

Lapwings in Plots

Title

Lapwings in Plots 2007

Description and Summary of Results

Creating areas of fallow land within arable fields, to provide nesting sites for ground-nesting birds, was an option with environmental agreements under both Option OS3 of Countryside Stewardship (CS) and Options HF13 and HF17 of Higher Level Stewardship (HLS). (These Defra agreements started in 2006 to give farmers some financial incentive to help environmental issues on their land.)

The CS option provided overwintered stubble followed by spring/summer fallow as whole or part fields, or as plots within fields. This was done by cultivating, using anything from light surface soil disturbance to deep ploughing, to create a 'false seed bed' in March and maintaining this as fallow without the use of pesticides or fertilizers until 31 July. Option OS3 was designed to provide nesting habitat for Lapwings throughout the season, and nesting densities and productivity were shown to be significantly higher on this option compared with arable crops during the Arable Stewardship Pilot Scheme (eg Sheldon *et al.* 2007: *Bird Study* 54: 168-175).

The HLS options ('fallow plots for ground nesting birds' (HF13) and 'fallow plots for ground nesting birds as an enhanced set-aside' (HF17)), which were the targeted components of Environmental Stewardship which replaced CS in 2005, allowed for the creation of uncropped plots of at least 2ha within arable fields by cultivating the plot in the spring to produce rough fallow that is retained without the use of pesticides or fertilizers for an agreed period. The plots had to be in large open fields and bare ground was to be maintained within the plot, in order to achieve a short but structurally diverse sward favoured by nesting Lapwings *Vanellus vanellus* (Sheldon *et al.* 2005: *Wader Study Group Bulletin* 108: 47-52). A key feature compared to the CS was that the options should only be considered if they had the potential to benefit 'priority declining farmland bird species either present or adjacent to [the farmer's] land'.

A systematic survey of a large number of such 'Lapwing plots' was undertaken to evaluate their effectiveness in providing foraging and nesting sites for Lapwings and other farmland birds. Specifically, the survey addressed three key issues:

- 1) The extent to which such plots were used by breeding Lapwings (measured as occupancy rate of breeding and/or foraging birds).
- 2) The extent to which plots were used by other bird species (measured as occupancy rate).
- 3) The extent to which occupancy by Lapwings and other bird species was determined by local habitat features, for example, extent of bare ground within the plot, vegetation height, nature of surrounding crop and boundary habitats.

In the event, of the 212 plots surveyed, Lapwings were recorded present on 40%, breeding was suspected on 25% and proven on 11%. Lapwing presence was lower where woodland

was close to the plot and breeding was more likely on plots with more bare ground. Skylark *Alauda arvensis*, Woodpigeon *Columba palumbus* and Yellowhammer *Emberiza citrinella* were also frequently recorded. It was concluded that the best 'value for money' could be achieved by ensuring that plots were: (1) managed to promote a short broken sward, with plenty of bare ground; and (2) placed in open landscapes away from woods and vertical features.

Methods of Data Capture

Farms with Lapwing plot options in place under either a CS or HLS agreement were identified from the 2007 agreement database supplied by Natural England (NE).

Volunteers were asked to visit plots twice, once between April and mid-May, and once between mid-May and late June. On each occasion observers were asked:

1) to carry out a timed, 20-minute watch from a vantage point from which they could see all or most of the plot without disturbing birds. During this time any Lapwing activity was recorded, in particular birds entering or leaving the plot, birds foraging or breeding within the plot and any chicks seen;

2) to walk a single transect across the plot recording any birds detected and evidence of territorial or breeding behaviour (alarm calling, nests, chicks);

(They were asked to minimize the time spent walking this transect to avoid disturbing any breeding birds.)

In addition to Lapwings, observers were given the option of recording any other bird species present on the plot from either of the above. (Species observed in flight over the plot that were displaying (eg Skylark) or foraging (eg Kestrel *Falco tinnunculus*, Swift *Apus apus*, hirundines) were recorded as using the plot.)

Observers also recorded: a) the nature of the crop within which the plot was located; b) the type of field boundary adjacent to the plot's field (hedgerow, woodland etc); c) the crop type in the adjoining fields; and d) the presence of any trees within the field. On each visit, observers estimated the percentage bare ground and the vegetation height in the plot itself after walking the transect across the plot.

In addition to this programme of volunteer-based data collection, information from an additional 28 fallow plots, managed primarily for Stone-curlews *Burhinus oedicnemus*, and being studied as part of a Natural England/Royal Society for the Protection of Birds project, was gathered by professional RSPB fieldworkers in 2007. Management of these plots is very similar to HLS and CS plots for ground-nesting birds, except that they sometimes were in separate 1ha half-plots separated by grass strips, and pesticides were often used as a management tool.

Purpose of Data Capture

The overall aim of the survey was to provide a quantitative measure of the 'delivery rate' of Environmental Stewardship options as well as a clear indication of the factors associated with success, both in terms of occupancy by the target species (Lapwing) and use by other declining farmland birds.

Geographic Coverage

Farms in England which had signed up to relevant options of the CS or HLS schemes. A total of 212 plots were surveyed by volunteer observers. These were located on 180 farms and covered a geographical area that mostly coincided with the distribution of arable and mixed farming areas.

Temporal Coverage

2007 breeding season. Two visits to each plot were requested, April to mid-May and mid-May to the end of June.

Other Interested parties

The project was funded by Natural England.

Organiser(s)

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Publications

The main report of the project is:

Chamberlain, D., Gough, S., Anderson, G., Macdonald, M., Grice, P. & Vickery, J. 2009. Bird use of cultivated fallow 'Lapwing plots' within English agrienvironment schemes. *Bird Study* 56: 289-297.

The project was noticed in *BTO News* numbers 269 and 278.

Available from NBN?

No

Computer data -- location

BTO Windows network central area.

Computer data -- outline contents

Data files, information about the sites surveyed, electronic copies of recording cards, proposal and various reports, various SAS programs used in analysis.

Computer data -- description of contents

Data files are Excel spreadsheets with 3 sheets: Lapwing data -- numbers of Lapwings (birds, nests, chicks etc) on each plot on each visit; Habitat data -- site characteristics as per the recording forms (ie % bare ground, the crop, trees in boundaries etc); Other species -- numbers of other species recorded on each visit and Observer's name.

Information held in BTO Archives

1 Transfer Case containing all recording sheets.

Notes on Access and Use**Other information needed****Notes on Survey Design****Specific Issues for Analysis**