



MONITORING THE MANAGEMENT OF GRASS-COVERED AREAS USING SATELLITE REMOTE SENSING

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Context

STUDY AREA



Figure 1: Major grassland categories (A–D: natural grasslands; E–H: semi-natural grasslands) (2)

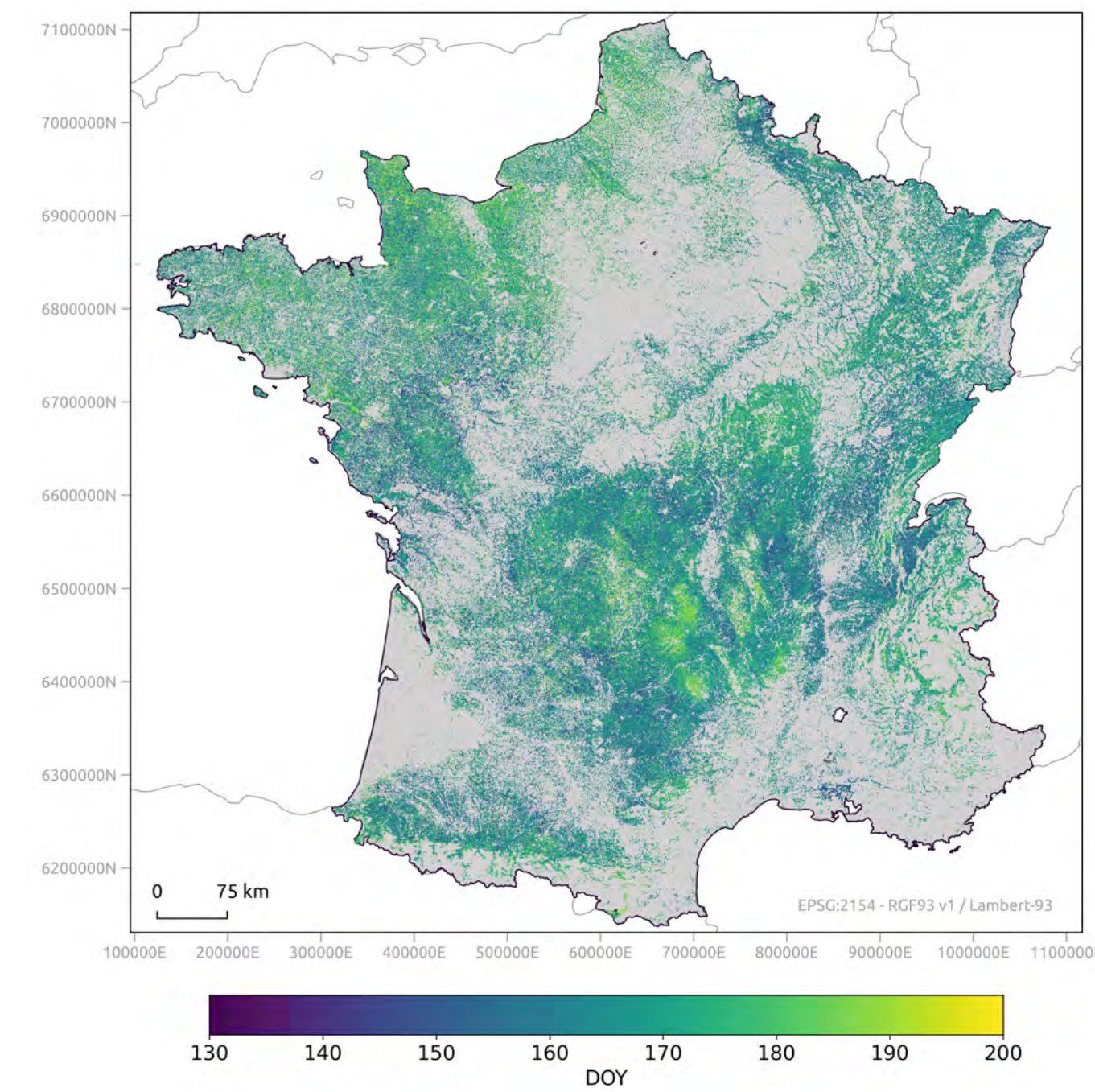


Figure 2: Map of the first date of mowing in permanent grasslands (18th class of RPG) in France in 2022. (9)

DATABASES

DATA SOURCE	STATUS OF FIELDS	ACQUISITION PERIOD	TEMPORAL RESOLUTION	TIME OF THE YEAR	PRACTICES NAMES MOWING	PRACTICES NAMES PASTURE	NUMBER OF FIELDS	AREA OF MOWING (KM2)	AREA OF PASTURE (KM2)	NEGATIVE
UNITÉS EXPÉRIMENTALES INRAE	OWNERS	2011-2024	DATE	ALL	SPECIFIC	BINARY	480	275	290	
OFFICE FRANÇAIS DE LA BIODIVERSITÉ	OBSERVERS	2012-2024	DELTA	ALL	SPECIFIC	SPECIFIC	1520	110	85	
PARCS NATURELS RÉGIONAUX	OBSERVERS	1999-2024	DELTA	ALL	BINARY	BINARY	190	15	15	
ASSOCIATIONS	OBSERVERS	2015-2024	DELTA	ALL	BINARY	BINARY	265	5	5	
MULTI-SOURCES	FRANCE	2015-2024	WEEK	ALL	BINARY	BINARY	2 450	405	395	AVAILABLE

Pluri-annual nationwide database

CHOICES AND RESULTING SAMPLES DATABASES

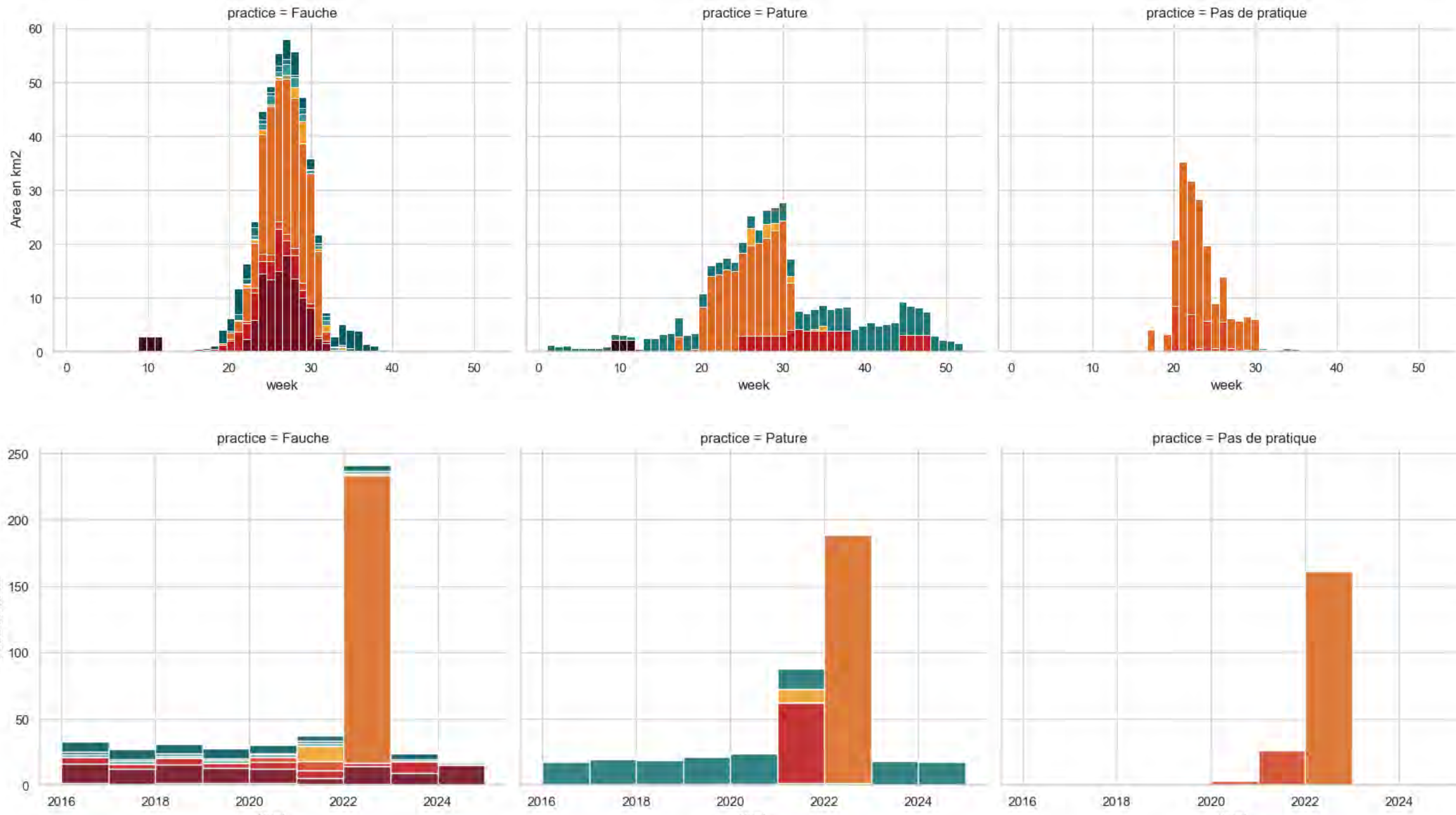
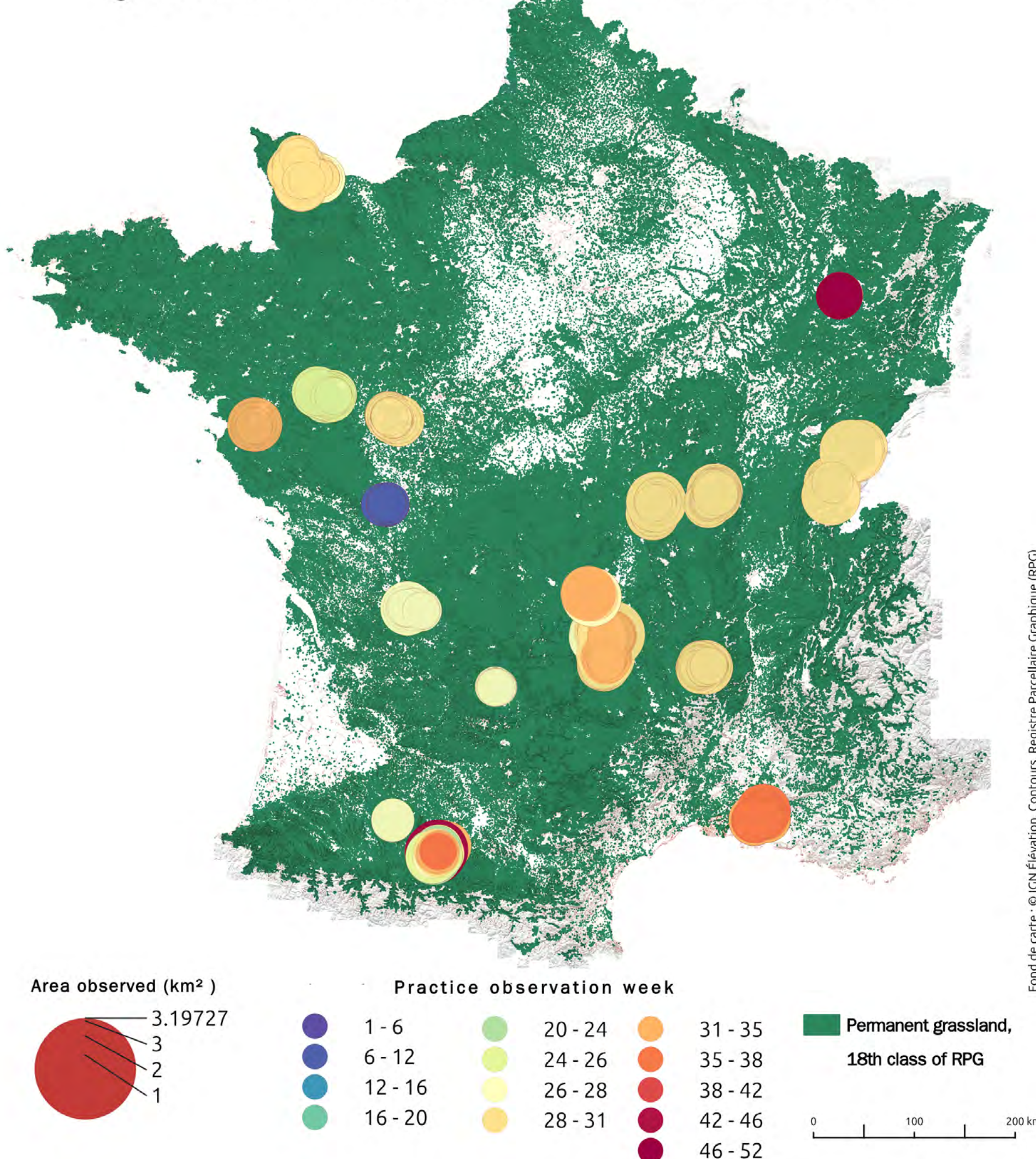


Figure 3: Micromet's (8) explanatory data from ERA-5 and Simon Gascoin's team, Théo Retif

NATIONAL FRENCH COVER

Area and week associated with practices observations in grasslands database between 2016 and 2024.

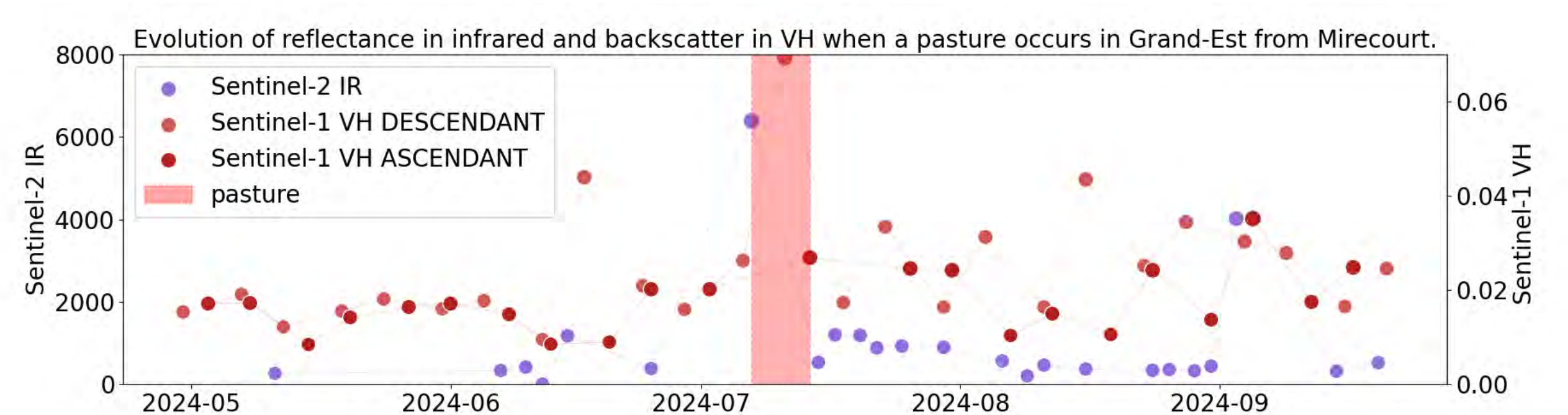


Research questions

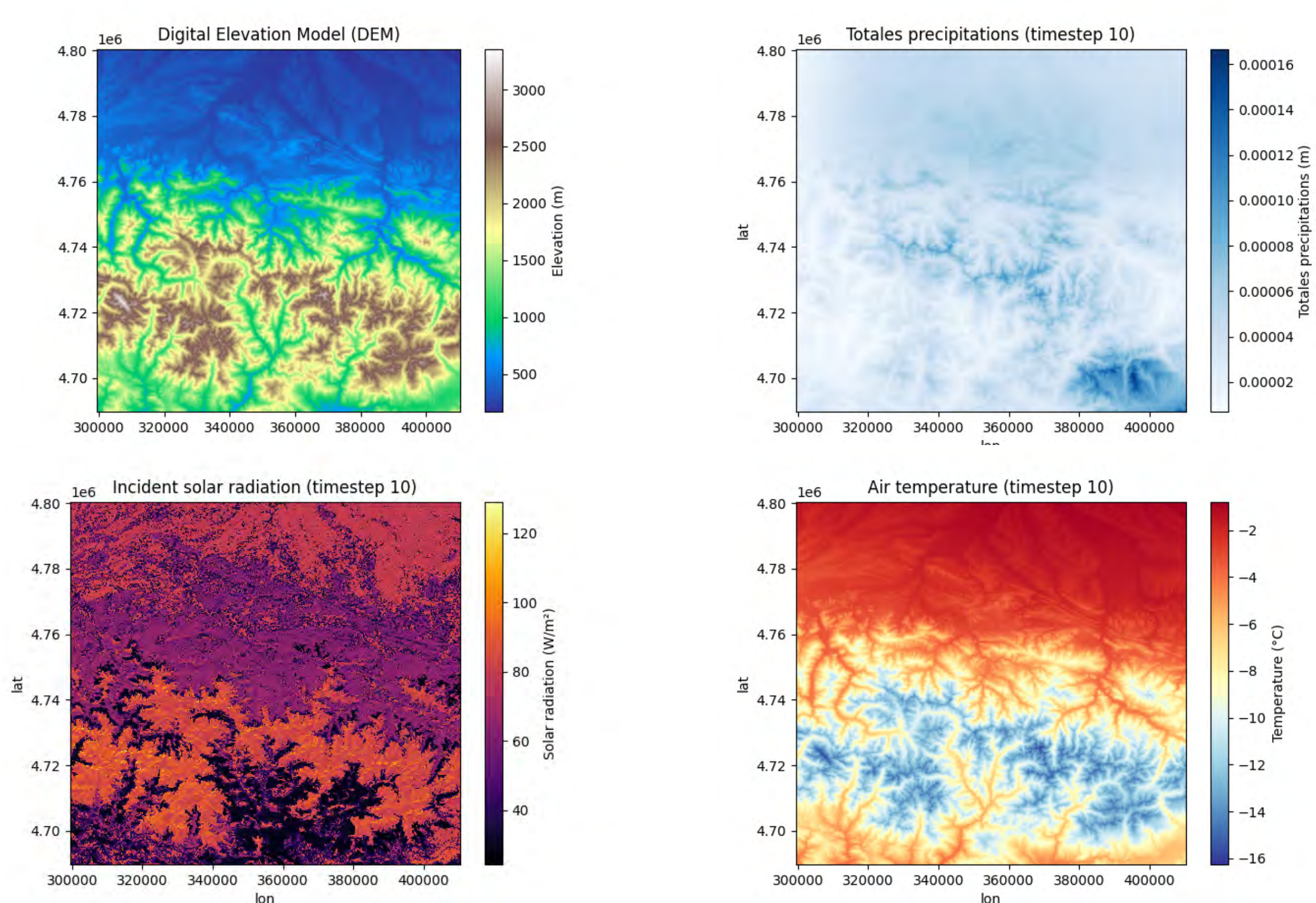
- ◇ Can we estimate grasslands's practices over several phenological seasons ? Date practices (4), (9) and characterize practices intensity (6)
- ◇ Can we determinate a degree of naturality in grasslands ? Is "High Nature Value" grassland (2) (7) a relevant concept ?

Explicative data

REMOTE SENSING DATA



ANCILLARY DATA



Methodology

UNALIGNED IRREGULAR DATA

- ◇ Different orbits and data grid
- ◇ Date and number of acquisitions date (between and within sensors)
- ◇ Data gaps (within sensors, here optical)

Pre-processing of data

- ◇ Interpolation was necessary with available classifications's methodologies (5)
- ◇ Interpolation doesn't improve classification (1) (3)
- ⇒ Needs an adapted methodology to take into account the heterogeneity (10) (3)

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