PrimeWater

# H2020-SPACE-2019
# Research and Innovation Action

## Satellite-derived chlorophyll-a concentrations for Lake Mulargia (Sardinia, Italy) using Mixture Density Networks and Sentinel-2 imagery

*CHL_it_sardinia_NASA_XXXXXXXXXX_000003_SENT2_m0020_32bit.TIF*

The project has received funding from the European Union's Horizon 2020. Research and Innovation Programme under Grant Agreement No 870497.

European Commission

# General

## Description

**This dataset contains satellite-derived chlorophyll-a data of Lake Mulargia (Sardinia, Italy) for the period 21 Mar. 2013 - 01 Feb. 2021. Chlorophyll-a concentrations have been calculated using Mixture Density Networks and Sentinel-2 imagery.**
**Mixture Density Networks are a class of neural networks that tackle the inverse problem by modelling the multimodal distribution of target variables using a mixture of Gaussians.**

## Parameters

**Chl-a**

## Unit

**µg/l**

## Coordinate reference systems

**UTM / WGS88**

## Data type

**GeoTIFF**

## Keywords

**Remote_Sensing, Sentinel 2**

## Public repository link

**https://zenodo.org/record/6783196**

## Contact

**Pahlevan, Nima**
**NASA**

# Dataset coverage

## Spatial coverage

**Lake**

## Spatial resolution

**37.19 m**

## Temporal coverage

**21/3/32013 - 01/2/2021**

## Temporal resolution

**Occasionally**

# Usage

## License conditions

**CC-BY-4.0**

## Citations and Acknowledgements

## Scientific Citations

**-Pahlevan, N., Smith, B., Alikas, K., Anstee, J., et al. (2022). Simultaneous retrieval of selected optical water quality indicators from Landsat-8, Sentinel-2, and Sentinel-3. Remote Sensing of Environment, 270, 112860**
**-Smith, B., Pahlevan, N., Schalles, J., et al. (2021). A Chlorophyll-a Algorithm for Landsat-8 Based on Mixture Density Networks. Frontiers in Remote Sensing, 1**
**-Pahlevan, N., Smith, B., Schalles, J., et al. (2020). Seamless retrievals of chlorophyll-a from Sentinel-2 (MSI) and Sentinel-3 (OLCI) in inland and coastal waters: A machine-learning approach. Remote Sensing of Environment, 240, 111604**

# Lineage statement

## Original data source

**NASA**

## Limitations on public access

**Accessible and confidential data**

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EMVIS S.A. | National Research Council of Italy | Swedish Meteorological and Hydrological Institute | EOMAP GmbH & Co.KG | International Water Association | Burgundy School of Business | Ente Acque della Sardegna | US Environmental Protection Agency | Commonwealth Scientific and Industrial Research Organization | Melbourne Water | SatDek

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