



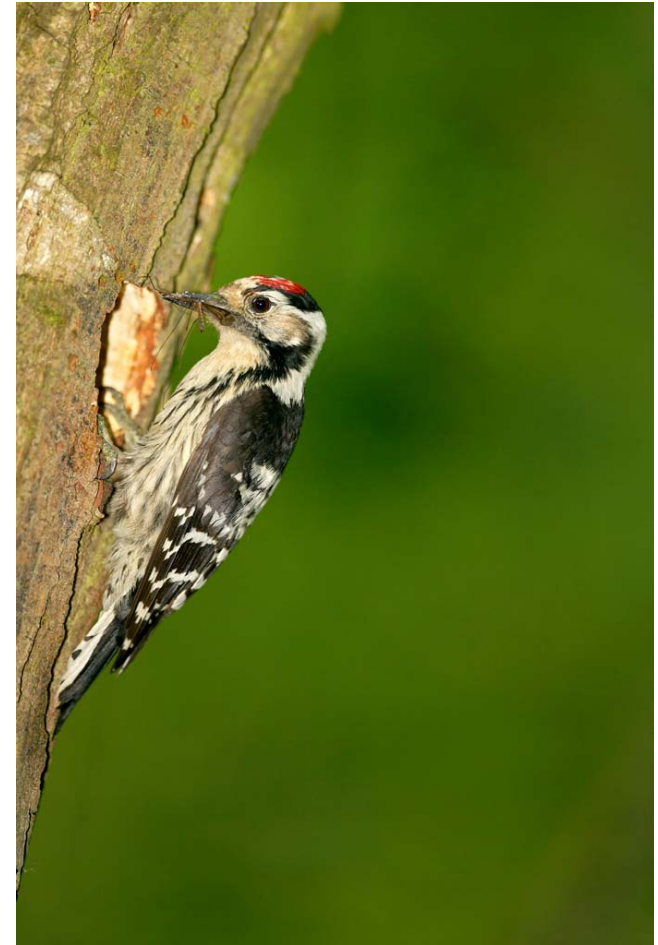
## Evidence for drivers of decline and priorities for future research

Elisabeth Charman



## Talk structure

- Defra contract CTE0805 ‘Understanding the cause of decline in breeding bird numbers in England’
- Identification of key drivers of decline
  - Habitat management
  - Deer
  - Wintering grounds
  - Climatic change
  - Food availability
- Summary of key research gaps
- Species priorities and stages of current work
- Species research gaps



Defra contract CTE0805

## Understanding the cause of decline in breeding bird numbers in England

- Reviewed the evidence for known and likely causes of decline for species in the woodland bird indicator
- Used the review process to identify priorities for future research to address key gaps in the evidence base and develop actions to reverse the declines

BTO Research Report No. 538



# Species evidence reviews

RSPB Research Report No. 37

- Lesser spotted woodpecker
- Lesser redpoll
- Willow tit
- Marsh tit
- Song thrush
- Bullfinch
- Hawfinch
- Blackbird
- Dunnock
- Goldcrest
- Jay
- Treecreeper
- Garden warbler
- Nightingale
- Spotted flycatcher
- Tree pipit
- Willow warbler
- Wood warbler



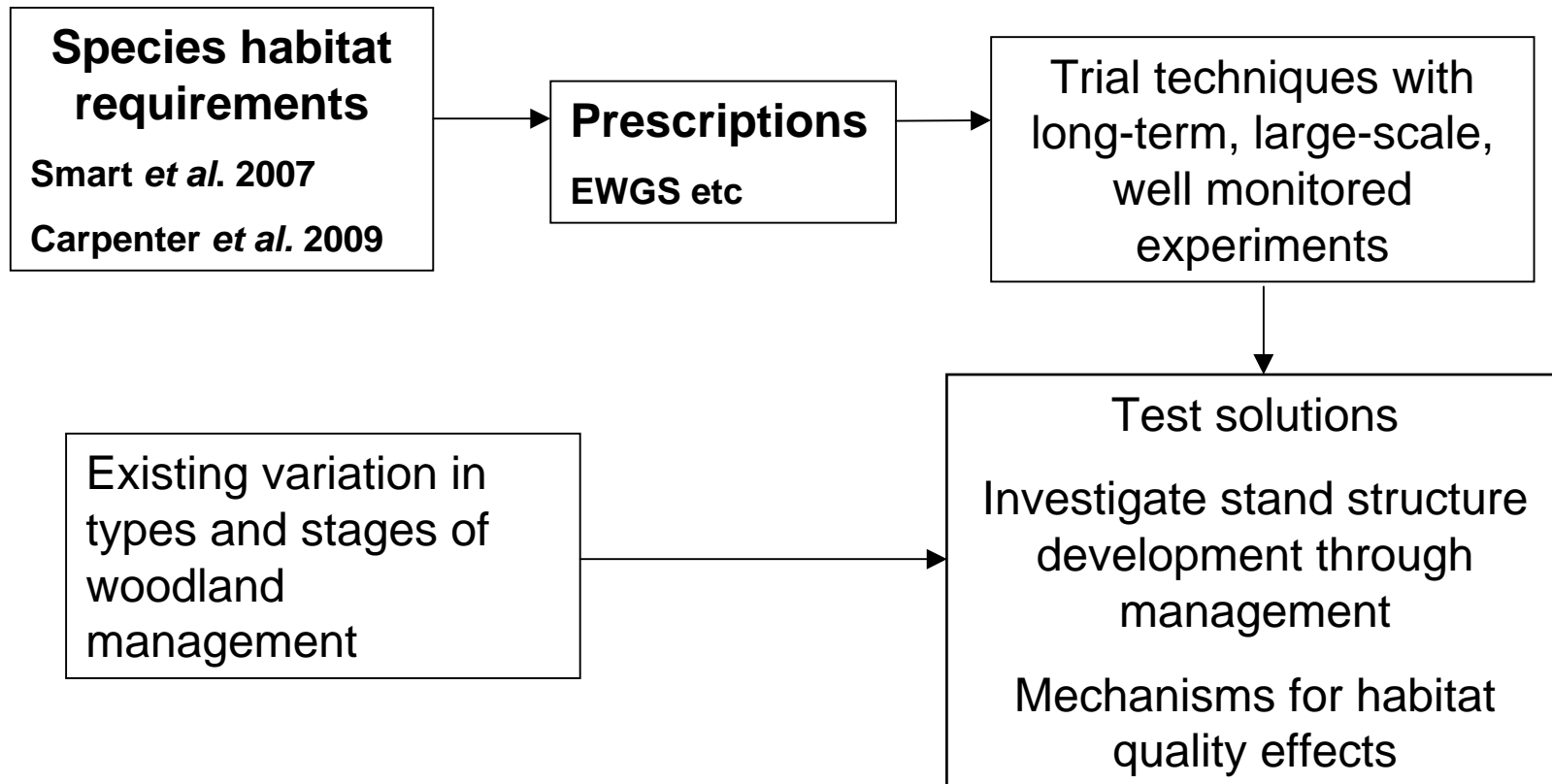
## HIGH Priority research

- Investigate change in woodland structure brought about through management
- Investigate change in woodland structure brought about through deer browsing
- For migrants, investigate processes occurring on wintering grounds or during migration
- Investigate the impacts of climatic change
- Investigate the role of food availability



# 1. Investigate change in woodland management

**Change in management**       $\longrightarrow$       **Unsuitable woodland structure**

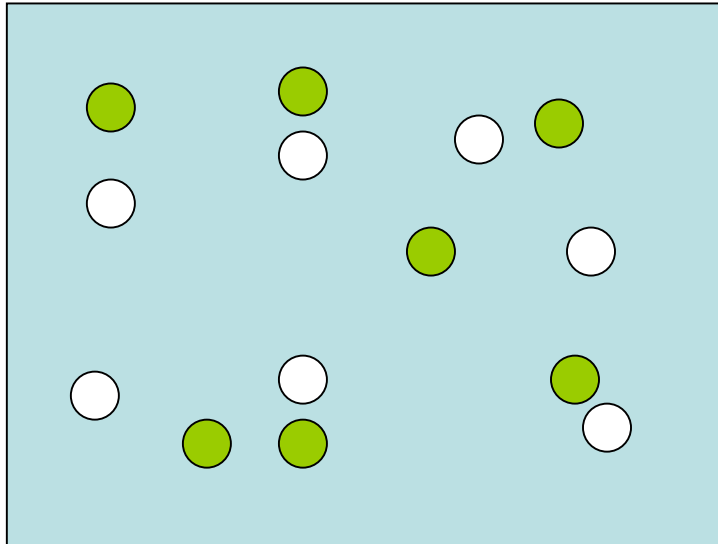


# 1. Monitoring of the EWGS

- East Midlands – development of regionally focused Woodland Improvement Grant (WIG) specifically focussed on birds
- FC supported project to evaluate the success of the WIG:
  - response by birds to large-scale habitat management implemented through the WIG
  - habitat change resulting from management and the development of stand structure appropriate for birds
- Responses of birds to woodland management:
  - changes in trends through time - before and after active management, and as managed areas mature
  - after repeat surveys, comparisons between control and treatment areas.

# 1. Monitoring of the EWGS

Upland



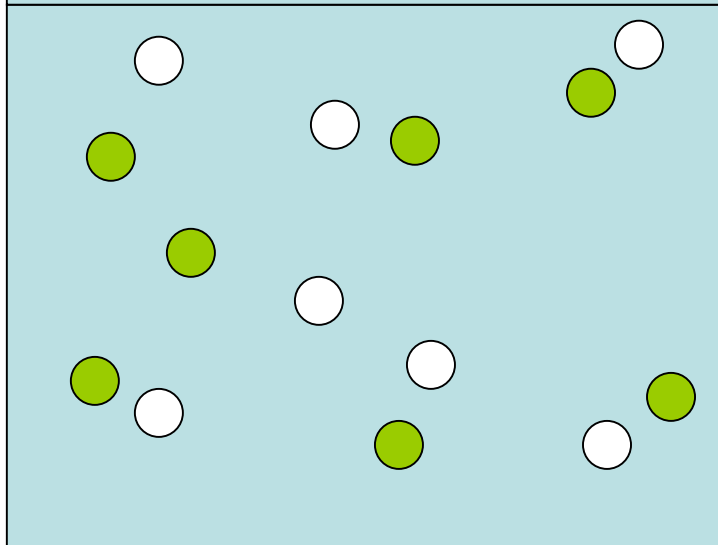
● WIG woods

○ Non-WIG woods

Establish baseline in WIG and non-WIG woods

2010 – 2012+

Lowland



Point counts

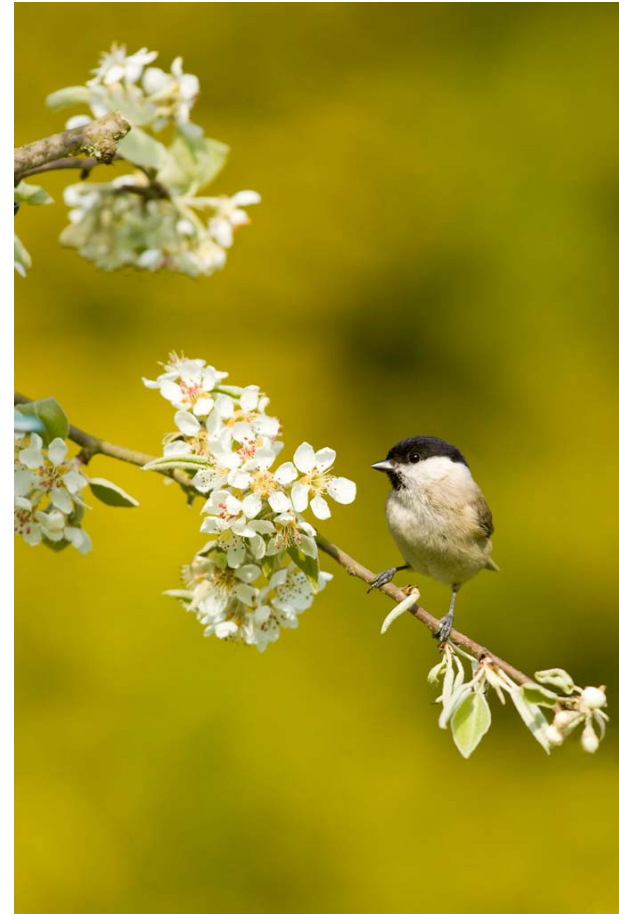
Territory mapping

Habitat surveys

5-year repeat surveys

# 1. Monitoring of the EWGS

- Spans upland and lowland woods and within a bird priority area with a large amount of funding for habitat management targeted at birds
- Not an experimental approach
- Wood selection determined by application process
- Monitoring responses to broad scale habitat manipulation
- Not targeted at single species



# 1. Dedicated habitat management trials

- Experimental paired approach with adequate replication and control
- Large scale
- Well monitored
- Targeted at priority species/groups of species
- Targeted at woodland type



Test solutions and refine prescriptions

Improve grant options

Respond to emerging issues

PAWS

Woodfuel

SRF etc

## 2. Change in woodland structure brought about through deer browsing

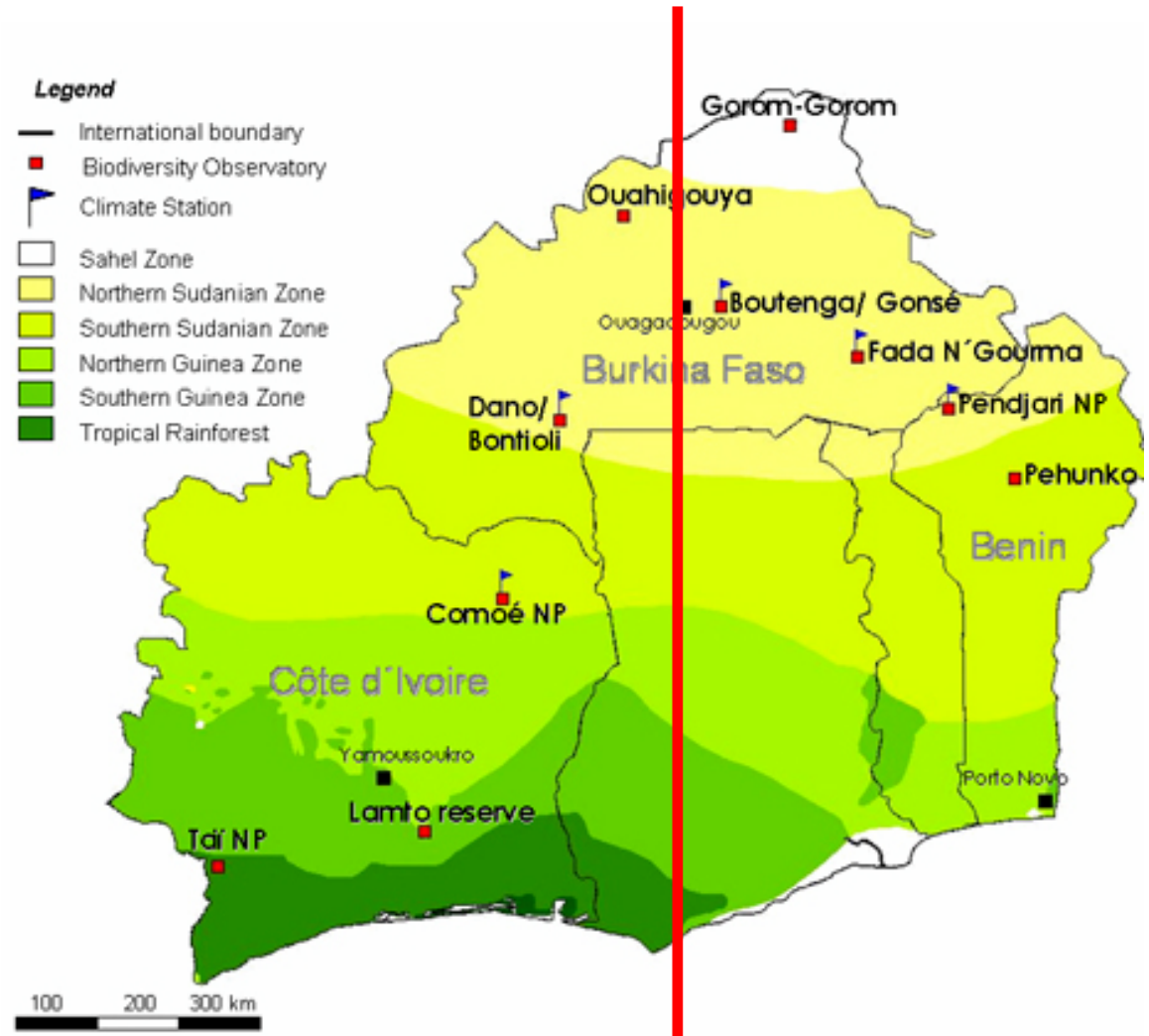
- Comparative and experimental studies to further investigate the role of deer in affecting breeding habitat quality for early successional species
- Investigate the interaction between woodland management and deer browsing in modifying woodland understorey structures and the consequences for habitat quality
- How and if appropriate stand structures can be achieved in the presence of deer.



More from Rob Fuller

### 3. Factors operating on wintering grounds

- Joint BTO/RSPB project with Ghana Wildlife Society and Naturama
- Distribution and ecology of migrants on wintering grounds
- 1<sup>st</sup> year of 3 – fundraising dependent



## 4. Climate change

- Phenological research
- Adaptation
- Predictions of range changes and population trends in the UK resulting from climatic change cf. *Gregory et al. 2009*

## 5. Food availability

- Changes through time
- Historical data?
- Resurvey of sites?
- [link with stand structure, deer and climate change]



## Summary of key research gaps

- Dedicated habitat management trials
  - Responses of birds to habitat prescriptions. Experimental paired approach, long-term, well monitored
- Habitat management in the context of deer browsing
  - Experimental exclosures and deer management with assessment of bird response
- Susceptibility to climatic change
  - Climatic modelling specific to the UK – set species priorities
- Investigate changes in food availability
  - Repeat surveys to assess change
  - Investigate change in accordance with changing stand structure

## HIGH priority species research – based on BoCC status, BAP status and magnitude of long term population trend

### Specialist residents:

LS woodpecker \*

Willow tit \*

Hawfinch

Lesser redpoll

Marsh tit \*

### Long-distance migrants:

Wood warbler \* (+ upland oak suite)

Tree pipit \*

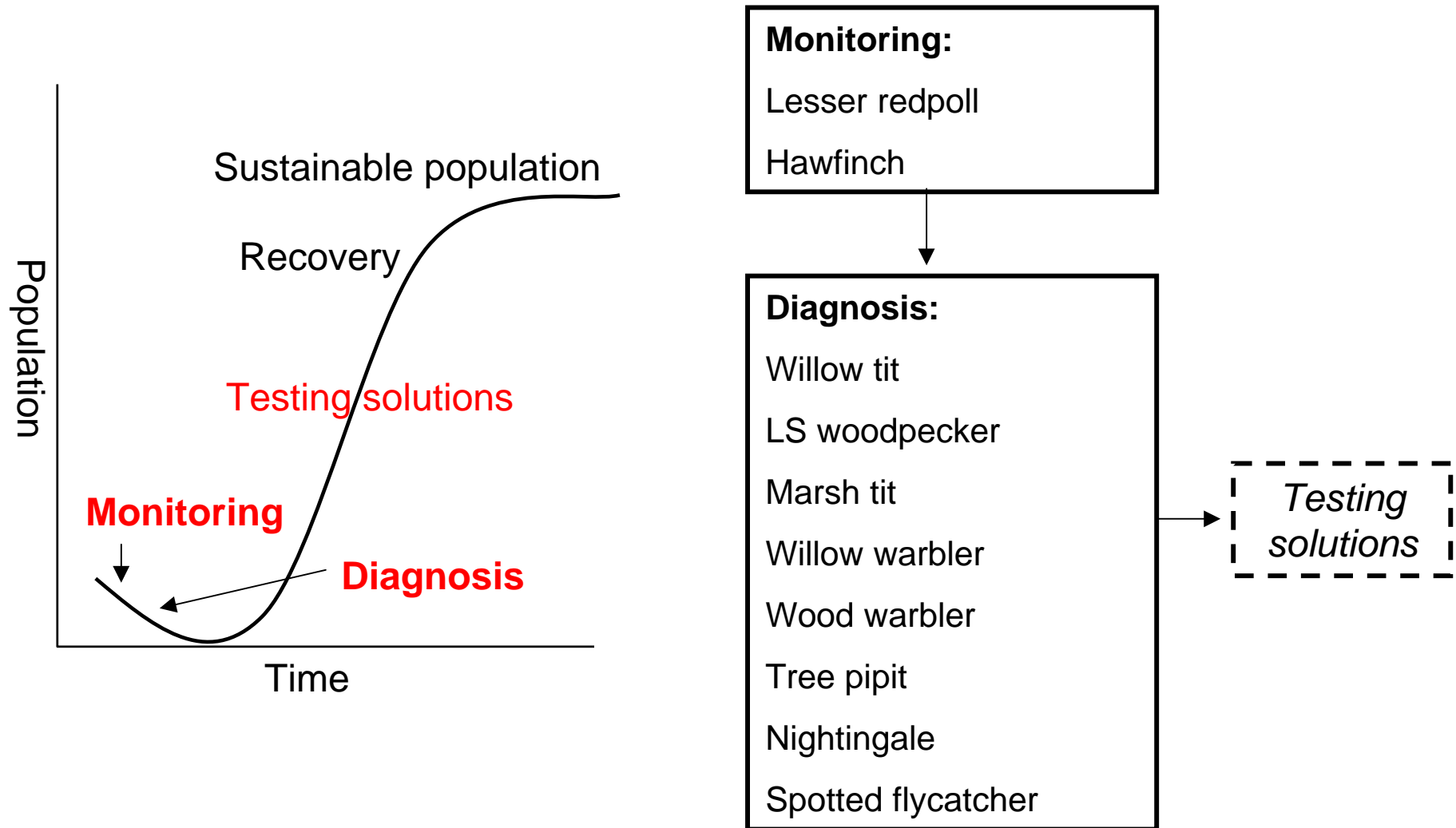
Spotted flycatcher \*

Nightingale \*

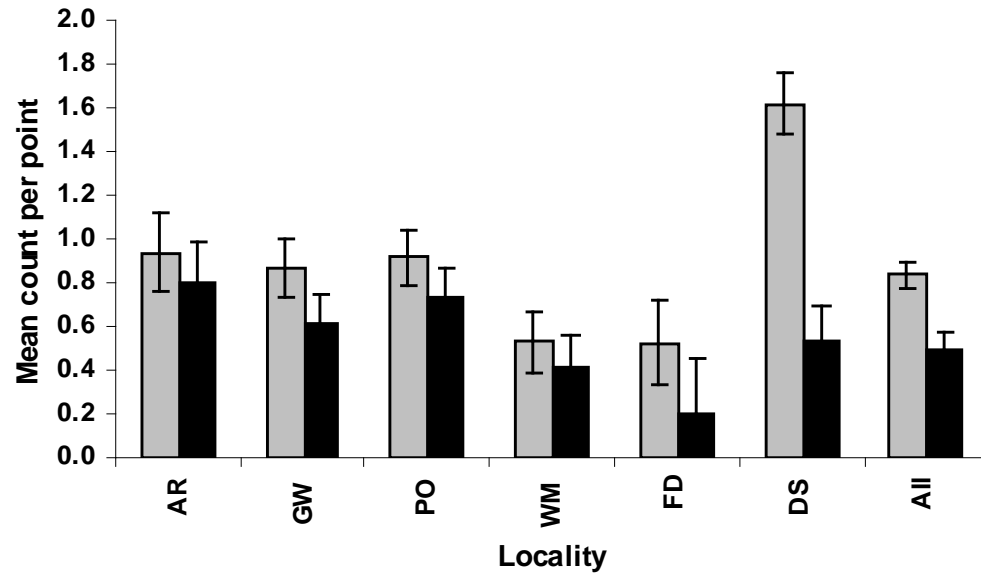
Willow warbler \*

\* Research initiated

# Progress with species research



## RSPB wood warbler project

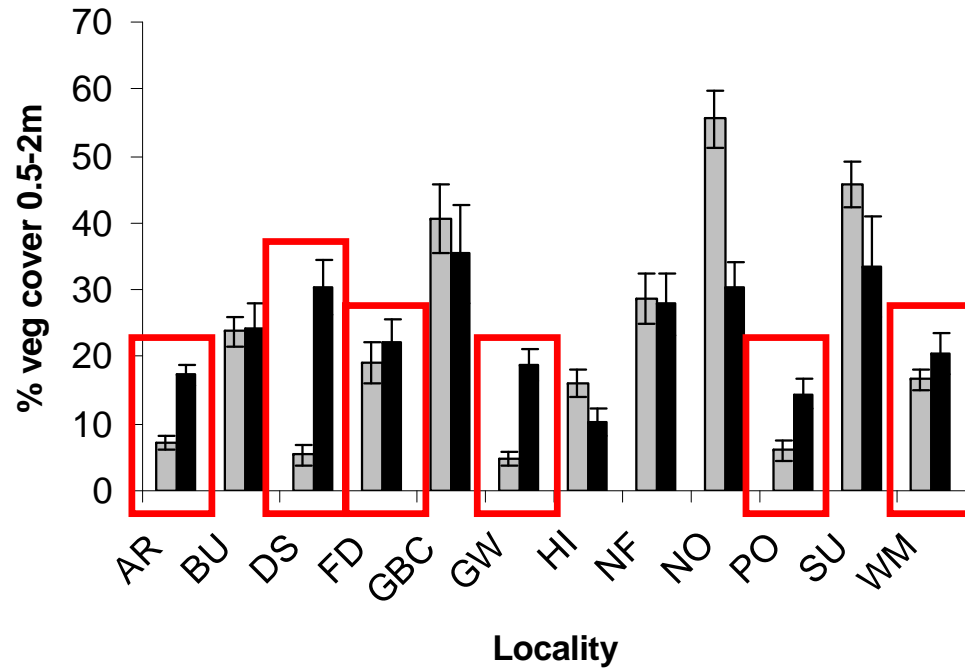


Potential causes of wood warbler declines:

- Problems on wintering grounds
- Adapting to climate change
- Changes in invertebrate abundance
- Predation
- Changes in woodland structure



# RSPB Wood warbler project



## Key species gaps

5. Lesser spotted woodpecker – no funding in 2010
  - Investigations of the abundance of winter and summer food resources and their contribution to poor breeding success
  - Investigation of causes of nest desertion and biased parental care
  
6. Willow tit – PhD to finish March 2010
  - Can we produce optimum habitat conditions to:
    - Maintain localised populations?
    - Expand former range?
  
- Western Atlantic Oakwoods – pied flycatcher, redstart, tree pipit and wood warbler
  - Experimental approach to establishing optimum grazing regimes

## Key research requirements

- Dedicated habitat management trials
- Habitat management in the context of deer browsing
- Susceptibility to climatic change
- Investigate changes in food availability
- Lesser spotted woodpecker
- Willow tit
- Western Atlantic Oakwoods – pied flycatcher, redstart, tree pipit and wood warbler

