

ECOPOTENTIAL Protected Area: Murgia Alta

Site characterization and first year results

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«Murgia Alta» National Park, in red line

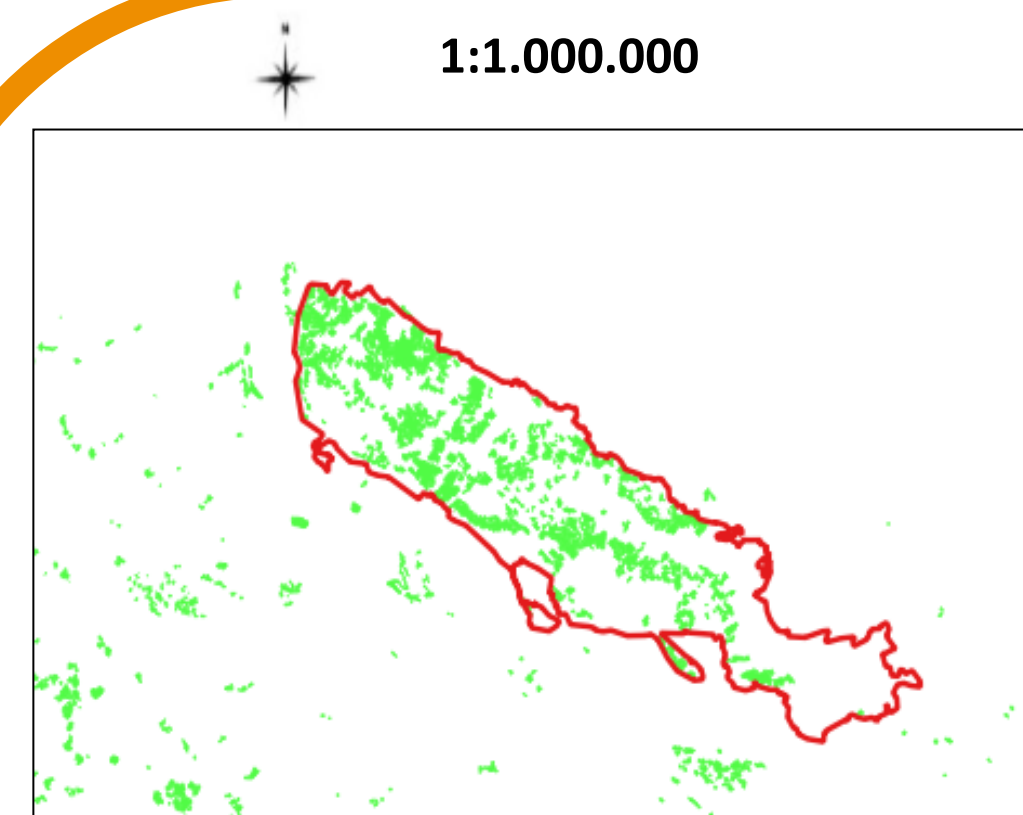


Mairota et al., (2015). *International Journal of Applied Earth Observation and Geoinformation, Special Issue on Earth Observation*
doi: 10.1016/j.jag.2014.09.01

SCI Murgia Alta IT9120007 – Puglia

- **Location:** Southern Italy;
- **Extension:** Natura 2000 site spanning over 125,880 ha partly designated as a National Park from 2004 (Mairota et. al, 2015);
- **Ecosystem type:** Calcareous upland where semi-natural dry calcareous grasslands cover almost 24% of the total area of the site, representing one of the most important areas for the conservation of this kind of ecosystems in Europe;
- **Main Pressures:** Agricultural intensification and land abandonment (e.g. habitat fragmentation, rock graining, woody encroachment). Substantial losses of this ecosystem type have occurred since the beginning of the 20th century and between 1990 and 2000 due to previous agricultural policy;
- **Main Habitat types:**
 - 6210 (important orchid sites) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)
 - 6220* Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea;
 - 62A0 Eastern sub-mediterranean dry grasslands (Scorzoneretalia villosae)

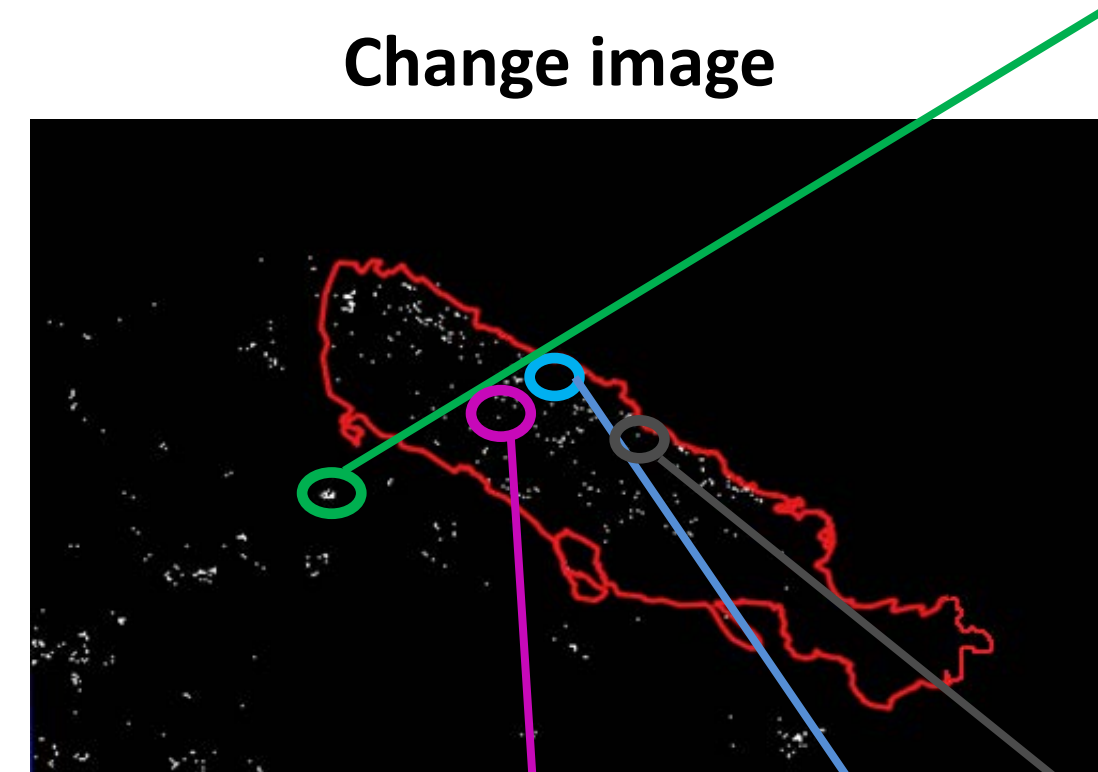
Change Detection from Copernicus Grassland Service and Sentinel-2



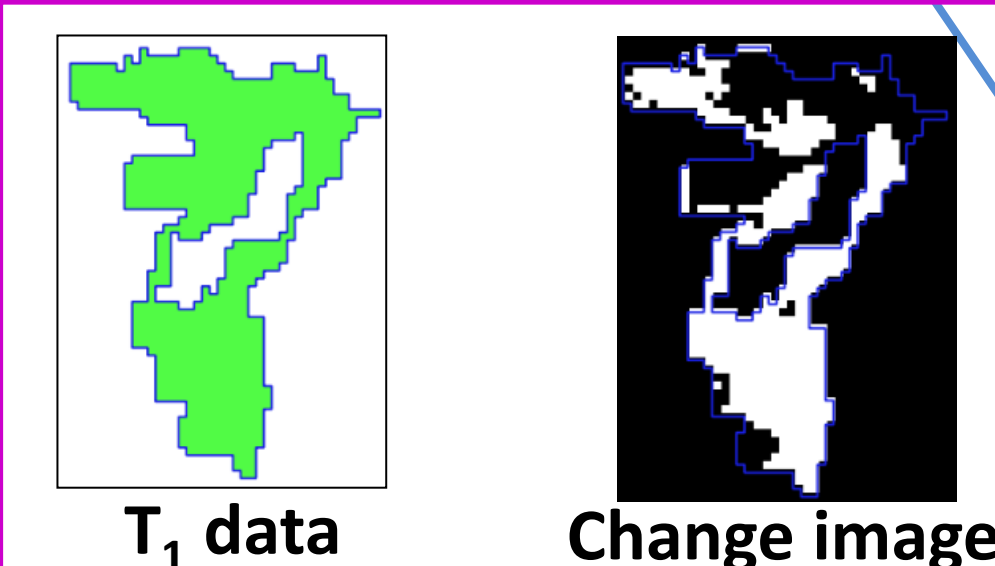
T₁ data: Copernicus layer natural/semi-natural Grassland
Year: 2012



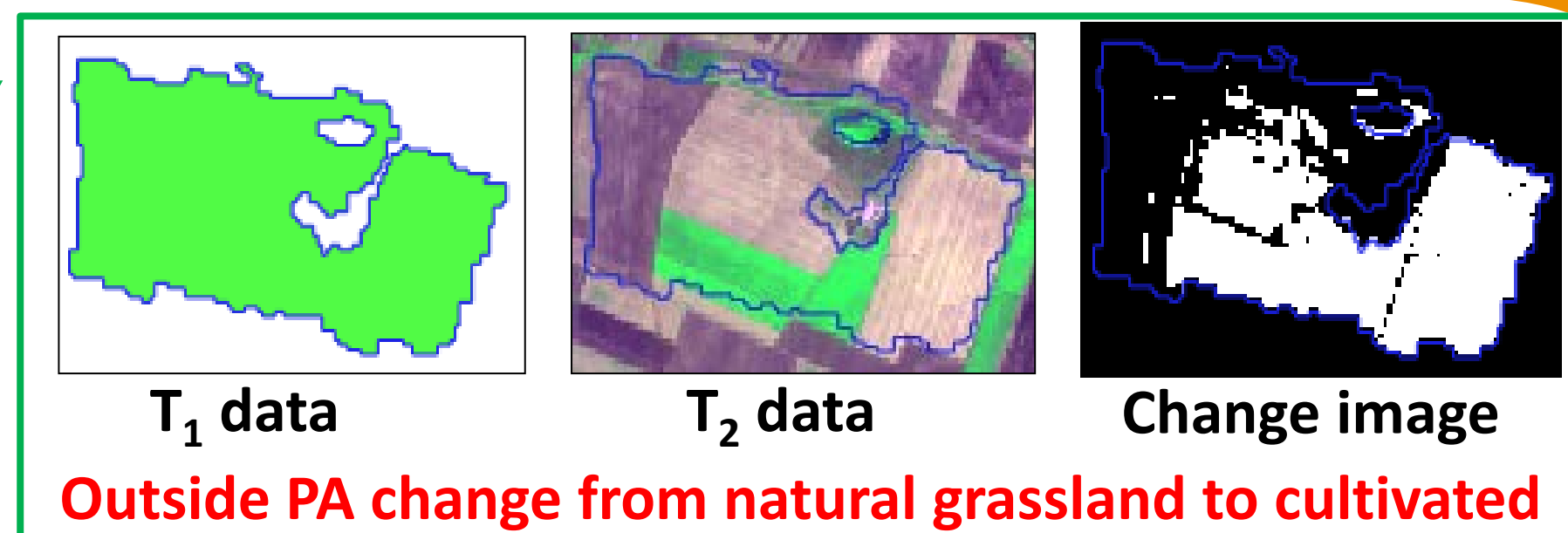
T₂ data: Sentinel-2 image
August 7, 2016
False Color: R=B3, G=B4, B=B2
20 meters – VIS/NIR/SWIR



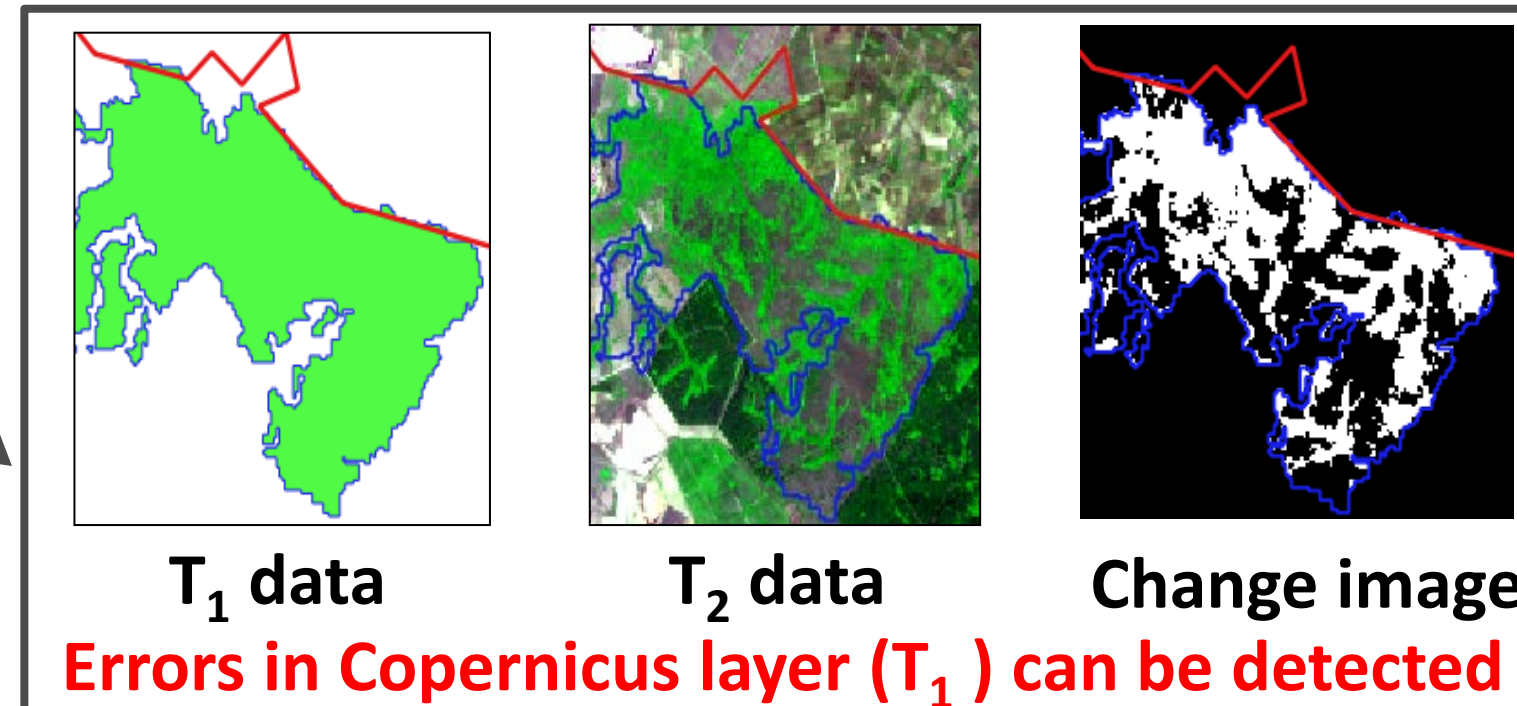
Change image



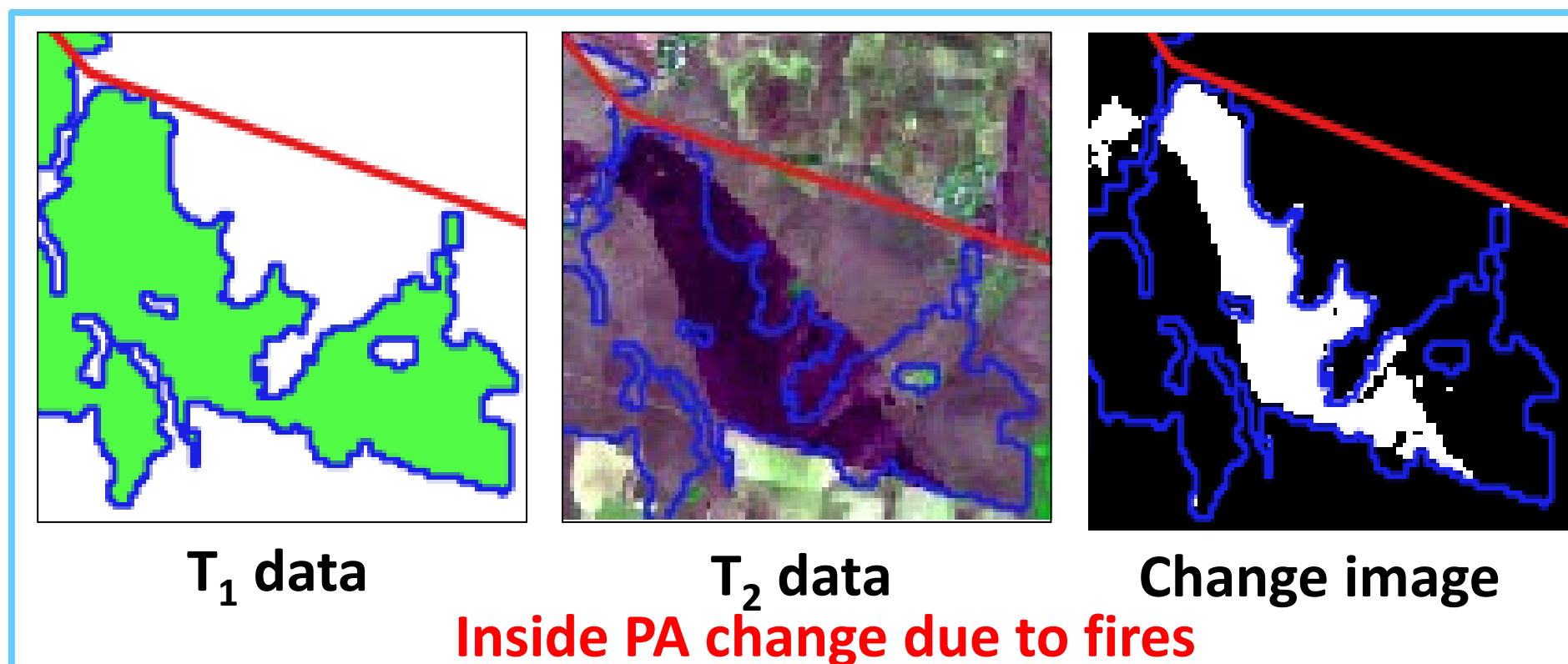
Inside PA change from natural grassland to cultivated



Outside PA change from natural grassland to cultivated

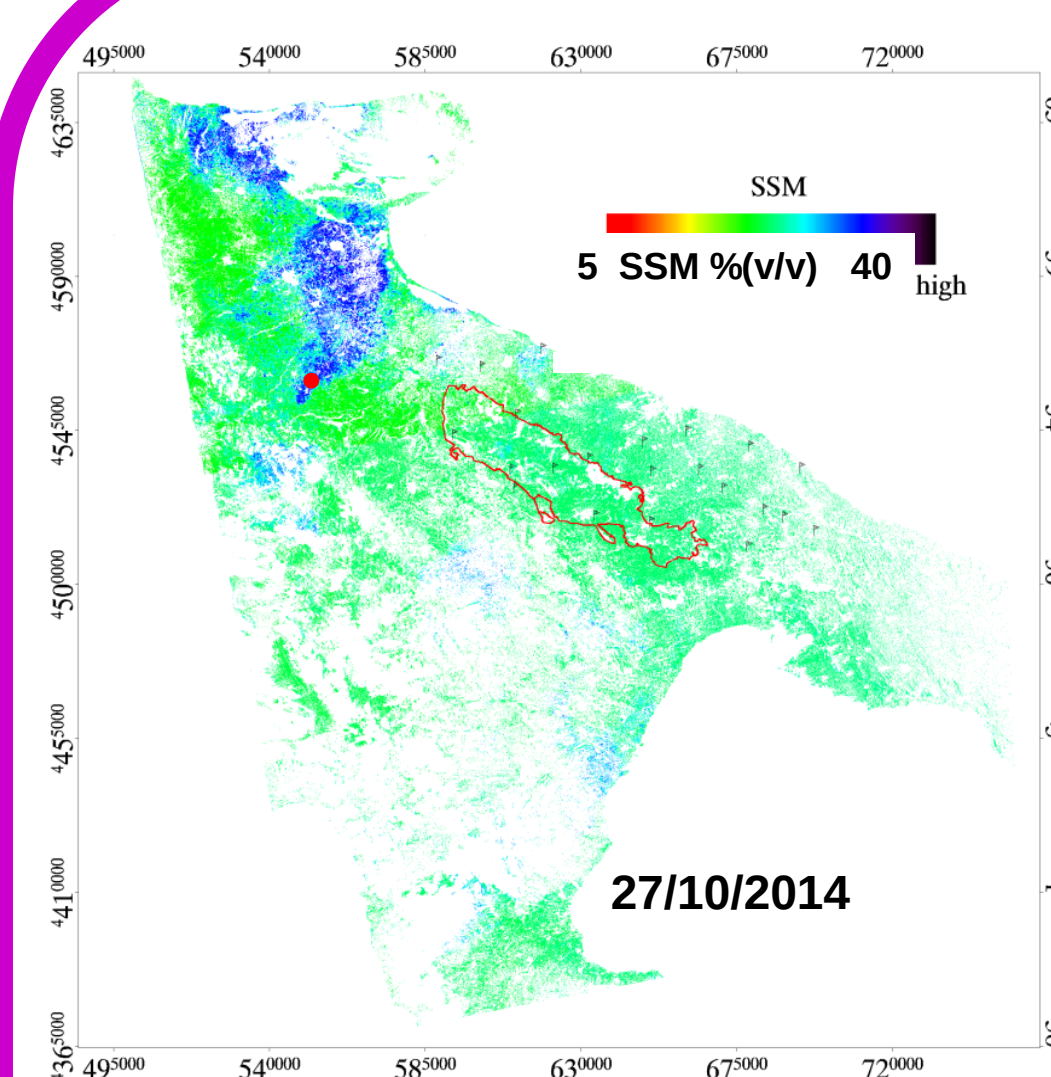


Errors in Copernicus layer (T₁) can be detected

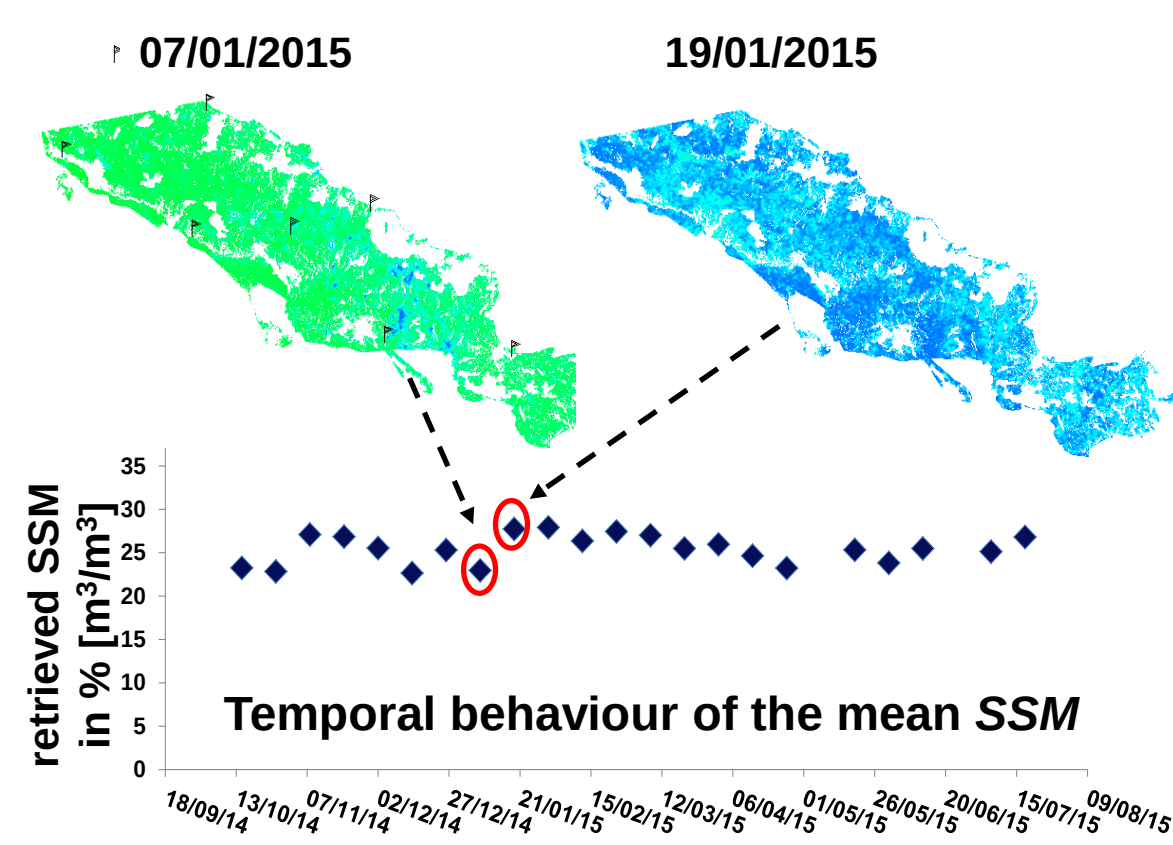


Inside PA change due to fires

Surface Soil Moisture from Sentinel-1A



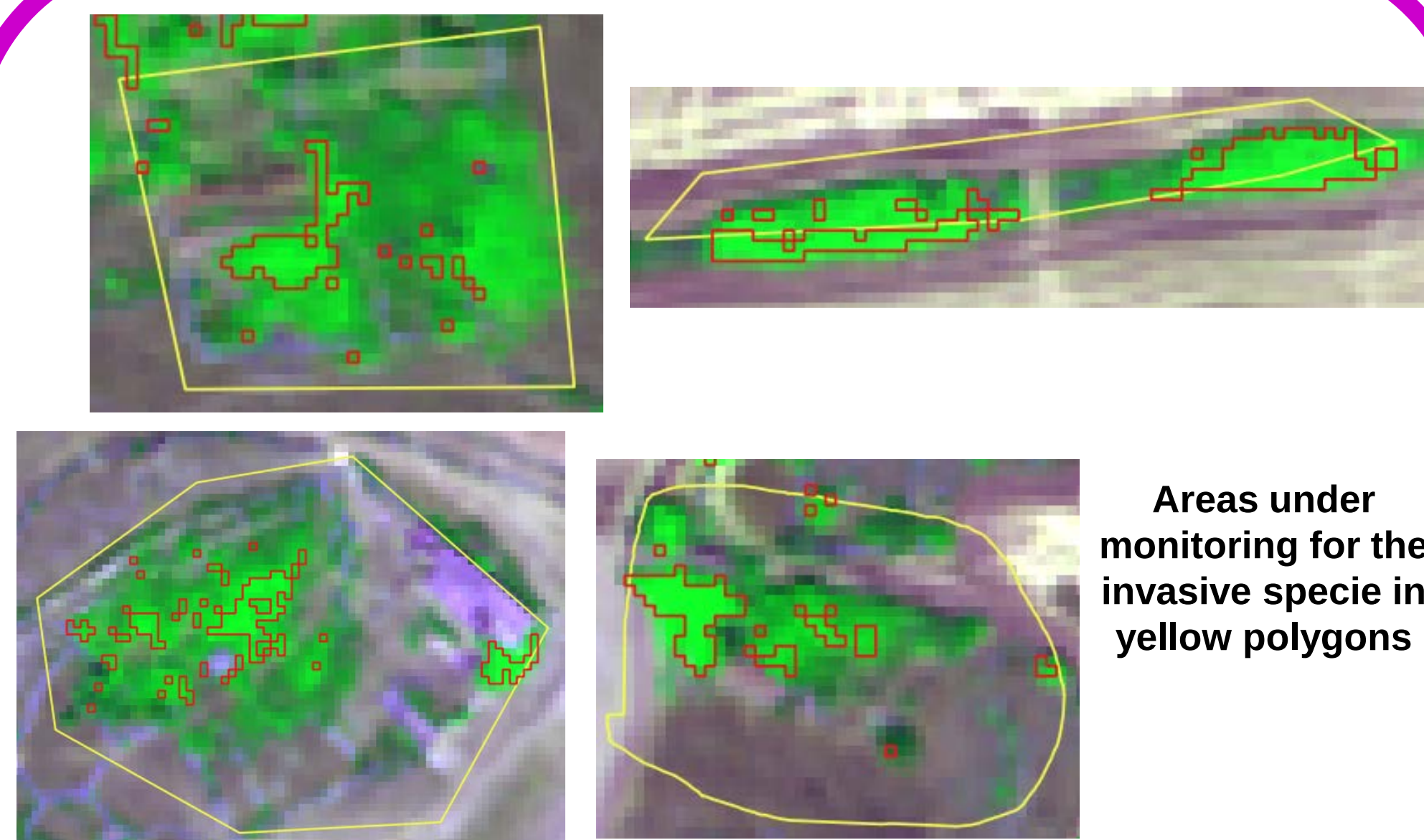
No validation on Murgia site: calibration and validation on the test site in the red point



34.9mm/day on 18/01/15 of mean rain from meteo stations

Sentinel-1A time series:
October 2014 to July 2015

«Ailanthus Altissima» invasive specie from WV-2



Areas under monitoring for the invasive specie in yellow polygons

«Ailanthus Altissima» invasive specie preliminary mapping, in red polygons, from Worldview-2, July 2012 - supervised classification -