

The logo for the Polish Space Agency (POLSA) is located in the top right corner. It features the letters 'P', 'O', 'L', 'S', and 'A' in a white, sans-serif font. A white arc is positioned below the 'O' and 'L', and another white arc is positioned below the 'S' and 'A'.

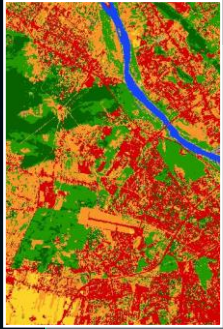
P O L S A

# NATIONAL SATELLITE INFORMATION SYSTEM TO INCREASE USER-UPTAKE

Earth Observation Department  
Polish Space Agency

27.10.2023  
EURISY Members' Corner

# NATIONAL SATELLITE INFORMATION SYSTEM (NSIS)



launching, improving and expanding as well as providing access to monitoring services (6 thematic areas)



integration of existing technical solutions and development of infrastructure, Copernicus archive, product repository, POLSA operational center;



information, communication, education and training activities and ongoing cooperation with users and suppliers;

interoperable system for receiving, storing, processing and sharing satellite data to provide monitoring services, information products, analytical tools along with the necessary infrastructure



# HTTPS://NSISPLATFORMA.POLSA.GOV.PL/EN

Knowledge base

Geoportal

Marketplace

## NATIONAL SATELLITE INFORMATION SYSTEM

### AGRICULTURAL DROUGHT SATELLITE MONITORING

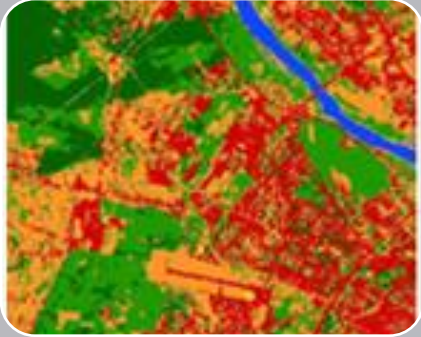
2023-09-05

In 2022 agricultural drought monitoring system has been prepared in consultation with the National Support Centre for Agriculture, which is building a satellite monitoring system for agricultural crops. Based on the indices, maps of crop growth conditions were prepared for 2022, as well as yield reduction assessment maps of selected crop groups(...)

READ MORE



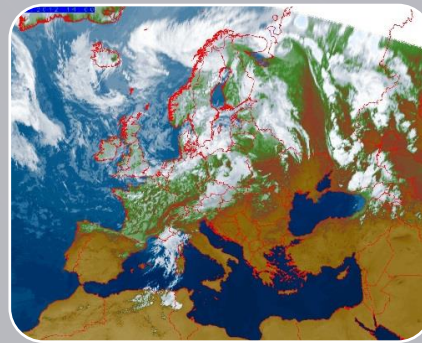
# NSIS PLATFORM - ASSETS



POLSA's  
satellite  
products



National  
repository of  
geodetic data



National  
meteorological,  
environmental,  
hydrological  
geospatial data



Atmosphere  
Monitoring Service  
(CAMS), Marine  
Environment  
Monitoring Service  
(CEMS), Land  
Monitoring Service  
(CLMS), Emergency  
Management Service  
(CEMS), Climate  
Change Service  
(C3S)



Commercial  
solutions

# POLSA SATELLITE PRODUCTS

**Land Cover  
Maps**

**Change  
Detection  
Maps**

**Orthophoto  
Maps**

**CIR  
Orthophoto  
Map**

**SWIR  
Orthophoto  
Map**

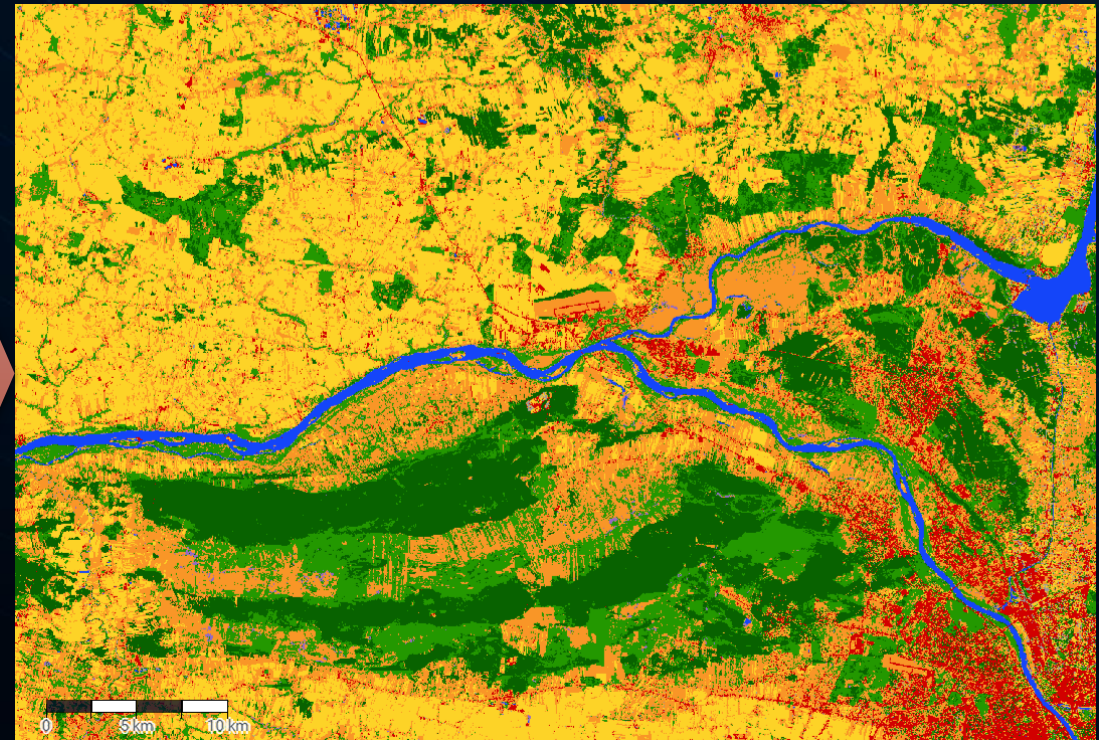
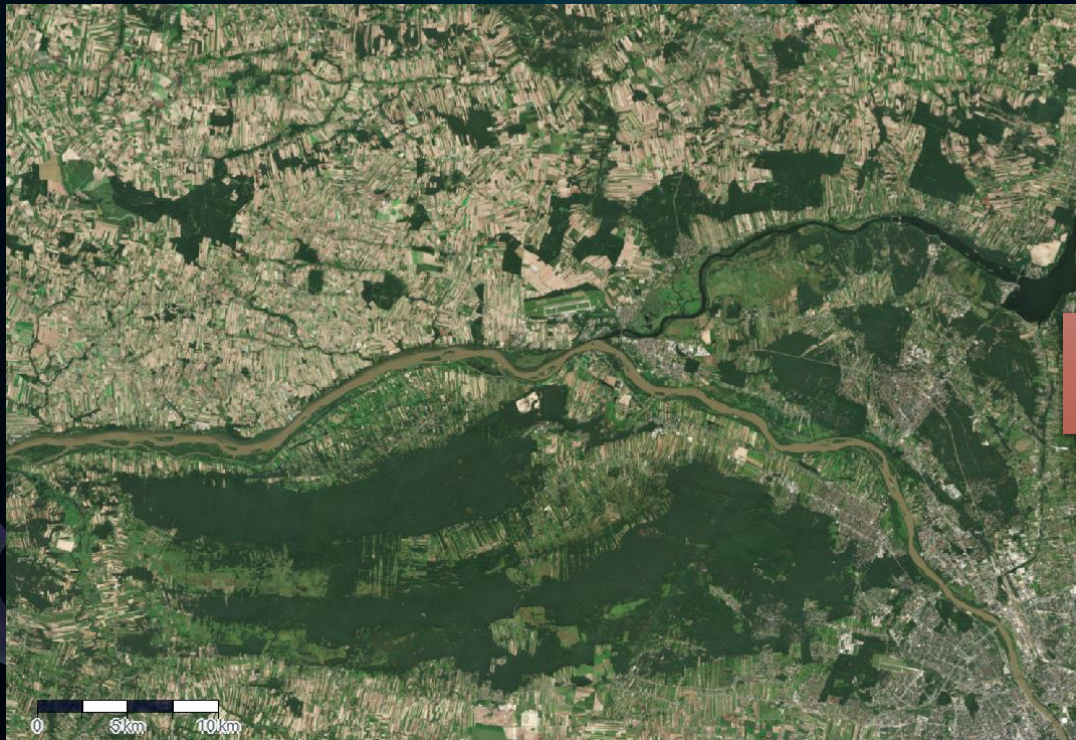
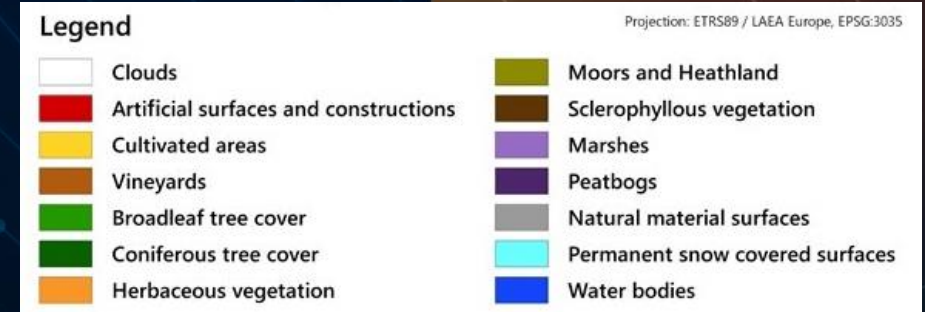
**Urban Heat  
Islands**

**Agricultural  
Drought**

**Soil Moisture**

# LAND COVER MAPS

- image classification based on Sentinel-2 data (10 m)
- available yearly 2019-2022



# CHANGE DETECTION MAPS

- Automated change detection based on land cover maps
- 2019-2020, 2020-2021, 2021-2022



Vistula spit changes in 2021

# SATELLITE ORTHOPHOTO MAP

Orthoimage based on Sentinel-2 (left - 10 m) - Improving spatial resolution using AI algorithms (right - 2.5 m)





# CIR AND SWIR ORTHOPHOTO MAP



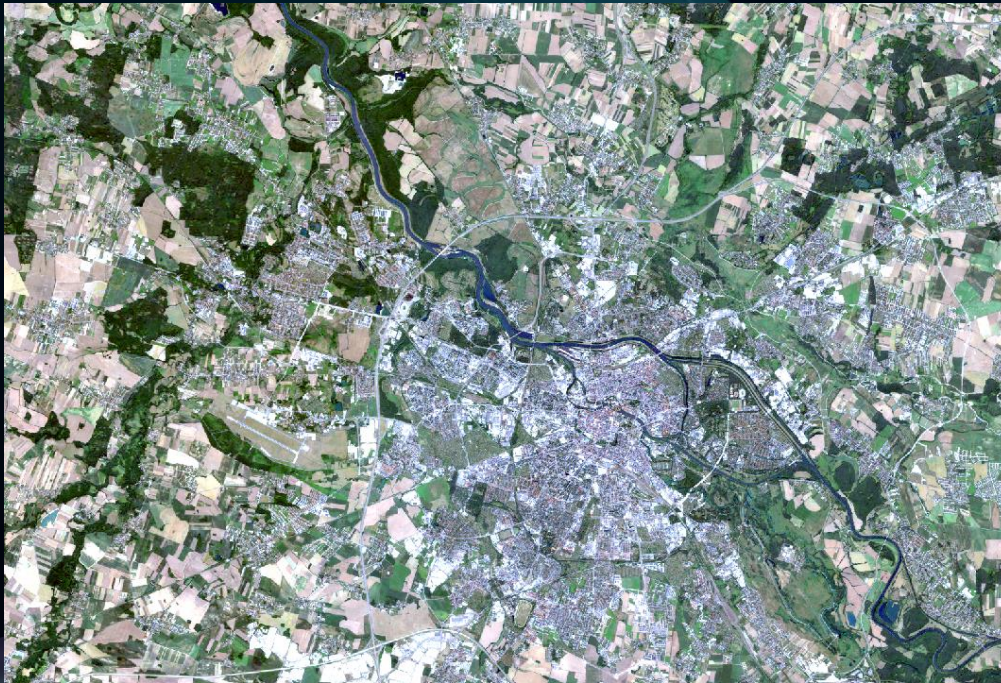
Colour Infrared (CIR) Orthoimage based on Sentinel-2 - improved spatial resolution using AI (2.5 m)

- healthier vegetation is more vibrant
- waters and wetlands are dark blue
- broadleaf forest will appear lighter red than Coniferous
- urban areas are cyan blue

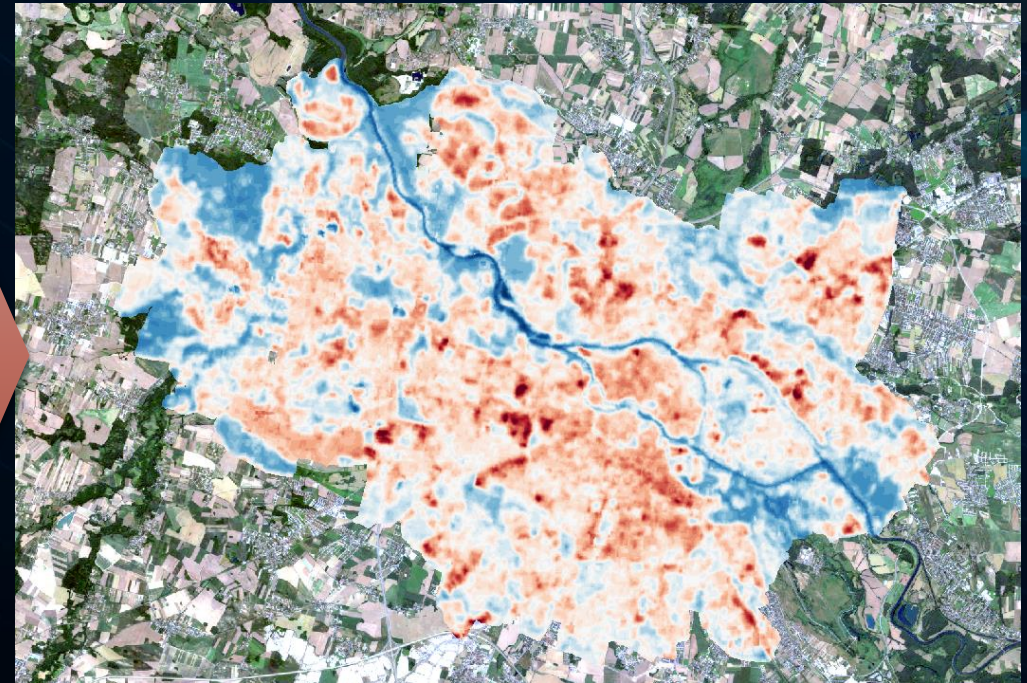
# URBAN HEAT ISLAND

5 Polish cities in 2022

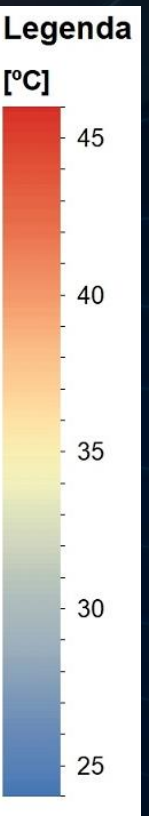
Landsat-8 and Landsat-9 Thermal data (30 m after resampling)



Wrocław orthoimage 2.5 m



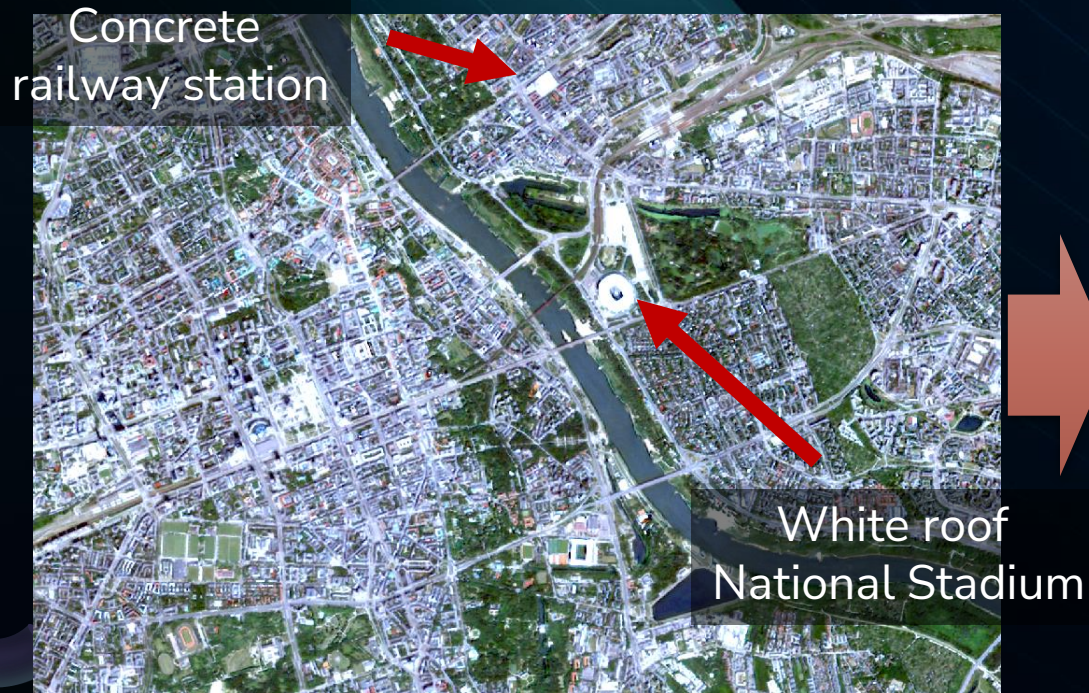
Wrocław Urban Heat Island 30 m



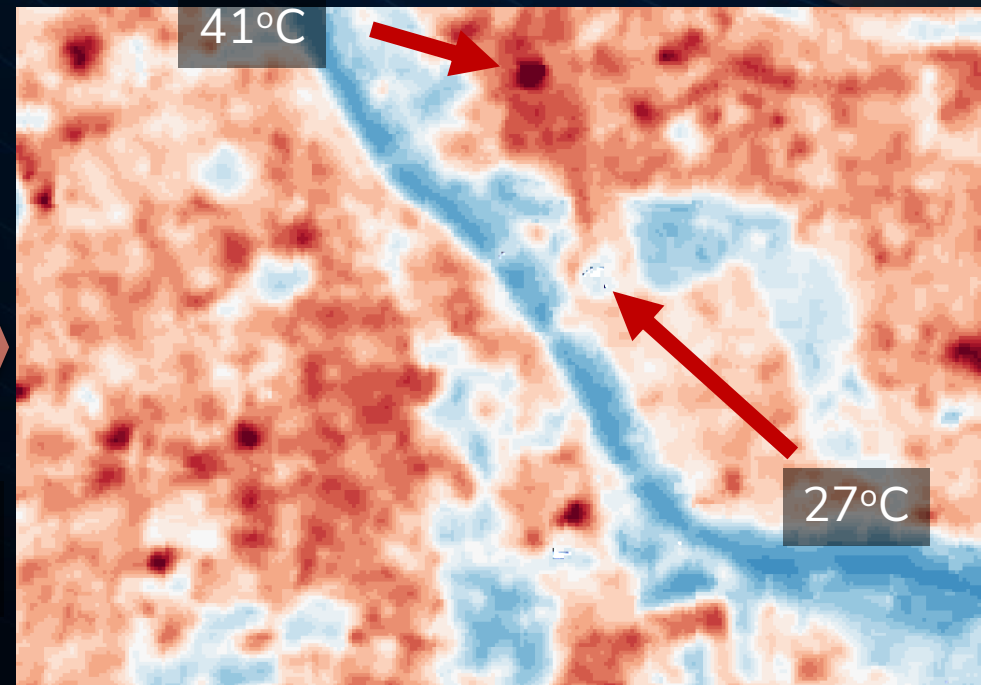
# URBAN HEAT ISLAND

5 Polish cities in 2022

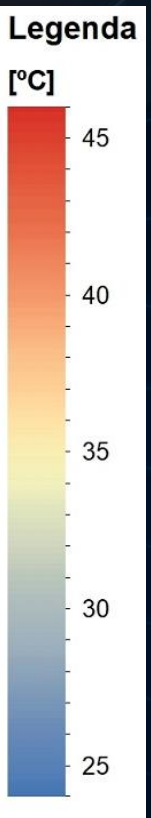
Landsat-8 and Landsat-9 Thermal data (30 m after resampling)



Warsaw orthoimage 2.5 m

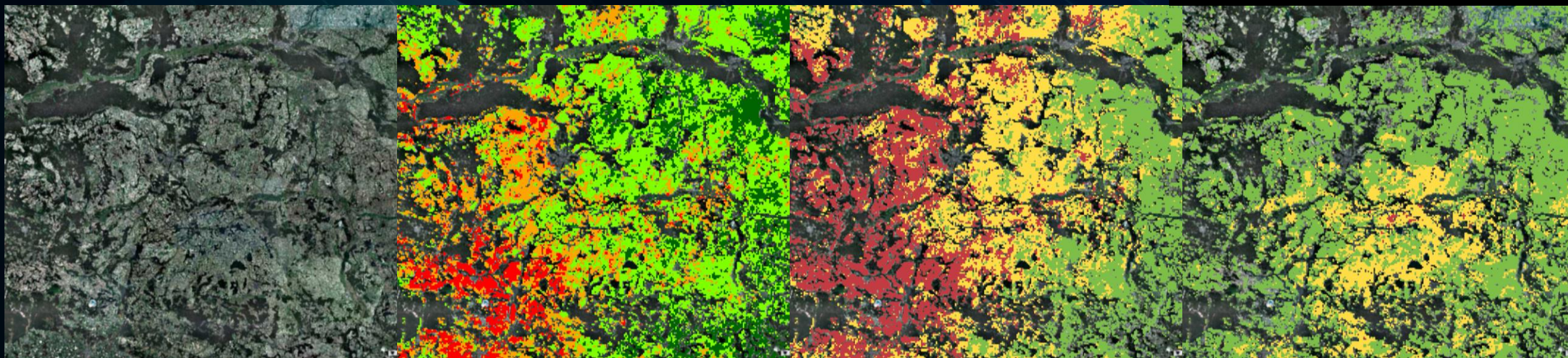
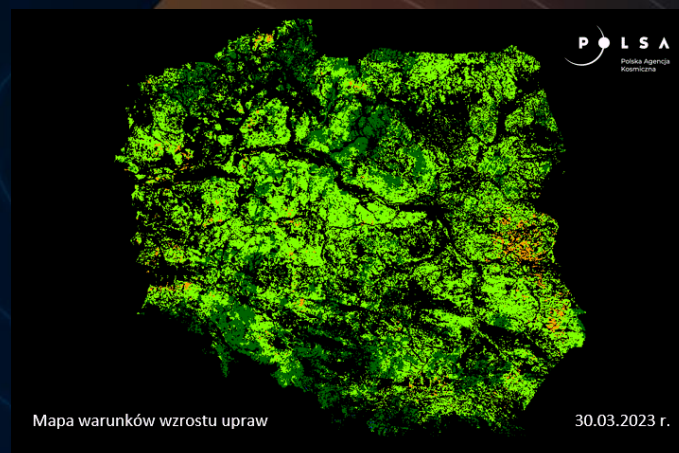


Warsaw Urban Heat Island 30 m



# AGRICULTURAL DROUGHT

Drought Identification Satellite System based on Terra MODIS images with 1 km spatial resolution



Orthoimage Sentinel-2



Corn crop reduction map

Rape crop reduction map

Crops condition map  
Drought Identification Satellite System  
12-19.07.2022

# SOIL MOISTURE

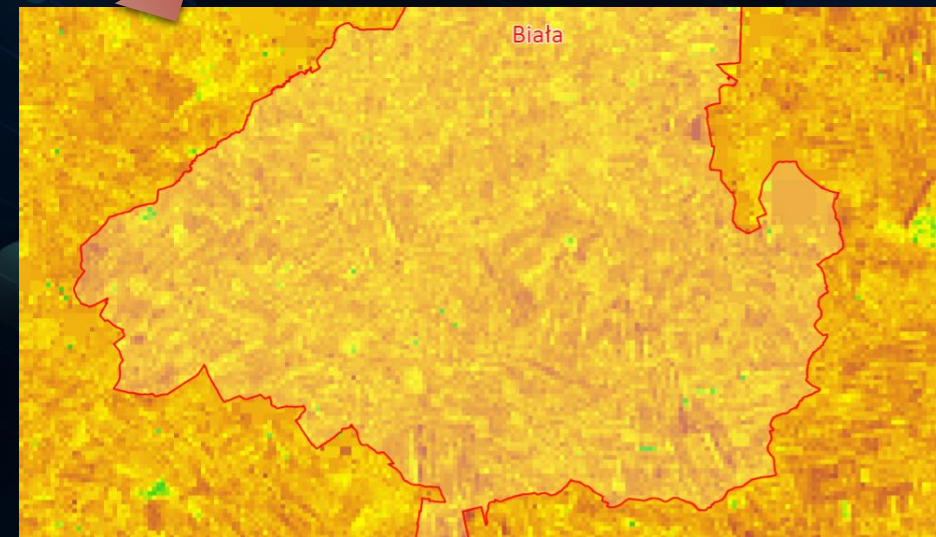
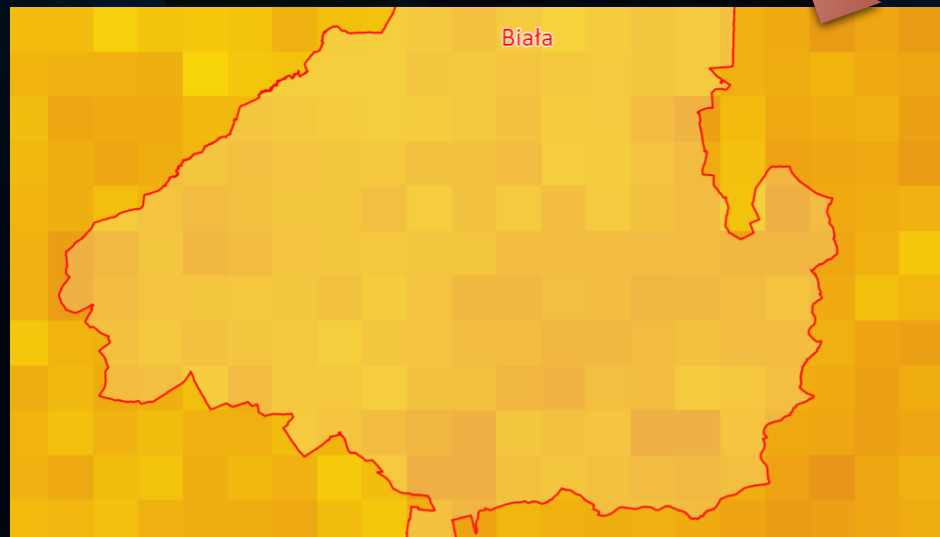
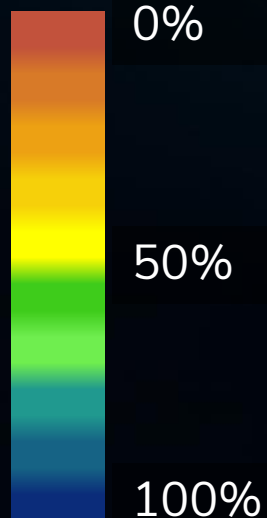
- Soil moisture monitoring based on Sentinel-1 images
- Monitoring every 12 days
- 2021-2022

Orthoimage Sentinel-2



Soil moisture 1000x1000 m  
26.10.2022

Soil moisture 100x100 m  
26.10.2022







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