# Water Quality Services - CyanoAlert and Copernicus Inland Water Services

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# Water Quality Services

- Water related satellite products are available from different services and with different purposes
- Water related parameters
  - Water quality (eutrophication/algal blooms, turbidity, sediment load)
  - Water temperature
  - Water quantity
  - Water level
- Tools are available to ease the use of data and translate data into information
- EU funded Copernicus Services – freely available for users
  - Satellite data & derived products
  - Visualisation tools
- User tailored Services
  - Dedicated (user tailored) tools & analyses
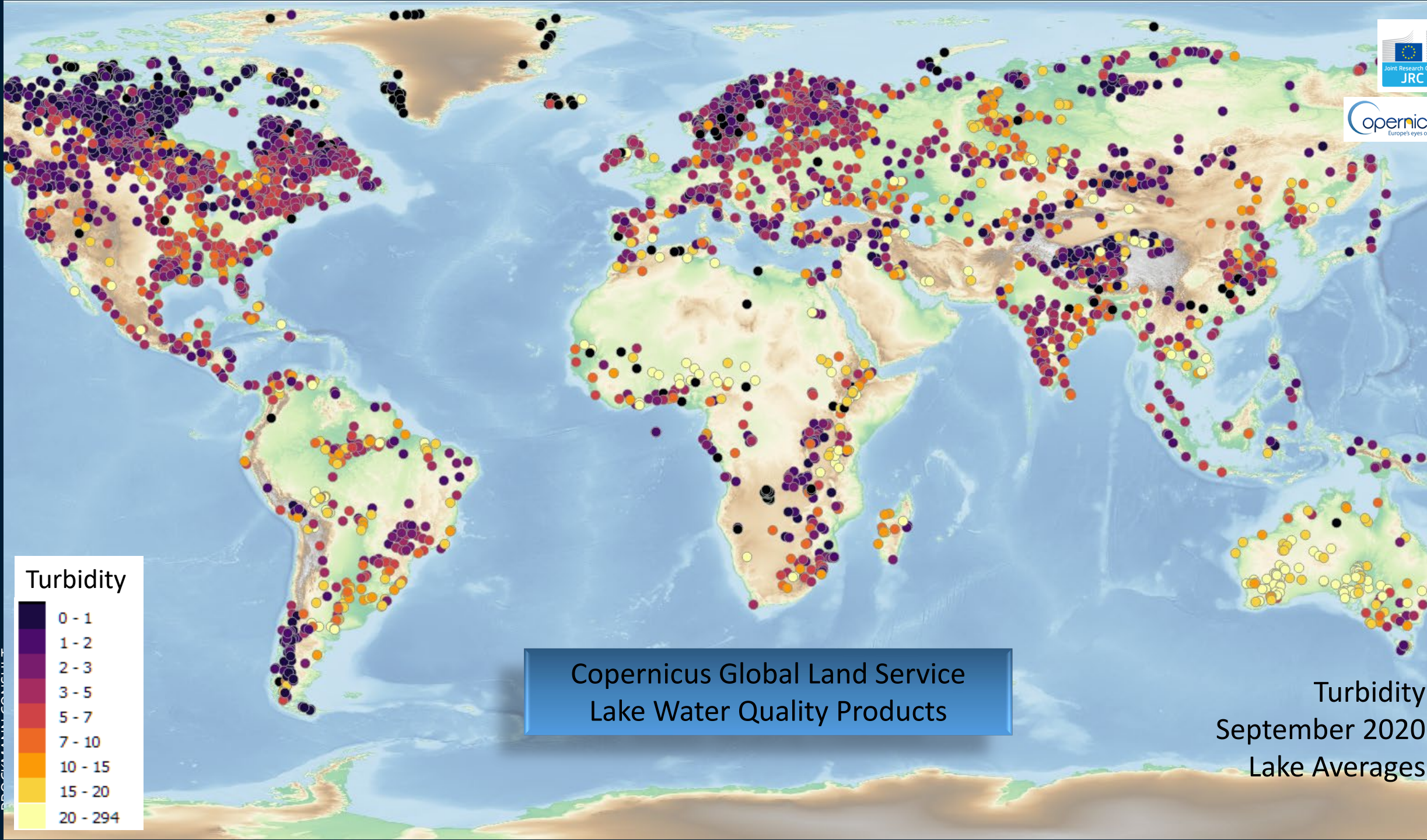  - Alert services
  - Higher level products

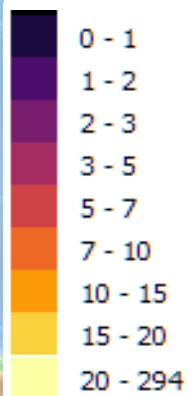WATER COLOR – Basis for water quality assessment

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Tropic State

- 10
- 20
- 30
- 40
- 50
- 60
- 70
- 80
- 90
- 100
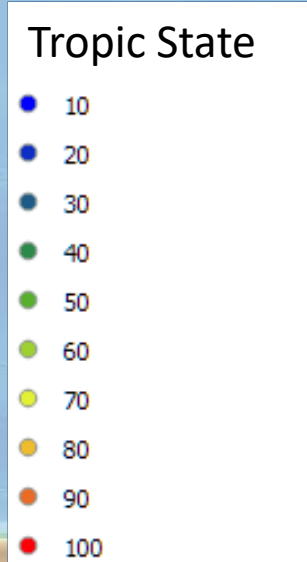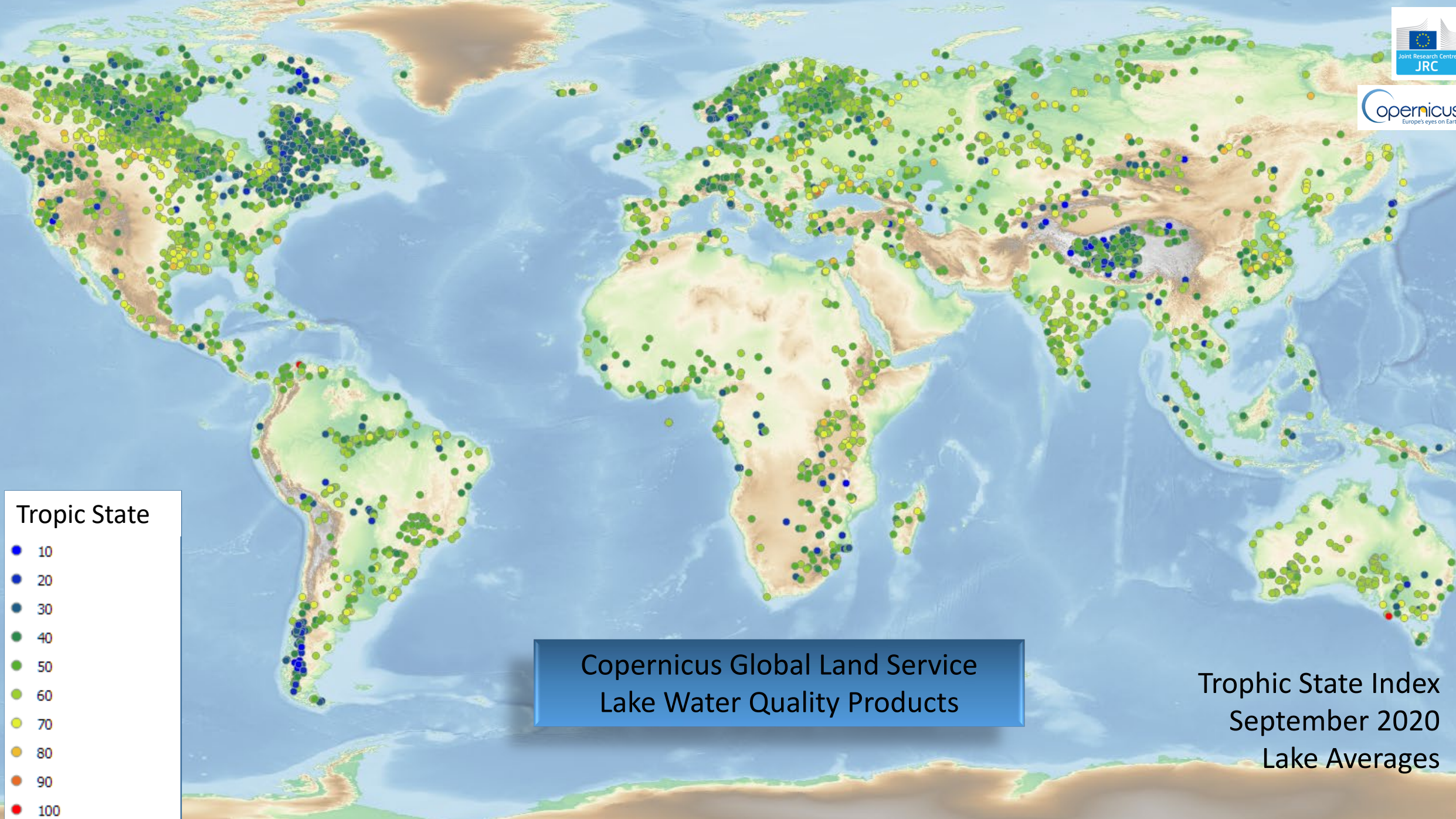
Copernicus Global Land Service
Lake Water Quality Products

Trophic State Index
September 2020
Lake Averages

Turbidity

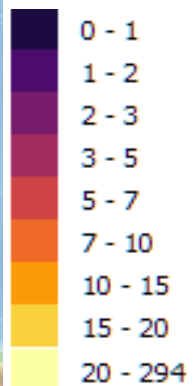| Turbidity | |
|---|---|
| ■ | 0 - 1 |
| ■ | 1 - 2 |
| ■ | 2 - 3 |
| ■ | 3 - 5 |
| ■ | 5 - 7 |
| ■ | 7 - 10 |
| ■ | 10 - 15 |
| ■ | 15 - 20 |
| ■ | 20 - 294 |

Copernicus Global Land Service
Lake Water Quality Products

Turbidity
September 2020
Lake Averages

Turbidity

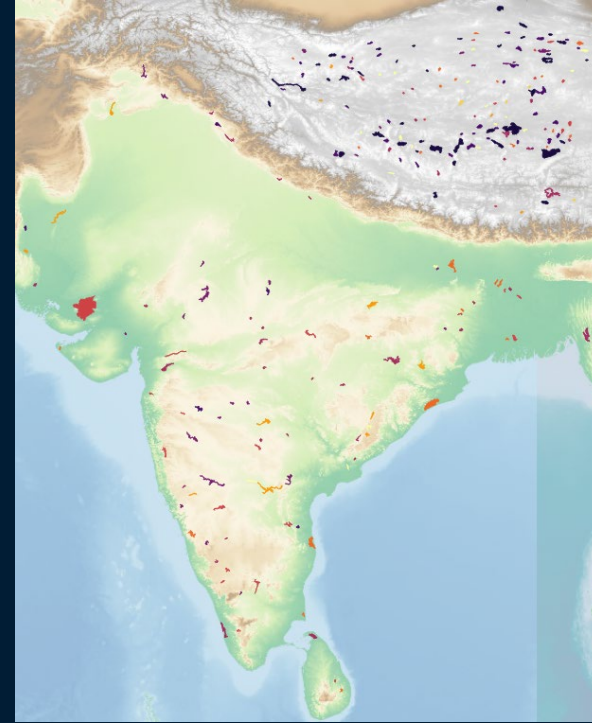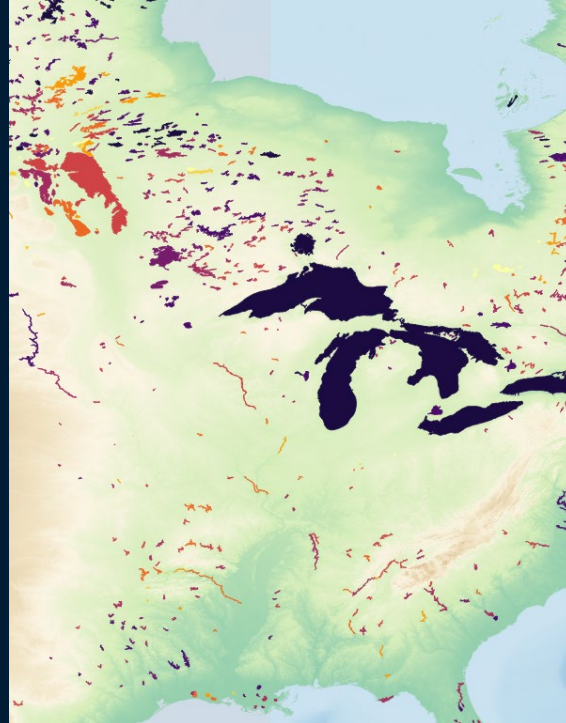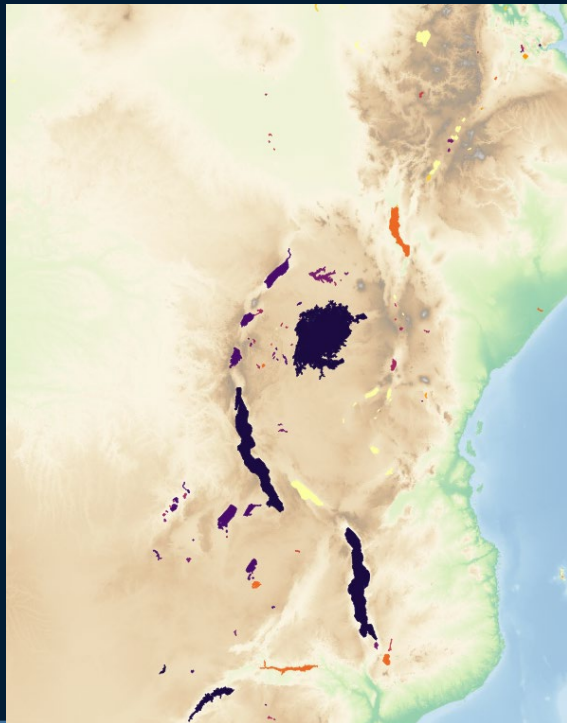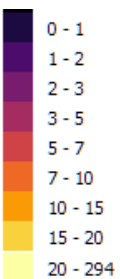| Turbidity | |
|---|---|
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| | 5 - 7 |
| | 7 - 10 |
| | 10 - 15 |
| | 15 - 20 |
| | 20 - 294 |

Copernicus Global Land Service
Lake Water Quality Products

Turbidity
September 2020
Lake Averages

# Copernicus Global Land Inland Waters



Turbidity

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 5
- 5 - 7
- 7 - 10
- 10 - 15
- 15 - 20
- 20 - 294
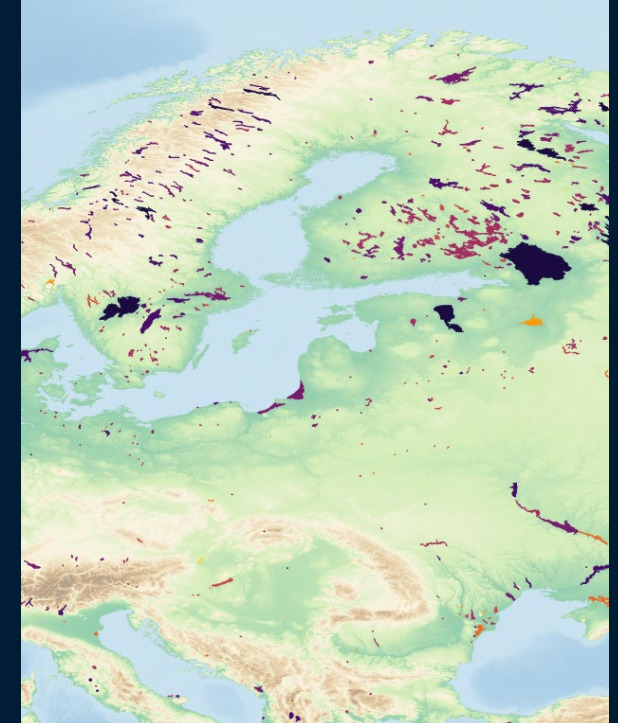
Copernicus Global Land Service
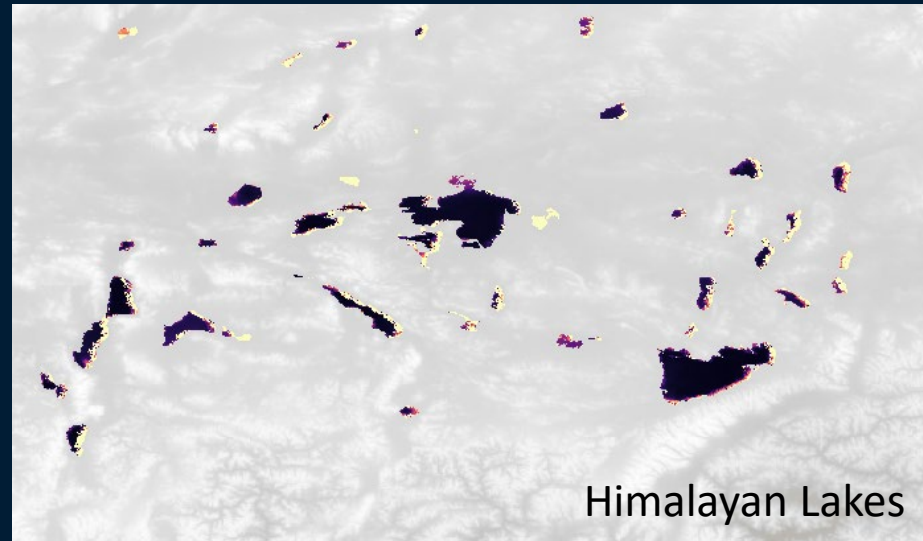Lake Water Quality Products

Turbidity
September 2020
Lake Averages
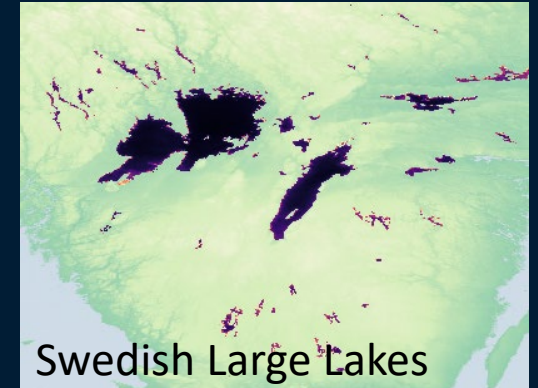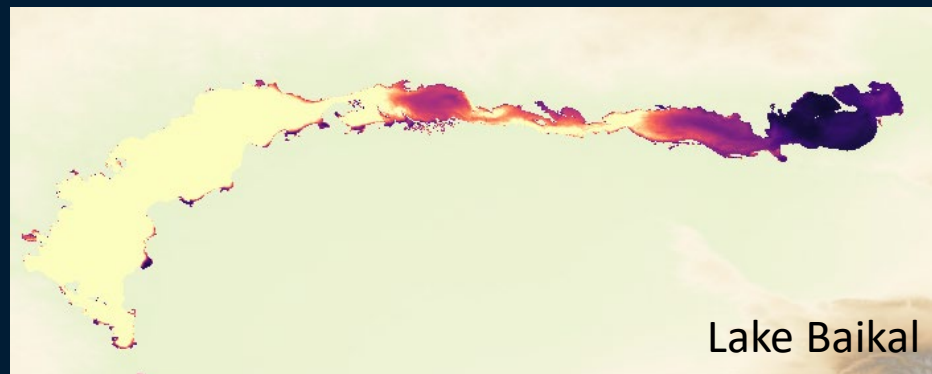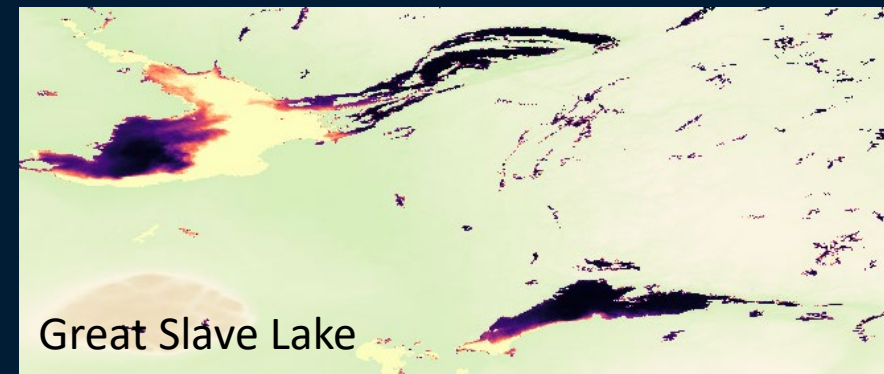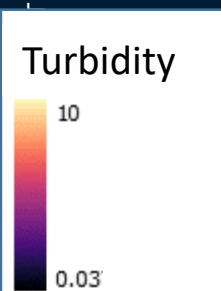
# Copernicus Global Land Inland Waters



Lake Victoria

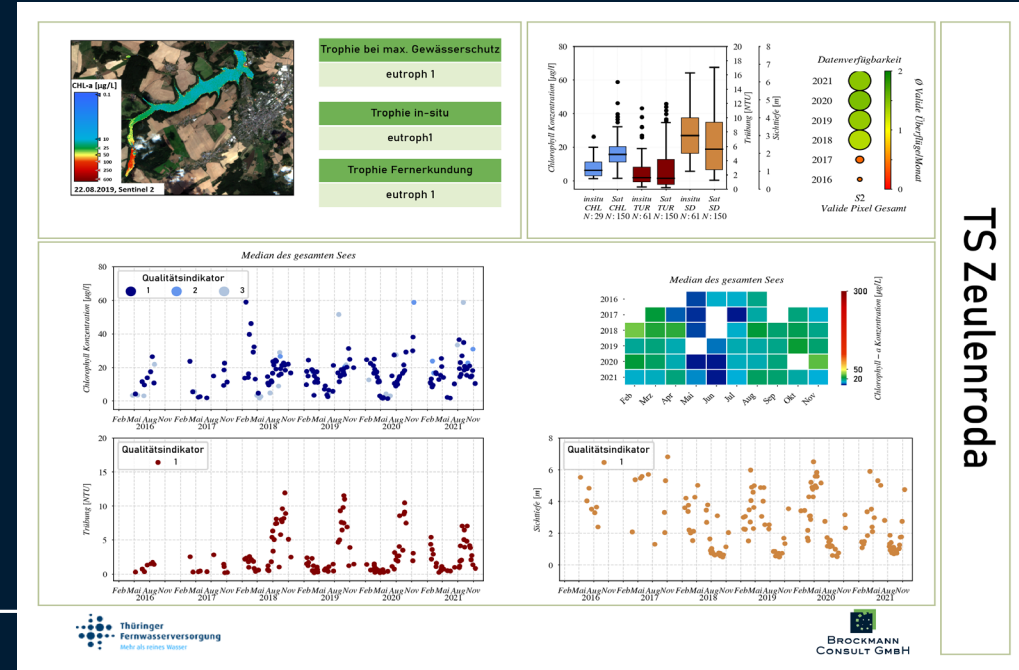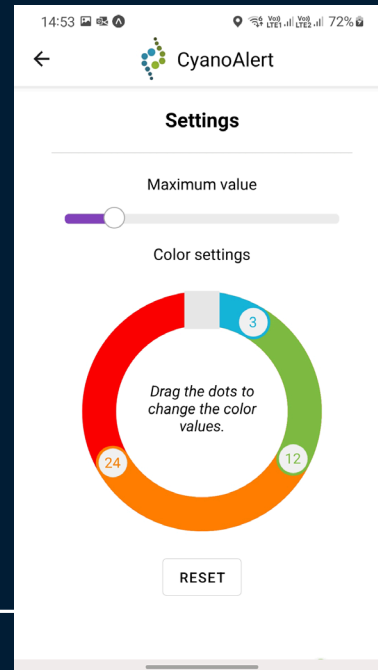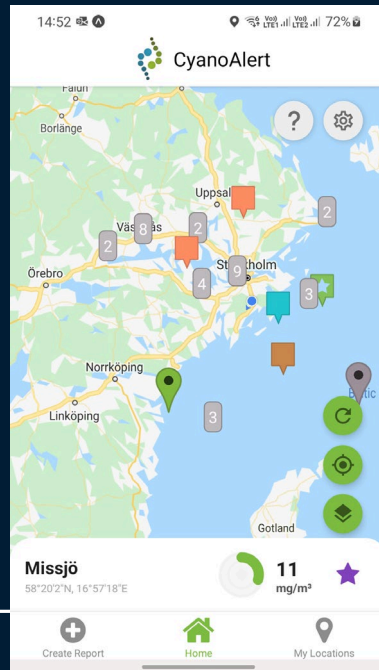Lake Turkana

Himalayan Lakes

Swedish Large Lakes

Lake Baikal

Great Slave Lake

Turbidity

10

0.03

Copernicus Global Land Service
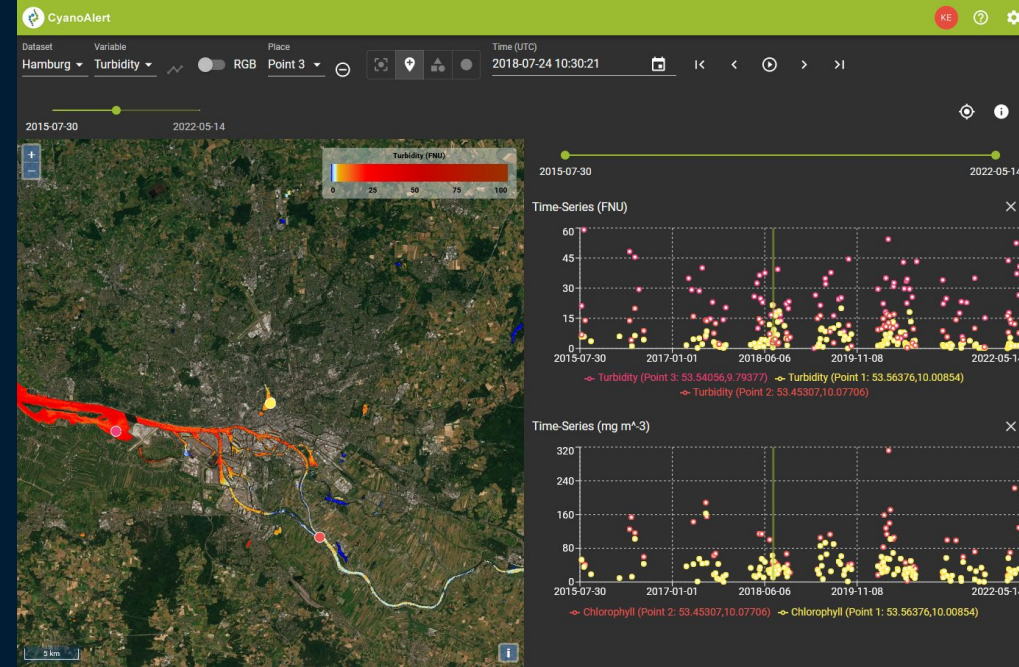Lake Water Quality Products

Turbidity
September 2020

# User tailored services

- Interactive Data Viewer

- Interactive, customisable Dashboards

- Factsheets

- Mobile App



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# Data Viewer

- Visualisation of satellite-derived parameters in maps

- Spatial distribution of water quality parameters

- Temporal dynamics for user-defined positions and regions
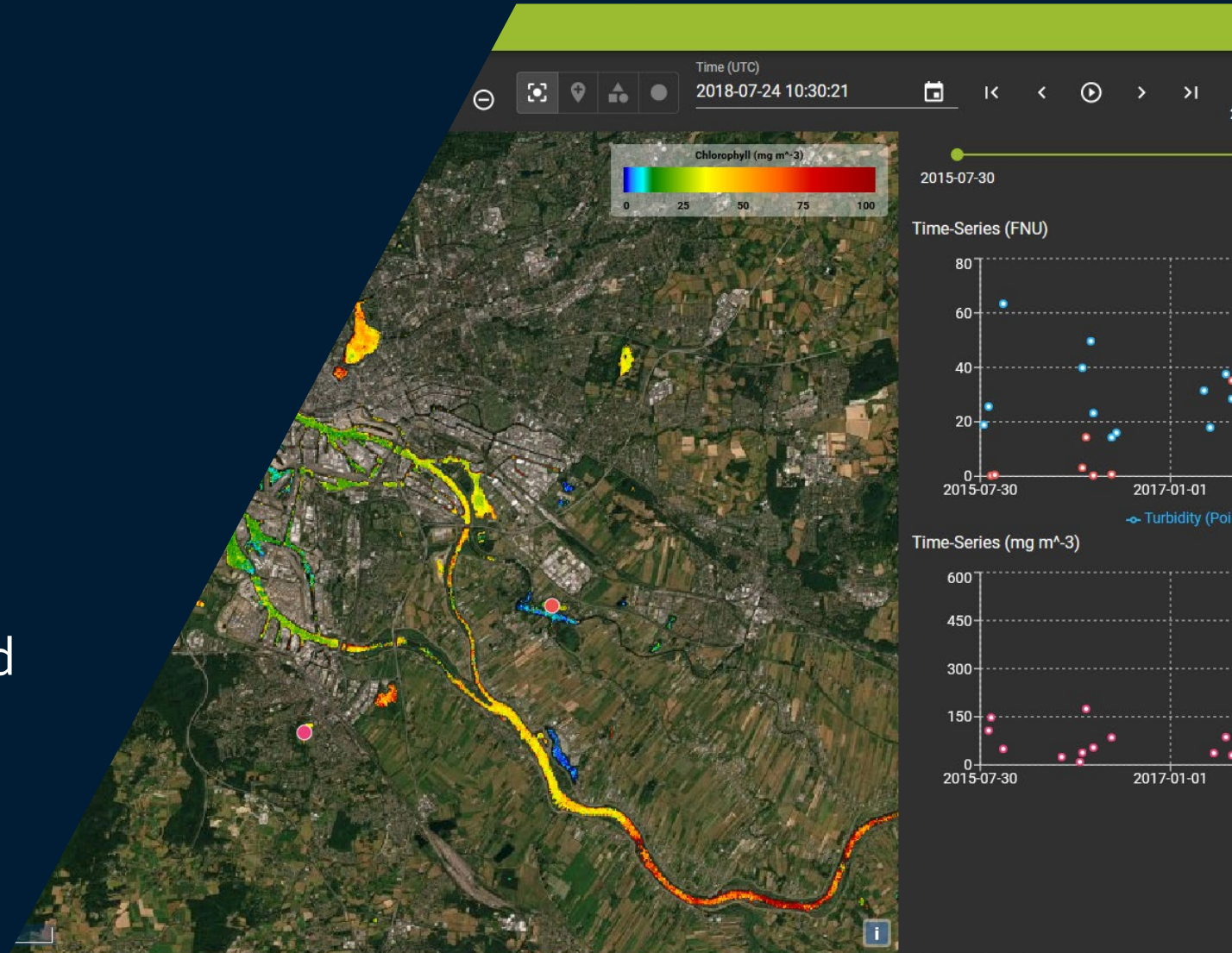
# Dashboards

- User-defined graphs

- Interactive selection of water body, time period, and parameters

- Graphs represent spatial and temporal evolution of water quality parameters

# Factsheets

- Characterisation of water bodies by graphs, maps and figures

- Factsheets provide the information for water bodies at a glance

- Individually designed according to customers' requirements
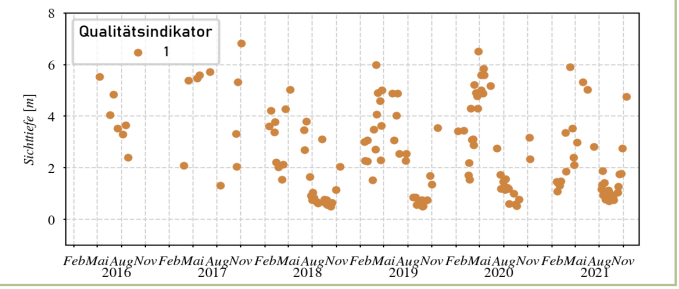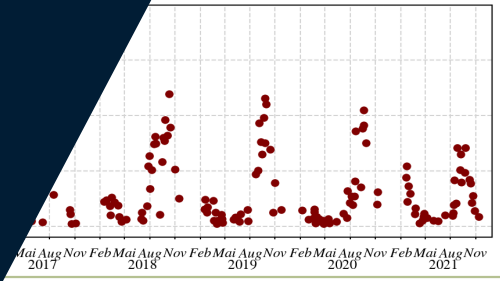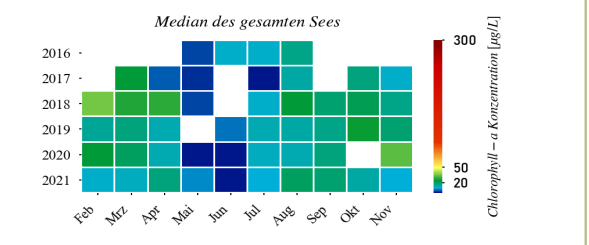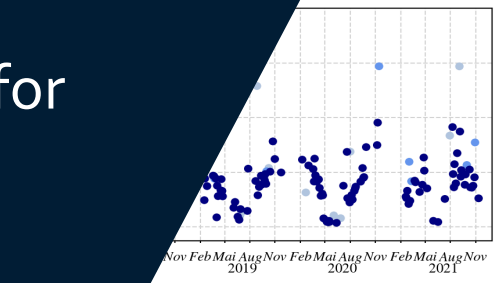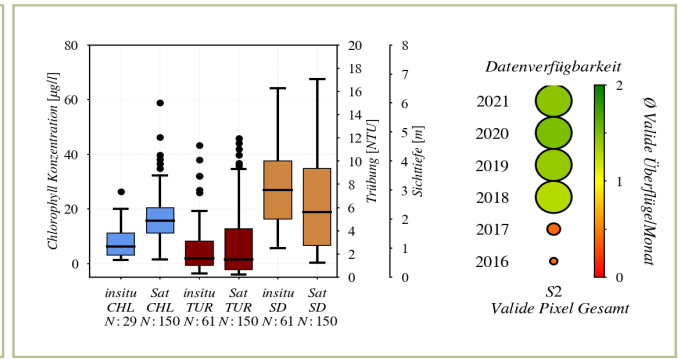


TS Zeulenroda

# Mobile App

- Observe your water body of interest in near real time (1 day after acquisition)

- See changes compared to period before

- Report water color and blooming alerts of your lake of interest



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# User needs and engagement

o Copernicus Services
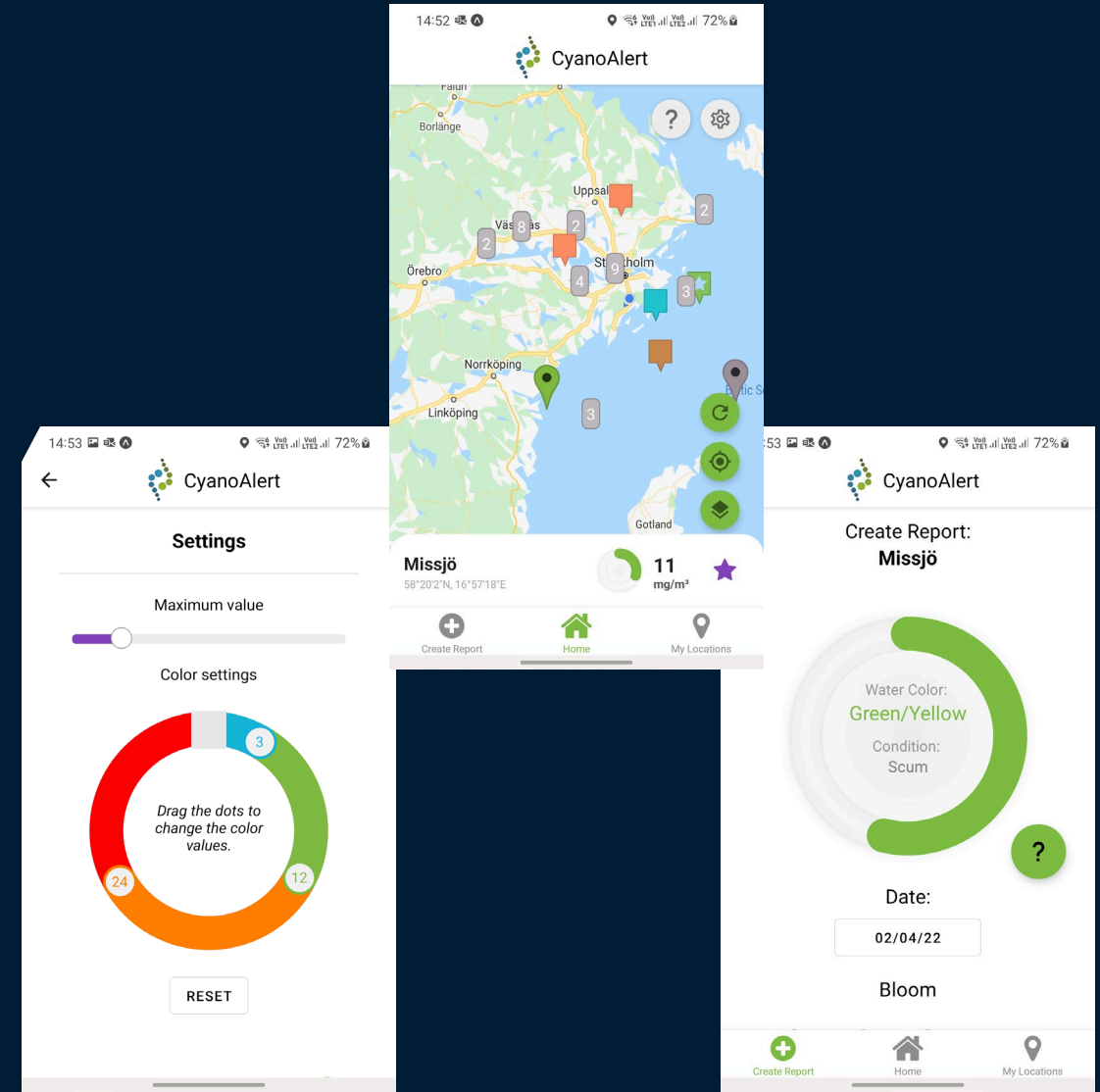- User forum for discussion of requirements and decision which products to be included in free services
- Service desks for supporting data download and applications
- Documentation about products and product quality

o CyanoAlert Services
- Direct user interaction and tailoring of services: which parameters show best the water quality of your water bodies?
- Users' specification: when to raise a flag that your water is running out of good quality
- What do you need to include the information directly into your daily work?

# Messages

- o Copernicus Core and Downstream Services provides **operational** products
  - at global scale
  - well documented and validated
  - in free and open access
  - **long-term commitment** ensured by the Copernicus programme

- o **Translation** and integration of EO parameters needed for **SDG indicators**

- o Combination of different data sources (EO sensors, EO and in-situ) provide most valuable products **for reporting**

- o Copernicus Services are free of charge **(Core Services)**

- o User tailored products (e.g. CyanoAlert) are provided under contract **(Downstream services)**