

New findings in dispersal, habitat-related breeding-success and predation in Danish Grey partridge.

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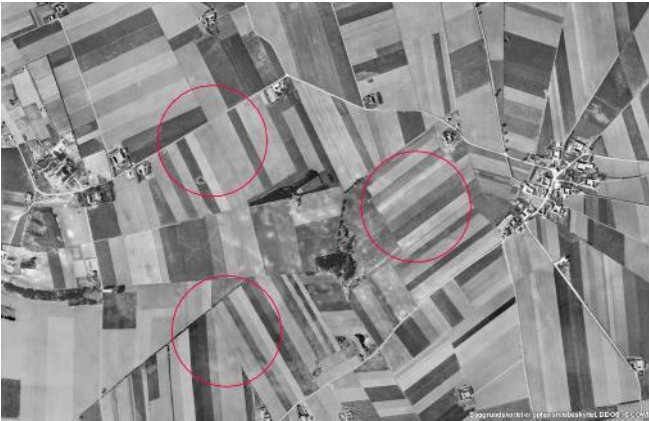


Study objectives

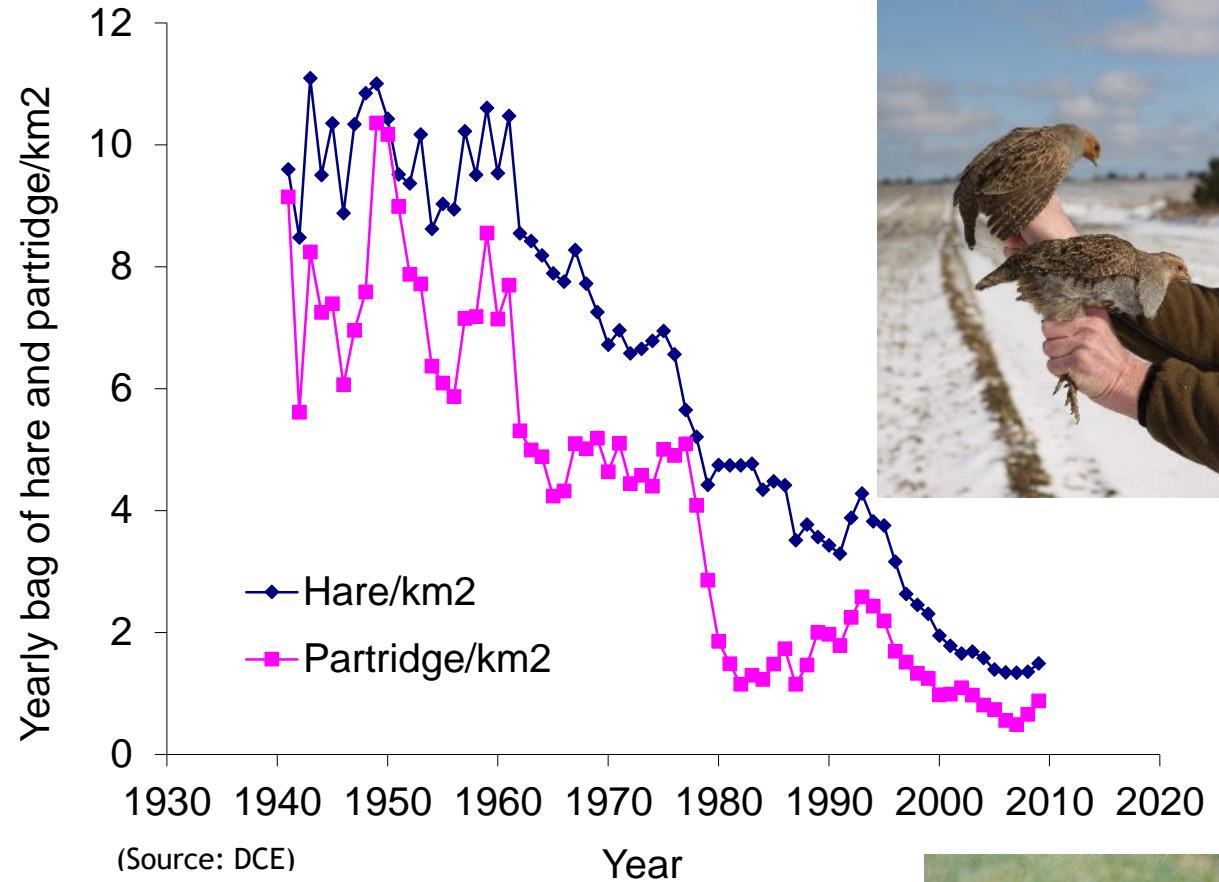
- Dispersal
- Nest site selection
- Breeding success
- Mortality and predation

A tragic story: The decline of the farm land game in Denmark and the need of a management plan based on national research results.

1954



2008



Methods: Capture and radio marking



Pre-bating:
December - January

Capture:
February

In areas with no
known history of
released farmed
birds

VHF Radio Collar Applied

Biotrack with mortality sensor

Weight 11-12 g

Captured :
161 birds.

Radio
collared :
91 female
Birds
(13 excluded)



Peninsula
"Djursland"
Area 1500
km²

New knowledge:

**Pre mating
dispersal up
to 22,5 km.**

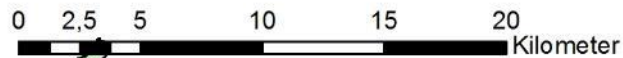
Nest
location
(*B. success*)

Nest
locations

22,5 km beeline

Capture
location

**Potential for
natural
recolonization**



Winter location: intensive agricultural area (large fields with rape seed).

Pattern of dispersal in 18 pairs of marked Grey Partridges from location of capture (February) to location of nest (far end of yellow lines).

Breeding location: Agricultural areas with small field size and a mosaic of small natural biotopes



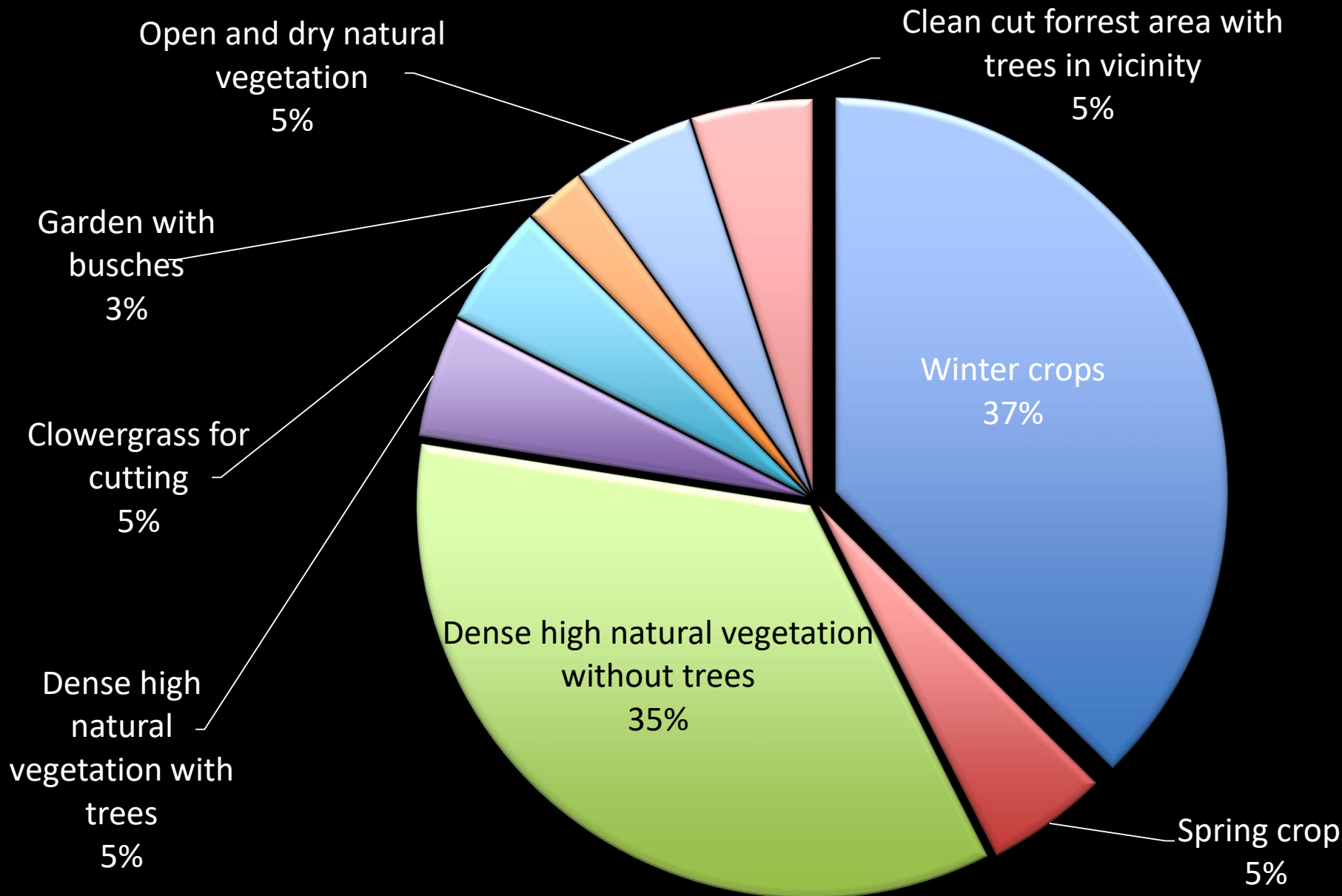



Winter location: intensive agricultural area (large fields with rape seed).

Typical nest site selection - conventional dence winter weat fields. No nests near headrows!



Nest location in Danish Grey Partridges (% , N=40)





Cover is of primary concern for choice of nest location. Conventional crops apply.

Secondary, but in the modern landscape, the most rare element - the good chicken biotope.



Typical nest location in natural vegetation often between tussock grass, blackberry, raspberry and other perennial herbs.

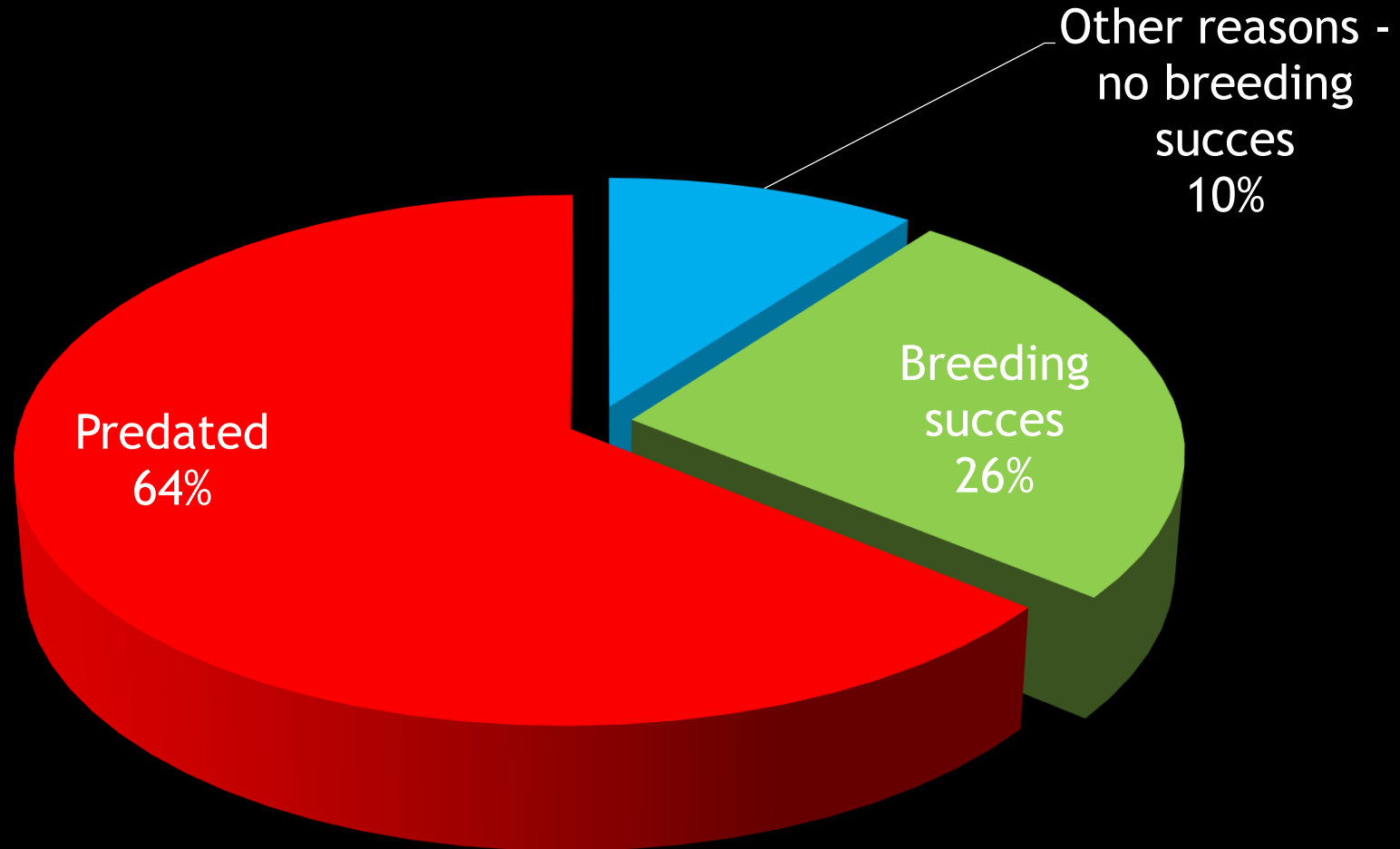
Predation



Exceptional exposed to predation as a ground nesting bird. Typical incubation period 1.-24. June (first attempt)

Predation and breeding success in Grey Partridge February - September (N=78)

(Mowing, traffic,
infertile eggs,
unknown)



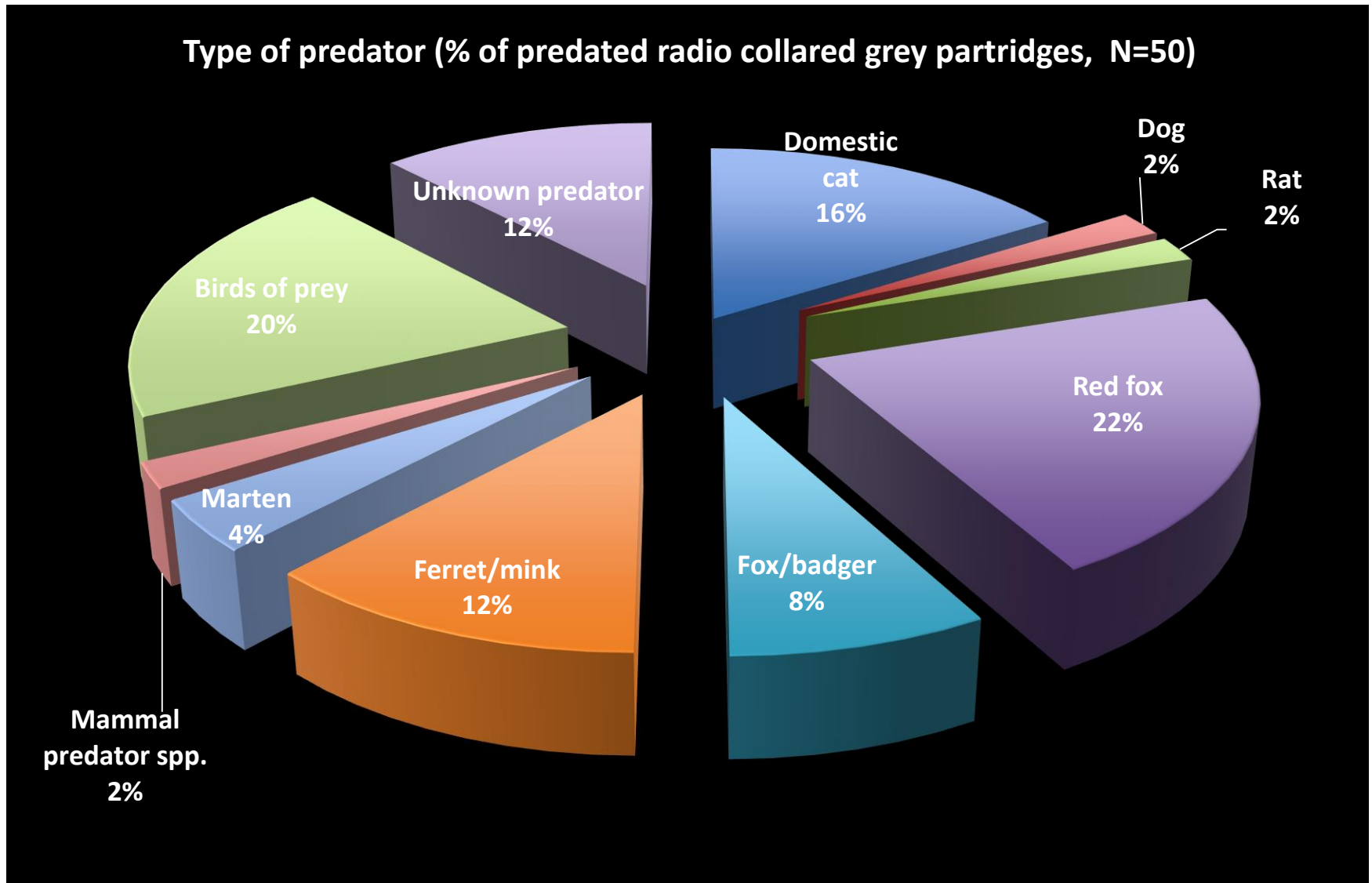
Calculated according to UK terminology - Nest loss (during incubation period only) = 52%, N=58

Predated by
Marsh Harrier
(*Circus aeruginosus*)

assica rapa and spring barley

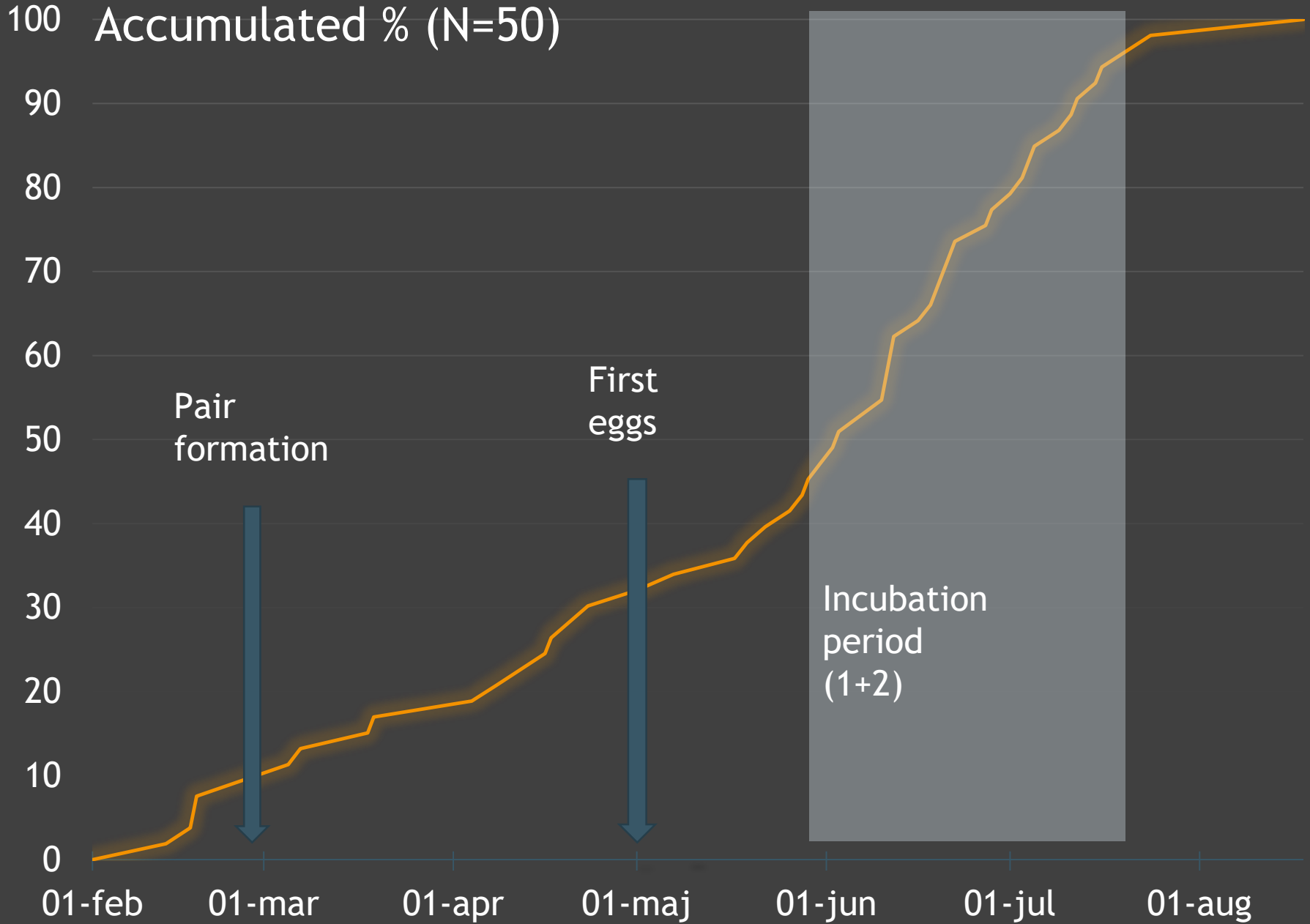
Carsten Riis Olesen

Plenty of generalist predators!



No corvid predation before hatching!

Seasonal variation in predation of Danish Grey Partridges. Accumulated % (N=50)



Future management - conclusions:



Financial support

- Predation is limiting production in Danish grey partridge. Important to regulate generalist mammal predators.
- Reduce the number of tall trees and other ecological traps.
- Nest site is the least concern, birds adapt. Primary concern is the lack of areas in the modern agricultural landscape, suitable for raising partridge chicks. Prioritize the creation of a mosaic landscape of small areas with open- and species rich vegetation of flowering herbs and a diverse insect fauna

End of speech



| | 2013 | 2014 | 2015 | SUM | | |
|---|-----------|-----------|-----------|-----------|------------|------------|
| | Antal | Antal | Antal | Antal | Procent | Delprocent |
| Indgår i undersøgelsen | 8 | 29 | 41 | 78 | 100 | |
| Ynglesucces (overlevelse af mærkede høner med kyllinger februar-september) | 1 | 5 | 14 | 20 | 26 | |
| Præderet i alt | 6 | 21 | 23 | 50 | 64 | 100 |
| Før rugeperiode | 1 | 11 | 7 | 19 | | 38 |
| I rugeperiode | 5 | 8 | 10 | 23 | | 46 |
| heraf høne og æg | 4 | 6 | 5 | 15 | | 65 |
| heraf alene æg | 1 | 2 | 5 | 8 | | 35 |
| Efter klækning | | 2 | 6 | 8 | | 16 |
| Andre årsager til manglende ynglesucces (af alle anvendte) | 1 | 3 | 4 | 8 | 10 | |
| Forsvundet (under migrering) før/under udparring | | 1 | | 1 | | |
| Forladt rede pga. græsslæt | | 1 | 1 | 2 | | |
| Forladt rede pga. ubefrugtede æg | | 1 | | 1 | | |
| Forladt rede af ukendte årsager (ikke omlagt) | 1 | | 2 | 3 | | |
| Trafik | | | 1 | 1 | | |
| Mærkede i alt (inklusive ikke anvendte) | 11 | 37 | 43 | 91 | | |
| Tabt, forsvundet, omkommet < 1 uge efter mærkning | 1 | 6 | 2 | 9 | | 14 |
| Præderet i fælde | | 1 | | 1 | | |
| Forladt rede pga. menneskelig forstyrrelse | 1 | 1 | | 2 | | |
| Defekt radiohalsbånd | 1 | | | 1 | | |

Prædatoropgørelse

| | 2013 | 2014 | 2015 | <u>SUM</u> | |
|-----------------------|----------|-----------|-----------|------------|------------|
| | Antal | Antal | Antal | Antal | Procent |
| Præderet i alt | 6 | 21 | 23 | 50 | 100 |
| Kat | 2 | 2 | 4 | 8 | 16 |
| Hund | | | 1 | 1 | 2 |
| Rotte | | | 1 | 1 | 2 |
| Ræv | | 5 | 6 | 11 | 22 |
| Ræv/Grævling | 1 | 2 | 1 | 4 | 8 |
| Ilder/mink | 1 | 2 | 3 | 6 | 12 |
| Mår | | 1 | 1 | 2 | 4 |
| Rovpattedyr spp | | 1 | | 1 | 2 |
| Rovfugle | 2 | 2 | 6 | 10 | 20 |
| Ukendt prædator | | 6 | | 6 | 12 |



| | 2013 | 2014 | 2015 | SUM | |
|--|----------|-----------|-----------|-------|------------|
| | Antal | Antal | Antal | Antal | Procent |
| Rugende fugle i alt | 7 | 12 | 21 | 40 | 100 |
| Vinterafgrøder | 4 | 3 | 7 | 14 | 35 |
| Vårafgrøder | 1 | 1 | | 2 | 5 |
| Tæt-høj naturlig vegetation uden træer | 2 | 4 | 7 | 13 | 33 |
| Tæt-høj naturlig vegetation med træer | | 1 | 1 | 2 | 5 |
| Tæt kløvergræs til slæt | | 1 | 1 | 2 | 5 |
| Havebed med buske | | 1 | | 1 | 3 |
| Løs-tør naturlig vegetation | | 1 | 1 | 2 | 5 |
| Skovafdrift med træer i nærheden | | | 3 | 3 | 8 |
| Hundegræs og kørvel | | | 1 | 1 | 3 |