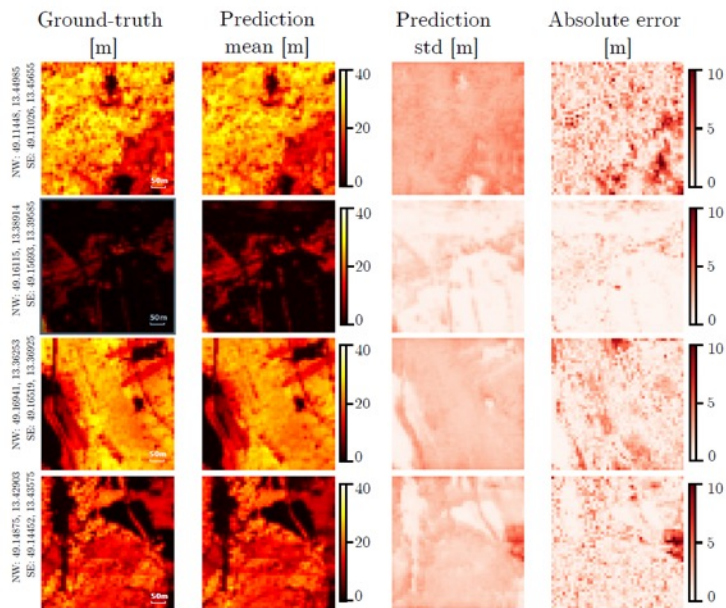
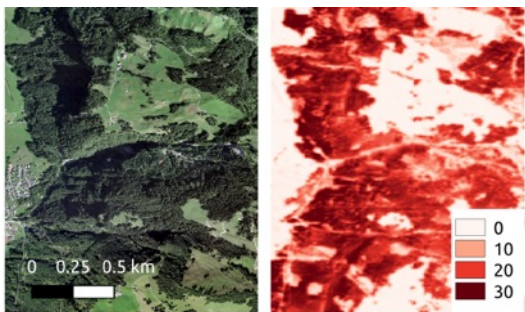
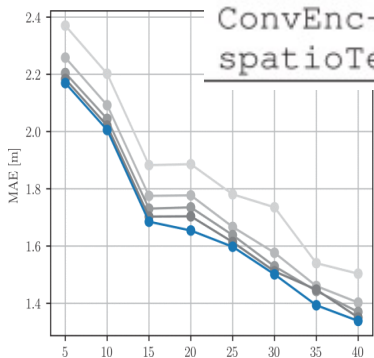




Canopy height service

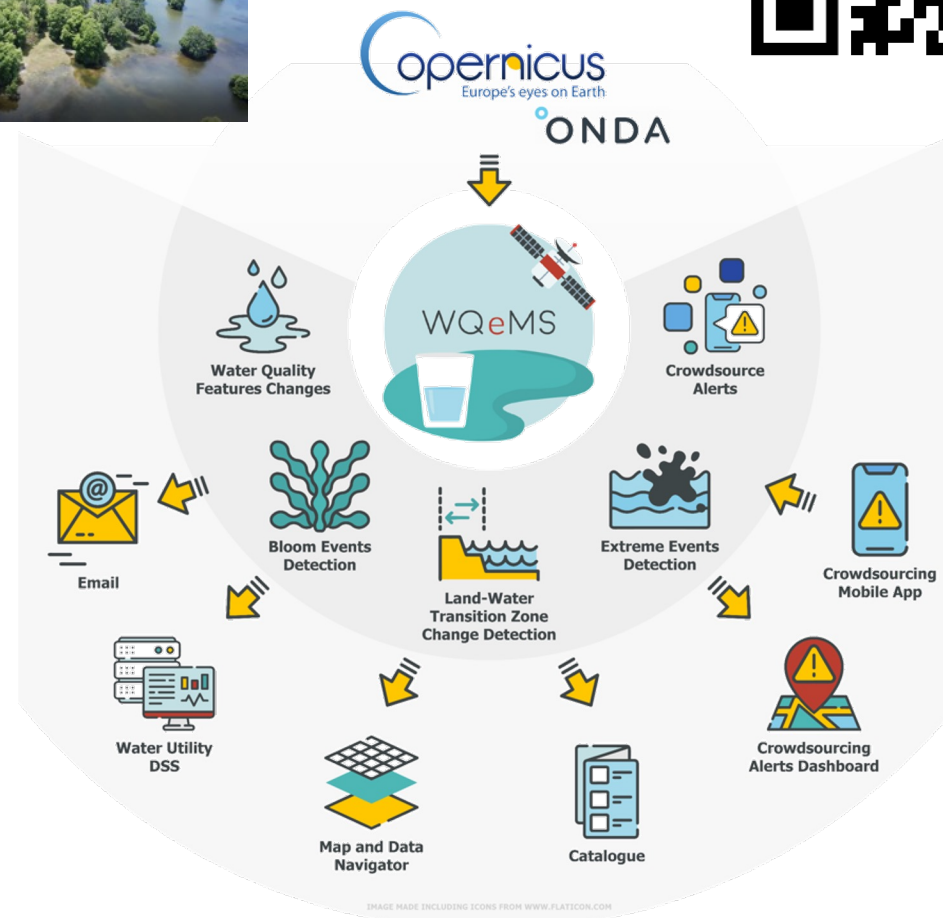


Method	Location	Area	MAE [m]	RMSE [m]
Lang et al. [8]	Switzerland	91Mpx	1.7	3.4
Lang et al. [8]	Gabon	25Mpx	4.3	5.6
ConvEnc-Dec [10]	BF	9.4Mpx	2.29	3.15
ConvEnc-Dec-mean40	BF	9.4Mpx	2.04	3.05
spatioTempCHM	BF	9.4Mpx	1.29	1.87



L. Alagialoglou, I. Manakos, M. Heurich, J. Cervenka, A. Delopoulos, [A learnable model with calibrated uncertainty quantification for estimating canopy height from spaceborne sequential imagery](#), 2022, IEEE Transactions on Geoscience and Remote Sensing, DOI: 10.1109/TGRS.2022.3171407

Water quality monitoring



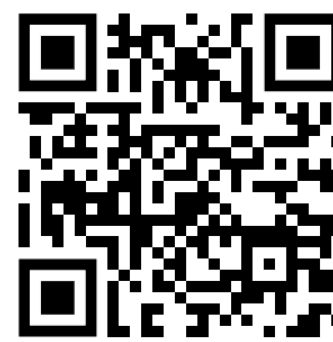
L. Alagialoglou, I. Manakos, S. Papadopoulou, R. Chadoulis, A. Kita, [Mapping underwater aquatic vegetation using foundation models with air- and space-borne images: the case of Polyphytos Lake](#), 2023, Remote Sensing, Special Issue: Remote Sensing and Artificial Intelligence in Inland Waters, DOI: 10.3390/rs15164001

A. Kita, I. Manakos, S. Papadopoulou, I. Lioumbas, L. Alagialoglou, M. Katsiapi, A. Christodoulou, [Land-Water Transition Zone Monitoring in Support of Drinking Water Production](#), 2023, Water MDPI, DOI: 10.3390/w15142596



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HELLAS

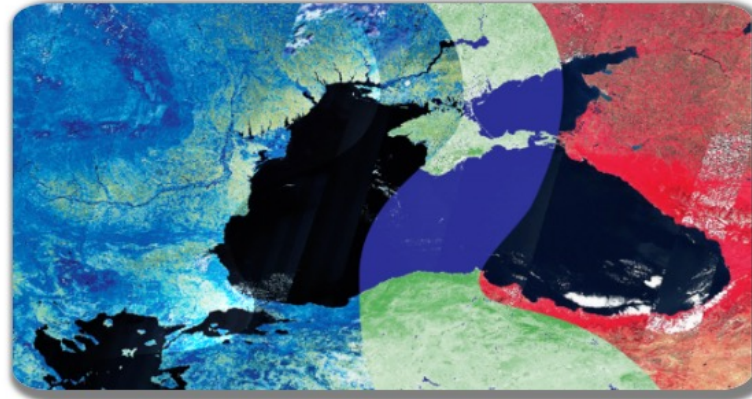
imaging life, planning the future



Black Sea Environmental Monitoring

Click to Access Data Cube

<http://160.40.53.201:8000/>



PONTOS Data Cube

Home Data Cube Manager Tools Task Manager Submit Feedback Logged in as: lefkals_1 Logout

Filters History Results Output

Satellite
Landsat 8

Data Selection:
Image Background Color: Black
Generate Time Series Animation: None

Geospatial Bounds:
Min Latitude: 40.0918 Max Latitude: 40.5446
Min Longitude: 44.8528 Max Longitude: 45.5489
Start Date: 07/18/2016 End Date: 08/10/2016

Additional Options Submit

Running tasks

Change Map Type

Lat: 40.7050 Lon: 46.5394

Normalized Water Percentage
Water observations / Clear observations

0% - 5%	40% - 55%
5% - 20%	55% - 70%
20% - 30%	70% - 85%
30% - 40%	85% - 100%

Water Observations
Water observations / Missing observations

0% - 0.5%	25% - 37.5%
0.5% - 1.25%	37.5% - 50%
1.25% - 2.5%	50% - 62.5%
2.5% - 6.25%	62.5% - 75%
6.25% - 12.5%	75% - 87.5%
12.5% - 25%	87.5% - 100%

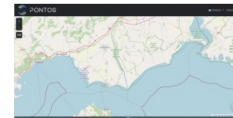
Clear Observations

0% - 1%	30% - 35%
1% - 2.5%	35% - 40%
2.5% - 5%	40% - 50%

Ullrich/FillMap data © Copernicus/Mapbox/Esri/DeLorme

Click to Access WebGIS

<https://labcolftp.env.duth.gr/PONTOS>



EO in Journalism

Services



The Project

SnapEarth project is to foster the Market growth of COPERNICUS by instigating the development of new EO applications and to develop general public awareness to EO data. SnapEarth is to initiate the creation of a virtuous circle of innovation by providing to EO data users an innovative platform with leading edge EO segmented datasets, Neural Networks models and Cloud computing ecosystem.

READ MORE



Includes EO Analysis

Search for events

Events Found: (26)

Location	Event	Created Date	Updated Date	Tweets related
Vilva-Levros	wildfires	23/07/2022 13:39	24/08/2022 19:42	
Nichomin Creek	wildfires	15/07/2022 04:21	11/08/2022 09:25	192
Peritron	wildfires	26/07/2022 04:11	13/08/2022 13:31	154
Canada	floods	17/11/2021 13:11	28/07/2022 07:21	92
La Palma	volcano eruption	19/09/2021 13:52	08/04/2022 13:39	48
Lesbos	wildfires	28/07/2022 17:38	30/07/2022 19:07	51

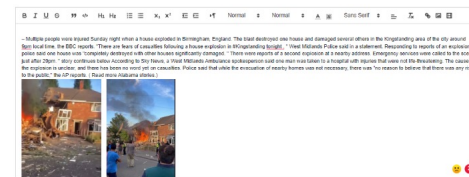
Map showing event locations with legend: floods, wildfires, earthquake, explosion, general disaster, tornado, hurricane, volcano eruption

Click to access Web App

<http://160.40.53.201:7000/>



L. Alagioglou, I. Manakos, E. Katsikis, S. Medinets, Y. Gazyetov, V. Medinets, A. Delopoulos, Machine Learning for Identifying Emergent and Floating Aquatic Vegetation from Space: A Case Study in the Dniester Delta, Ukraine, 2024, SN Computer Science, DOI: 10.1007/s42979-024-02873-7.

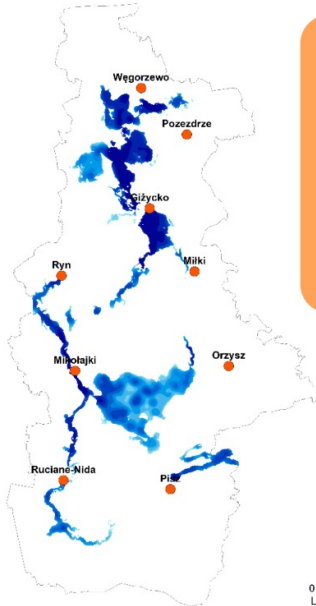
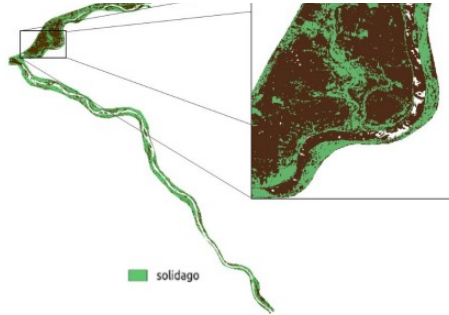


M. Sismanis, R-T. Chadoulis, I. Manakos, A. Drosou, An Unsupervised Burned Area Mapping Approach Using Sentinel-2 Images, 2023, Multidisciplinary Digital Publishing Institute - Land, 12(2), 379, DOI: 10.3390/land12020379

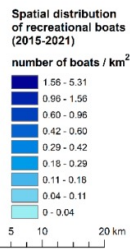


EO for ecosystem services monitoring

Continuous learning program based on virtual courses on Remote Sensing, Ecosystem Research, Modelling and Computer Science, addressed to the CBK PAN staff within the EOTIST project (Earth Observation Training in Science and Technology at the Space Research Centre of the Polish Academy of Sciences).

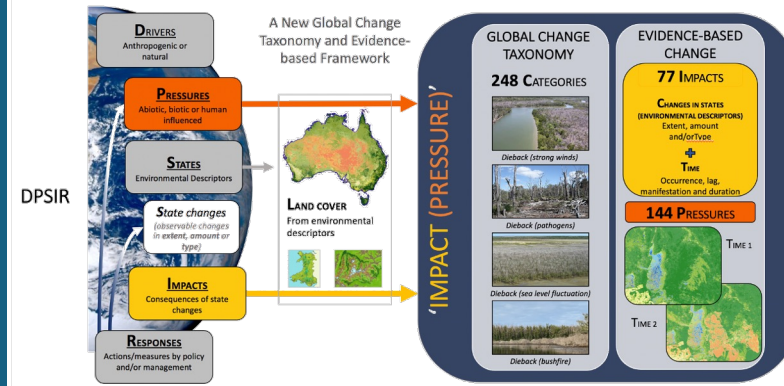


- **High Accuracy:** The detection algorithm achieved an 88.17% accuracy rate.
- **Spatial and Temporal Analysis:** The method allows for the analysis of both spatial and temporal distribution of tourist boat traffic.
- **Daily Monitoring Capability:** The algorithm can process images captured daily, whenever they are available, providing near real-time monitoring.
- **Correlation with Field Data:** There was a 0.76 correlation between satellite-based detections and field observations, confirming the method's reliability.



M. Milczarek, S. Aleksandrowicz, A. Kita, R.-T. Chadoulis, I. Manakos, E. Woźniak, [Object- Versus Pixel-Based Unsupervised Fire Burn Scar Mapping under Different Biogeographical Conditions in Europe](#), 2023, Multidisciplinary Digital Publishing Institute - Land, 12(5), 1087, DOI: 10.3390/land12051087

Evidenced based land monitoring



IMPACT (PRESSURE)

VEGETATION DAMAGE

- (Excess rain)
- (Bushfire)
- (Mechanical intervention)
- (Severe thunderstorm)
- (Strong winds)

VEGETATION DIEBACK

- (Drought)
- (Pathogens)

VEGETATION GAIN (AMOUNT)

- (Growth)
- (Reforestation (natural))

EVIDENCE FOR IMPACTS

EEDS		AEDS			
Vegetation cover (%)	Vegetation Height (%)	Woody Biomass (Mg ha ⁻¹)	Woody Fraction (%)	Photosynthetic (PV) Fraction (%)	Non-PV Fraction (%)
+	+	+	+	+	+
-	-	-	-	-	-
+	-	+	-	+	-
-	+	-	+	-	+
+	+	+	+	+	+
-	-	-	-	-	-

EVIDENCE FOR PRESSURE

AEDS				
Precipitation (mm)	Burn Scar (Y/N)	Management change (Y/N)	Air Temp. change (°C)	Pathogen Presence (Y/N)
+	+	+	+	+
-	-	-	-	-
+	-	+	-	+
-	+	-	+	-
+	+	+	+	+
-	-	-	-	-

○ No change ⊖ Likely loss ⊕ Probable to possible loss ⊕ Likely gain ⊕ Probable to possible gain ⊕ Cat unc

Term	Definition and associated information
Occurrence	The time span of the actual natural event or process or human activity
Lag	The time between commencement and detection
Manifestation	The time period of detectability
Duration	The time from commencement to completion of a natural event or process or human activity.

1.R. M. Lucas, et al., [A globally relevant change taxonomy and evidence-based change framework for land monitoring](#), 2022, Global Change Biology, 00, 1–25, DOI: <https://onlinelibrary.wiley.com/doi/10.1111/gcb.16346>