



Land Monitoring

Water monitoring products: **CLMS - EEA**

*Highlighting the integration of Copernicus services
to support the computation of the change in the
extent of water-related ecosystems over time*

Joanna Przystawska

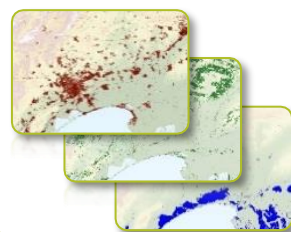
UN-GGIM: Europe

12 May 2025

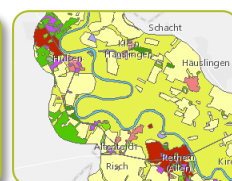
CLMS portfolio: Categories of products



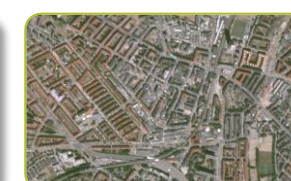
Land Cover and Land Use Mapping



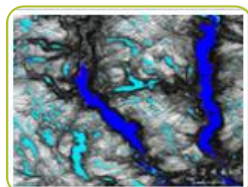
Priority Area Monitoring



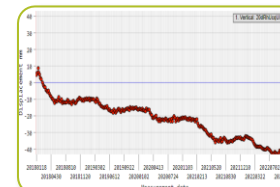
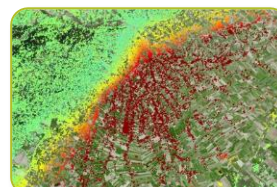
Satellite Data



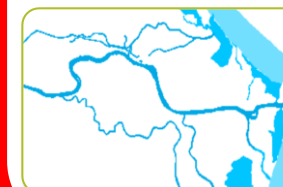
Bio-geophysical Parameters



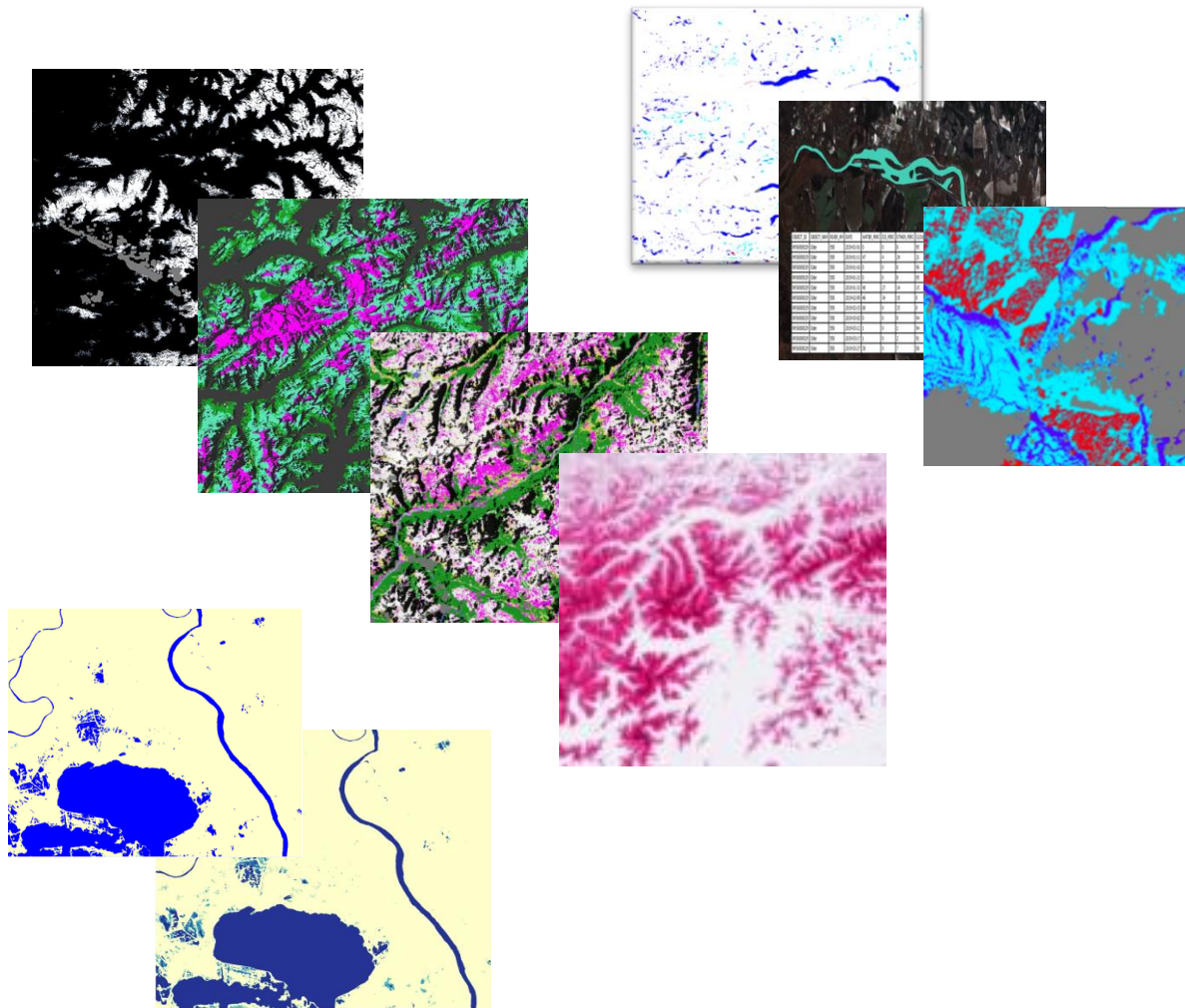
Ground Motion Monitoring



Reference and Validation Data



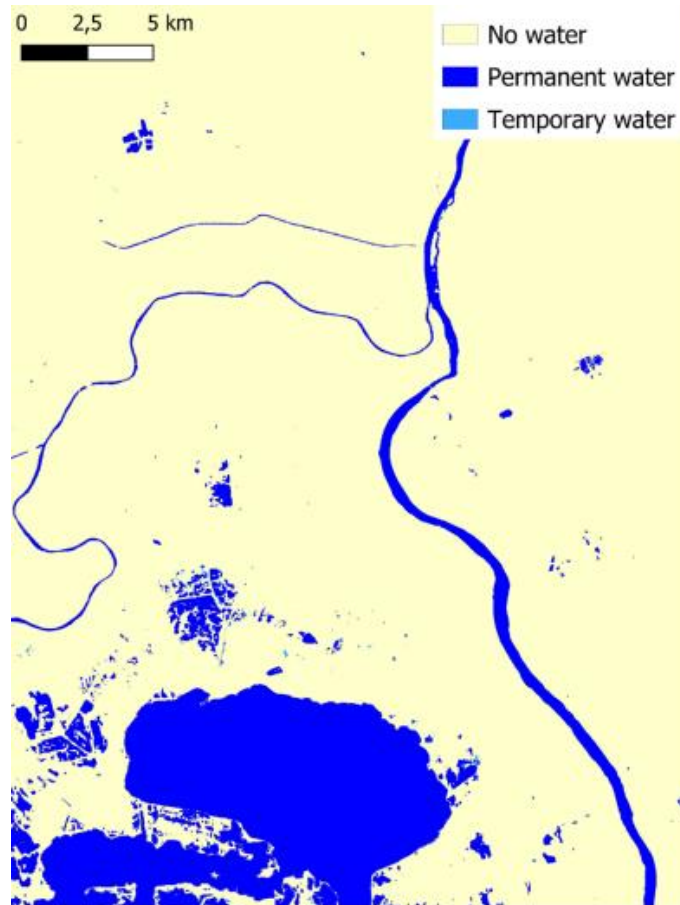
High Resolution Water Snow and Ice (HR-WSI)



- HR-WSI provides detailed monitoring of snow, ice, and water bodies across Europe
- Based on Sentinel-1 and Sentinel-2 images
- Spatial extent: EEA-38+UK
- Temporal extent: 2016-present
- Spatial resolution: 10-60 meters
- Production: Near-Real-Time (NRT), yearly and multi-yearly products
- CRS: UTM/WGS84 (NRT)
ETRS89 – LAEA (annual, multi-yearly)
- Information on the access points can be found at <https://land.copernicus.eu/en/products/>

High Resolution Water Snow and Ice (HR-WSI) products

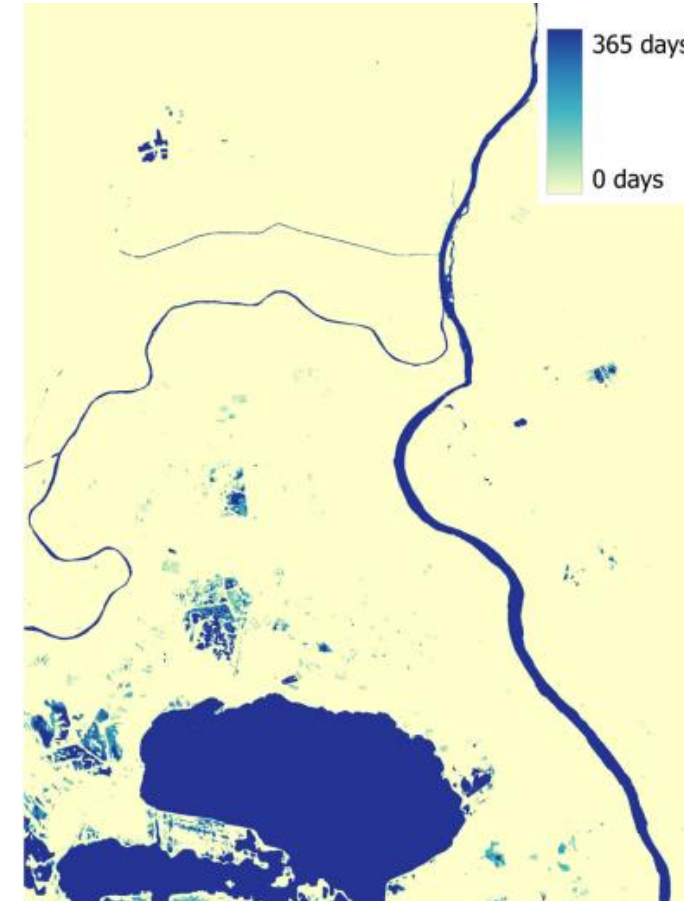
High Resolution Water Layer (HRWL)



3-yearly products

2021
2024

Water Cover Duration (WCD)



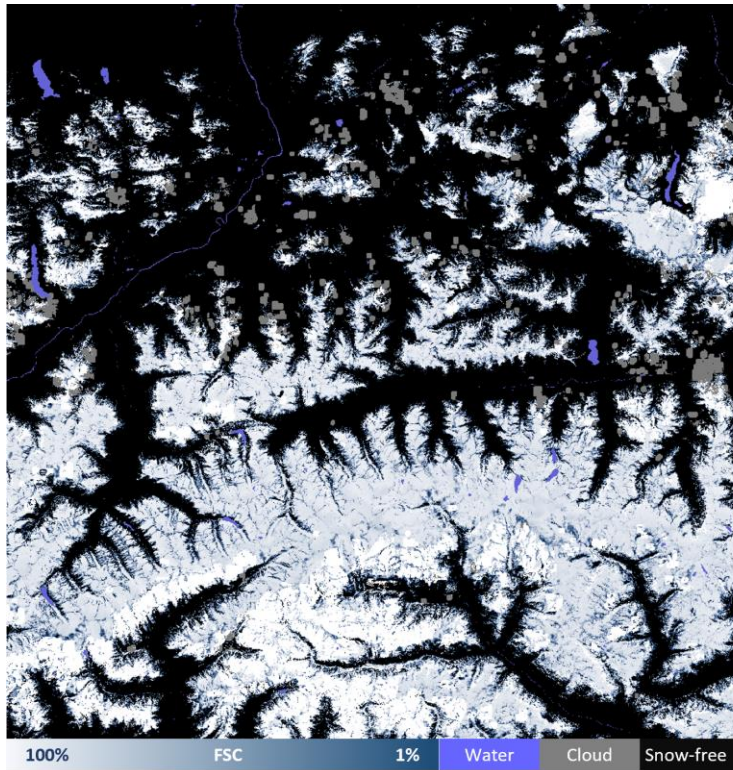
Yearly products

Since
2016/2017

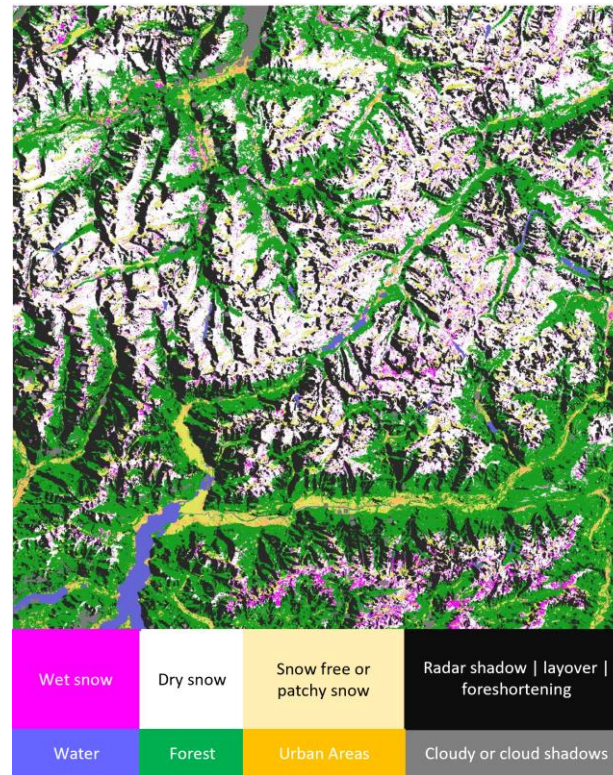
Q3 2025

High Resolution Water Snow and Ice (HR-WSI) products

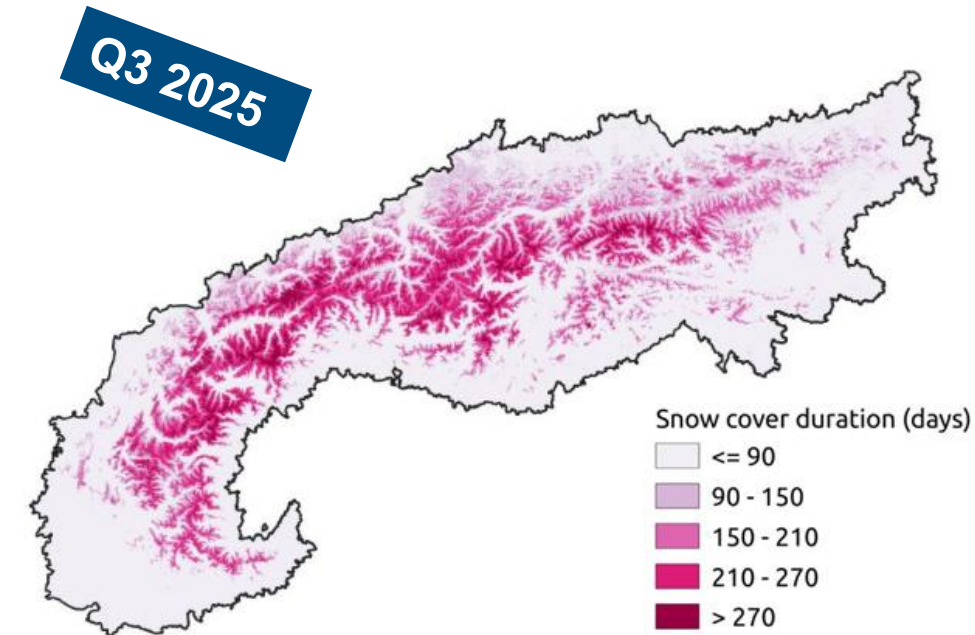
Fractional Snow Cover (FSC)



Wet/Dry Snow (WDS)



Snow Phenology (SP): Snow Cover Onset, Snow Cover Melt-out, Snow Cover Duration



NRT products

Continuous since 2016

Yearly products

Since
2016/2017



PROGRAMME OF THE
EUROPEAN UNION



Land Monitoring

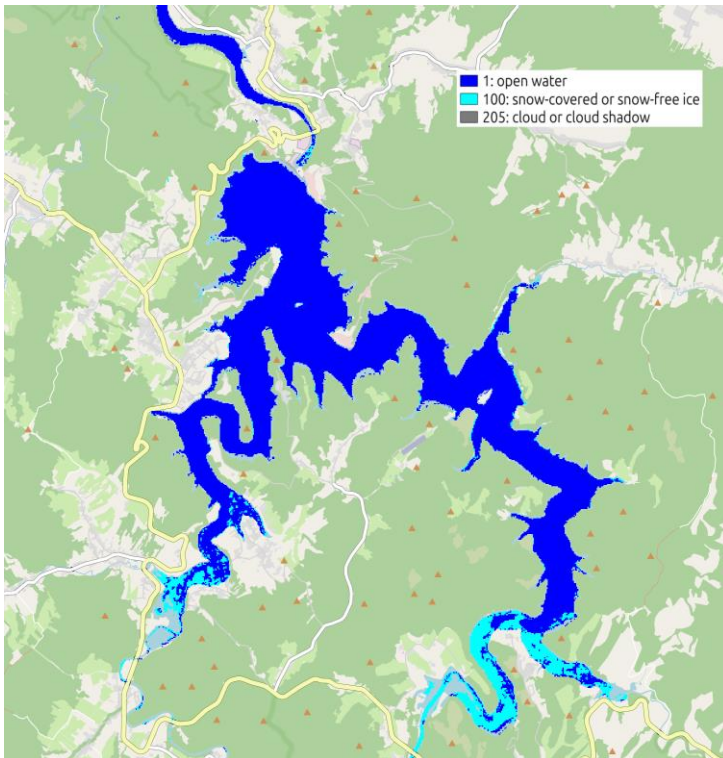
Implemented by



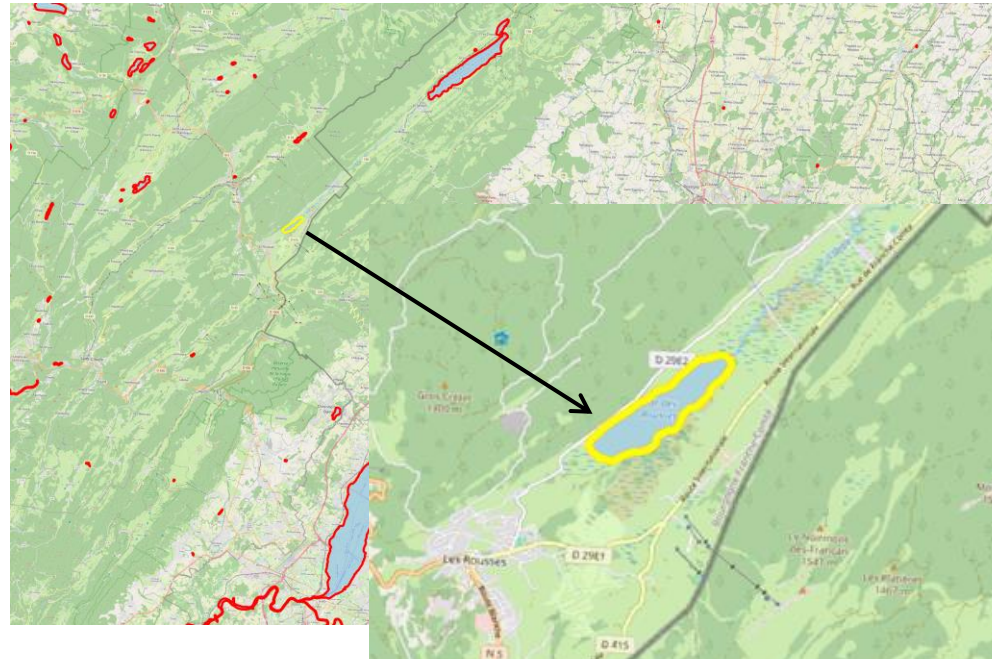
European
Environment
Agency

High Resolution Water Snow and Ice (HR-WSI) products

Water Ice Cover (WIC)

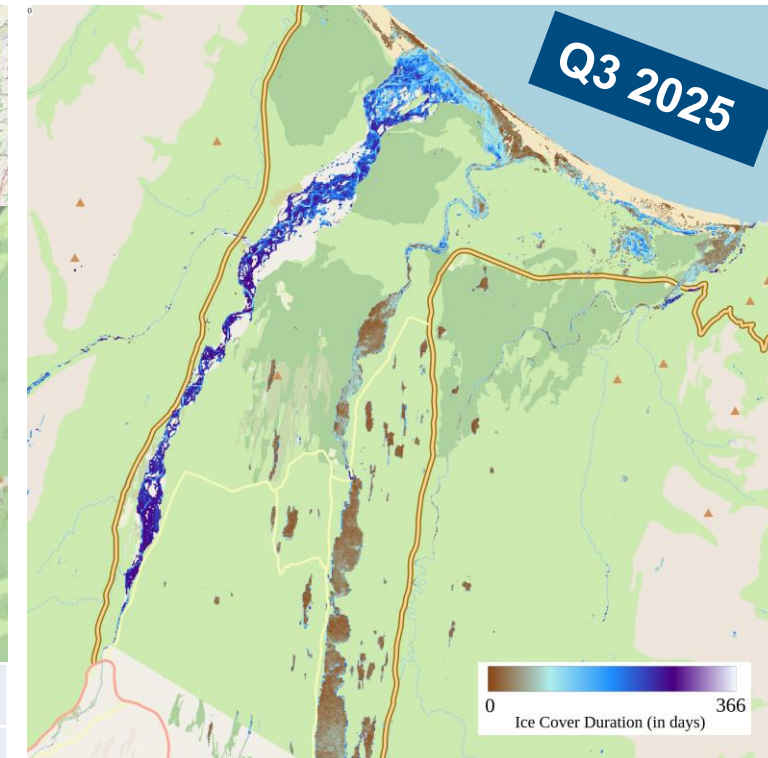


Aggregated Water Ice Cover (AWIC)



id	river_k m_id	datetime	water_ perc	ice_per c	other_ perc	cloud_ perc	shdw_ perc	nd_p erc	qa	s1_perc	s2_perc	source
3	234058	2025-01-18 10:39:07	1	93	6	0	0	0	0	0	100	S-2

Ice Cover Duration (ICD)



NRT products

Continuous since 2016

Yearly products

Since
2016/2017



PROGRAMME OF THE
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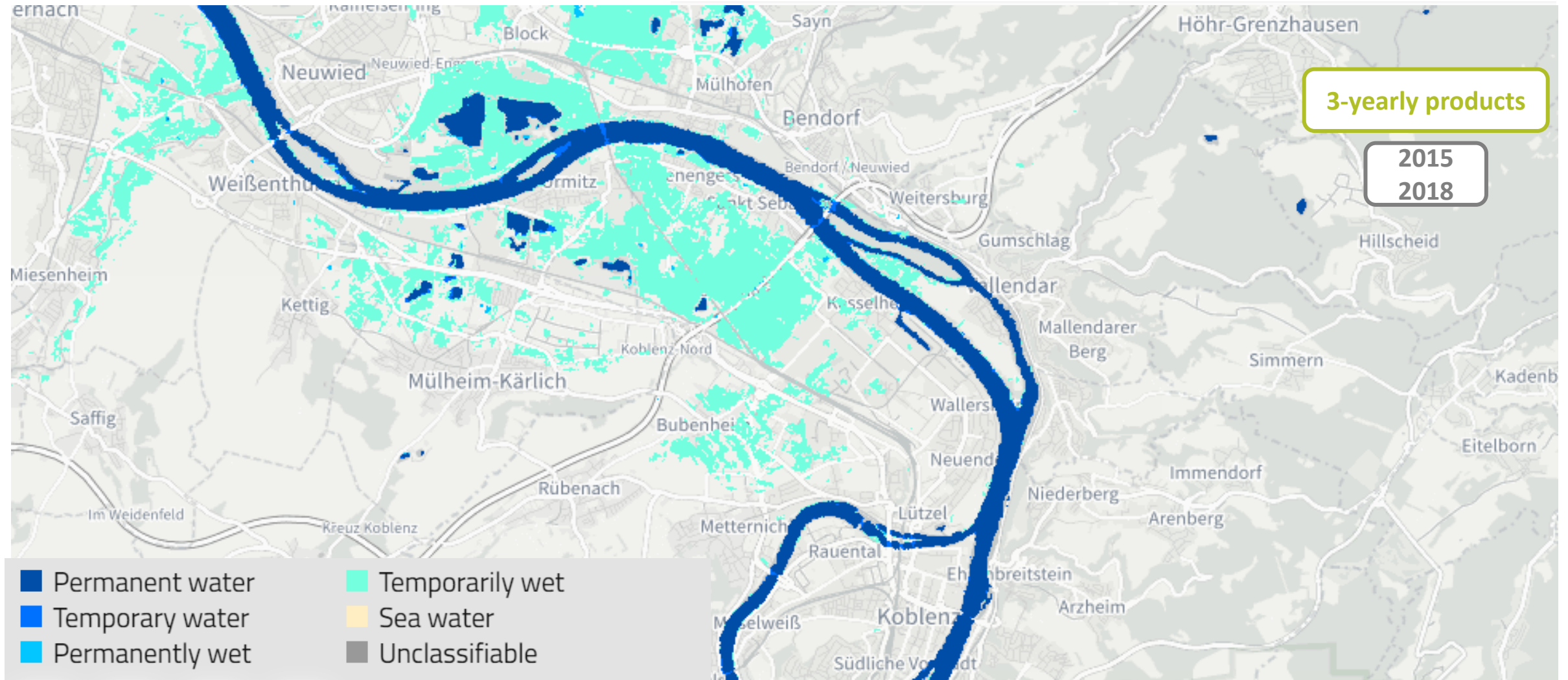
Land Monitoring

Implemented by

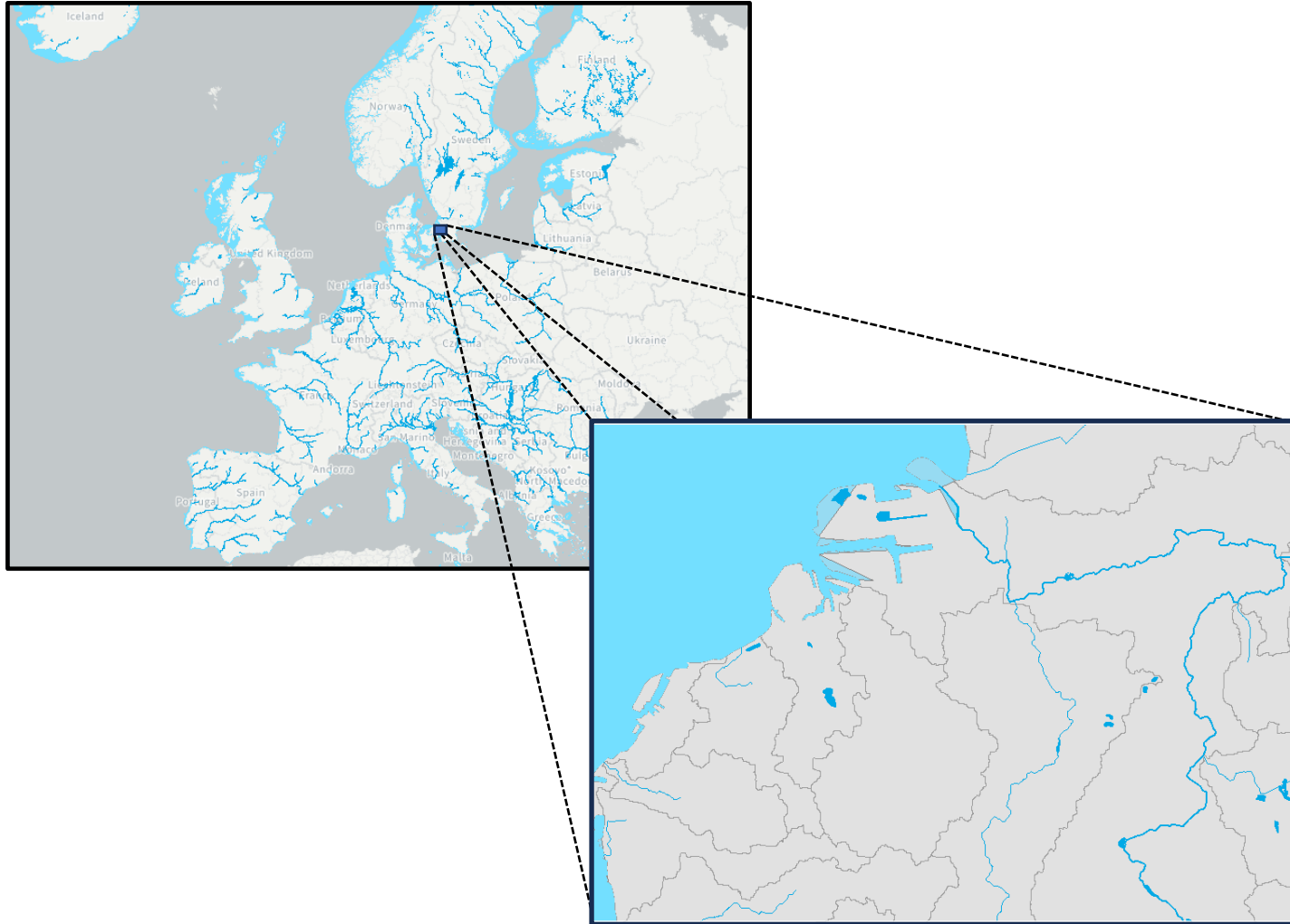


European
Environment
Agency

HRL-WAW: Water and wetness – phased out



Current EU-Hydro product available



- River network (v1.3) and drainage network (beta) database
- Based on photointerpretation of water bodies and drainage model from EU-DEM
- Spatial extent: EEA-38+UK
- Temporal extent: 2006-2012
- MMU: 1ha
- CRS: ETRS89 - LAEA
- Available for download at <https://land.copernicus.eu/en/products/eu-hydro/eu-hydro-river-network-database>

Expected EU-Hydro suite of products

Raster layers

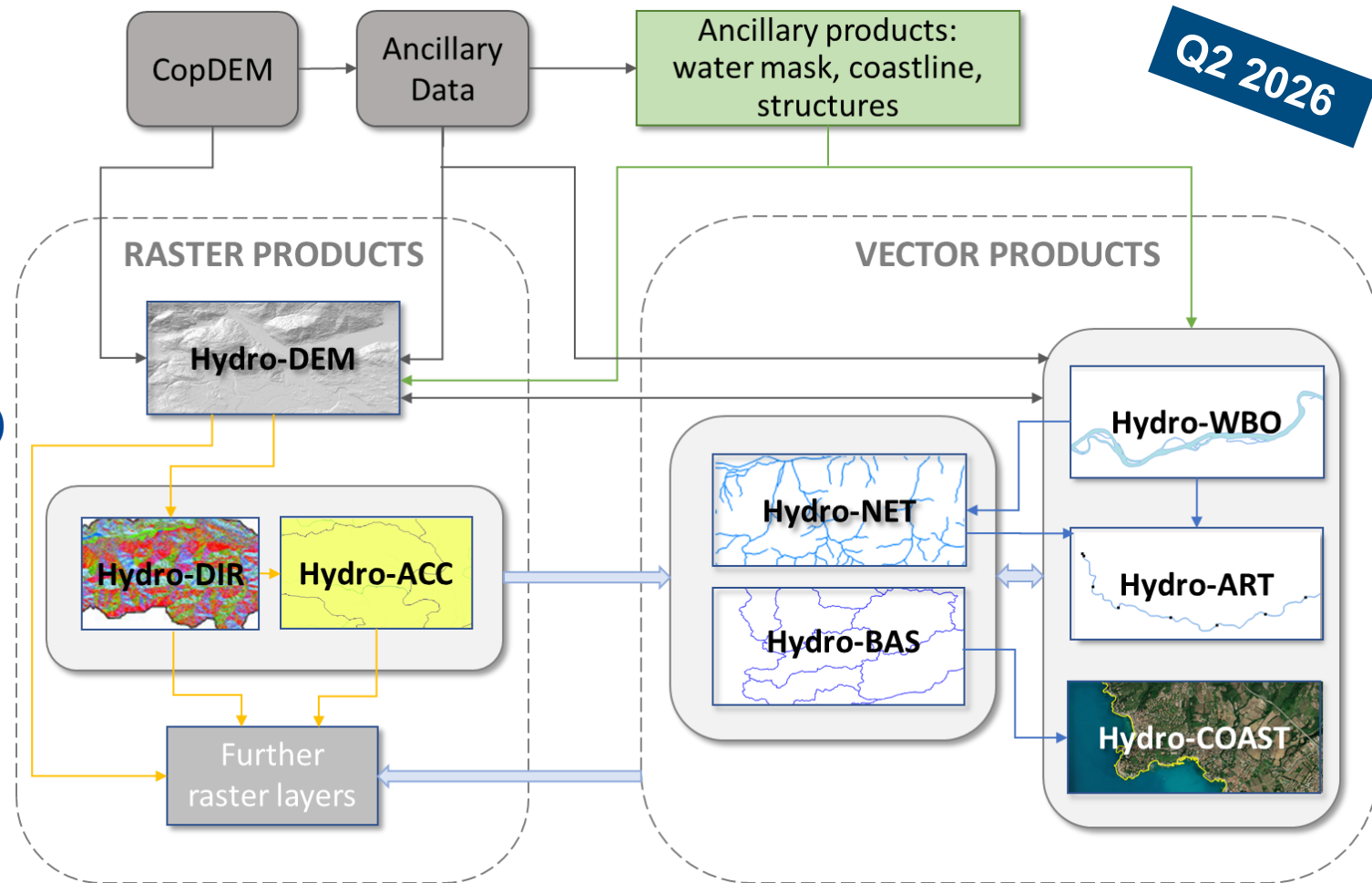
- Hydrologically conditioned DEM
- Flow direction
- Flow accumulation

Vector layers

- River network
- Watershed boundaries
- Coastline (as stand-alone product)
- Water bodies (inc. reservoirs)
- Artificial structures (barriers and protective structures)

Input data:

- Copernicus DEM 10 m
- Ancillary data (vector and raster data, VHR)



Ramp-up phase (until Q2 2025),
Full production phase (until Q2 2026).



Thank you!

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