Focal Bird Species for Amenity Grassland Risk Assessments

Jens Schabacker, Jochen Gerlach, Marcel Münderle, Felix von Blanckenhagen, Christan Dietzen, Jan-Dieter Ludwigs

RIFCON GmbH, Zinkenbergweg 8, 69493 Hirschberg, Germany E-Mail: jens.schabacker@rifcon.de

Introduction

EFSA guidance (EFSA Journal 2009; 7/12) gives a list of crop groups and indicator species for the risk assessment of birds and mammals. For agricultural grasslands such as pastures and meadows, the default focal species given by EFSA are the house sparrow, linnet, pink-footed goose, and yellow wagtail. In common with agricultural grasslands, most amenity grasslands and particularly golf courses (GC) receive routine applications of pesticides. However, can we be sure that EFSA default species for agricultural grasslands are appropriate for assessing risk to birds utilising amenity grasslands such as GC? The aim of this study was to determine appropriate focal bird species for amenity grasslands such as GC.

To this end, we asked the following questions:
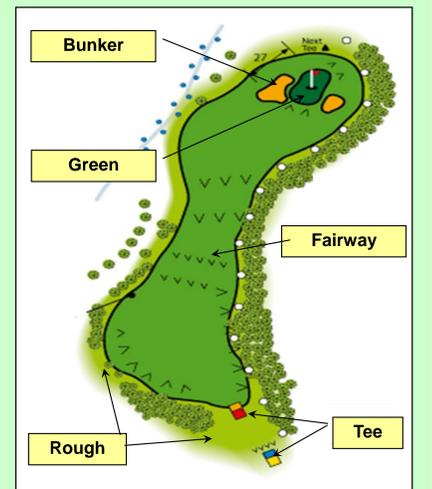
A) Which bird species are present on GC grassland?

• **Are the EFSA default species for agricultural grasslands appropriate for GC? If not, can we derive appropriate focal species for risk assessments on GC?**

B) In which habitats do these species forage?

• **Are there any preferences in habitat use (treated vs. untreated areas on GC? See box on right.**
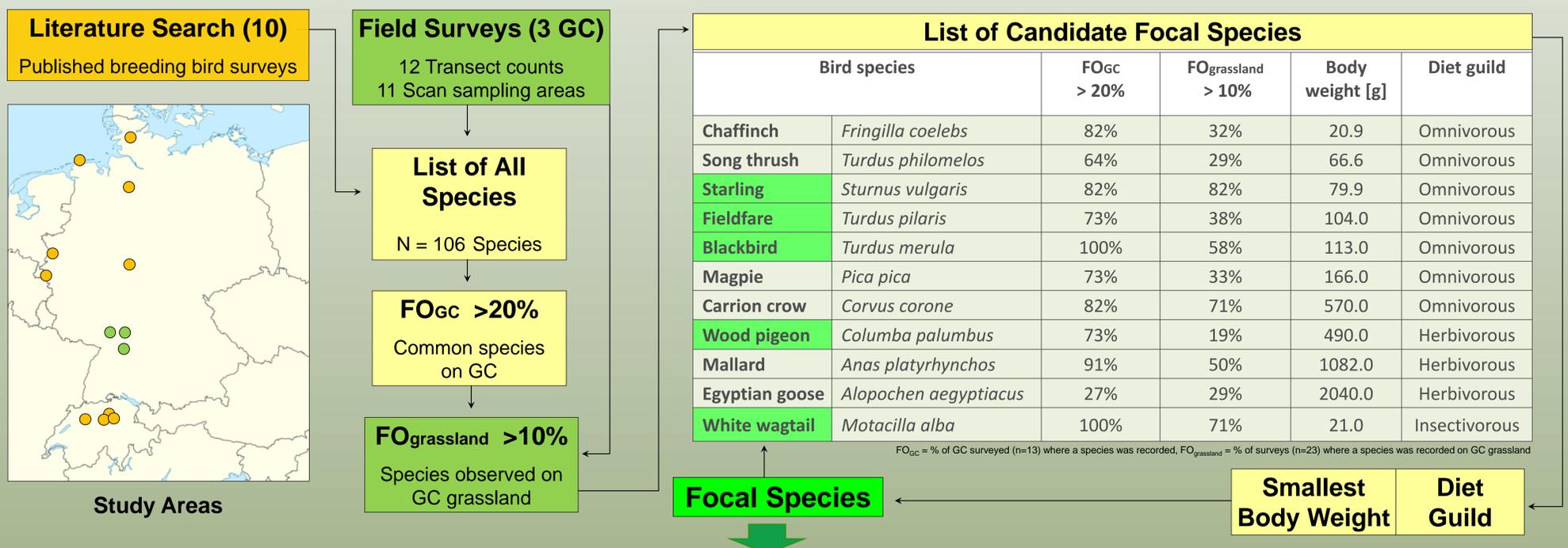
Golf courses (GC):

Large areas of grass that often require a high input of plant protection products. The various grassland habitats within a GC are usually managed differently. Some such as the **greens, tees and fairways** often receive intensive fertilizer and pesticide applications and regular mowing (*treated areas*). Conversely, the **rough** areas remain relatively unmanaged with little pesticide use and irregular mowing (*untreated areas*).

A) Bird Species Using Grassland on Golf Courses

Methodology:

Literature Search (10)
Published breeding bird surveys

Study Areas

Field Surveys (3 GC)
12 Transect counts
11 Scan sampling areas

List of All Species
N = 106 Species

FO_GC >20%
Common species on GC

FO_grassland >10%
Species observed on GC grassland

Focal Species

List of Candidate Focal Species

Bird species		FO_GC > 20%	FO_grassland > 10%	Body weight [g]	Diet guild
Chaffinch	*Fringilla coelebs*	82%	32%	20.9	Omnivorous
Song thrush	*Turdus philomelos*	64%	29%	66.6	Omnivorous
Starling	*Sturnus vulgaris*	82%	82%	79.9	Omnivorous
Fieldfare	*Turdus pilaris*	73%	38%	104.0	Omnivorous
Blackbird	*Turdus merula*	100%	58%	113.0	Omnivorous
Magpie	*Pica pica*	73%	33%	166.0	Omnivorous
Carrion crow	*Corvus corone*	82%	71%	570.0	Omnivorous
Wood pigeon	*Columba palumbus*	73%	19%	490.0	Herbivorous
Mallard	*Anas platyrhynchos*	91%	50%	1082.0	Herbivorous
Egyptian goose	*Alopochen aegyptiacus*	27%	29%	2040.0	Herbivorous
White wagtail	*Motacilla alba*	100%	71%	21.0	Insectivorous

FO_GC = % of GC surveyed (n=13) where a species was recorded, FO_grassland = % of surveys (n=23) where a species was recorded on GC grassland

Smallest Body Weight | **Diet Guild**

The EFSA (2009) default focal species (house sparrow, linnet, pink-footed goose, yellow wagtail) do not appear on our list of candidate focal bird species for GC. This is because they were either not present on GC or did not meet the FO_GC/grassland criteria. These findings clearly indicate that more appropriate focal species should be selected for realistic exposure scenarios in risk assessments on GC.

B) Habitat Use of Focal Bird Species

Methodology:

The foraging habitat preferences of birds on GC were recorded during scan sampling (3-4 scan areas observed 3 times on each GC). Individual birds were recorded as foraging on either *fairways, rough, or tees/greens*, see GC diagram top right.

The habitat preferences of the focal bird species derived for GC were determined according to the presence of individuals of that species in a specific area over a given time (3x30min) and then normalised to 1 ha.
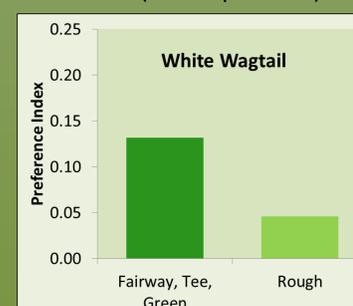

Trend towards untreated areas (MWU p = 0.08)

Trend towards untreated areas (MWU p = 0.07)

No trend observed (MWU p = 0.5)

Possible trend towards treated areas (MWU p = 0.7)

Conclusion:

None of the GC focal bird species was found to feed entirely in the treated areas (greens, tees and fairways).

For two of the focal species (blackbird, starling) our data indicate a preference for foraging in un-treated areas (rough).

No habitat preference was found for some species such as the fieldfare.

Data for the white wagtail suggest a possible preference for foraging in treated areas (i.e. it seems to be the most exposed species).

For further information please contact the authors

MWU = Mann–Whitney *U* test