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WINTERING REED BUNTING *EMBERIZA SCHOENICLUS* IN LUBUSKIE VOIVODESHIP, POLAND

ABSTRACT

In Poland, wintering Reed Buntings *Emberiza schoeniclus* have been recorded in all provinces, and are considered common in the west of the country. It is believed that the main Reed bunting wintering habitats in Western Europe (including Poland) are weedy fields and stubble, less often other habitats. In national faunal monographs, wintering Reed buntings are recorded in a variety of habitats, among which are listed: agricultural landscapes (fields, stubble fields, fallow land), river valleys, various water bodies (lakes, fish ponds), rubbish-damps, orchards, bogs. The aim of the study is to characterize winter observations of Reed Buntings in Lubuskie Voivodeship, in the context of habitats and size of bird concentrations. The paper uses 146 observations of Reed Buntings collected in Lubuskie Voivodeship during spontaneous ornithological observations carried out in 1996-2024. A total of 654 individuals of Reed Buntings were recorded in 146 inspections. Most observations came from January (51.4%), followed by December (35.6%), and the least from February (13.0%). Reed Bunting observation sites were assigned to five habitat types (wasteland (weedy), grassland, ditch/trash, stubble fields and reeds). The most common habitat was wasteland (weedy), with a total of 47.3%. In this habitat, the Reed Buntings were observed most often in every winter month. The size of the concentration of wintering Reed Buntings ranged from 1 to 50 individuals (mean 4.48, SD = 8.49, N = 146). Single birds were recorded most often – a total of 48.6% of all observations. Groups of 2 to 10 individuals accounted for 41.8%, and flocks of more than 10 birds accounted for 9.6% of all observations. The environments in which wintering Reed Buntings were most often observed in Lubuskie Voivodeship and the abundance of bird groupings are similar to other regions of the country.
Key words: wintering, Reed Bunting *Emberiza schoeniclus*, habitat, flock size, Lubuskie Voivodeship (Western Poland)

INTRODUCTION

Changes in agriculture, particularly the use of herbicides, the simplification of crop structures and the elimination of weeds and the disappearance of stubble fields are affecting the decline in winter food resources used by many bird species (Chamberlain

et al. 2000, Moorcroft et al. 2002). This includes many grain-eaters, for which these resources are important during the wintering season. Included in this group of birds is also the Reed bunting *Emberiza schoeniclus*, for which common weeds are the main food during the winter (Cramp 1998, Trnka and Matoušek 1999, Matessi et al. 2002). In Poland, wintering Reed Buntings have been recorded in all regions, and in the west it is considered common (Tomiałojć and Stawarczyk 2003). It is recognized that the main wintering habitats of the Reed Bunting in Western Europe (including Poland), are weedy fields and stubble, less frequently other environments (Górski 1976, Wilson et al. 1996, Buckingham et al. 1999, Perkins et al. 2000, Moorcroft et al. 2002). Regional national ornithological monographs mention that wintering birds were seen in a variety of habitats, among which the following are given: agricultural landscape (fields, stubble fields, fallow land), river valleys, various water bodies (lakes, fish ponds), rubbish-dumps, orchards, bogs (Dyrcz et al. 1991, Jermaczek et al. 1995, Bednorz et al. 2000, Walasz 2000, Chmielewski et al. 2005, Tryjanowski et al. 2009). Studies in Lower Silesia have shown that in agricultural landscapes, fallow farmland is a particularly important habitat for wintering Reed Buntings (Orłowski 2005). The phenomenon of Reed Bunting wintering in Poland has only exceptionally been studied more thoroughly (Orłowski 2005). The diet of Reed Bunting wintering in the agricultural landscape of western Poland has also been studied (Orłowski & Czarnecka 2006).

The purpose of this paper is to characterize winter observations of Reed Buntings in Lubuskie Voivodeship, in the context of environments and size of bird concentrations.

STUDY AREA AND METHODS

146 observations of Reed Buntings collected in Lubuskie Voivodeship during spontaneous ornithological observations conducted in 1996-2024 were used. The data collected during the winter months (December, January, February) were used. Observations of birds were carried out in various habitats, mainly in river valleys, agricultural landscapes and other water bodies. For each observation, the number of individuals and the type of habitat in which the birds resided were recorded. The species habitats were assigned to five main categories: wasteland (fallow land, weeds), stubble fields, meadows, ditches and wastewater – vegetation overgrowing the banks, reeds (lakes, fish ponds, oxbow, river banks) and others.

RESULTS

A total of 654 Reed Buntings individuals were recorded in 146 observations. The highest number of observations was recorded in January – 51.4% (Fig. 1), followed by December (35.6%), and the lowest in February (13.0%).

Wintering Reed Buntings were observed in a variety of habitat types. Most often in wastelands (weedy areas) – a total of 47.3% of all observations and 60.2% of observed

birds. A high percentage of observations were also recorded in reeds (ponds, lakes banks) – 24.7%. The number of observations, individuals and their proportion, as well as the maximum flock counts in each type of environment are shown in Table 1. In all three months, the highest number of observations were recorded in wasteland (weedy areas). The percentage of observations in other types of environments varied from month to month (Fig. 2).

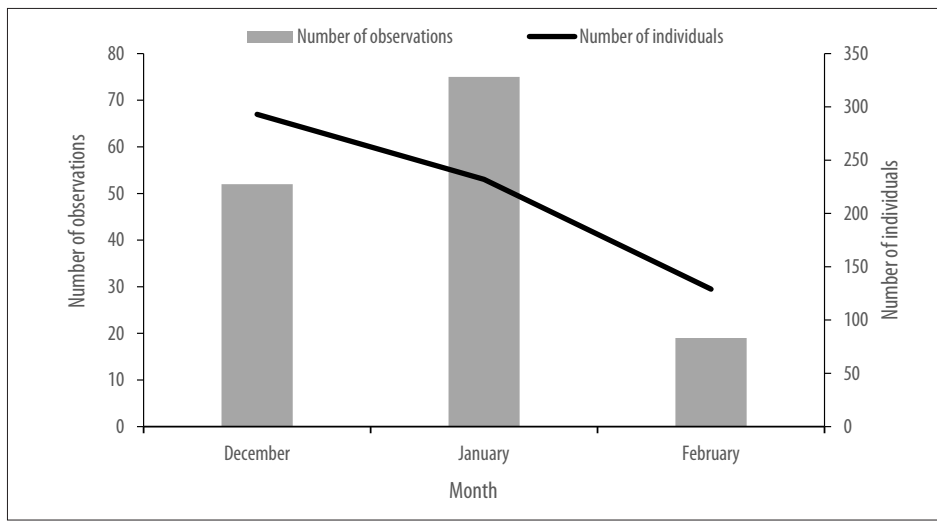

Fig. 1. Distribution of the number of observations and the number of individuals of Reed Buntings *Emberiza schoeniclus* by winter months in Lubuskie Voivodeship

Table 1. Occurrence of Reed Buntings *Emberiza schoeniclus* in winter in different types of habitats in Lubuskie Voivodeship

Habitat	Number of observations	% observations	Number of individuals	% individuals	Maximal recorded flock
Wasteland (weeds)	69	47.3	394	60.2	50
Meadows	14	9.6	20	3.1	2
Ditches/wastewater	17	11.6	66	10.1	20
Stubble field	7	4.8	17	2.6	6
Reeds	36	24.7	65	9.9	9
Others	3	2.1	92	14.1	50
Total	146	100.0	654	100.0	

The magnitude of concentration of wintering Reed Buntings ranged from 1 to 50 individuals (mean 4.48, SD = 8.49, N = 146). Single birds were recorded most often – a total of 48.6% of all observations. Groups of 2 to 10 individuals accounted for 41.8%, and flocks of more than 10 birds accounted for 9.6% of all observations. The distribution of the number of observations of each abundance category of observed Reed Buntings groups is shown in Fig. 3.

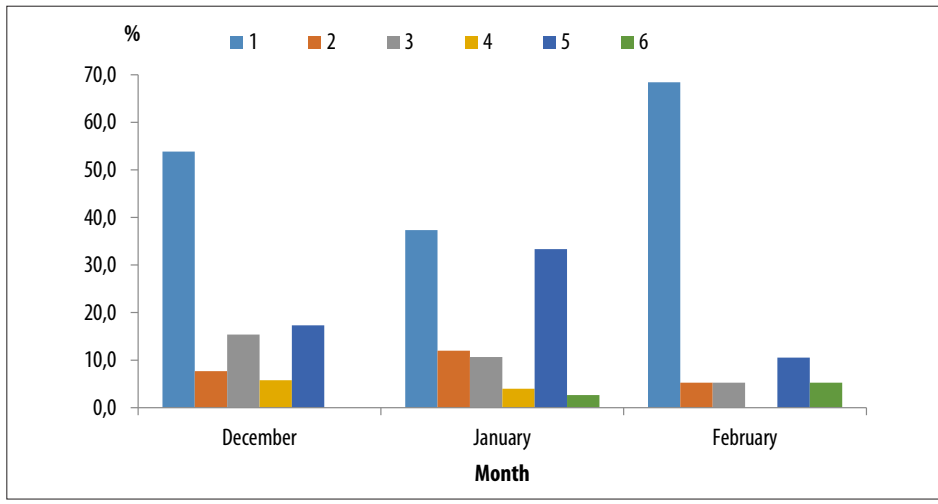

Fig. 2. Number of Reed Buntings *Emberiza schoeniclus* observations in a given environment by month in Lubuskie Voivodeship. 1 – wasteland (weeds), 2 – meadows, 3 – ditches/wastewater, 4 – stubble fields, 5 – reeds, 6 – others

All three months had the highest number of observations of 1 and 2 individuals, where the sum was XII – 67.3%, I – 74.7% and II – 47.4%. The proportion of the other abundance categories varied by month (Fig. 4), but groups of 3-5 birds had a similar proportion in all three periods (range 13.3-17.3%). The most numerous flocks of Reed Buntings numbering more than 20 individuals were observed most often in December (7.7% of all finds).

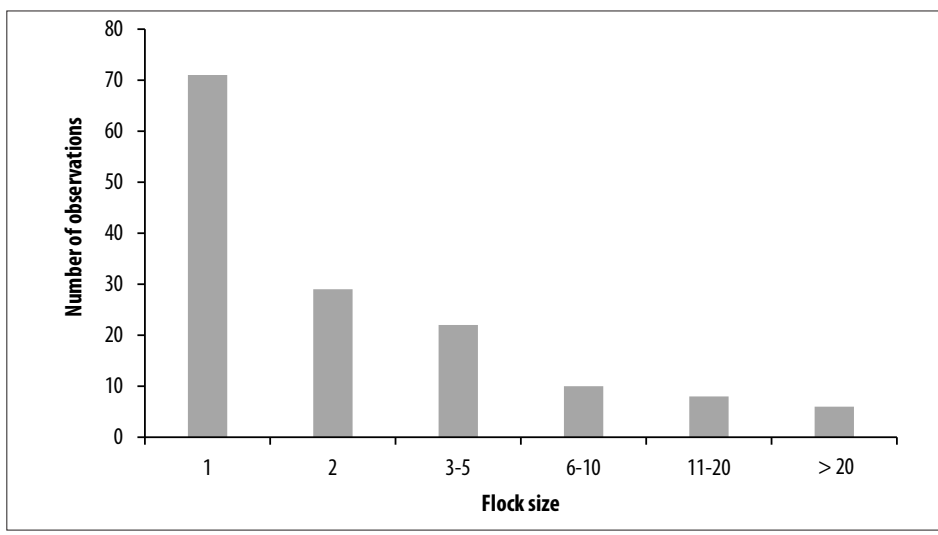

Fig. 3. Distribution of winter flock sizes (n = 146) of Reed Buntings *Emberiza schoeniclus* in winter in Lubuskie Voivodeship

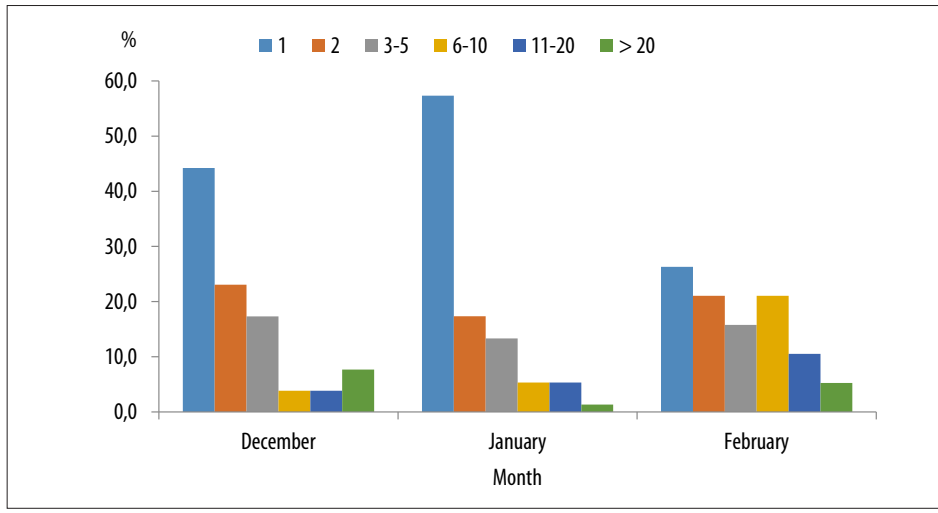

Fig. 4. Number of individual count categories of Reed Buntings *Emberiza schoeniclus* by month in Lubuskie Voivodeship

DISCUSSION

The phenomenon of Reed Bunting wintering in Poland is described differently in regional faunistic monographs. In the Lubuskie region, until the end of the 1980s, it was exceptionally found wintering in fields (Jermaczek et al. 1995). In the region of Zielona Góra in the first decades of the 20th century it was recorded only from March to October (Gruhl 1929). After 100 years, it has been found annually in winter within cultivated fields and rush vegetation (Czechowski et al. 2016). Single birds were regularly found in the valleys of Noteć and Warta rivers and at many lakes in Wielkopolska region (Bednorz et al. 2000). In Silesia, Reed Bunting is a regular wintering bird (Dyrcz et al. 1991). More detailed observations from Wrocław indicate consistent wintering, but the authors emphasize that this is a relatively new phenomenon – at the turn of the 20th century, wintering observations involved only a few individuals. At present, it occurs more frequently in winter, both in wetland biotopes and in cultivated fields (Tomiałojć et al. 2020). In Świętokrzyskie Mountains it wintered annually, being an extremely rare bird in harsh winters and rare during moderate winters. There it was encountered on fish ponds, dam reservoirs and in river valleys. It is more common in fields, fallow fields and rubbish dumps, but also in orchards (Chmielewski et al. 2005). The phenomenon of Reed Bunting wintering is better understood in Małopolska region, where the species has the status of a rare wintering bird, with the highest numbers in December, decreasing markedly in January and February (Walasz et al. 2000). Despite the fact of mentioning the Reed Bunting in regional ornithological monographs, as a regularly wintering species, in detailed studies of the wintering avifauna of different

environments, Reed Bunting belongs to the birds occurring marginally or is completely absent (reviewed in Tryjanowski et al. 2009). It was also not included in the group of dominant species (more than 5% of the assemblage) in winter in various field environments in different regions of Poland (reviewed in Tryjanowski et al. 2009). On the other hand, a detailed study of the winter assemblage of farmland birds in the agricultural landscape of southwestern Poland showed that Reed Bunting was found in five of the seven types of fields studied. In total, it was found in 43 of 117 controlled plots and was the most common species – 37% of the surveyed fields and the third most abundant (Orłowski 2006). Particularly important field types for wintering buntings were young fallows (1-2 years old) and stubbles after root crops, where the highest numbers and densities of wintering birds were recorded (Orłowski 2005).

In the present study, almost half of the observations took place precisely in fallow, weedy areas. Also, some of the observations of Reed Buntings took place near ditches located within agricultural fields and involved birds feeding on vegetation growing on the banks of the ditches. In the described research, a permanent Reed Buntings wintering site was also found on a small fragment of an unused area overgrown with American black cherry *Prunus serotina*. Flocks of Reed Buntings numbering up to 50 individuals were observed there throughout the winter period. In the works cited above, similar types of habitats (e.g., orchards) are also mentioned as wintering sites for this species. Winter observations of Reed Buntings usually involve 1-2 birds (Walasz 2000, Orłowski 2005, the present study). In Małopolska, 53% of observations were of single birds (Walasz 2000), in Lower Silesia about 35% (Orłowski 2005), and in the present study almost 49% of all observations. Groups of 2-5 birds are most common: Lubuskie Province – 35% (this study), Małopolska – 39% (Walasz 2000), Lower Silesia – 28% (Orłowski 2005). Larger flocks of birds, numbering more than 20 individuals, are observed less frequently. In Silesia, flocks of up to 30-50 individuals have been observed, and under favorable food conditions, groups of 100, 200, and even 230 birds (Dyrcz et al. 1991, Tomiałojć et al. 2020, Orłowski 2005, 2006). In Małopolska, the largest recorded flocks numbered up to 50 birds (Walasz 2000). Data on the number of Reed Buntings in winter also come from Świętokrzyskie Mountains, where up to 34.5 individuals per 100 km^2 were recorded in the Nida valley in mild winters, and up to 33 individuals were recorded on ponds in Górki (Chmielewski et al. 2005).

Studies of the food composition of wintering Reed Buntings showed that the seeds of annual weed species *Chenopodium album* (the dominant species – 74%), *Amaranthus retroflexus*, *Setaria viridis*, *Stellaria media* and *Fumaria officinalis* formed the basis of the Reed Bunting's diet. The proportion of dominant weed species in the diet of the Reed Bunting varied according to field type. The most varied food composition was found for birds feeding on root crops, and the least varied in fallow fields (Orłowski & Czarnecka 2007).

The above arguments indicate that the occurrence of Reed Buntings in agricultural landscapes in winter depends on the presence of suitable plant species (weeds) in the fields, the seeds of which the birds feed on (Trnka and Matoušek 1999, Moorcroft et al. 2002, Orłowski 2005, Orłowski and Czarnecka 2007). More detailed studies are still needed of other habitats for winter sightings of Reed Buntings, especially riparian areas – reeds, where the species is regularly seen in winter in many regions of Poland.

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