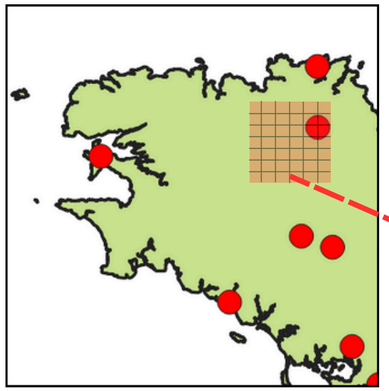
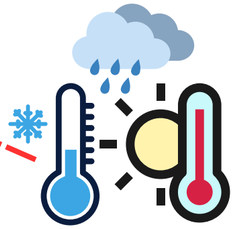


Climatic variables



Satellite data

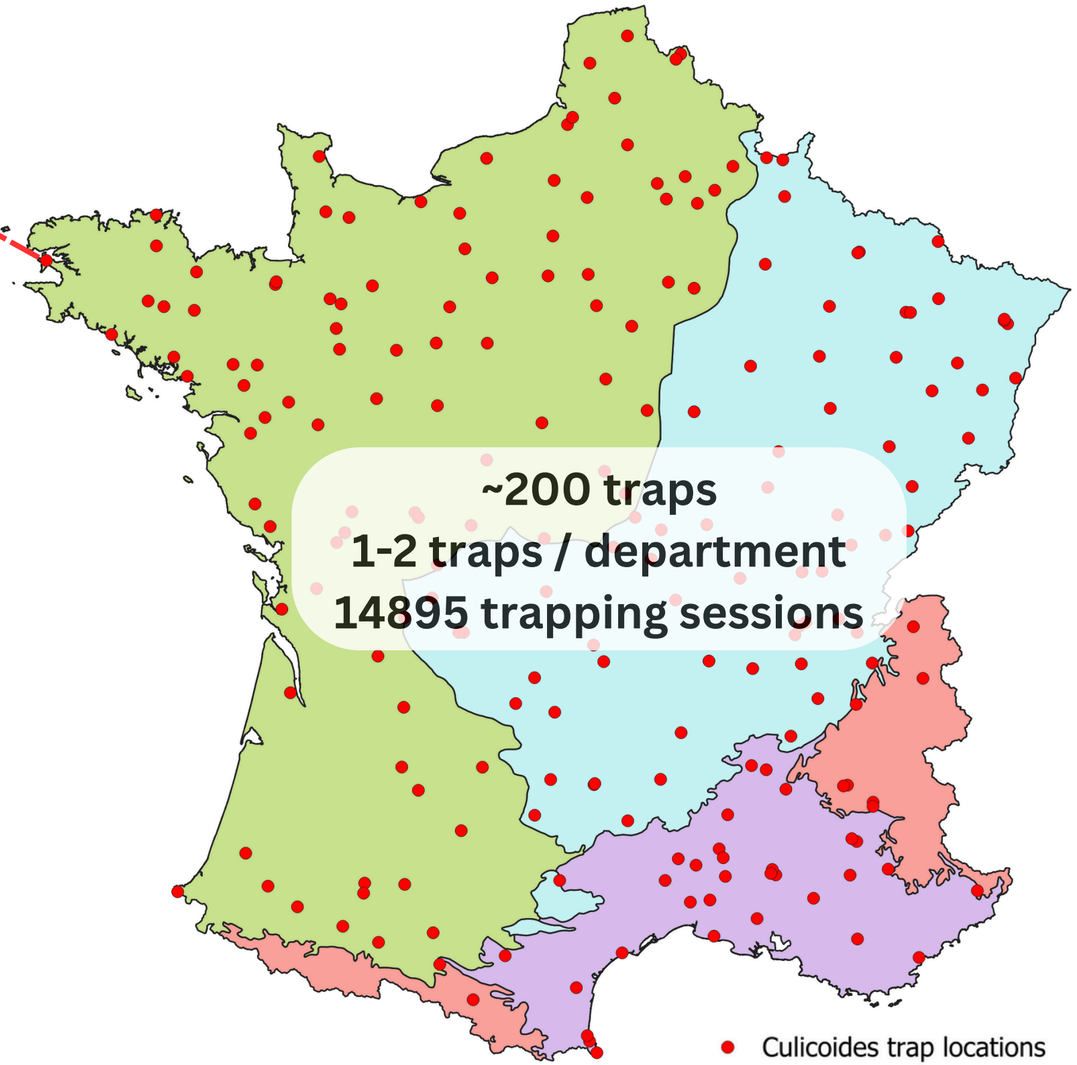
- 9 x 9 km grid
- Daily measurments

Landscape and microclimatic variables

Point location data:

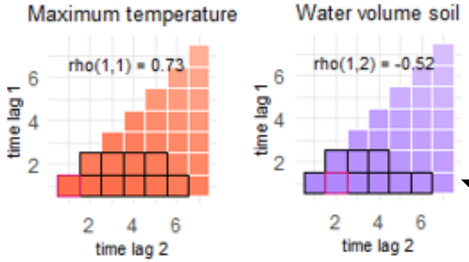
- Ouverture du bâtiment
- Type d'élevage
- Force du vent

2009-2012 *Culicoides* trap data

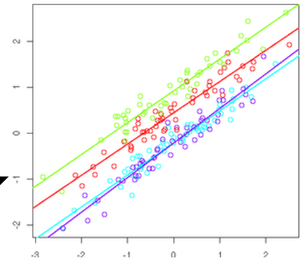


Variable selection

Cross-Correlation Maps



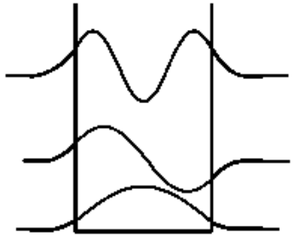
General Linear Mixed Model



Presence/absence model

ML approaches

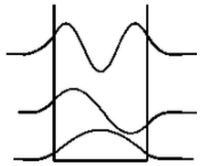
Abundance model



2 OBJECTIVES:

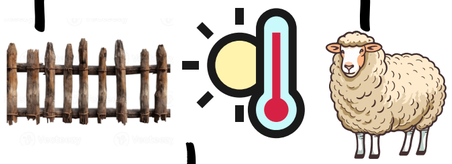
1. IDENTIFYING ENVIRONMENTAL DETERMINANTS

determinants for presence =/= determinants for abundance

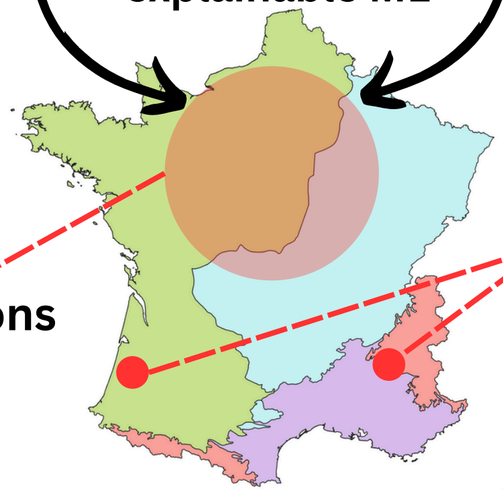


Presence/absence model variables

Abundance model variables



explainable ML



Explaining global predictions

Explaining local predictions

2. PREDICTION UNDER CLIMATE CHANGE

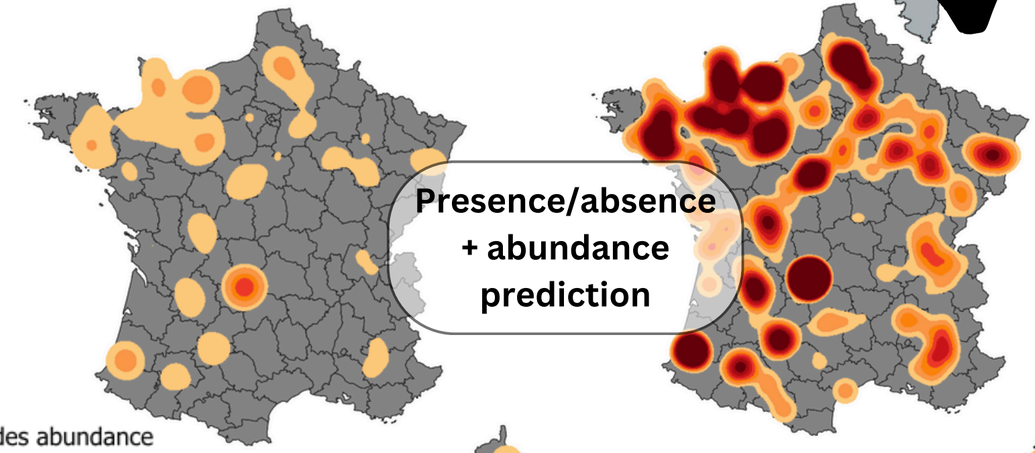
Using future projection data from:

IPCC* SCENARIOS:

- Most Optimistic (1.5°C by 2050)
- Next Best (1.8°C by 2100) ...

1.5°C by 2050

3.6°C by 2100



Presence/absence + abundance prediction

Culicoides abundance

Maximum

Minimum

*IPCC = Intergovernmental Panel For Climate Change