



Focal species for pesticide risk assessments - how to determine the correct mammal species

INTRODUCTION

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In the European Union the determination of risks from pesticides is part of the registration process. The EFSA Guidance Document for the Risk Assessment for Birds & Mammals proposes a tiered approach for the determination of focal species (FS) for the exposure estimation: from 'indicator species' via 'generic focal species' towards 'focal species' the risk assessment becomes more realistic as it is finally based on real species that uses the crop.

For birds, methods, studies and publications are available for a range of crops and the respective bird FS. No such data analysis is so far available for European mammal species to be used as FS.

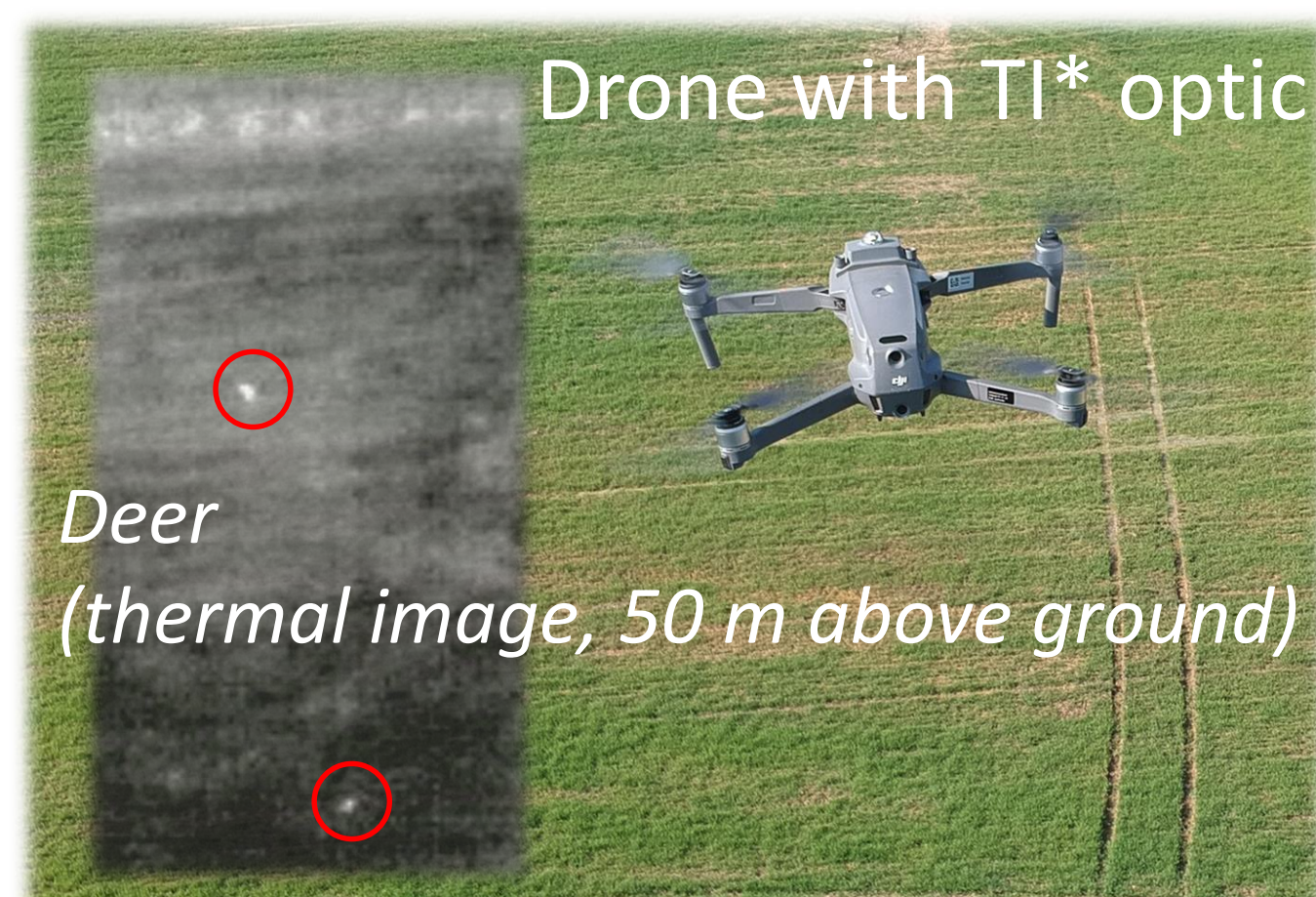
Mammal Focal Species - Methods

Method 1: Transect Counts

Counts of (mainly) lagomorph species on a landscape level, e.g. from a slow moving car in darkness. Strong spot-light is directed towards the fields. Lagomorph eyes reflect the light of a strong spot-light or night-vision devices can be used to identify animals.



Orchard (white line) with a transect path (dotted line) and the observation area (light grey shaded).



Drone with TI* optic

Deer (thermal image, 50 m above ground)

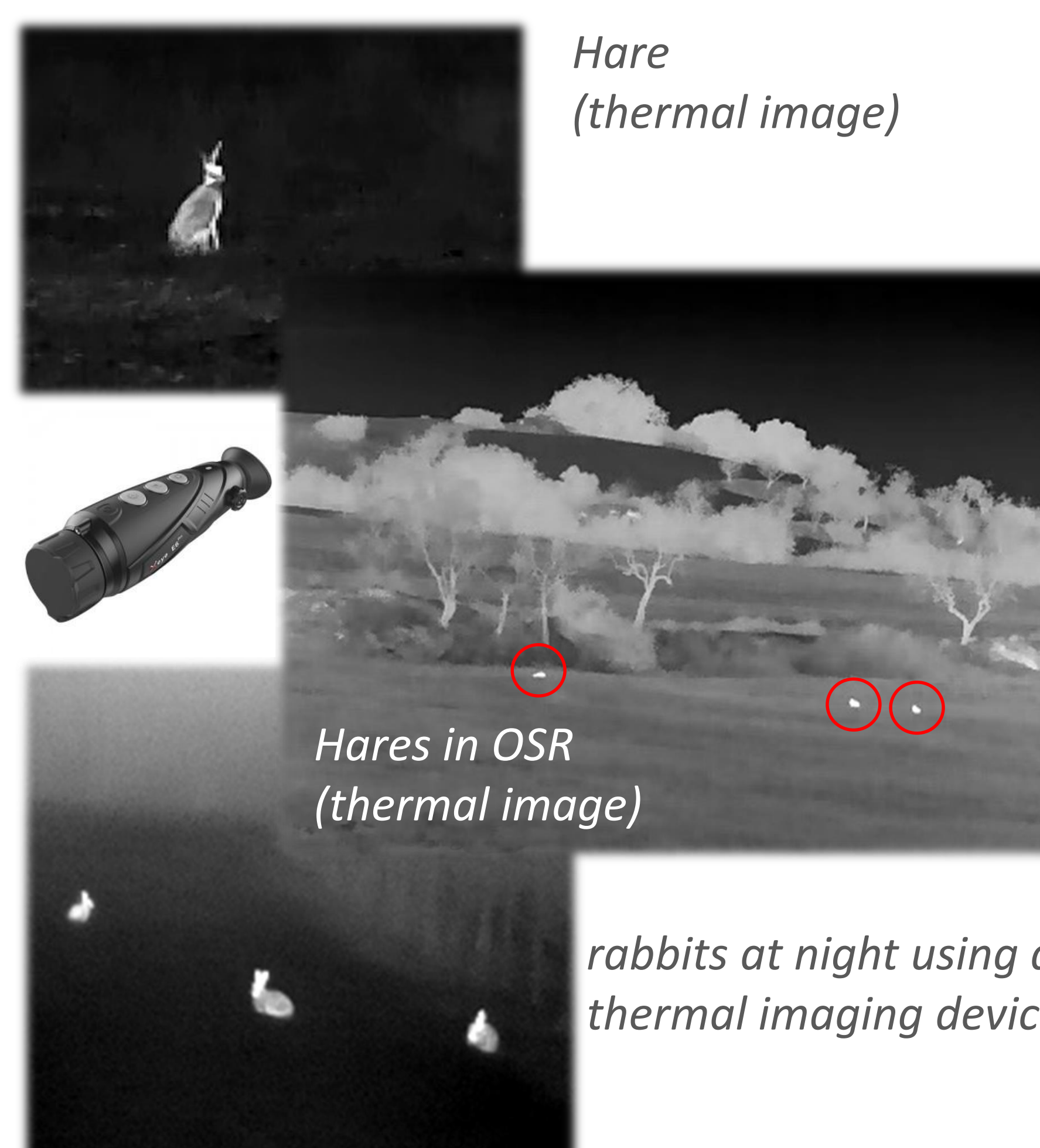
Modern techniques, like the use of drones, allow transects counts from above.

- **Endpoints:**
Abundance (individuals/ area/species)
No. of individuals/species
Frequencies of occurrence

*) TI = thermal imaging

Method 2: Point Count / Scan Sampling

Counts of mammals at night inside a pre-defined area from an observation point located next to the crop using night-vision devices. The method is ideal for medium sized species and limited (but not impossible) for small species.



Hare (thermal image)

Hares in OSR (thermal image)

rabbits at night using a thermal imaging device

- **Endpoints:**
Species composition
Species abundance (individuals/ area/species)
Behaviour observations
Frequencies of occurrence

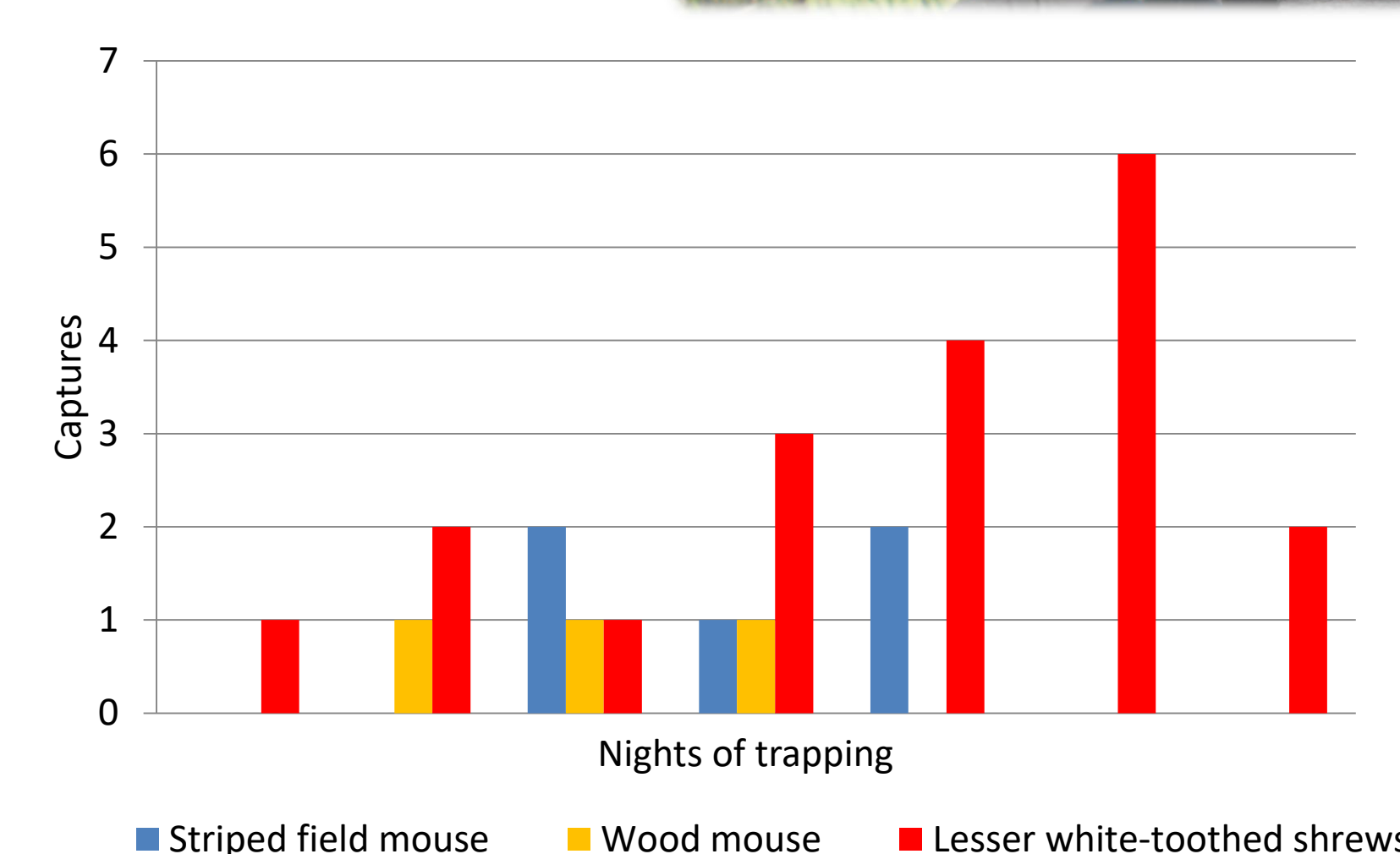
Method 3: Live trapping

Live trapping of small mammals (rodents and shrews). Set traps in-crop to identify the focal species and off-crop to proof the occurrence of potential focal species.



Multi-capture life traps placed in-crop and off-crop at a study field

Common shrew (Sorex araneus) in a multi-capture Ugglan trap



- **Endpoints:**
Species composition
No. of individuals/species
'Relative abundance' (No. of individuals/trap-night)
Frequencies of occurrence

DATA ANALYSIS & CONCLUSIONS

- Different mammal species require different field techniques to obtain data for their occurrence, e.g. point counts for hares and trapping for shrews.
- Specific approaches for the data-analysis are necessary, depending on the field methods used.
- To understand the importance of a certain crop as habitat for wild mammals data on species abundance in surrounding habitats/crops needs to be considered to determine the correct FS.
- Methods are available and with modern observation/field techniques, even the specific difficulties in observing wild mammals can be solved.

