COPERNICUS MARINE SERVICE FOR THE AQUACULTURE SECTOR

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Marine Monitoring



#### OUTLINE

Marine Monitoring

- THE COPERNICUS PROGRAMME and ITS MARINE SERVICE
  - WHICH MARINE DATA & INFORMATION OFFER?
  - WHICH OFFER FOR THE AQUACULTURE SECTOR?
  - DATA FOR WHO?
  - EXAMPLE OF USE IN THE AQUACULTURE SECTOR





Monitoring

## • THE COPERNICUS PROGRAMME and ITS MARINE SERVICE

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# COPERNICUS MARINE SERVICE



## http://www.marine.copernicus.eu



- One Single Portal
- MARINE PRODUCTS

# OPEN&FREE





## CMEMS USERS

Marine Monitoring

# >19.000 users from 3725 organisations and 166 countries 3200 regular users (download data at least 3 times in 1 month)





#### CMEMS USER NEEDS

Marine Monitoring

# Systematically recorded since July 2011

Service Desk servicedesk.cmems@mercator-ocean.eu
Requests raised by users
Satisfaction inquiries (sent by the service desk after any exchange)
Questionnaires
Annual questionnaires to evaluate the service and to identify improvement areas
Thematic questionnaires
User workshops & trainings& meetings
Users' requests & questions
Champion User Advisory Group (New!)

Around 2000 feedbacks collected





### CMEMS USER NEEDS

Marine Monitoring

## Feedback Classification:

- Access to products
- → Additional or update of p
- → Communication/outreacl
- ➔ Product information
- → Service (quality and defi
- ➔ Web functionalities



Access to products
Additional or update of products
Communication/outreach
Product information
Service definition
Web functionalities





#### CMEMS USER NEEDS

Marine Monitoring

## Top6 of User Feedbacks (since July 2011):

- To provide higher spatial and temporal resolution for products (on going)
- > To ease the choice of products for non-experienced users (on going)
- To have waves products (done)
- To have wind and atmospheric products (not done)
- > To convert from netcdf format to other formats (planned)
- > To easily download very large datasets (planned)





#### TODAY'S OBJECTIVES

- Monitoring
- Share the aquaculture community's issues regarding operating at sea, and how Copernicus Marine Service could tackle current and future challenges --> DAY1 am agenda
- Present Copernicus Marine Service offer with existing examples and solutions --> DAY1 pm agenda
- Put it in practice with marine hands-on training sessions --> DAY2 agenda
- Benefits for EATIP and Aquaculture community
  - Gain better knowledge about available marine data in Europe
- Benefits for Copernicus Marine Service
  - Understand the aquaculture marine data needs to better serve them in the future





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#### Ocean Data & Information

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#### OCEAN PRODUCTS

Ocean product catalogue, to download or visualize data accross more than 10 variables, including historic, current and forecasted data.

#### OCEAN MONITORING INDICATORS

Essential variables monitoring the health of the ocean

#### OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events

DCEAN

EXPERTISE

Gime



110 111 - 二二



STATE REPORT

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## Marine.copernicus.eu

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## ACCESS TO DATA & INFORMATION

Free and open access to worldwide Ocean information marine.copernicus.eu









## PORTFOLIO GATHERS DATA FROM 3 SOURCES

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## SATELLITE OBSERVATION

## IN SITU OBSERVATION

## OCEAN MODEL COMPUTATION





## GLOBAL OCEAN AND EUROPEAN REGIONAL SEAS

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- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea



## CMEMS CONTRACTANTS in Europe

• ~300 contractants throughout Europe

Marine

Monitoring

- 40+ data providers throughout Europe
- State-of-the-art scientific knowledge



#### Ο U T L I N E

Marine Monitoring

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#### COPERNICUS MARINE SERVICE HIGH QUALITY OCEAN DATA



Hourly and dailyHourly and daily 3Dsurface ocean wavesocean currentsGLO : 8kmGLO : 8kmMED: 4kmMED: 4kmNWS: 1.5kmNWS: 1.5km

Hourly and daily 3DHourly and daily 3Docean temperatureocean salinityGLO : 8kmGLO : 8kmMED: 4kmMED: 4kmNWS: 1.5kmNWS: 1.5km



#### COPERNICUS MARINE SERVICE HIGH QUALITY OCEAN DATA





#### Ο U T L I N E

Marine Monitoring

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#### DATA FOR WHO?

Marine Monitoring



#### COPERNICUS MARINE SERVICE MARKETS



-



Foregroups or Faths





#### SECTORAL IMPACTS

MARINE FOOD Copernicus Marine Service supports the management of aquaculture farms and the sustainable exploitation of ocean's living resources.









### AQUACULTURE FARM LIFE CYCLE

Monitoring





- Marine Monitoring
- 1. Evaluation and monitoring of **ocean resources** (tidal, wave, heat, currents, salinity...)
- 2. Performance validation, technology certification, licencing
- 3. Evaluation of met-ocean conditions for **operations at sea**
- 4. Evaluation of **constraints applied on the sea-exposed material**
- 5. Environmental impact assessment of farm (before / after implementation)
- 6. **Decommissioning** of farms





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- Antoine Mangin, ARGANS-F
- Felipe Fernandez, IH CANTABRIA
- Karl Strømsem, OFFTEK







## • FREE OCEAN DATA

# • USER DRIVEN: your opinion matters

• VALUE CHAIN: Copernicus Marine, Intermediate users, End users



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# THANK YOU **HOW TO REACH US?** marine.copernicus.eu



Servicedesk.cmems@mercator-ocean.eu



@CMEMS\_EU

Copernicus Marine Service

