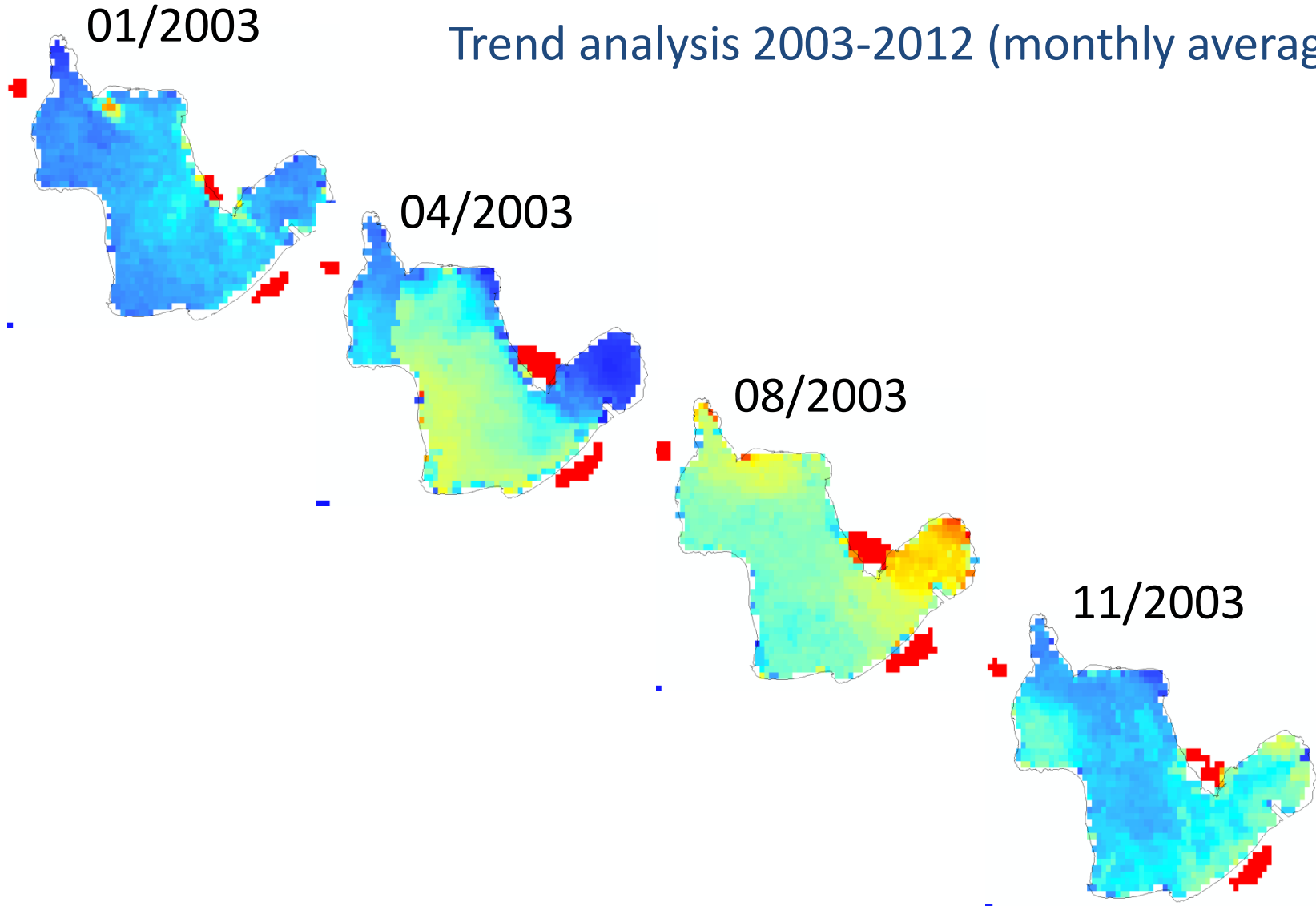


Comparison with in situ estimated water quality data (Berre)



Water Quality monitoring (ex. Berre)

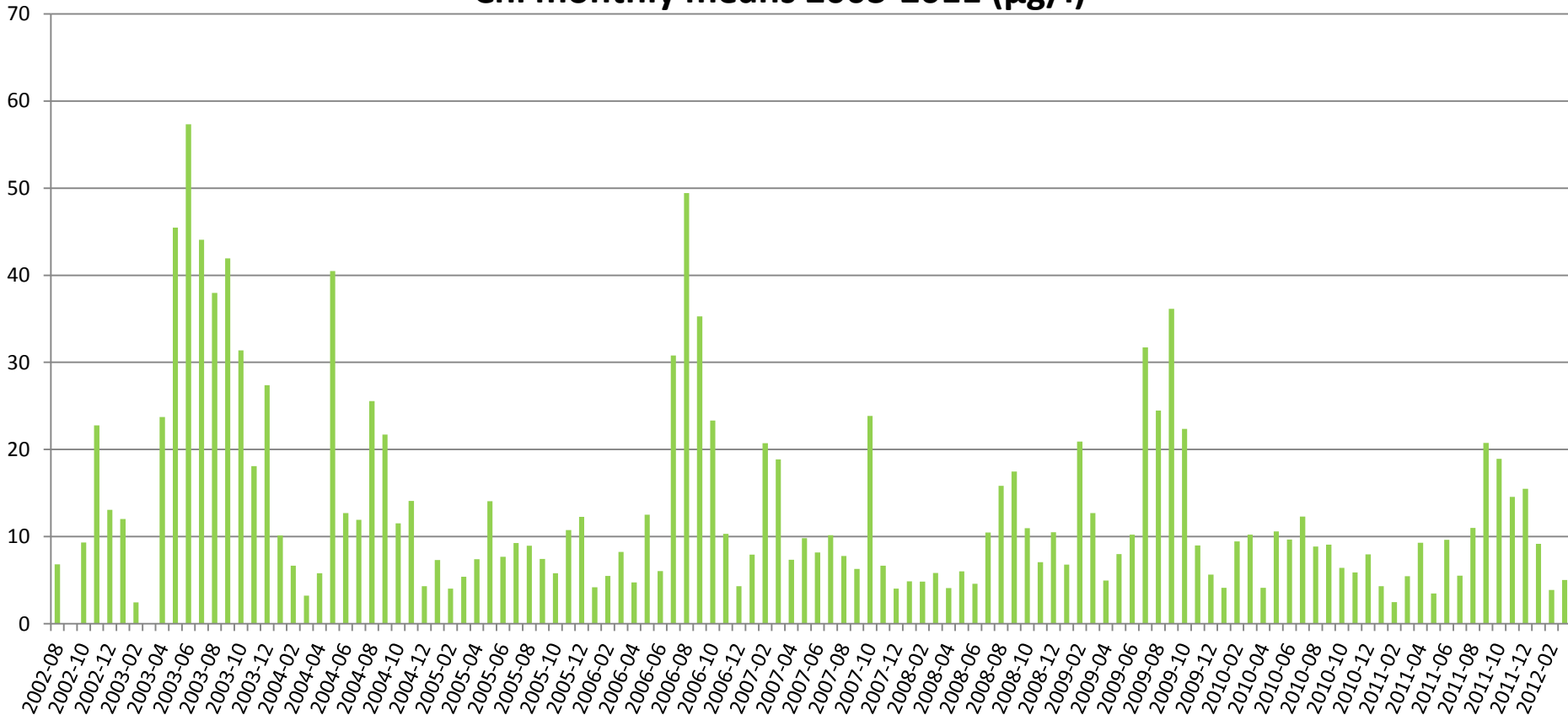
Trend analysis 2003-2012 (monthly average)



Water Quality monitoring (ex. Berre)

Trend analysis 2003-2012 (monthly average)

Chl monthly means 2003-2011 ($\mu\text{g/l}$)





Thank you

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