

**Implications of afforestation for Hen Harriers (*Circus cyaneus*) in Ireland**

Photo by Peter Hadfield



**Dr Mark Wilson**  
School of BEES, University College Cork



**BEES**  
School of Biological, Earth & Environmental Sciences  
University College Cork, Ireland




**PLANFORBIO**  
Department of Agriculture, Food and the Marine  
Talmhaíochta, Bia agus Mara



National Parks & Wildlife Service

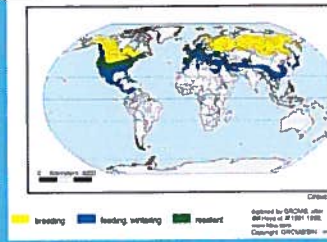
**Hen Harrier (*Circus cyaneus*)**

The most widely distributed harrier



## Hen Harrier (*Circus cyaneus*)

The most widely distributed harrier

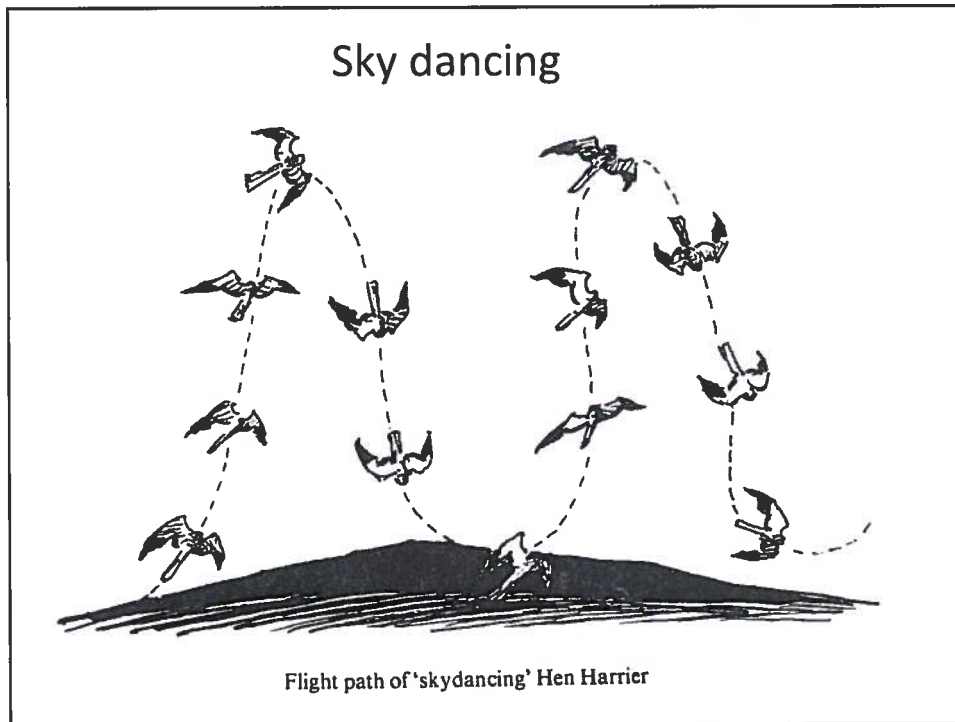


## Hen Harrier (*Circus cyaneus*)

The most widely distributed harrier


One of Ireland's rarest birds of prey





### Food passes

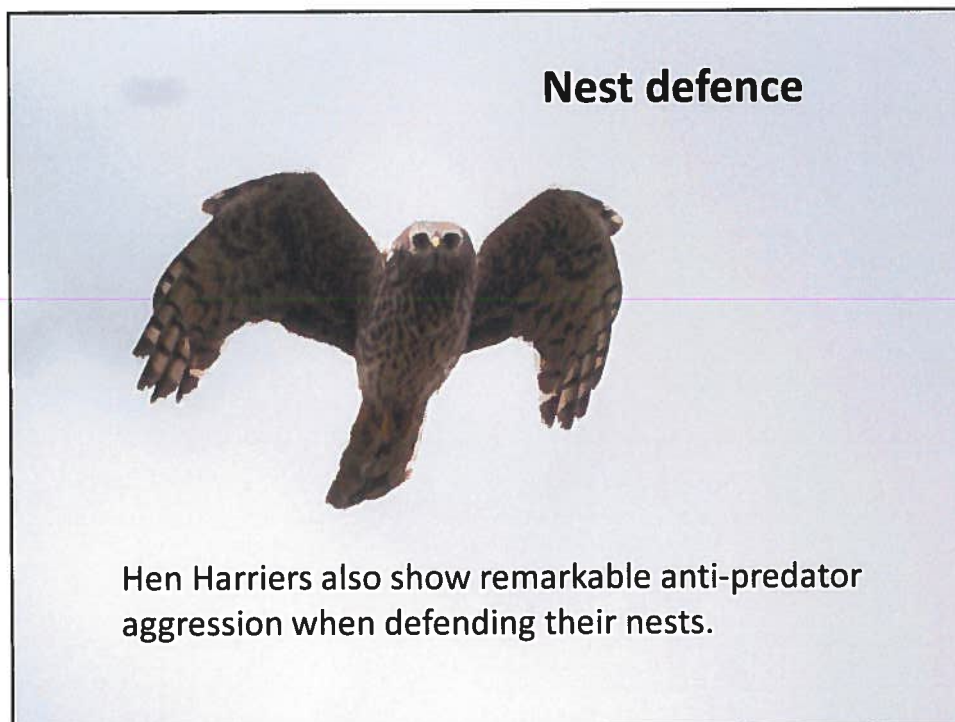
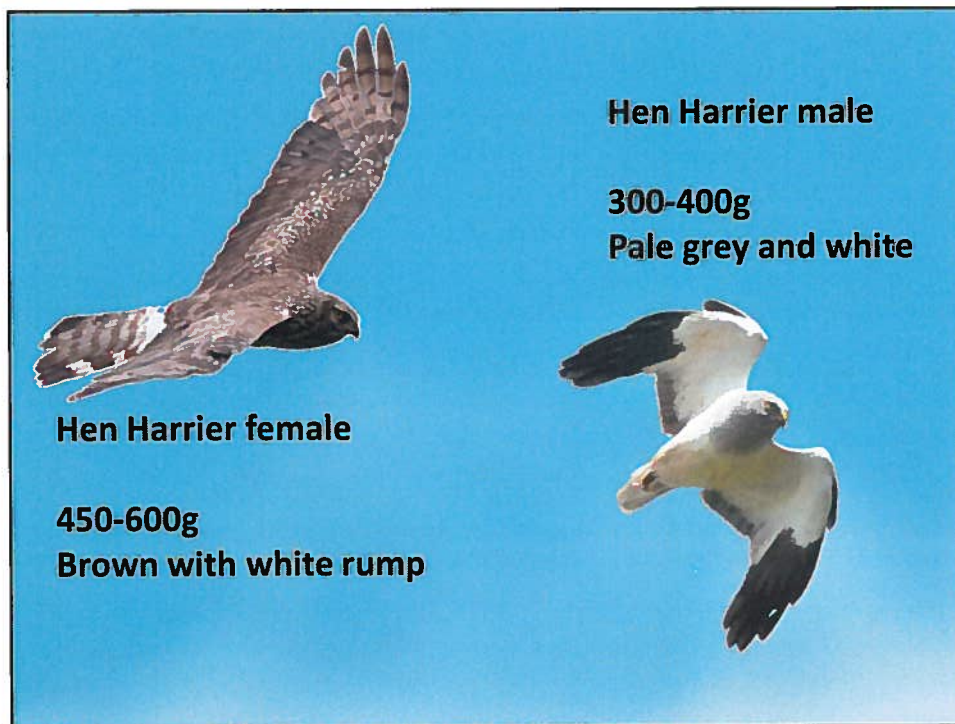
- Very adaptable hunter
- Diet dominated by small birds
- For first six weeks of nest period, males provide all the food
- Males call females up from the nest and drop food to them
- Typically caught in mid-air



"Food Pass" by Rebecca Whatmore

The illustration shows a male Hen Harrier in flight, dropping a small bird (likely a prey item) towards a female Hen Harrier below. The male is shown in profile, with its wings spread and its head tilted downwards. The female is shown from a slightly different angle, also with wings spread, looking up towards the male. The background is plain white.






16 May 2012 Last updated at 13:59 GMT ← share f t e

## Hen harriers 'being wiped out' in England by persecution

Hen harriers are close to being wiped out as a breeding bird in England, with just one pair showing signs of nesting this year, a wildlife charity said.


The Royal Society for the Protection of Birds (RSPB) said none are trying to nest in Lancashire's Bowland Fells, their only recent English stronghold.

Only four nesting pairs raised chicks last year, all in Bowland.



Hen harriers had suffered many years of decline before the recovery.

This next photo shows a hen harrier caught in one of the illegal traps that had been laid out on Moy Estate. The picture is slightly blurred but we can forgive the photographer, given the circumstances:




## Hen Harrier Disaster on United Utilities Land

-1 0 0 Tweet 0

**Harriers dead and gone within days of warden leaving estate**

This morning I was dragged out for a walk by Mrs Adma. She mentions I spend far too much time in front of the computer, and she's probably right. I do need some exercise, but important news of a disaster on a United Utilities estate in Bowland needed a write-up. So as we trudged along over hill and dale, I tried to explain to her what had happened.

"Last night I got news that some hen harriers on United Utilities land had disappeared. There were two adults, and three chicks in their nest last week. Now there's just one dead chick in the nest, and no sign of the rest of the birds."



The dead Hen Harrier which arrived by post at the offices of The Kerryman last week was most likely shot by a rifle, it was claimed this week.

By Aidan O'Connor

The dead Hen Harrier which arrived by post at the offices of The Kerryman last week was most likely shot by a rifle, it was claimed this week.

The bitter row involving proposed measures to zone thousands of acres of land in North Kerry to protect the rare bird took a snarlier twist when the dead Hen Harrier was sent anonymously with a copy of a newspaper article.

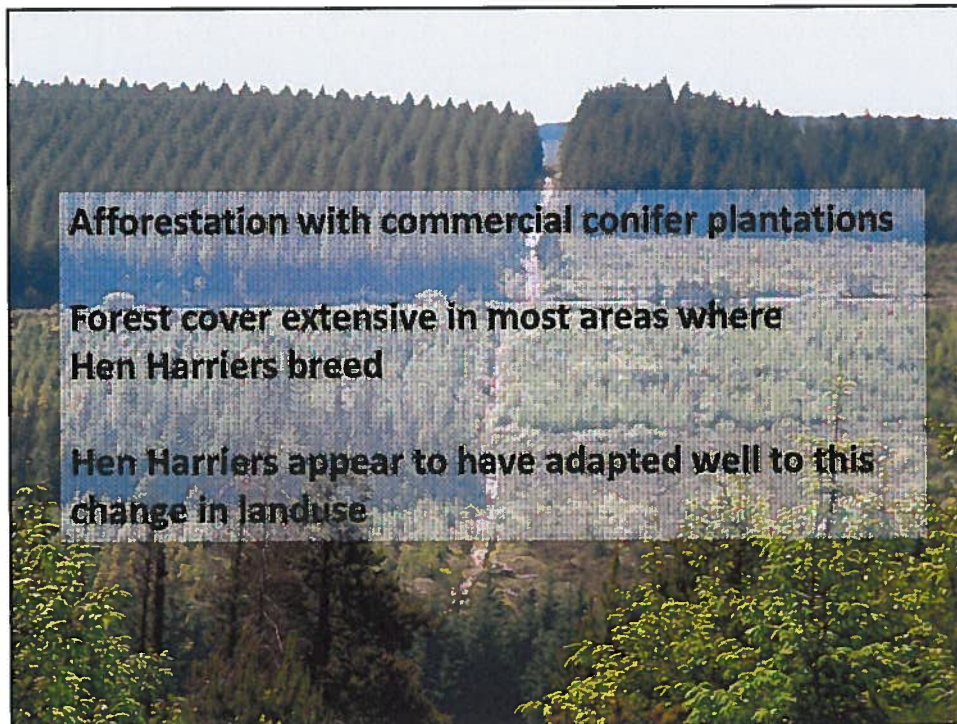
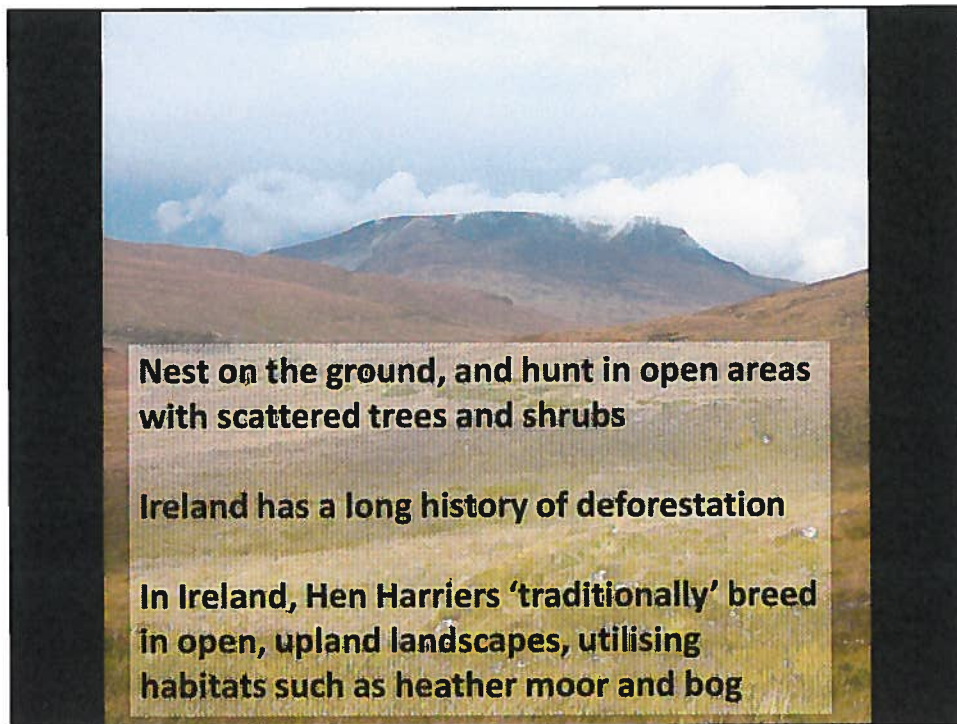
The dead harrier was inside a sealed cellophane zip lock bag, blooded and missing a wing. So far the sender or the killer has not been identified.

A veterinary inspection carried out the two-year-old male bird found that he was most likely shot by rifle at relatively close range.

## Protected by European and national law

- Hen Harrier population in Europe is constrained by historical and ongoing impacts
- Hen Harriers are on Annex 1 of the Directive 2009/147/EC, known as the Birds Directive
- Requires member states to take steps to protect this species to ensure population is maintained
- These measures include designation of Special Protection Areas (SPAs)





## Commercial Forest Cycle



STAGE	PRE-THICKET	THICKET	MID-ROTATION	MATURE
AGE	4 - 9	10 - 19	20 - 29	30 - 50
	Low open canopy	Closed canopy		





## Recent population trends in Ireland

**Early 20<sup>th</sup> century:** very few breeding pairs

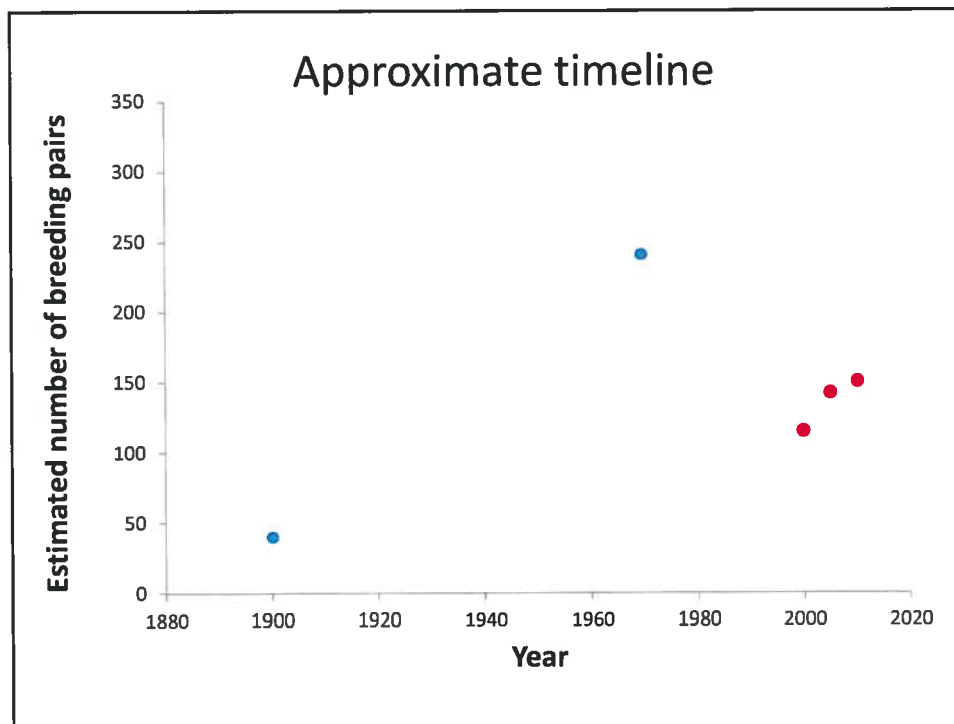
**1970:** roughly estimated as 200 – 300 breeding pairs

**2000:** 102 – 129 breeding pairs

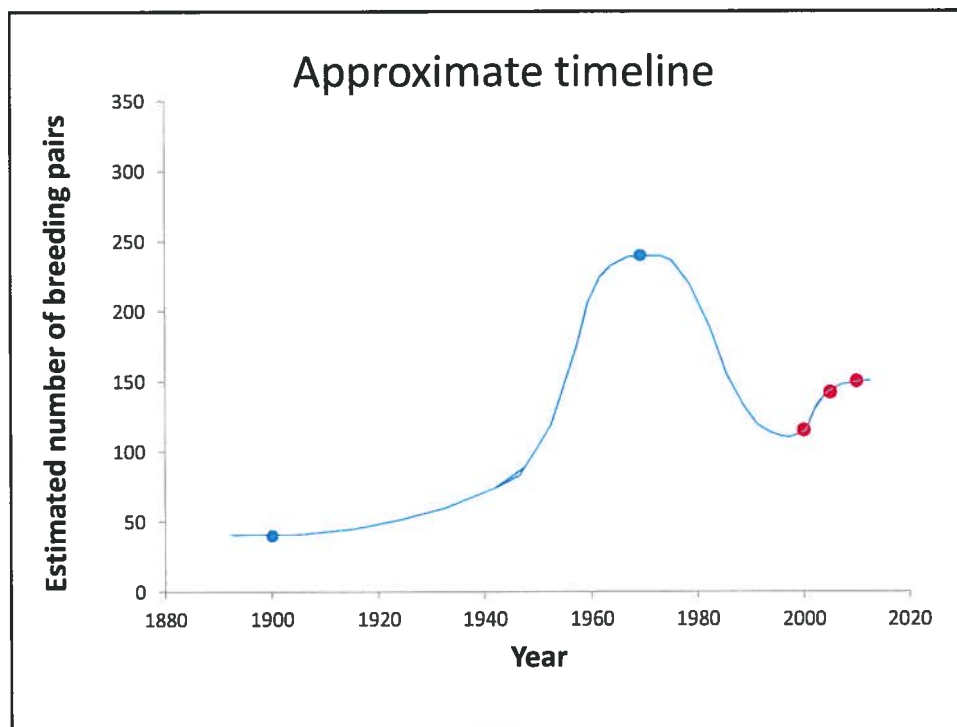
**2005:** 132 – 153 breeding pairs

**2010:** 128 – 172 breeding pairs

National Surveys







### Recent population trends in Ireland

**Early 20<sup>th</sup> century:** very few breeding pairs

**1970:** roughly estimated as 200 – 300 breeding pairs

**2000:** 102 – 129 breeding pairs

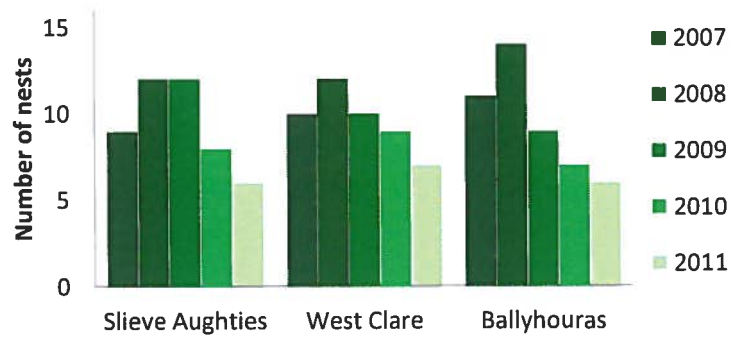
**2005:** 132 – 153 breeding pairs

**2010:** 128 – 172 breeding pairs

} National Surveys

However, greatly increased effort in 2010 survey.  
Population in SPAs decreased by 18%.

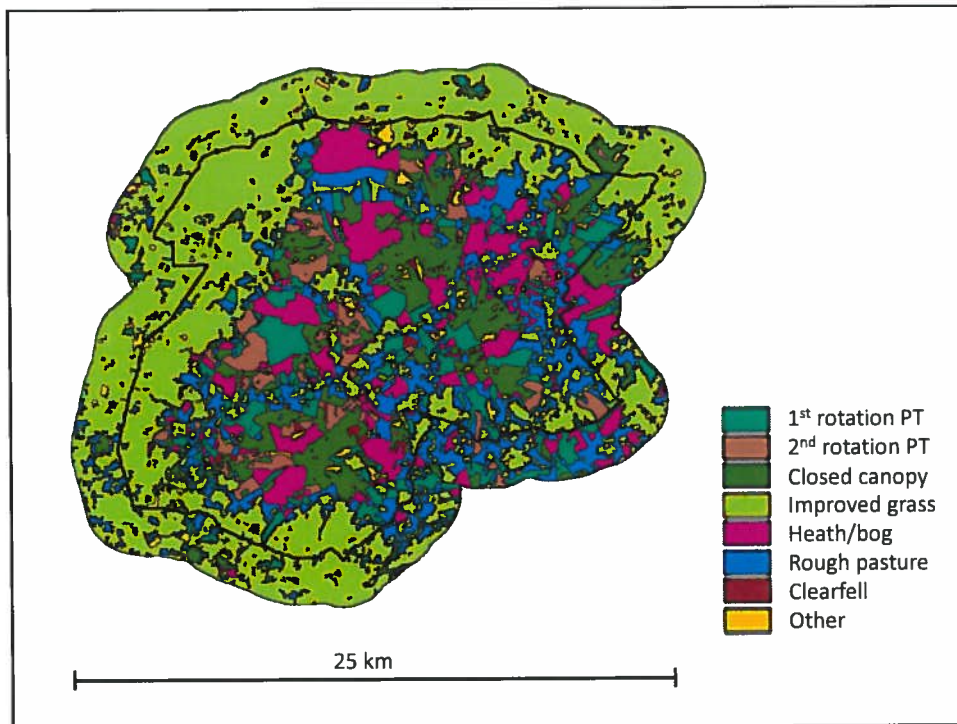
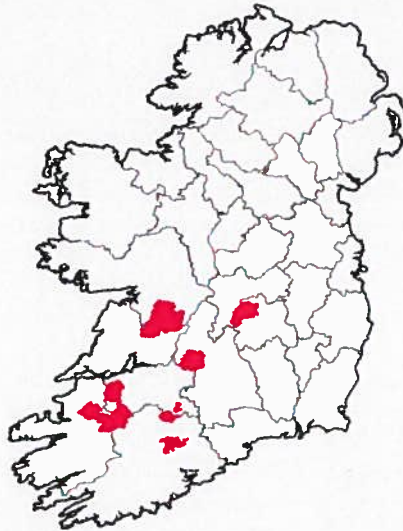
Decline in number of nests recorded over a five year period in detailed study



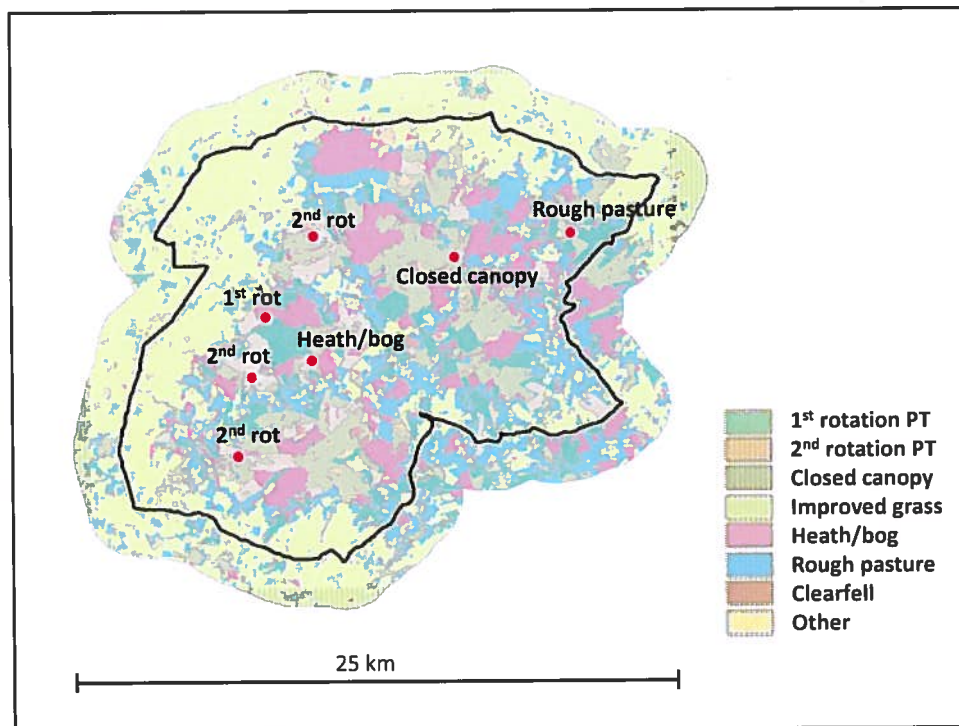
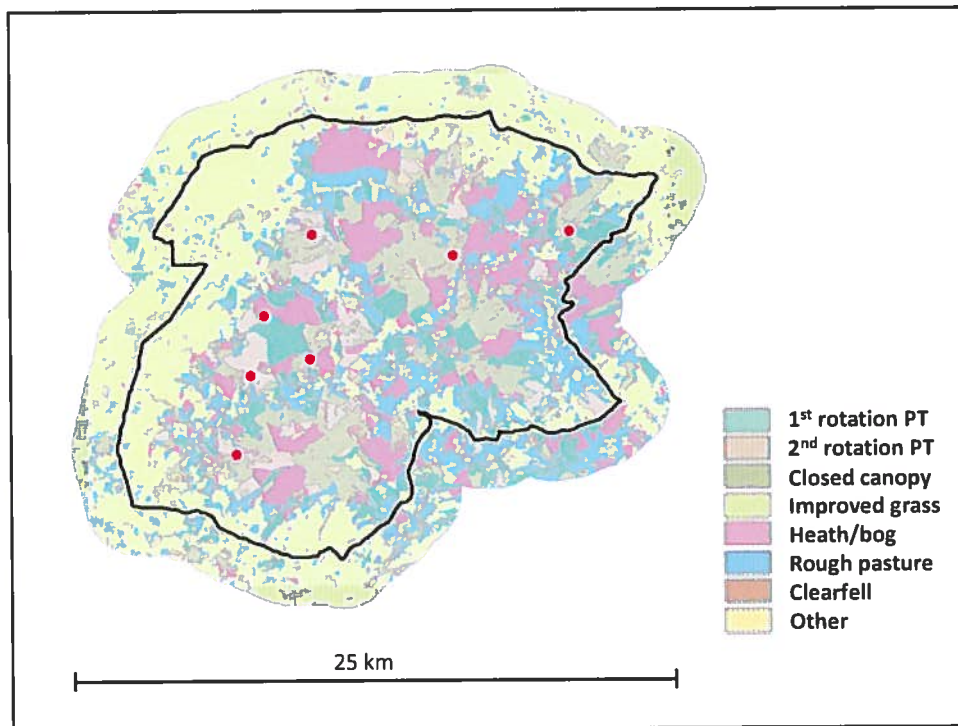
Very few juveniles recruiting into breeding population

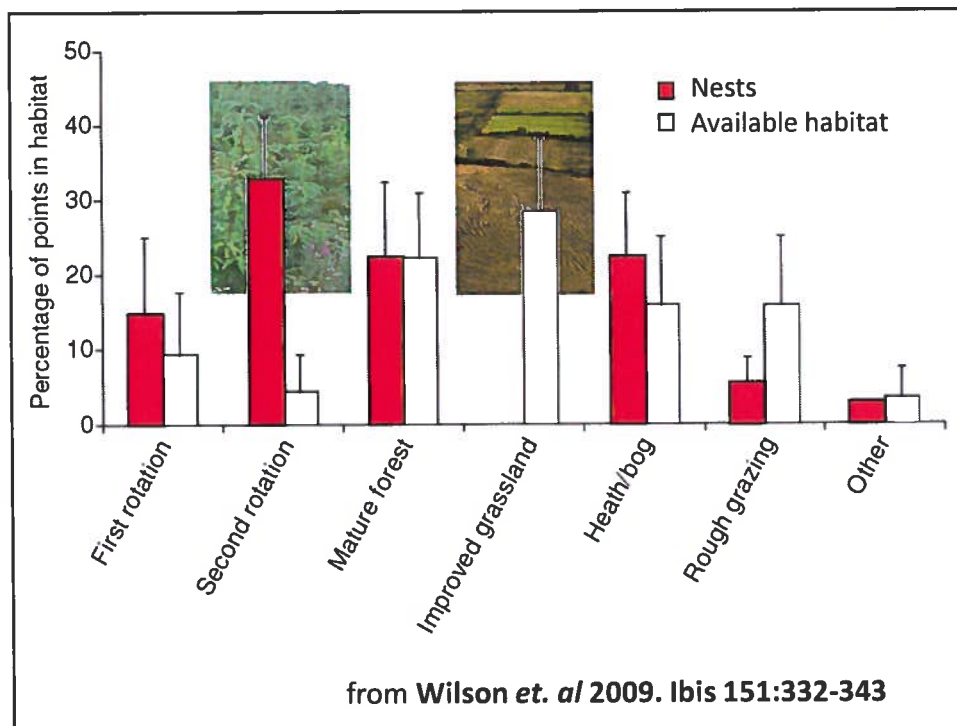
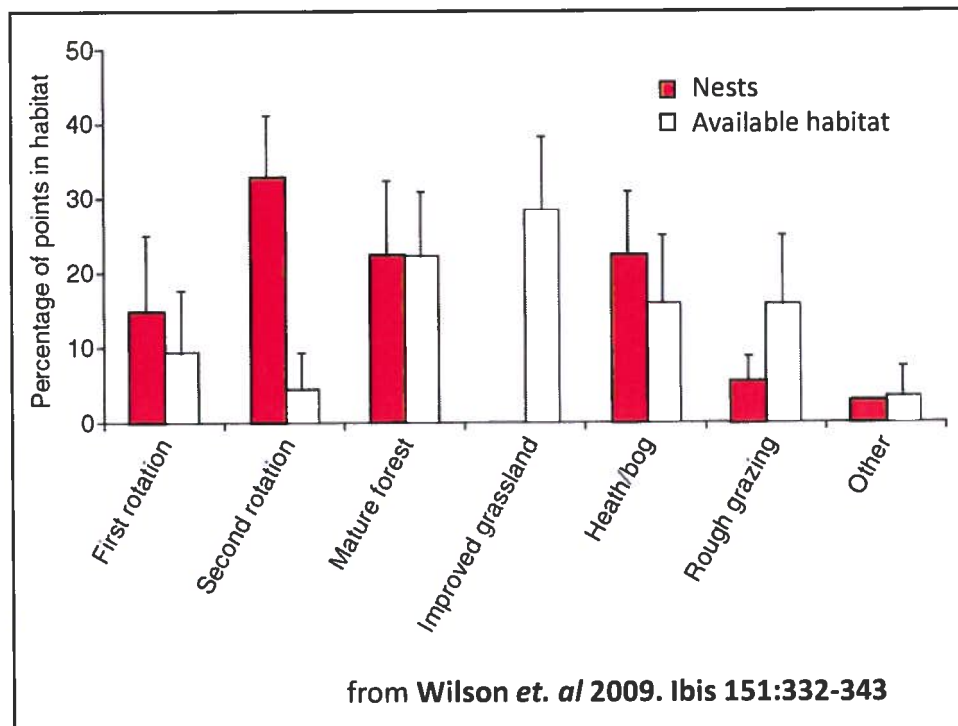


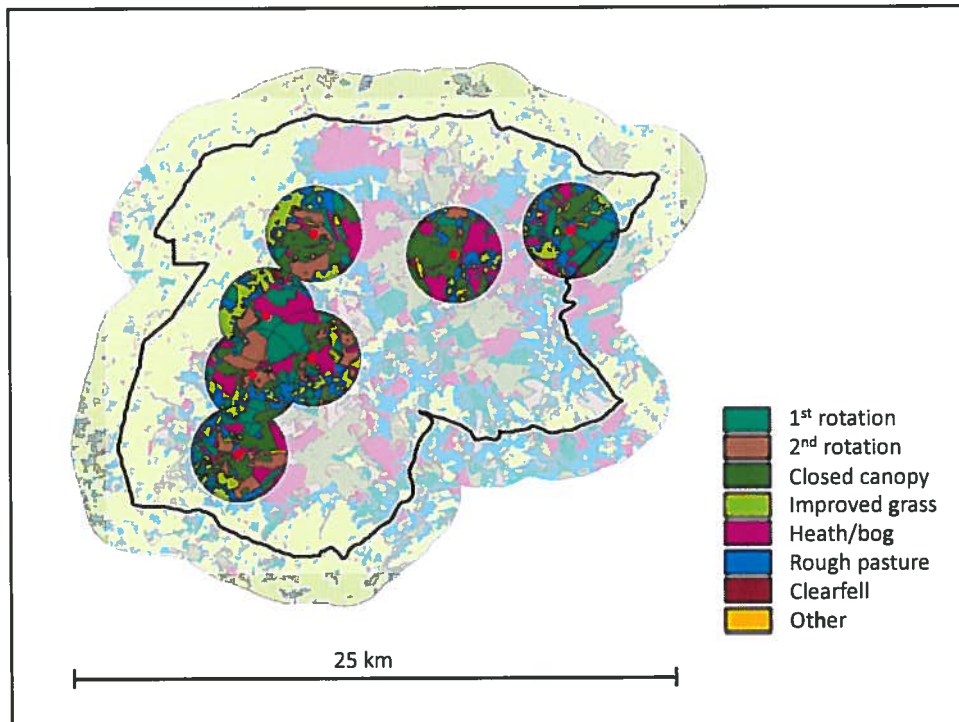
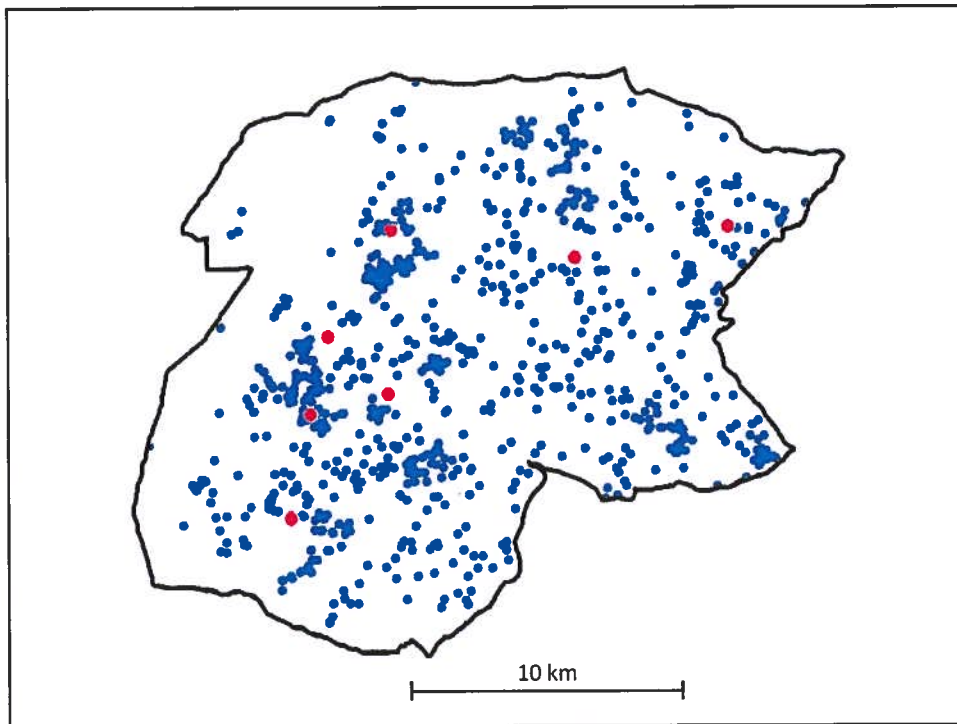
Study of nesting habitat preferences, using data from 2000 and 2005 surveys, in six largest concentrations of breeding Hen Harriers



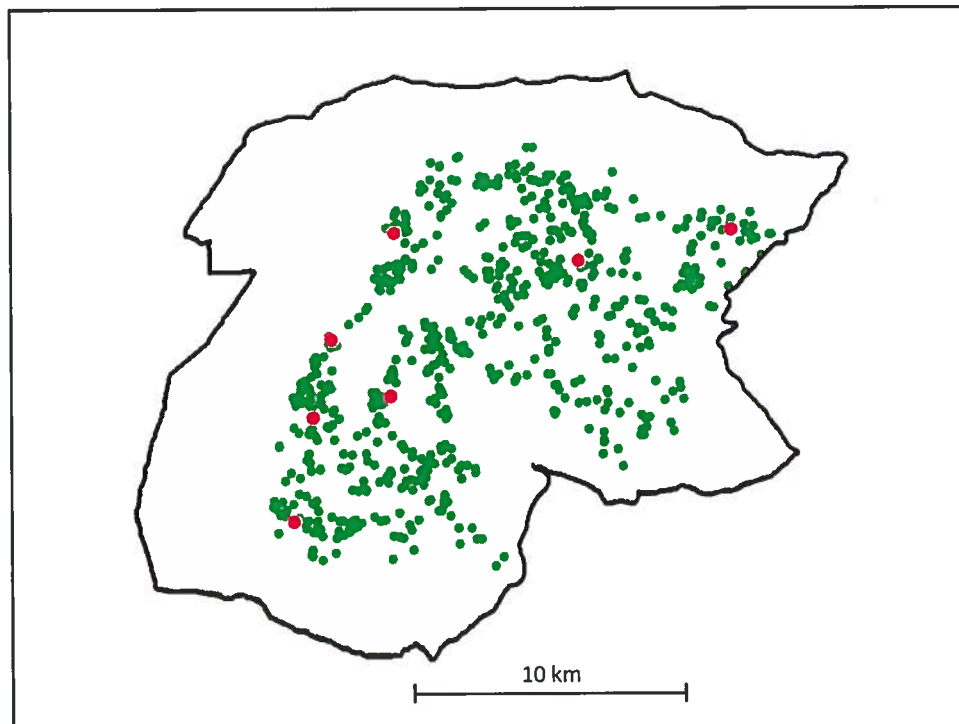
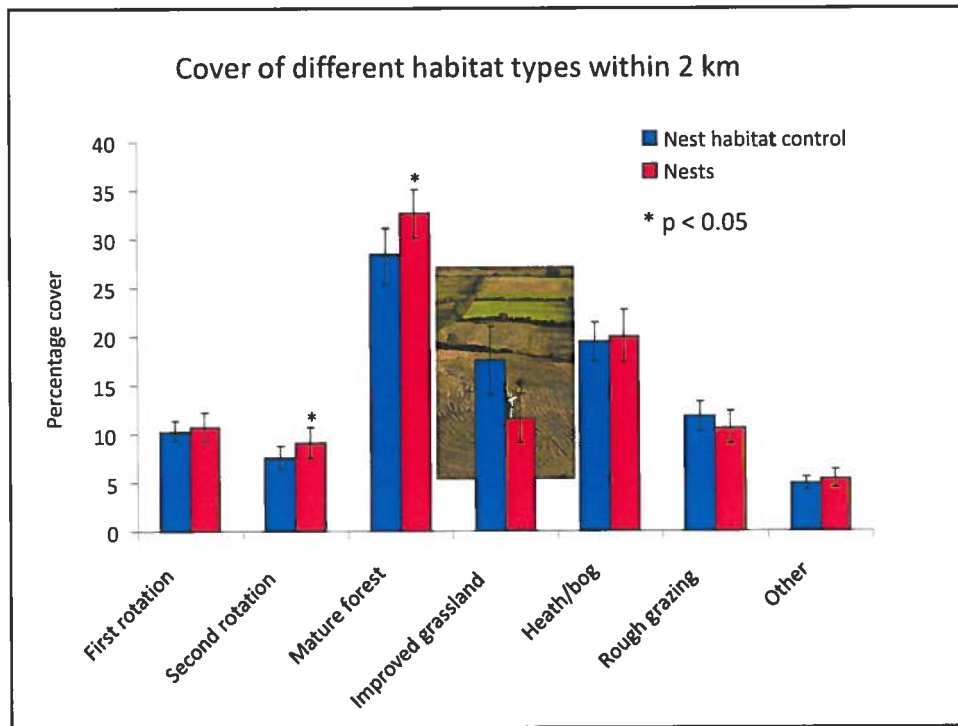


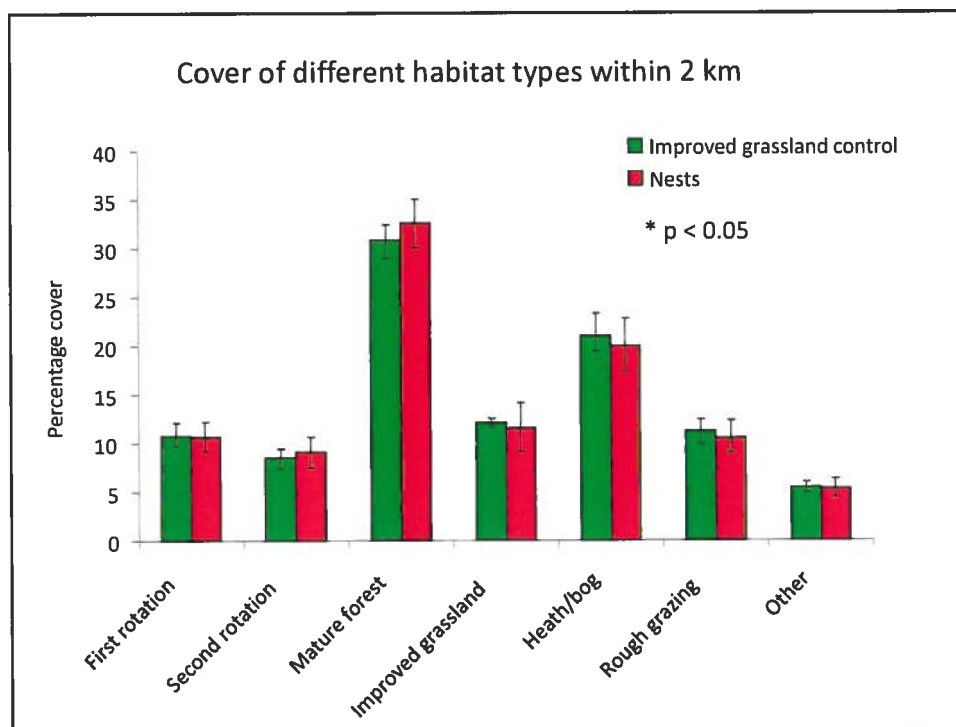








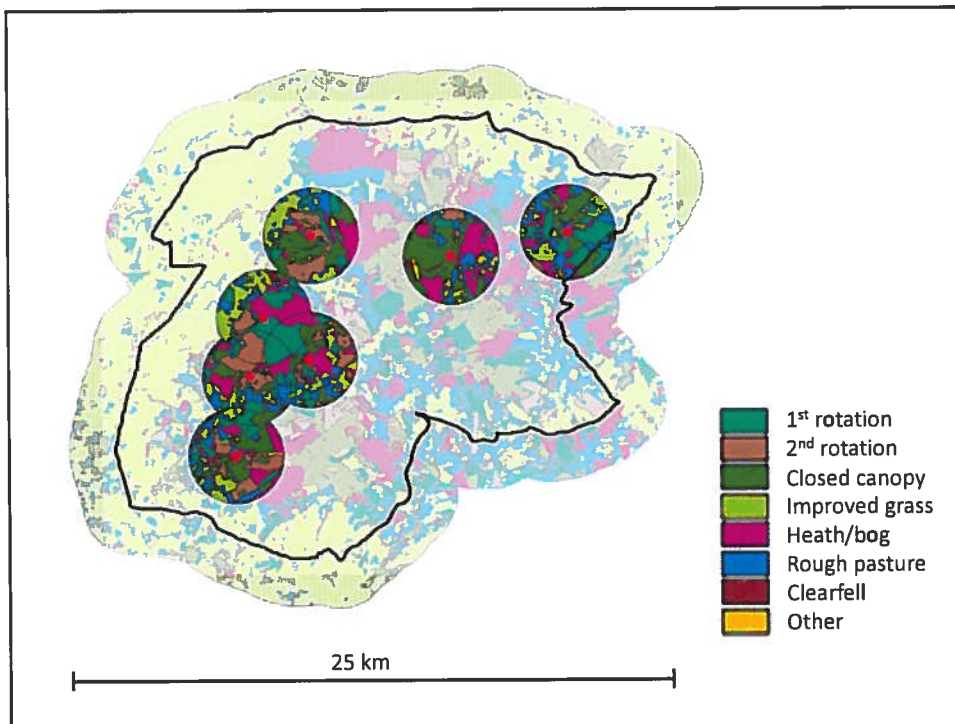
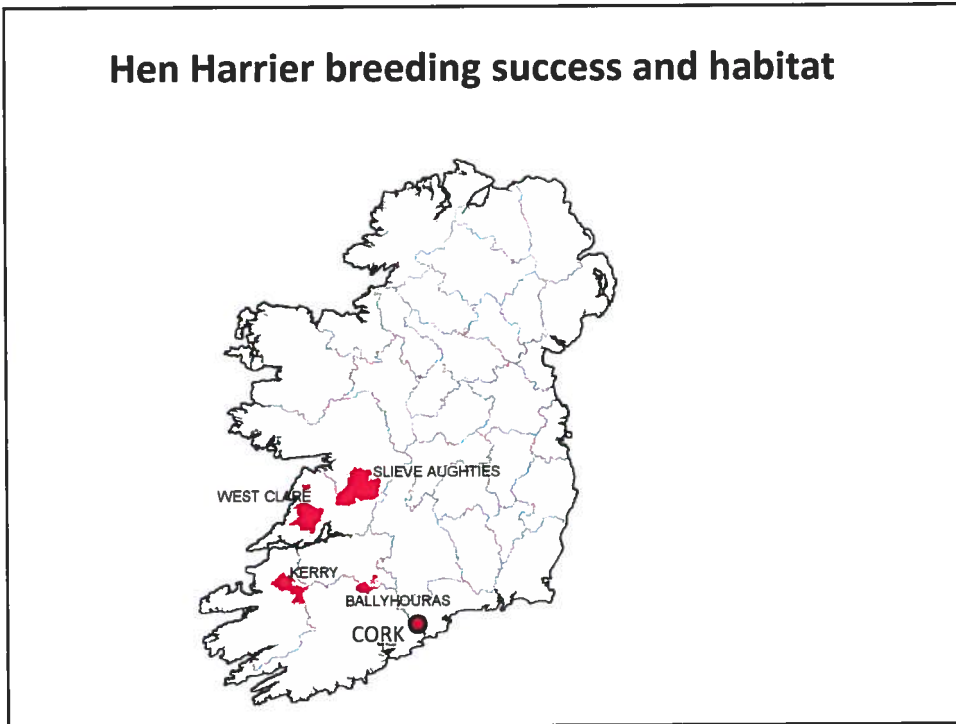




- **Hen Harriers clearly avoid intensively managed agricultural land**
- **No evidence that Hen Harriers avoid forest plantations**
- **Long-term co-existence with forestry may be possible...**
- **... provided Hen Harriers can breed and forage successfully in forested landscapes**



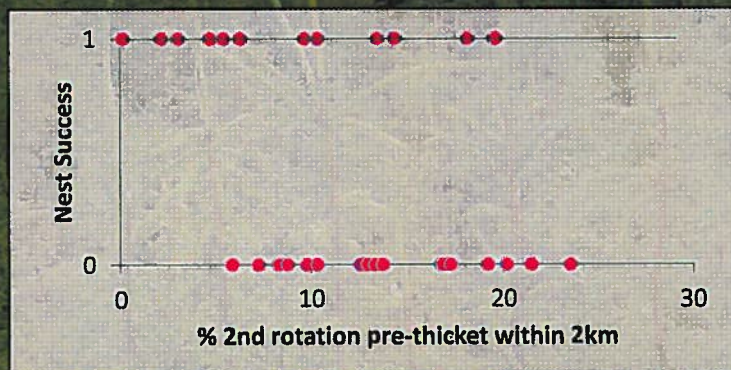
### Hen Harrier breeding success and habitat





No effect of total forest cover within 2 km on either nest success or productivity

But ...



Montagu Harrier nest in cereal field



Kirtland's Warbler



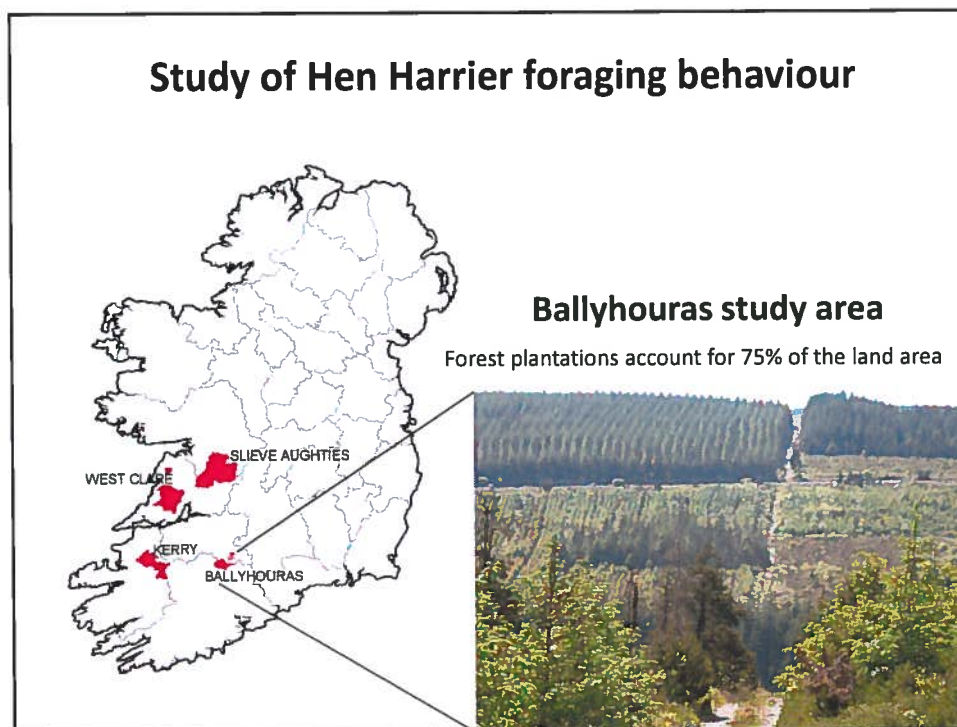
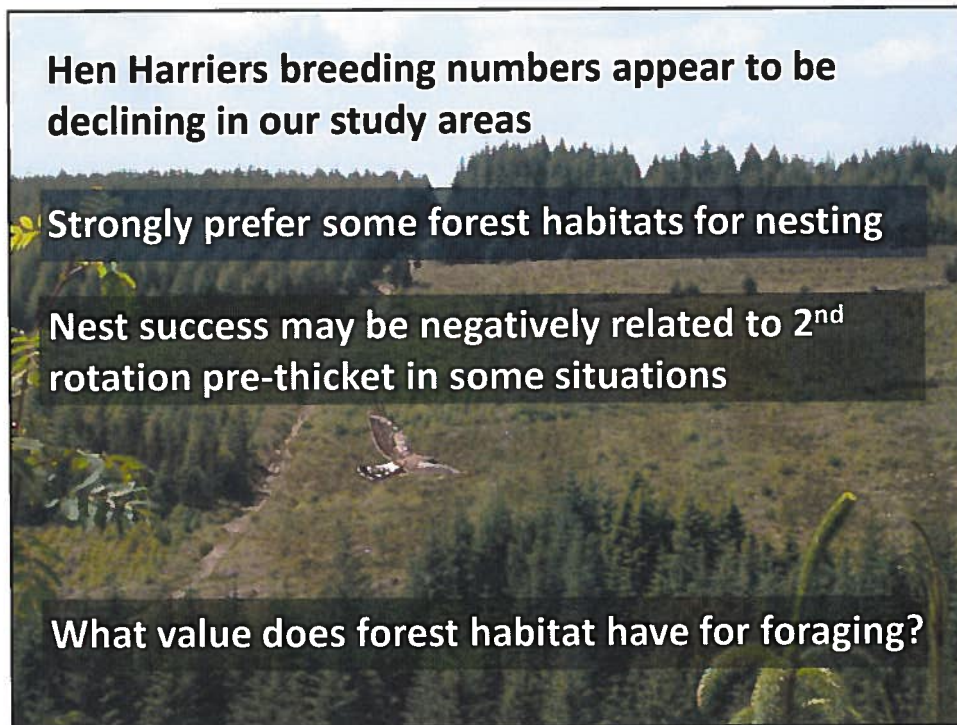
Olive-sided Flycatcher

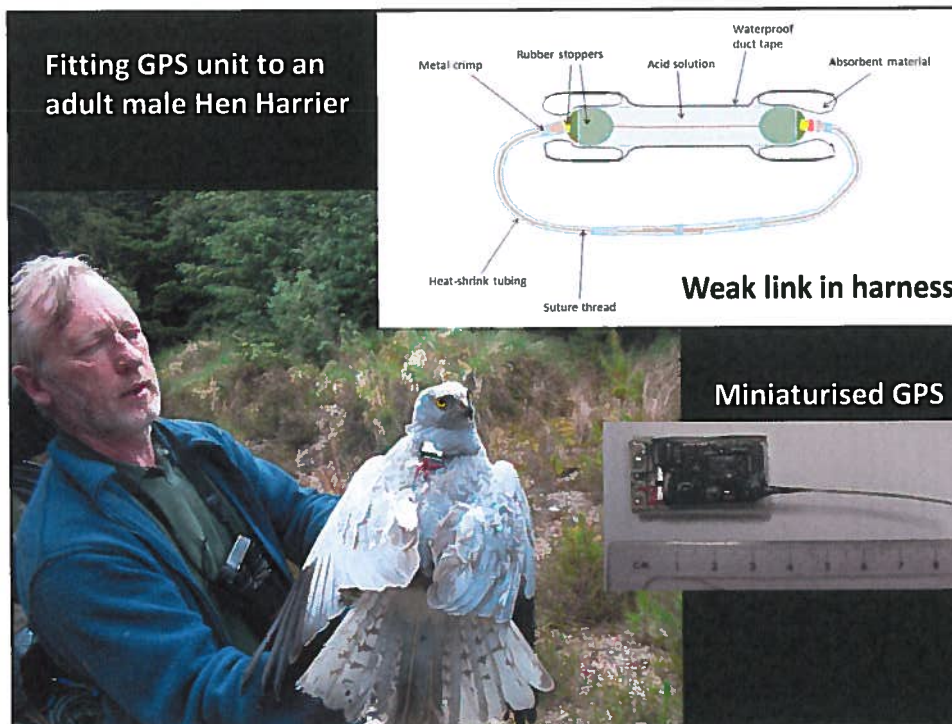
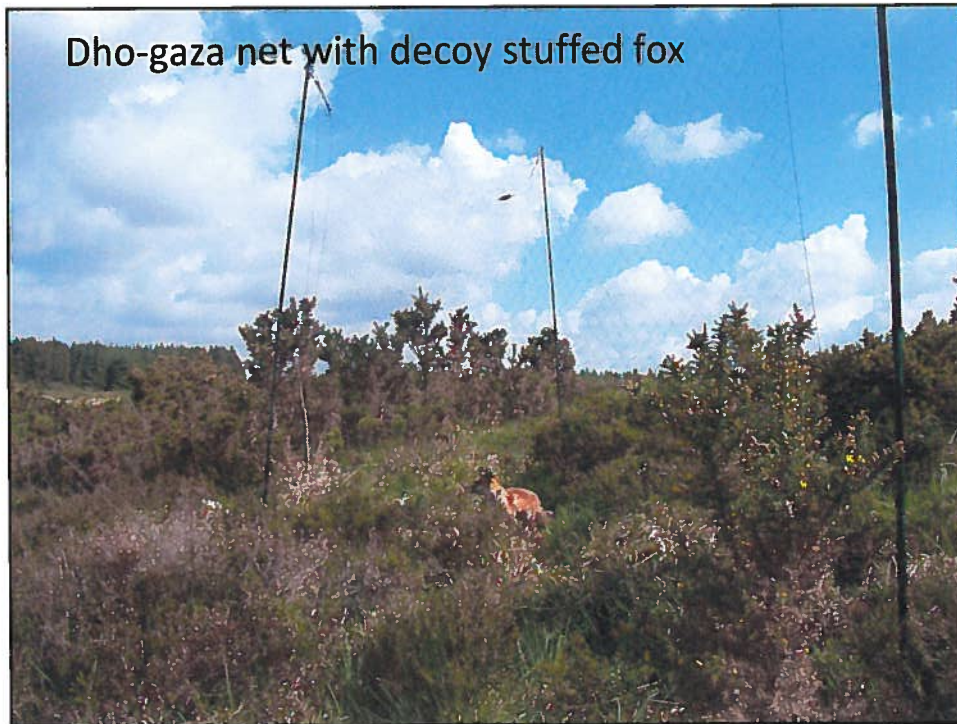


Kirtland's Warbler







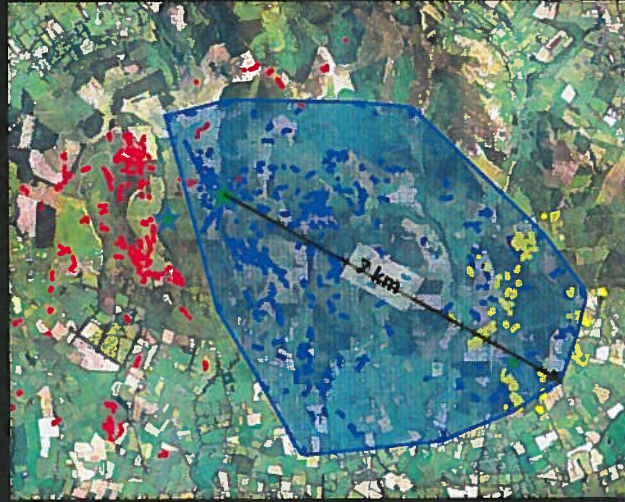
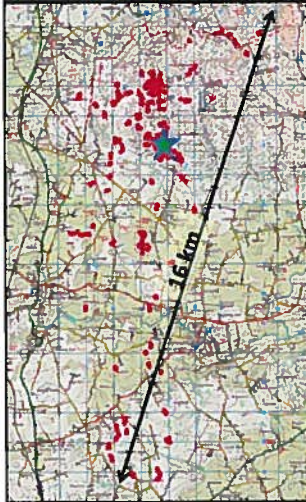




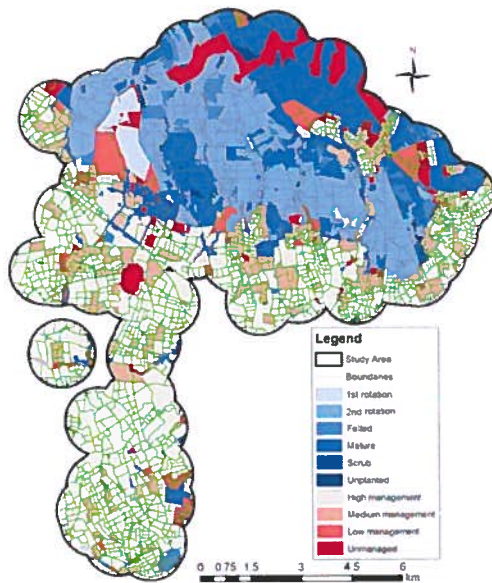
### Ranging behaviour (Ballyhouras)

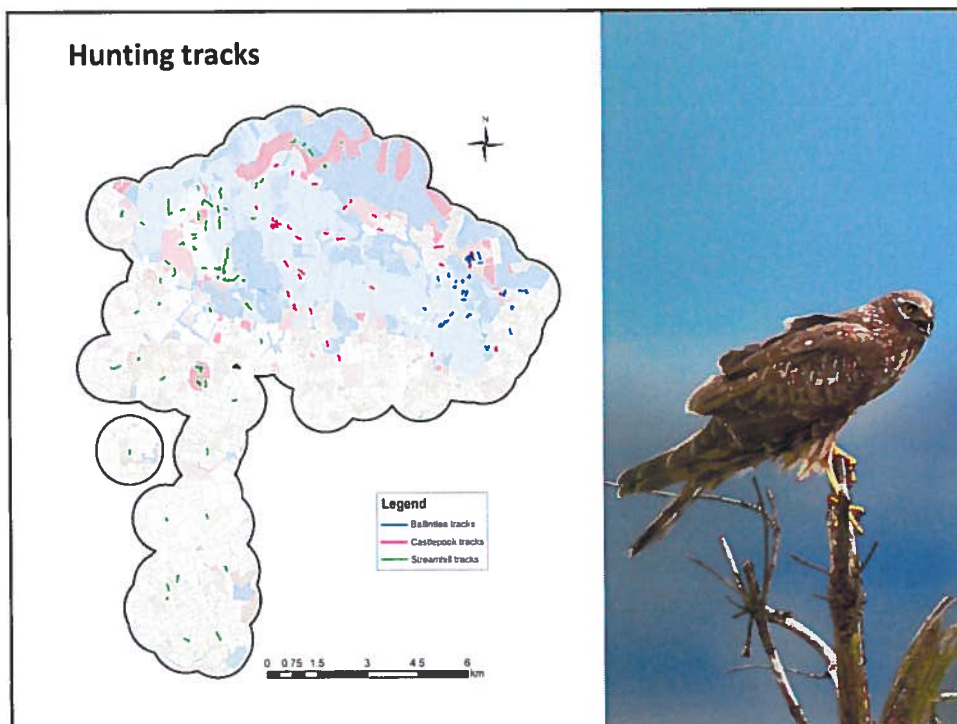
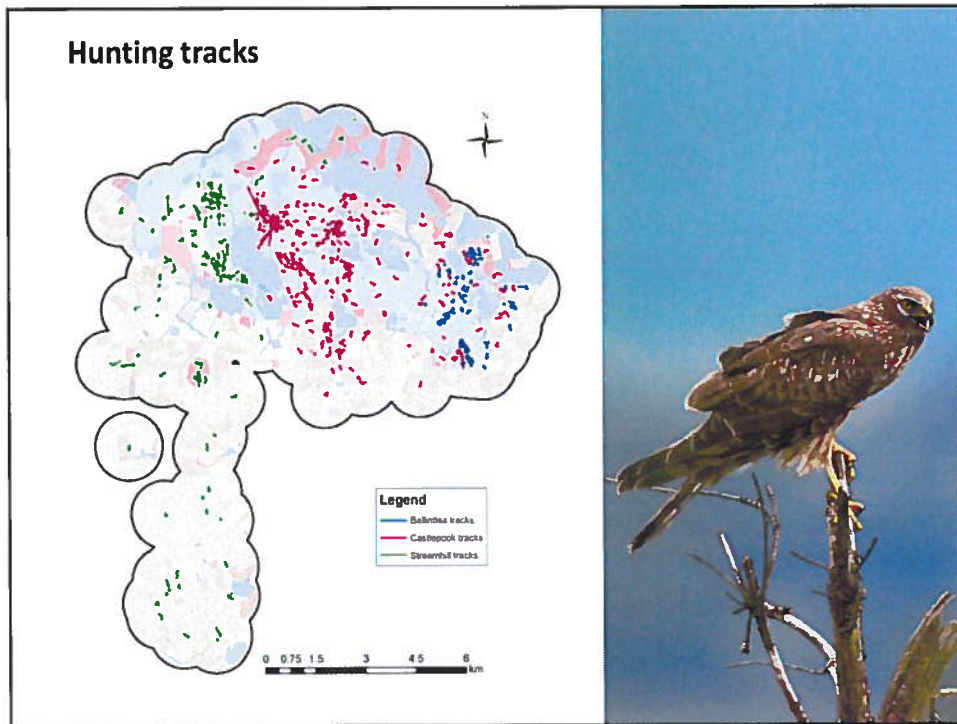
Streamhill male 2011 (red)

Castlepook female 2010 (blue)

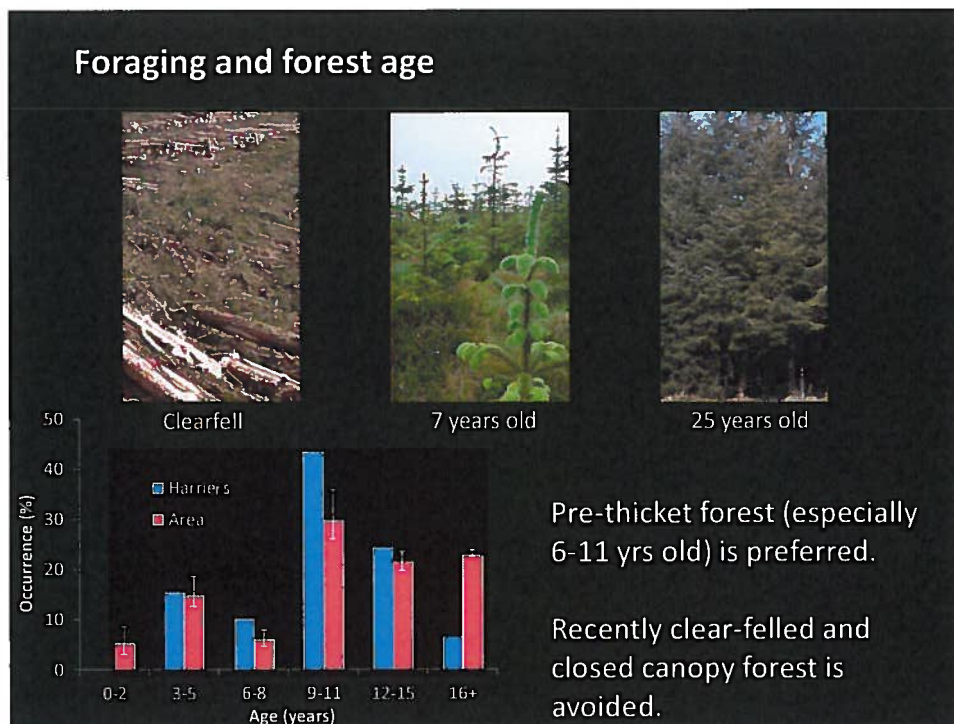
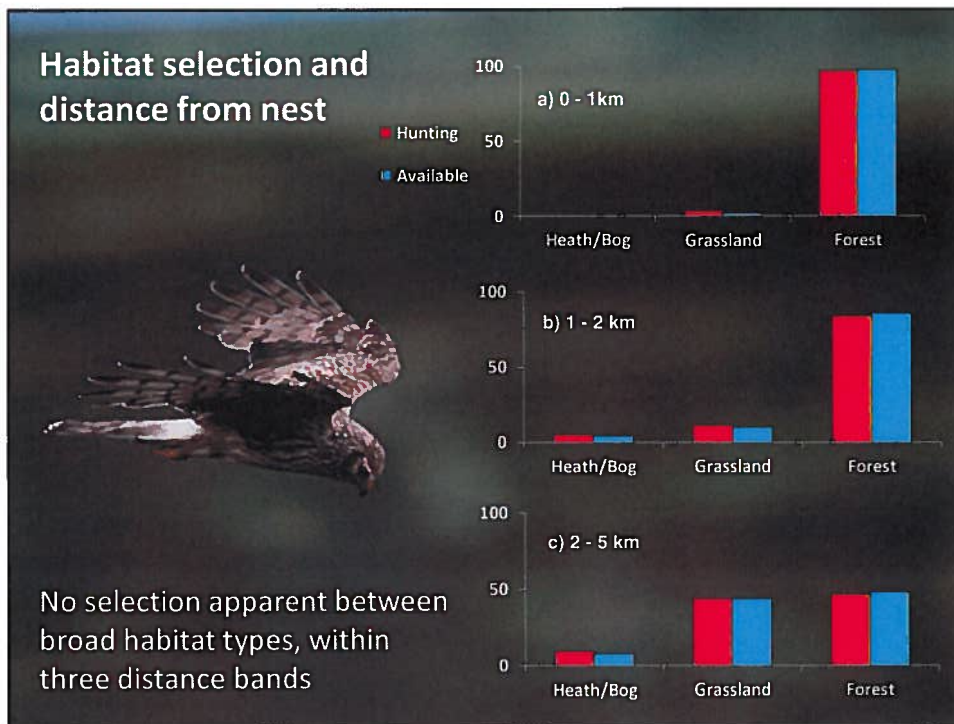


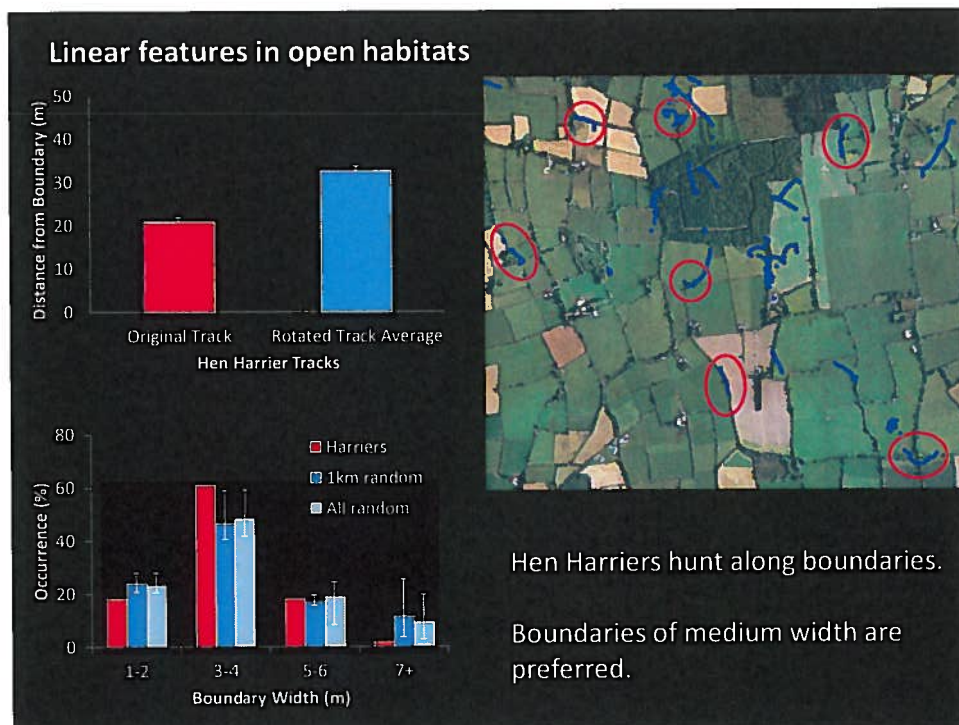
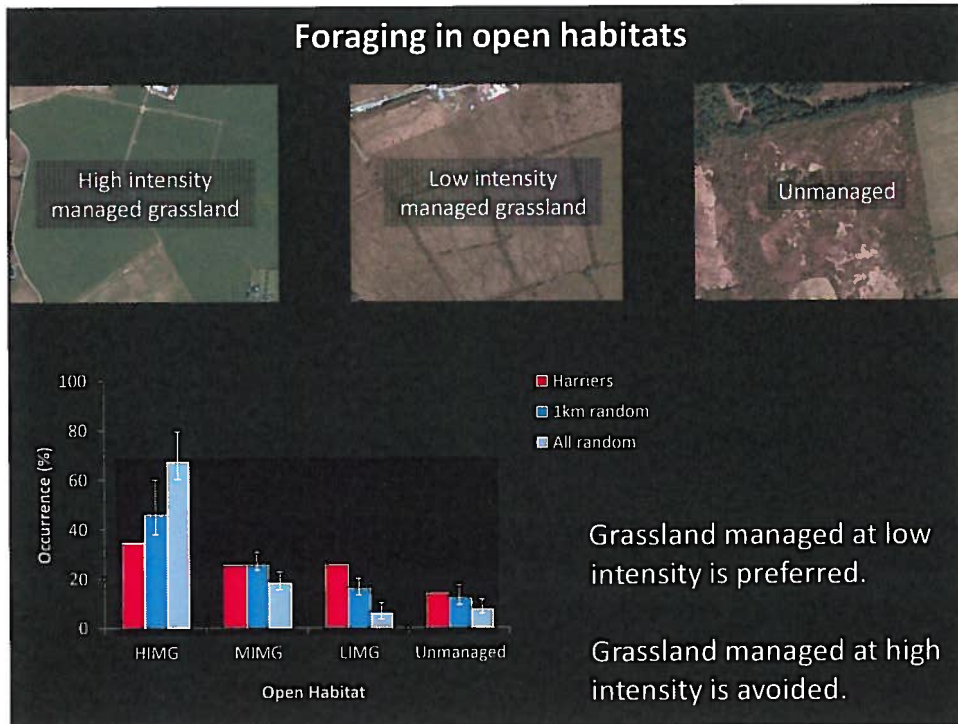
### Habitat classification













## Conclusions - Foraging

- Hunting ranges used appear to be larger than found in previous studies – maybe relatively poor habitat quality
- Young forests are strongly preferred for a five year period, but may remain useful foraging areas for up to 12 years.
- Grasslands managed at low intensity are preferred for foraging, but are often targeted for afforestation

## Questions?



Photo by Peter Hadfield

**Thanks to many collaborators, including:**  
COFORD, Coillte, Kevin Collins, Chris Cullen, Giacomo Dell’Omo, Sandra Irwin, Tom C. Kelly, David Norriss, NPWS, Barry O’Donoghue, John O’Halloran, Geoff Oliver, Barry O’Mahony, Jason Parker, Barry Ryan, David Tierney, and Paul Troake