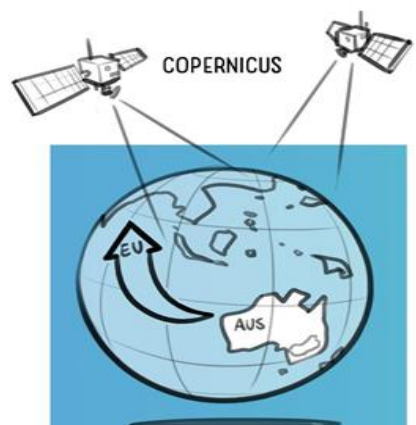




WaterSENSE Making SENSE of the water value chain in Australia

Operational water-monitoring system built on **Copernicus EO data** to provide water managers with a toolbox of reliable and actionable information on **water availability and water use**, anywhere in the world, in support of **sustainable water management** and transparency across the entire water value chain.

1 January 2020 – 30 June 2024
Website: www.watersense.eu
LinkedIn: [WaterSENSE](https://www.linkedin.com/company/watersense)

Steven Wonink
Operations Manager eLEAF
WaterSENSE Project Coordinator

Thursday 20th of June 2024

KCEO Deep dive assessment on the use of Earth Observation for Compliance Assurance

Session 3: EO current and future products and services



European Commission



Irrigation Compliance Monitoring

- Irrigation Mapping
- Irrigated Water Use Quantification

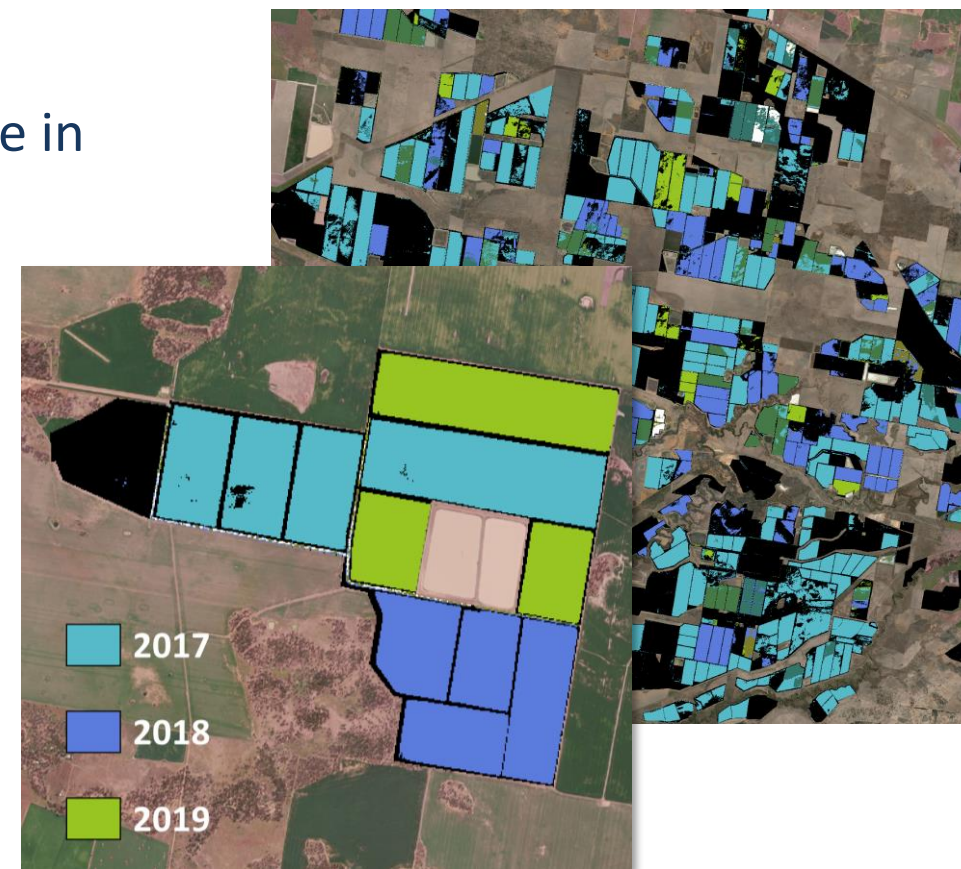


Irrigation Compliance Monitoring

Where, When, How much?

- Water Scarcity is increasing rapidly, 2.3 billion people live in water-stressed countries
- Climate change and population growth exacerbate this.
- Agriculture accounts for 70 percent of the freshwater withdrawals
- Integrated water resources management and accountability is essential to meet this challenge
- Water Authorities lack reliable information to plan, act and enforce legislation
- **Earth Observation data can fill this information gap, anywhere in the world, at low cost**

Irrigation mapping



Water extraction policy is national/local, no direct EU regulations apply (and often low on the priority list)



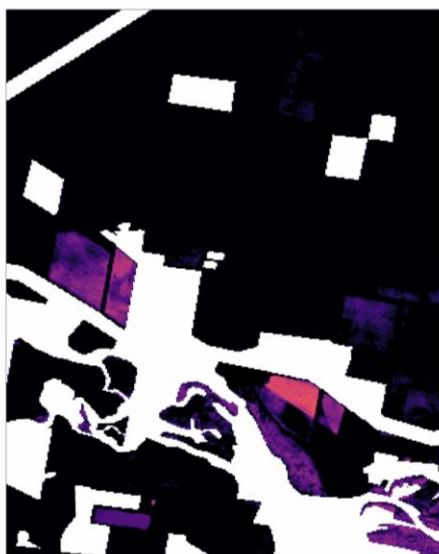
Earth Observation based Monitoring

- Actual Evapotranspiration (ET_{act}), i.e. Crop Water Consumption, is calculated with (Copernicus) EO data
- Incremental ET is the human induced evapotranspiration due to irrigation (irrigated ET – natural ET)
- Applied irrigation water is estimate by correcting for the irrigation efficiency, using the Irrigation Map

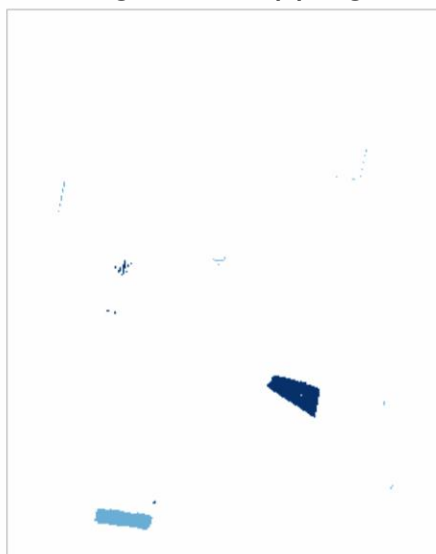
Actual Evapotranspiration



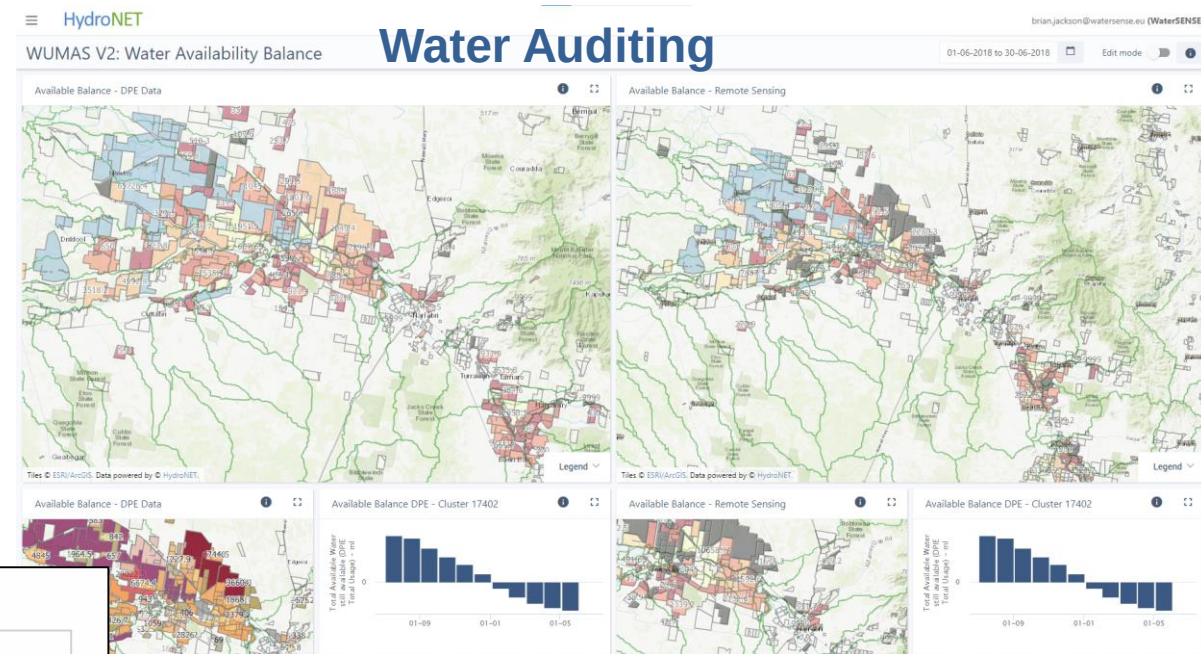
Incremental ET



Irrigation Mapping



Mar 2023 May 2023 Jul 2023 Sep 2023 Nov 2023 Jan 2024 Mar 2024



- Aggregation of EO data (raster) to field and cluster (license unit)
- Compliance check against licensed water allocation volume (Authority data)
- Monitored on a weekly basis
- Accessible through Water Control Room