- address factors, need to be taken into account when conducting a focal species study
- fill the gap between the former presentation and the following presentation
- evaluate different key approaches regarding their suitability under certain conditions
- best approach depends on many factors like the actual crop, its growth stage, the region, the timing and already available data
- alternatives, not mentioned here, might even be more appropriate in some cases

BACKGROUND

Revised EFSA guidance document for birds and mammals (GD):
worst case in terms of vulnerability of potential focal species (FS) should not be missed

BEFORE	NOW
Most prevalent species per feeding guild	Most vulnerable species per feeding guild

What is still to be resolved?

Clear methodological approaches on how to address the worst case in terms of vulnerability are not proposed in the GD

BASIC ASSUMPTIONS

In order to address the worst case in terms of vulnerability, FS field studies should be conducted in a way that:

i. Allows for the presence of species that potentially are most vulnerable

ii. Meets the requirements to cover the highest exposure

SELECTION OF ACTUAL STUDY FIELDS IN THE DEFINED STUDY REGION/AREA

SELECTION OF STUDY FIELDS – SPECIES VULNERABILITY OR OTHER FACTORS

Presence of 'potentially most vulnerable species'

- List of '*Potentially relevant species*' already defined for selection of study region(s)
- Conditions increasing the probability of the occurrence of the listed species should be favoured

Methodological approaches most suitable to detect these species in the study fields should be selected

Alternative or additional factors

- A specific agricultural practise may have to be monitored
- Crop prevalence may have to be considered

SELECTION OF ACTUAL STUDY FIELDS IN THE DEFINED STUDY REGION/AREA

SELECTION OF STUDY FIELDS – SPECIES VULNERABILITY

Aspects to consider to address 'species vulnerability'

- Habitat characteristics (of the study fields and their surroundings)
- Sample size of study fields
- Survey method
- General presence of birds (in the area)

SELECTION OF STUDY FIELDS – WORST CASE EXPOSURE OR OTHER FACTORS

To cover the worst case in terms of exposure or 'other factors':

- Agricultural practise ('worst case' versus 'most common')
- General presence of birds (in the area)
- Food abundance (in the study fields and/or in the surrounding habitats)

SELECTION OF ACTUAL STUDY FIELDS IN THE DEFINED STUDY REGION/AREA

HABITAT CHARACTERISTICS

To allow for presence of '*specific*' or general species using the crop consider:

- Features of the study fields (e.g. tree high in orchards; flat versus hilly fields)
- Immediate surrounding habitats (e.g. large open fields lacking high vegetation at the margins versus smaller fields surrounded by hedges/trees)

HABITAT CHARACTERISTICS

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- Immediate surrounding habitats (e.g. large open fields lacking high vegetation at the margins versus smaller fields surrounded by hedges/trees)
- Wider landscape characteristics (e.g. presence of natural habitats like water bodies)

⇒ Consider worst case in terms of exposure

SELECTION OF ACTUAL STUDY FIELDS IN THE DEFINED STUDY REGION/AREA

HABITAT CHARACTERISTICS

How to conduct a focal species field study

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soil characteristics might prevent proper incorporation of the seeds during sowing → increased availability of seeds for granivorous birds.

SELECTION OF ACTUAL STUDY FIELDS IN THE DEFINED STUDY REGION/AREA

HABITAT CHARACTERISTICS

To allow for presence of '*specific*' or general species using the crop consider:

- Features of the study fields (e.g. tree high in orchards; flat versus hilly fields)
- Immediate surrounding habitats (e.g. large open fields lacking high vegetation at the margins versus smaller fields surrounded by hedges/trees)
- Wider landscape characteristics (e.g. presence of natural habitats like water bodies)

⇒ Consider worst case in terms of exposure (e.g. soil conditions that increase availability of freshly drilled seeds on the soil surface)

Alternative or additional approach:
select study fields showing the most prevalent habitat characteristics of the fields of a crop

Alternative: Selection of study fields showing the most prevalent habitat characteristics for fields of a crop
→ no potentially relevant species eliminated

NUMBER OF STUDY FIELDS

- Sufficiently high to cover all habitat types required for the occurrence of 'potentially relevant species' (≥ 20)
- Sufficiently high to increase the chance of the detection of rare species

ALTERNATIVE OPTIONS FOR SELECTION APPROACH

- Option 1
  ⇒ Simple random selection: a **large sample size** to increase the likelihood that also rare species occur
- Option 2
  ⇒ Conduct of 'simple qualitative bird surveys' to check for the presence of the 'potentially relevant species'

AGRICULTURAL PRACTISE IN THE STUDY FIELDS

To address the agricultural practise (AP) there are at least 2 options:

- Option 1 – the 'worst case' approach

  ⇒ Try to preferably select study fields with the AP that most likely causes the highest exposure

  ⇒ The estimation which AP might cause the highest exposure can either be based on former empirical research or well-founded theoretical reasoning

  ⇒ If 'worst case' AP cannot be foreseen, a large sample size covering different APs may be used

AGRICULTURAL PRACTISE IN THE STUDY FIELDS

- Option 2 – the 'prevalence' approach

If worst case AP is an extremely rare and unusual case, the prevalence of an AP might be more relevant

⇒ Study fields where the most common AP is applied would be preferred

⇒ To address 'representativeness' data are required regarding the frequency of different APs

⇒ If these data are not available a survey might be required prior to the FS study

SURVEY METHOD

- Sufficient sample size of surveys to calculate a reasonable species-specific FO_{survey} for the identification of FS candidates

  ⇒ More surveys per study field lead to a more differentiated classification of the FO_{survey} for the species recorded

Presence of birds (FO_{survey} in %) in different no. of surveys

	3 surveys	10 surveys
Species 1	100	100
Species 2	100	90
Species 3	100	80
Species 4	66	70
Species 5	66	60
Species 6	66	50
Species 7	33	40
Species 8	33	30
Species 9	33	20

Example: A study with only three surveys per field would offer just 3 different FO_{survey} values. However, if 10 surveys were conducted, a theoretical maximum of 10 different values for FO_{survey} is possible. From 10 different values a more differentiated ranking of species is possible than for only 3 values.

SURVEY METHOD

Scan sampling

Transect count

Bird trapping

SCAN SAMPLING

SURVEY METHOD

How to conduct a focal species field study

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- a defined part of a field is systematically observed and present birds are recorded
- repetition at a pre-defined periods of mostly either 5, 10 or 15 minutes
- Ideally no influence of the observer on the birds
- each scan treated as one survey.

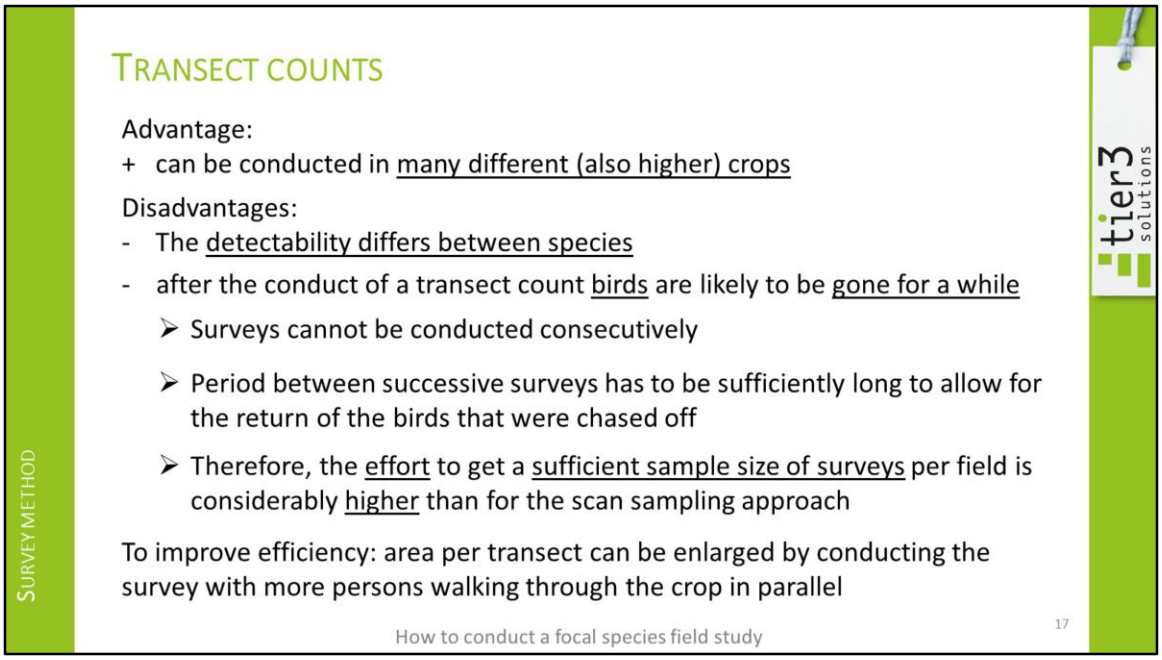
SCAN SAMPLING

Advantage:

+ results in a large number of surveys; preferred approach in order to obtain more differentiated FO_{survey} values per species

Disadvantage:

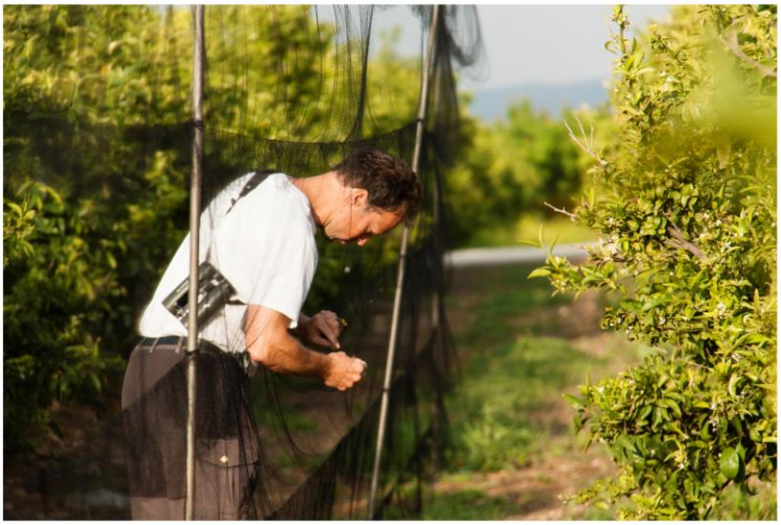
- restricted to (low) crops/BBCH-stages that allow visibility of small birds on the ground within a large part of the study field



- at least one person is walking through or along the crop within a defined part of a field
- birds either detected visually or acoustically

SURVEY METHOD

BIRD TRAPPING



How to conduct a focal species field study

SURVEY METHOD

BIRD TRAPPING

Advantage:

+ Trapped birds can be marked individually
  - ➢ repeated utilisation of a study field can be shown for individuals and not just assumed (as for the other survey methods)

Disadvantages:

- Elaborate
- Restricted to 'high crops' (e.g. hop yards, vineyards, orchards)
- Only a fraction of the birds present are trapped in most cases
- FO_{survey} values may reflect probability of trapping rather than differences in occurrence.

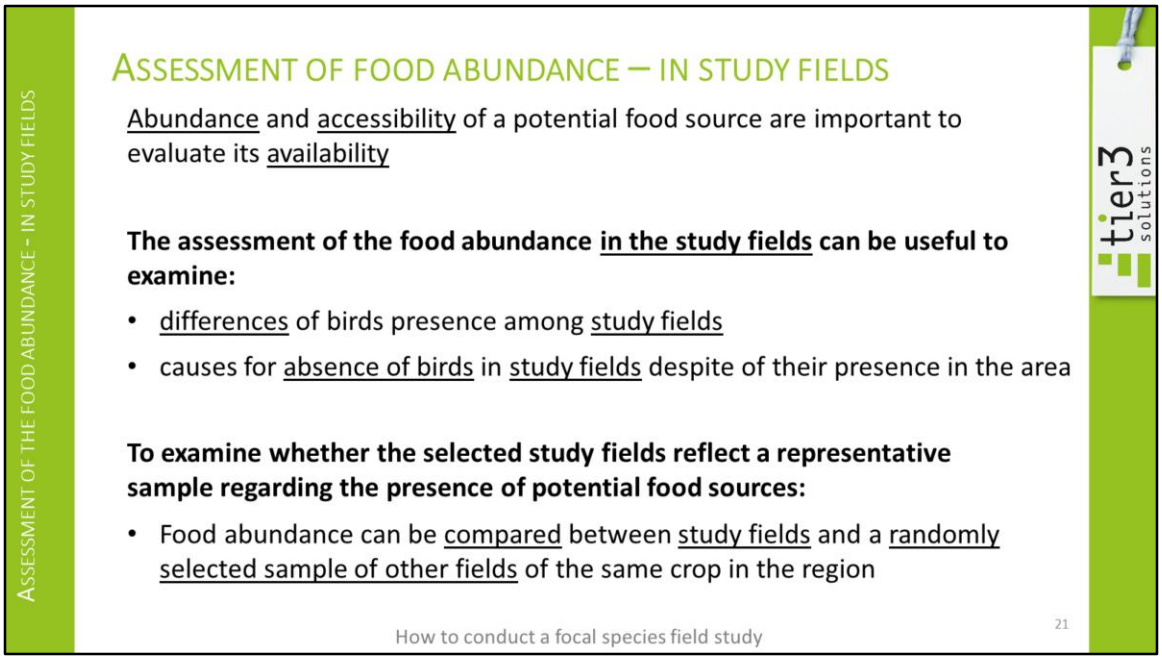
ASSESSMENT OF BIRDS IN THE VICINITY OF THE STUDY FIELDS

To demonstrate that specific bird species or bird species in general have the opportunity to use a study field

- Bird species should at least be present in the vicinity

  ⇒ Conduct of 'simple qualitative bird surveys' in the surroundings of study fields to check for the presence bird species

- Only if a species is present in the area, its absence in a study field can be considered as illustrating the unattractiveness of the field



Example:

- a freshly drilled field might contain a high abundance of seeds → high food abundance for granivorous species
- seeds well incorporated into the soil → not accessible for species that cannot dig for seeds
- despite of a high food abundance in the soil the seeds are not available
- abundance measured quite easily
- difficult to evaluate the species-specific accessibility

ASSESSMENT OF FOOD ABUNDANCE – IN SURROUNDING HABITATS

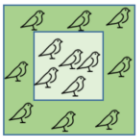
The necessity of the assessment of the food abundance in the habitats in the surroundings of the study fields by default is questioned

- Foraging birds are expected to indicate food availability sufficiently
- Absence of (foraging) birds illustrates either lack of suitable food and/or unattractiveness of a site for other reasons

⇒ Ultimately, bird presence rather than verification of food abundance is relevant for the successful conduct of a FS field study

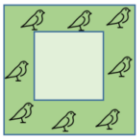
ASSESSMENT OF THE FOOD ABUNDANCE - IN SURROUNDING HABITATS

ASSESSMENT OF FOOD ABUNDANCE – IN SURROUNDING HABITATS

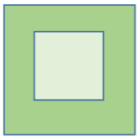


- Food likely to be present in both habitats
- No need to assess food abundance in the surrounding habitat
- Presence of birds in study field offers the chance to gain data for FS identification

- Food likely to be present at least in the study field
- Reasons for absence in the latter might either be obvious or remain unclear but not necessarily important for study purpose
- Presence of birds in study field offers the chance to get data for FS identification



- Food likely to be present at least in the surrounding habitat
- Reasons for absence might be explained by food assessment in the study field
- Absence of bird species in a study field that occur in the surrounding can be considered as illustrating the unattractiveness of the field



- Lack of food and/or unattractiveness due to other (either obvious or unknown) reasons
- Reasons for absence might remain unclear but not necessarily important for study purpose
- Basically unsuitable conditions for FS field study

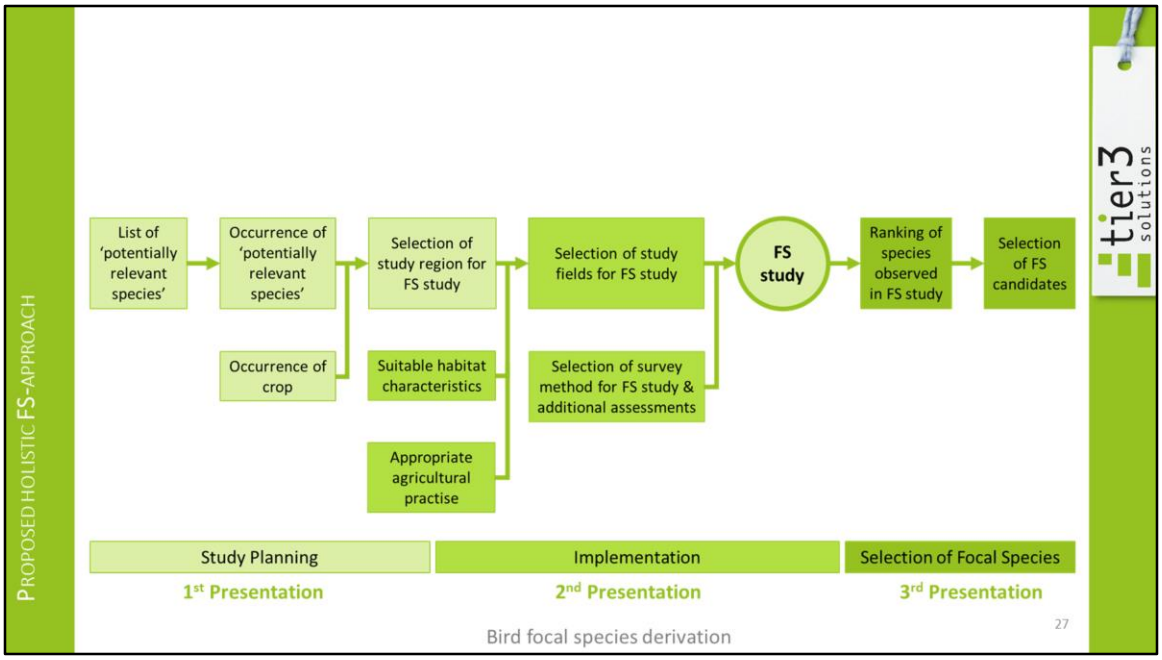
TO KEEP IN MIND

SUMMARY

- Habitat types/structures in and around the study fields should represent the requirements of all *'potentially relevant species'* (if the aim is to address vulnerability)
- Agricultural practise: different approaches are possible (e.g. either focus on 'worst case' or 'prevalence')
- Survey method and frequency should allow reasonable FO_{survey} calculation (3rd presentation)
- Assessment of birds in the vicinity of the study fields can support the verification of the presence of *'potentially relevant species'*
- Assessment of food abundance can at least be useful in study fields
- A 'better' FS study can focus (and most likely reduce) the effort for subsequent PT studies

⇒ A higher investment in a properly planned and conducted FS study could save resources

THANK YOU FOR YOUR ATTENTION!


PROPOSED HOLISTIC FS-APPROACH
List of 'potentially relevant species'
Occurrence of 'potentially relevant species'
Occurrence of crop
Selection of study region for FS study
Suitable habitat characteristics
Appropriate agricultural practise
Selection of study fields for FS study
Selection of survey method for FS study & additional assessments
FS study
Ranking of species observed in FS study
Selection of FS candidates
Study Planning
1st Presentation
Implementation
2nd Presentation
Selection of Focal Species
3rd Presentation
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Bird focal species derivation
tier3 solutions

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