WINTERING BIRDS

Best practice guidelines to survey wintering farmland birds

Point counts

Farmland birds are in decline in Europe and hence urgent action is needed to halt and reverse this decline. To evaluate conservation efforts, reliable, reproducible monitoring is vital. The point count method, detailed in this factsheet, provides a user-friendly and efficient tool for anyone interested in monitoring farmland birds that utilise a defined habitat feature. The following protocol draws upon extensive experiences gained during the seven-year North Sea Region Interreg PARTRIDGE project.

WHY

The abundance of most farmland birds is in continuous decline across Europe and hence urgent action is needed to halt and reverse this decline. Agri-environmental schemes (AES) play a key role in helping to achieve the EU's biodiversity targets on farmland. Several different habitat measures are implemented across EU member states. A range of these habitats are aimed at improving the amount and quality of farmland bird breeding habitats in summer and providing more food and shelter for wintering residents and migrants. However, it is not always clear whether the intended objectives are achieved. To find out, standardized monitoring is required. The protocol that we describe here to investigate the overwintering farmland bird population is easy-to-use. It provides a best-practice method that can be applied by everybody, from professional ecologists to volunteers, who have enough experience to recognise (farmland) birds in the field. It is also a nice subject for a citizen science project for experienced birders that want to use their skills in the winter season.

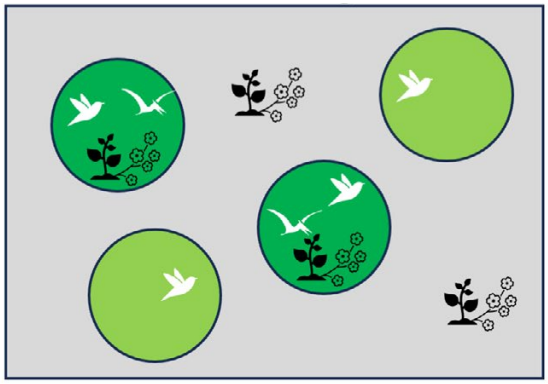
PROJECT SET-UP

Ten PARTRIDGE-project demonstration areas were compared to paired reference areas, in order to better interpret and detect meaningful effects and evaluate the effectiveness of management practices on overwintering bird numbers. In the case of a similar project, that aims to evaluate a specific management approach, monitoring should be conducted in both demonstration and paired reference areas. Apart from not receiving any of the management measures or other experimental treatments undertaken at the demonstration area, the reference area must be spatially near and agriculturally similar to the demonstration area. To ensure that the two areas are independent, however, they should be at least 6 km apart to avoid birds moving between sites. To get a reliable population count, study areas should be sufficiently large. A minimum area of 500ha is recommended. The current technique can be used for other projects as well, but without a comparison, i.e. a reference area, it will be more difficult to interpret any changes recorded in farmland bird numbers.

POINT COUNTS

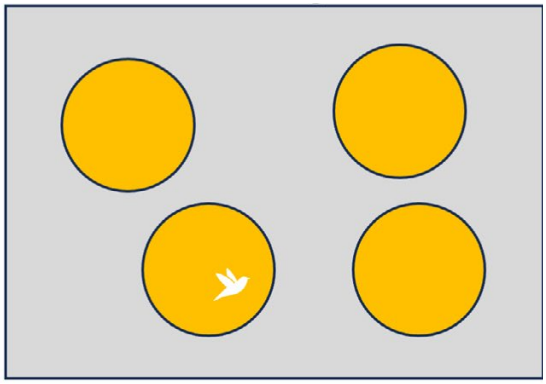
Wintering birds are counted within circles around a fixed counting point (Buckland 2006). The radius of the circles depends on the environment (openness, relief). It is important that the recorder can identify all farmland birds within the circle. For example, in flat and open landscapes such as in parts of Flanders and the Netherlands, a radius of up to 300m is feasible for an experienced birder. In a hilly terrain, obstructed by many habitat features, such as in Germany and the UK, a radius of 50-100m may be

Demonstration site



Counting circles with measures, without measures

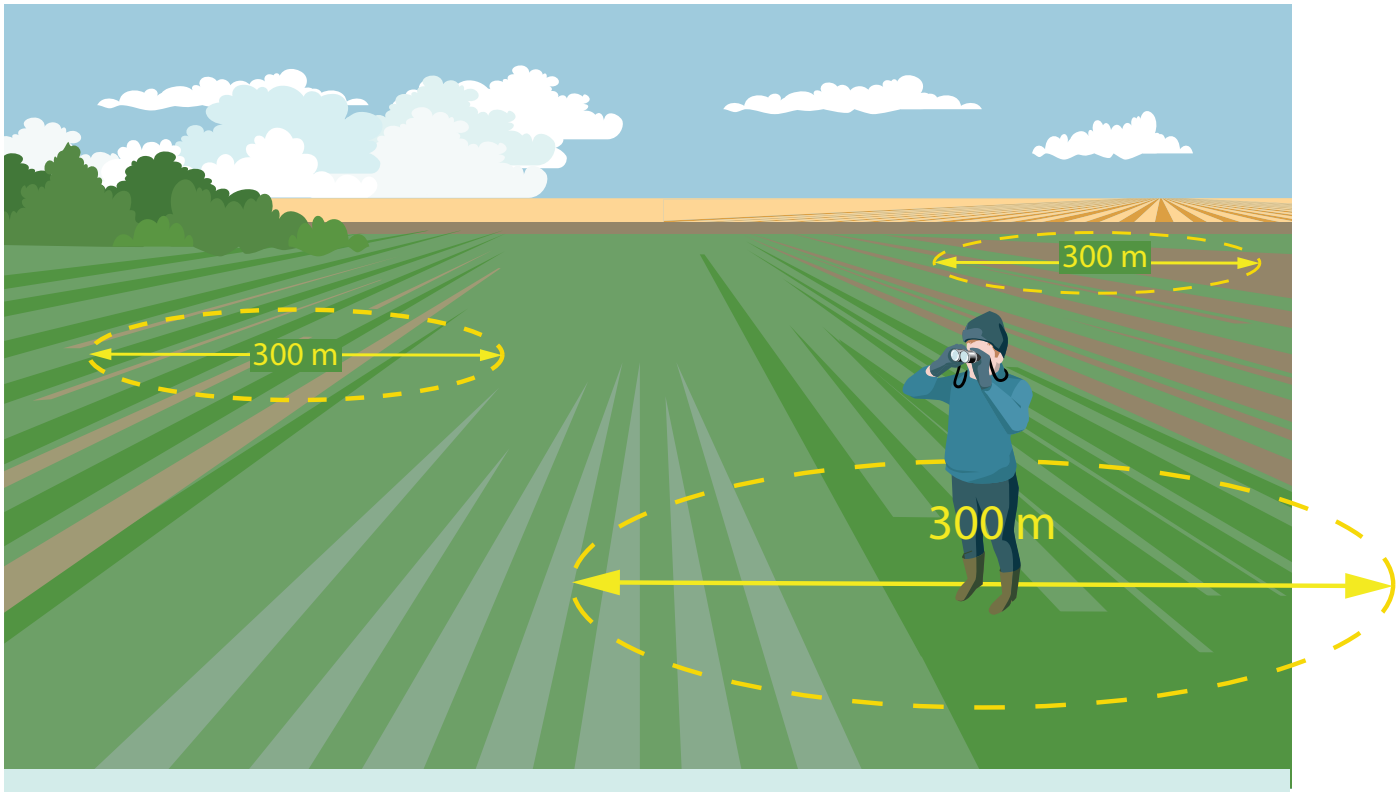
Control site



Counting circles without measures

more appropriate. Depending on the size of the area being monitored, a minimum of 10 non-overlapping counting circles should be randomly selected for counting. These points should remain fixed during the entire monitoring period. To assess whether the birds aggregate in or around the implemented habitat measures in a research area, a stratified sampling design can be used, where one group of counting points is selected on the measures and another group away from the measures.

Each study areas should be visited at least once a month from November till March (minimum 5 times in total). Surveys should take place on the same day per study site. If the site is paired with a reference site, both sites should ideally be surveyed on the same day. If that is not possible, surveys should be carried out on two consecutive days to avoid data being affected by varying weather conditions. In winter, birds can be observed at a comparable rate of detection throughout the day (Gutzwiller 1993). This allows for counting to be carried out during the whole day (except late afternoon when birds stop their foraging activities to leave for their roosting sites). Ideally, the same observer should monitor all survey points at the demonstration and reference site. If two surveyors are used, they should be allocated randomly to survey demonstration and reference sites, whereby both surveyors monitor at both sites and not one doing the demonstration and the other the reference site only as this can result in biased data.

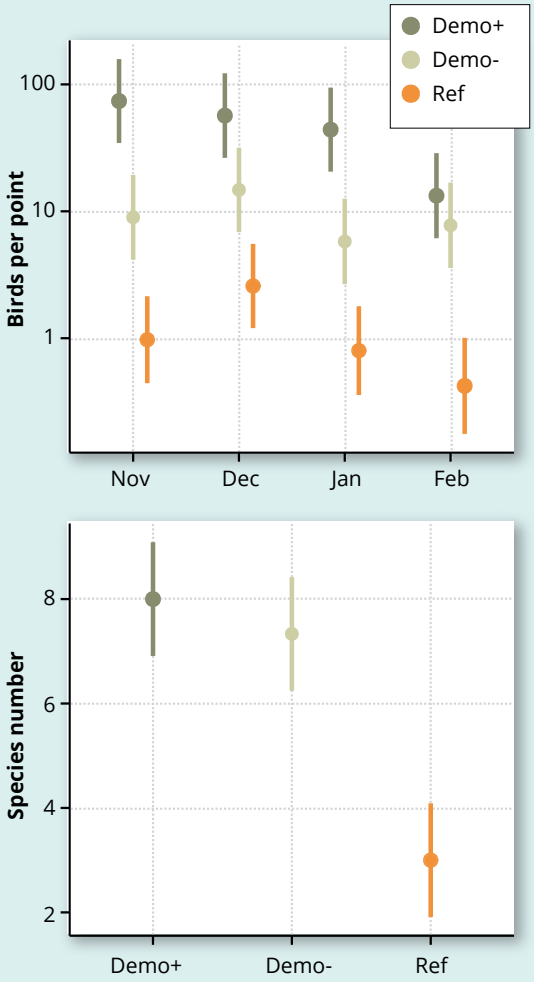


Counting session

On the survey day, the fieldworker(s) positions themselves in the centre of each point count circle and notes down all the bird species and numbers seen and/or heard within a period of 10 minutes. This is repeated in all circles in the study area(s), by moving from one circle to the next. Each month, the order of the circles monitored is changed randomly to avoid factors such as time and location affecting data collection. Field surveys should take place on days with preferably calm and sunny weather conditions, as wind, rain and overcast skies are likely to negatively affect bird activity and hence the survey itself.

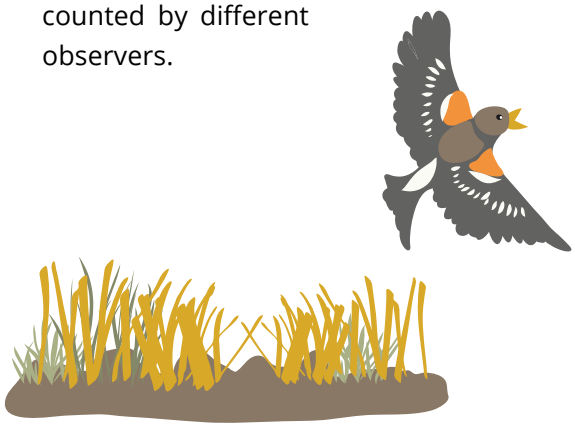
DATA ANALYSIS

To assess the effects of implemented management strategies on the visiting rate of the birds (abundance), the average number of birds seen in the counting circles is calculated per month. This is done separately for the circles with measures (demo+) and without measures (demo-) of the demonstration site. These means can then be compared with the mean calculated for the circles at the reference site. One can use 95% confidence intervals to visualize the variation among counting circles. The same can be done for the number of bird species that visit the sites to see whether the measures also effect bird diversity.



WORDS OF CAUTION

Deviations from the protocol should be avoided as much as possible, as they can seriously affect the precision of the counts. Therefore, it is important that all participants are aware of the protocol guidelines and comfortable with the implemented technique before monitoring starts. Especially when different sites are counted by different observers.



BACKGROUND

This factsheet is based on experiences collected during the seven years of the North Sea Region Interreg PARTRIDGE project, where farmland birds (and other species groups) were monitored at 10 demonstration and 10 reference sites across Belgium, England, Germany, the Netherlands, and Scotland. For more information visit: PARTRIDGE, Interreg VB North Sea Region Programme.

BACKGROUND LITERATURE

Buckland, S. T. 2006. Point-Transect Surveys for Songbirds: Robust Methodologies. The Auk 123:345-357.

Gutzwiller, K. J. 1993. Refining the Use of Point Counts for Winter Studies of Individual Species. The Wilson Bulletin 105:612-627.

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