

*Till Thomas Pettersson,  
med stort tack för din medverkan  
Bengt-Olov*

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**I.**

# **ORTOLAN-SYMPOSIUM**

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## **Ergebnisse**

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Herausgegeben von Hans M. STEINER  
Institut für Zoologie  
Universität für Bodenkultur, Wien

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## Current changes in abundance, distribution and habitat of the Ortolan Bunting *Emberiza hortulana* in Sweden

Bengt-Olov STOLT (Stockholm)

### 1. Abstract

Since the 19th century the Ortolan Bunting is known to have a wide distribution in Sweden. The species has bred regularly in all provinces, except the islands of Öland and Gotland in the Baltic, but after a longterm decline in number it has now disappeared entirely from the southwesternmost provinces.

The population status in different provinces is summarized. Reports indicate unchanged number of Ortolan Buntings during the last years in 6 provinces, decreasing number in 7, disappearing or now missing in 5 and lack of information in 5 provinces. Documented increase was not reported from any province.

Breeding habitats are found in:

1. Large forest clearings common in northern Sweden.
2. Agricultural areas.
3. Abandoned gravel quarries, some reports.
4. Refuse tips, a few reports.
5. A limestone quarry, one case.

Possible causes of the continued population decline during the last years are discussed. The largescale traditional hunting of Ortolan Buntings during migration in southwestern France is pointed out as one evident negative factor. Other negative factors may be increased road traffic and locally habitat losses.

### 2. Introduction

The Ortolan Bunting still has a wide distribution in Sweden, although, after a longterm decline, it has disappeared from large areas (Figs 1 and 2). Local patterns of distribution and number of singing males have been studied in a number of provinces for time periods up to 20 years. Changes in distribution and abundance are probably dependent on available habitats, breeding success and survival of the birds in the breeding area, during migration and in the wintering area. The degree of site fidelity to birth and breeding area is also important in this connection, as it influences dispersal.

In this report, I review briefly the available information on population development in the different provinces, habitat requirements and factors that may have caused or influenced the observed changes.

**Acknowledgements.** I want to express my gratitude to the report committees of the Swedish Ornithologists Society, and to many ornithologists all over the country, for their contributions to this report. I also wish to thank Prof. Bo FERNHOLM for helpful comments on the manuscript.



- ▨ commonly breeding
- ▤ sparsely but regularly breeding
- probably not breeding

Fig. 1. Distribution of the Ortolan Bunting in Sweden. From ENGSTRÖM 1952.



Fig. 2. Distribution of the Ortolan Bunting in Sweden. From SOF 1990. Dense lines: regular breeding, common. Sparse lines: regular breeding, less common. Dotted lines: irregular breeding or less well known. Filled dot: breeding site used six or more times in 1976-1988. Open dot: ditto less than six times.

### 3. Population status in different provinces

Brief notes on the occurrence of Ortolan Buntings are listed here according to published reports, files at the Swedish Museum of Natural History (NRM) and answers to an inquiry in spring 1992 to among others all the local report committees of the Swedish Ornithological Society.

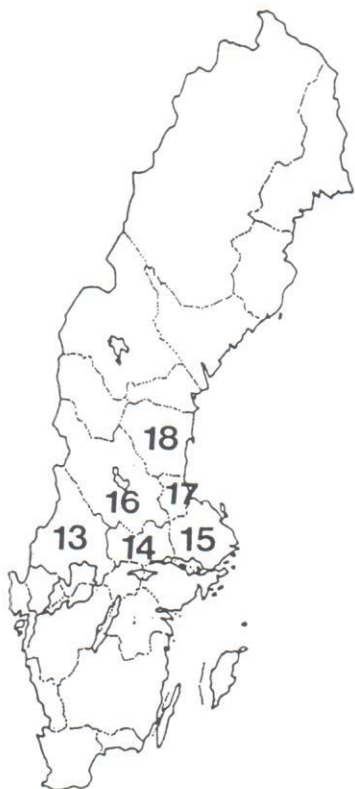


1. **Skåne.** NILSSON (1824): The Ortolan Bunting occurs in large numbers in certain areas, i. e. at Hör, Billinge, Bårslöf, Engelholm etc. ROSENIUS (1926): breeds in several places. After 1970 observed only sporadically during breeding season. One locality at Munka Tågarp after 1982 with 1 - 2 singing males (ANDELL et al. 1988);
2. **Blekinge.** During the 1930s nestlings were ringed at seven occasions (NRM). Occasional breedings in 1972 - 74 and in 1982. Now missing (Anders BLOMDAHL).
3. **Halland.** NILSSON (1824): Large numbers at Frölinge, Asahed etc. No recent information.
4. **Småland.** TISELIUS (1868): The Ortolan Bunting is common in Tveta in the northern part of the province. During the 1950s the species bred locally in the northern part, but disappeared gradually - now only sporadic occurrence in this area (Erik LINDBERG). During several decades up to 1960 known to breed regularly at Stävlo in the eastern part of the province but missing there 1961 - 1964, returned after 1966 - now 10 - 15 pairs annually in that area (Andreas STÄHL).
5. **Öland.** The only breedings reported are two during the 19th century (DURANGO 1948).
6. **Gotland.** The only breedings reported are at Stora Karlsö 1949, 1950 and 1959 (DURANGO 1963).





7. **Västergötland.** Reports from the 19th century: not rare 1857 - 1858 (Gadamer), common in certain habitats ("svältor", which means a poor, meagre agricultural land) in 1868 (KOLTHOFF & JÄGERSKIÖLD 1898), common at Hjo (SUNDSTRÖM 1888). At Valle one pair for every 200 m during the period 1930 - 1950, a rapid decrease followed between 1950 and 1961 (SWANBERG 1976). Now 6 - 8 pairs in the whole province (Claes-Ola PERSSON).
8. **Östergötland.** Several pairs at Åby during the 1870s, 1880s and late 1940s, but not during the 1890s (LUNDEVALL & ANDERSSON 1957). At Vikbolandet 67 pairs were found in 1983. No check after that. In other parts of the province only separate pairs are reported (Juhani VUORINEN). Missing at Gryt since 1981 (Viking OLSSON).
9. **Bohuslän.** NILSSON (1824): Occurs in large number. Common (MALM 1877). Last breedings in 1958 and 1985. Now missing (Dan KORN).
10. **Dalsland.** Common at Åmål in 1868 (KOLTHOFF & JÄGERSKIÖLD 1898). During the 1940s fairly common but disappeared in the period 1952 - 1954 (KARVIK 1964). After 1960 only three birds are reported during breeding season (Leif APPELGREN).
11. **Närke.** SUNDSTRÖM (1868): Not rare. ENGSTRÖM (1952): Fairly common. In 1956 a drastic decrease was noted. In 1962 only one pair was reported during breeding season (OTTERLIND & LENNERSTEDT 1964). The population during the 1980s is estimated to more than 200 pairs, more and more concentrated to optimal habitats in the southeastern part, but number roughly unchanged during the last 10 years (Lage JOHNSON). Censuses see Fig. 6.
12. **Södermanland.** Censuses of singing males. Following numbers can be mentioned: 94 in 1977 (BENGTSSON 1981), 70 in 1980, 95 in 1984, 40 in 1987, 65 in 1988 and 35 in 1990 (Leif KARLSSON).



13. **Värmland**. NILSSON (1858): Occurs in some areas. During the period 1939 - 1951 nestlings were ringed at 25 occasions (NRM). Found on burned forest clearings in the northern part for the first time in 1960 (EHRENROTH 1961). Decreasing number in agricultural areas in southern part. Present population estimated to 10 - 15 pairs (Erik BORGSTRÖM).
14. **Västmanland**. Present population estimated to 750 pairs. Has decreased with about 30 % since 1980. Habitats almost exclusively in agricultural land (Thomas PETTERSSON).
15. **Uppland**. MESCH (1844): Occurs here and there. The population decreased from the early 1950s up to 1965, whereupon an increase followed (Stolt 1974). At the beginning of the 1980s about 1000 pairs (STENLUND 1985) and at the end of the 1980s about 600 pairs (Martin TJERNBERG). In one area with 37 males in 1982 only 25 % were left in 1992 (Kjell ERIKSSON). Habitats in agricultural areas (Fig. 8 and 9, Plate I) are predominant. Census see Fig. 3.
16. **Dalarna**. Common in farmland areas at the beginning of this century. A longterm decrease since the 1950s (BYLIN 1975, Gunnar LIND, cf. Fig. 4). Present population estimated to less than 100 singing males. Probably some increase on forest clearings in the western part (Per ADENÄS).
17. **Gästrikland**. HARTMAN (1859): Breeds commonly. In the 1960s almost missing. Later some increase has occurred. Now found at i. e. gravel pits and old refuse tips (Lars STRINDBERG).
18. **Hälsingland**. WITT-STRÖMER (1950): Breeds in open, settled areas over the whole province; most common in larger agricultural areas, but occurs in smaller cultivated localities and new farmland clearings as well. Found locally during the 1970s and 1980s (Gustav ÅSTRÖM).

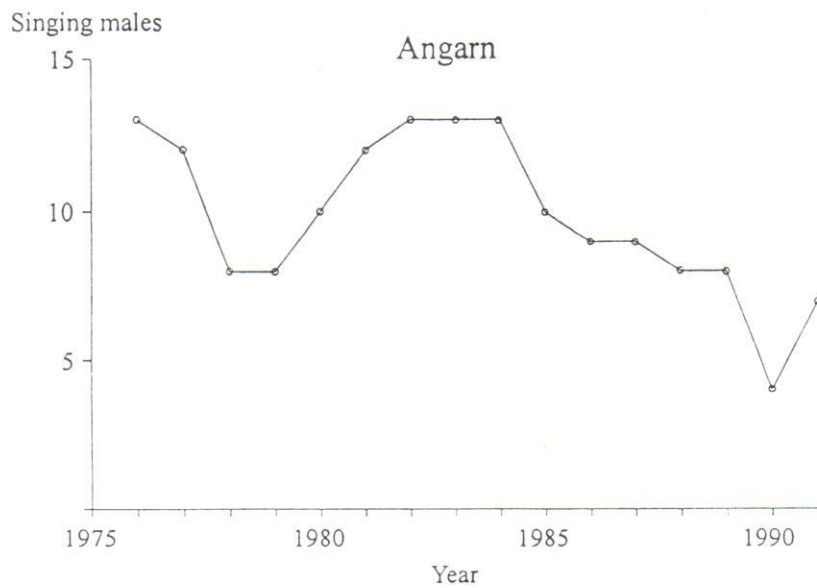


Fig. 3. Census of Ortolan Buntings *Emberiza hortulana* at Angarnsjöängen, province of Uppland. The area is 1,6 km<sup>2</sup> composed of arable land (1,1 km<sup>2</sup>), stony field islets, pasture fields, deciduous trees and small woods (STENLUND 1983, Kjell ERIKSSON pers. comm.).

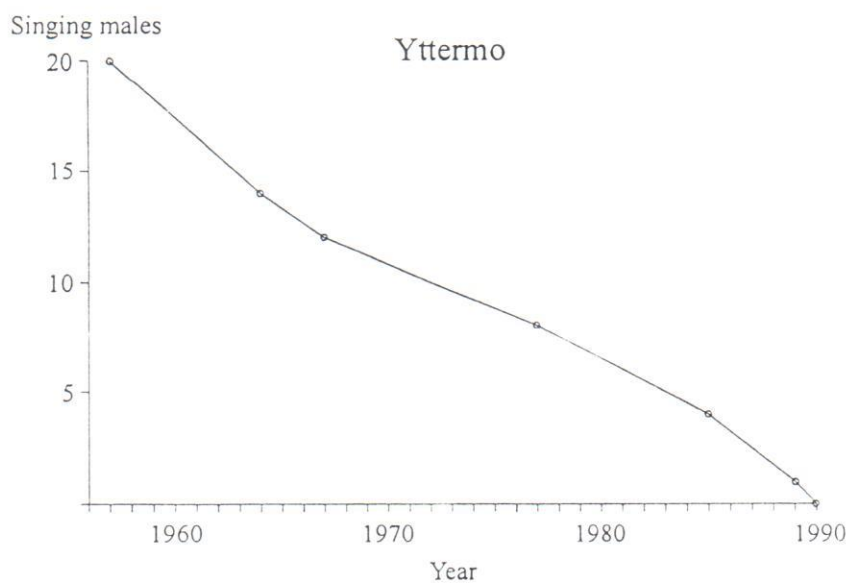


Fig. 4. Occurrence of Ortolan Buntings *Emberiza hortulana* at Yttermo, Leksand, province of Dalarna, during the period 1957 - 1989, not found in 1990 and 1991 (Gunnar LIND pers. comm.).





19. **Härjedalen.** Reported at Älvros, Sveg, Vemdalen, Valmåsen, Ljungdalen and Funäsdalen in 1951 (DURANGO 1963). One clutch ringed at Lillhärdal in 1956 (NRM). No recent information.
20. **Medelpad.** Youngs ringed in 1916 and 1939 (NRM). Fairly common (SOF 1990). Habitats in agricultural areas and woodland clearings as well. Decreasing: (Nils LUNDMARK).
21. **Jämtland.** CARLSON (1894): Occurs at Oviken and Östersund. NILSSON & PERSSON (1948): Found almost everywhere near settlements, excluding a few of the westernmost places. Nestlings ringed at 19 occasions 1943 - 1959 (NRM). Found locally during the 1970s and 1980s (Bengt-Olov STOLT). Present situation unknown.
22. **Ångermanland.** Nestlings ringed at 22 occasions 1941 - 1955 (NRM). Fairly common (SOF 1990). More common on clearings than in agricultural areas (Fig. 10 and 11, Plate II) (Kurt HOLMQVIST).
23. **Lappland.** Nilsson (1858): Common right up to the mountains. 14 clutches ringed 1915 - 1952 (NRM). HOLM (1970): Reported locally up to Kiruna. Decrease during the 1960s. Occurs in farmland areas and on large burned clearings. No recent information.
24. **Västerbotten.** KOLMODIN (1907): Fairly common near the coast. Very common (HOLM 1926). This province seems to have the largest number of Ortolan Buntings in Sweden. The present population can be estimated to about 10.000 pairs. Most of them on the 200.000 ha 3 - 10 years old woodland clearings and some of them in agricultural areas (Gustaf EGNELL & Linus ANDERSSON).
25. **Norrbotten.** W. von WRIGHT reported the species as very common at Övertorneå already in 1832 (HOLM 1970). Near the coast: Common during the 1970s and 1980s but decreased somewhat after 1985. Inland: local occurrence. Rare in the western and northern parts where it has decreased considerably (Ove STEFANSSON & Kjell PATOMELLA).

To summarize, for the 25 provinces and during the last years, the reports indicate unchanged number of Ortolan Buntings in 6 provinces, decreasing number in 7, disappearing or now missing in 5 and lack of information from 5 provinces (Fig. 5). Documented increase was not reported from any province.

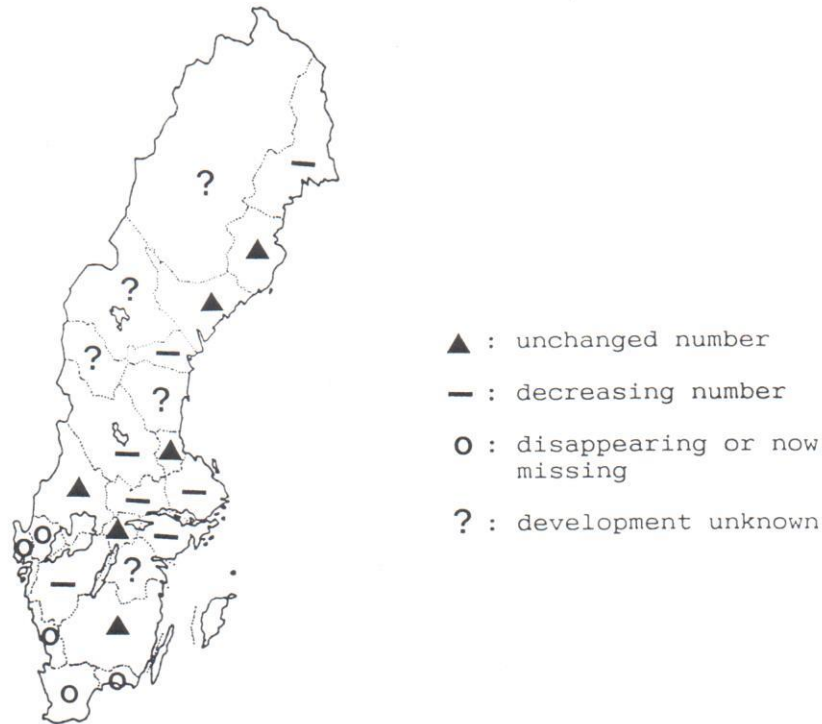


Fig. 5. Recent development of the Ortolan Bunting population in different provinces according to available reports in April 1992.

One pattern of distribution, that seems to recur when the population declines, is that large marginal areas are abandoned, while singing males concentrate to, and may increase in number in, small areas with optimal habitats (cf. Fig. 6).

#### 4. Breeding habitat

The Ortolan Bunting in Sweden has a preference for agricultural landscapes with an old-fashioned appearance. Probably more nest sites and food are available there than in large, modernized and more uniform cultivations. The degree of openness of the landscape seems to be an important quality of the habitat. Characteristic components of the habitat are cleared up edges of woods, patches with naked earth, like gravel roads or

sometimes abandoned gravel quarries, stony field islets, often grazing cattle and open water, for instance in ditches. The habitat often includes large trees with high heads, usually deciduous trees or pines, in northern Sweden often on sandy soil. As singing places the Ortolan Buntings often use conducting wires, tops of small barns out in the field, boulders, single trees etc., giving a wide view over the landscape.

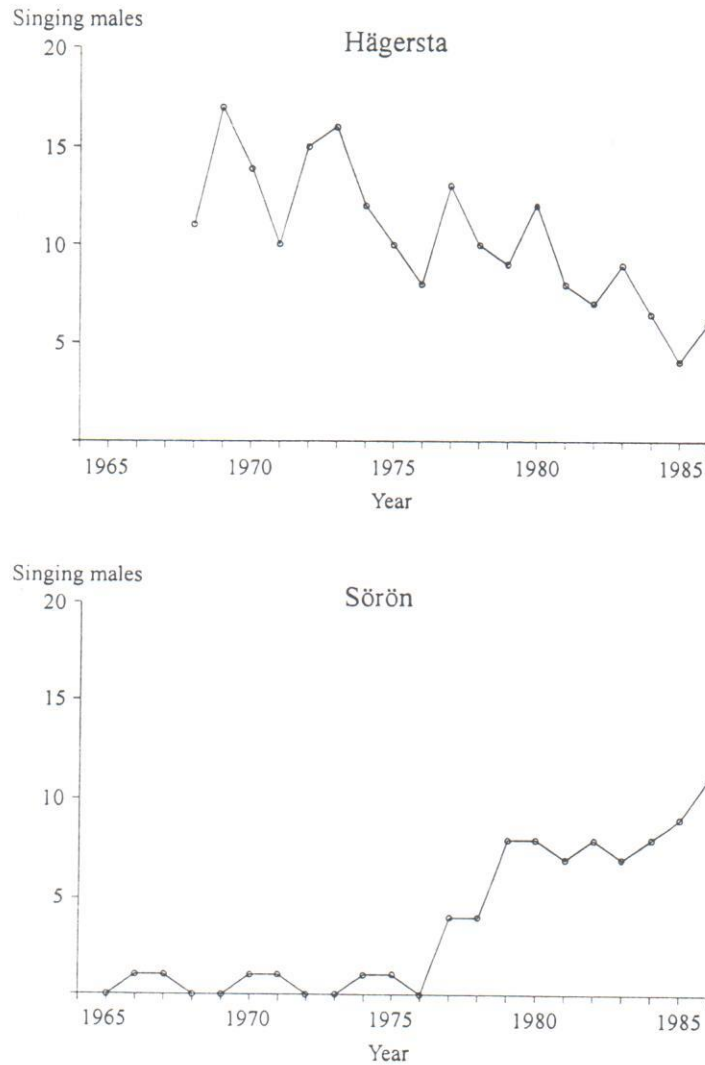


Fig. 6. Results from Ortolan Bunting *Emberiza hortulana* censuses in two areas, five km apart, in the province of Närke, Central Sweden. The area at Hägersta is about 165 ha with a main habitat of arable land mixed with some pasture fields and groves. The area at Sörön is about 20 ha and consists of deciduous woods surrounded by arable land. From RUNESSON & JÖNSSON 1987.



The importance of a warm and dry local climate has been stressed by i. e. DURANGO (1948) and ENGSTRÖM (1952). Some habitats like gravel quarries and refuse tips clearly offer warm and sunexposed slopes and so do most forest clearings.

A striking feature is that Ortolan Bunting territories usually are found in respectful distance from human dwellings or inhabited houses, giving the impression of a cautious or shy behaviour. Forest clearings, for instance, are rarely visited by people.

During the 1960s and 1970s the Ortolan Bunting rapidly colonized, new, large forest clearings in northern Sweden from about 61°N. EHRENROTH (1961) reported Ortolan Buntings on burned forest clearings in Värmland and AHLÉN (1975) found Ortolan Buntings on clear-cut forest areas from the upper part of the province of Dalarna and northward. AHLÉN found the species at elevations from sea level to timber line in the mountains. At present, it seems likely, that the main part of the Swedish Ortolan Bunting population breeds on forest clearings, though there is probably a recent marked decline in number in this habitat, too. The large forest clearings offer a suitable habitat for Ortolan Buntings only for a limited period, may be for 5 - 10 years. As the methods in forestry change the development of the population will be influenced.

In Sweden recent breeding habitats of the Ortolan Bunting have been found in:

1. Large forest clearings.
2. Agricultural areas.
3. Abandoned gravel quarries.
4. Refuse tips, a few reports.
5. A limestone quarry, one case.

### 5. Possible causes of the population changes

**Available habitats.** New habitats like large forest clearings and abandoned gravel quarries have been available during the last decades and have been colonized by Ortolan Buntings. At the same time many habitats around expanding towns and villages and in modernized agricultural areas have been lost. However, my impression is, that there are many habitats that look suitable for Ortolan Buntings but are not occupied.

**Breeding success.** The hypothesis that the decline of the Ortolan Bunting population in Sweden is caused by decreased reproduction success, accompanied by an increased frequency of replacement broods (which are later than the first broods), has been tested on a material of 167 Ortolan Bunting clutches ringed during the years 1915 - 1990. No significant change over the years was found in the number of youngs per nest or in the seasonal pattern of nestlings (STOLT, 1993). The results indicate that those Ortolan Buntings breeding in Sweden after the 1950s are as successful breeders as those during earlier decades.

**Survival.** During a period in the 1950s, and in the beginning of the 1960s, the Ortolan Buntings suffered from the use of alkyl-mercury compounds in seed dressing in Sweden (OTTERLING & LENNERSTEDT 1964). This use was later prohibited.

Road traffic has increased markedly in many countrysides during the last decades, and more and more roads are laid with a permanent surface. I think this is, at least in some areas, a clear disadvantage for Ortolan Buntings, that spend much time on the ground. The increased traffic may be a danger especially for young after they have left the nest.

Nothing seems to be known about changes in survival during wintering in West Africa and during migration over the Sahelzone of Sahara.

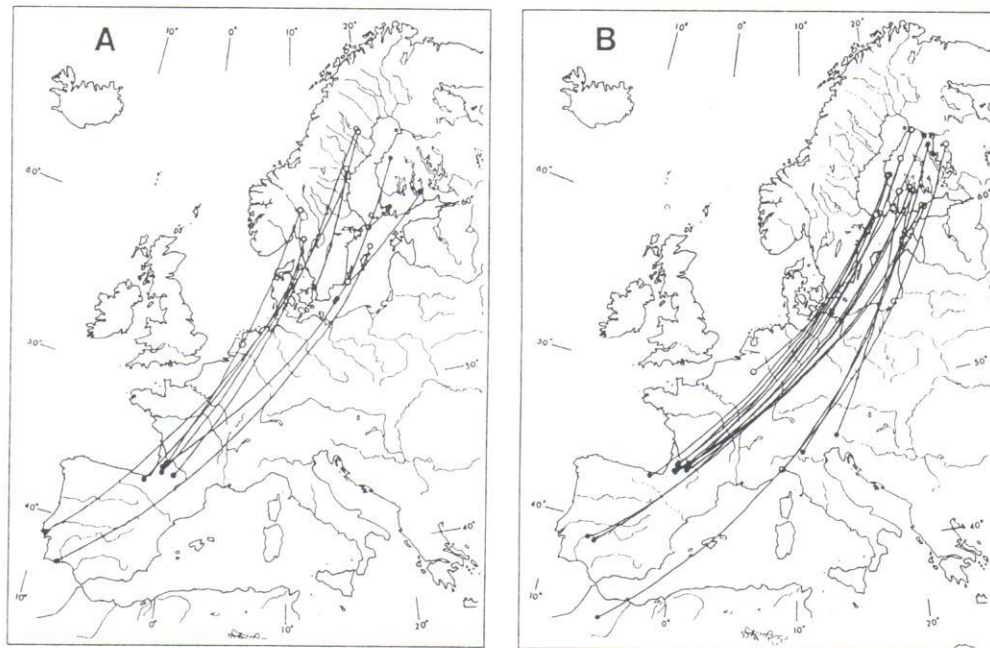


Fig. 7. Recoveries more than 100 km from the place of ringing of Ortolan Buntings ringed in Sweden, Norway and Denmark (A)  $n=12$ , and ringed in Finland (B)  $n=15$ . Ringing locality (open circle) and finding locality (filled circle) are joined by a line in a constant compass course. (From STOLT 1987).

During the autumn migration through Europe, however, one evident difference, against other comparable species, is the accumulation in a restricted area in southwestern France of recoveries of ringed Ortolan Buntings (STOLT 1977, 1987, cf. Fig. 7). Most



of the Ortolan Buntings recovered there have been shot or caught in traps. One of our latest cases is an Ortolan Bunting killed at Landes on August 27<sup>th</sup> 1988, only six days after it was ringed on the island of Gotland. During these six days it moved 1981 km SW, which means a speed of migration of 330 km/day (STOLT et al. 1992). As far as I am aware a largescale traditional hunting of Ortolan Buntings is still taking place in southwestern France (cf. ARNHEM 1992). If that is so, it might well influence the population and it is desirable that this hunting should cease as soon as possible.

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Last corrections July 4<sup>th</sup>, 1994





Fig. 8: Ortolan Bunting habitat of several years in agricultural land. Birches along a small gravel road. Two singing males in 1993. Sweden, Uppland, Harbo, June 17<sup>th</sup> 1993. Photo: B.-O. STOLT.



Fig. 9: Ortolan Bunting habitat of several years in agricultural land with a small gravel quarry in a low esker hill. Three singing males in 1993. Sweden, Uppland, north of Uppsala, May 29<sup>th</sup> 1992. Photo: B.-O. STOLT.



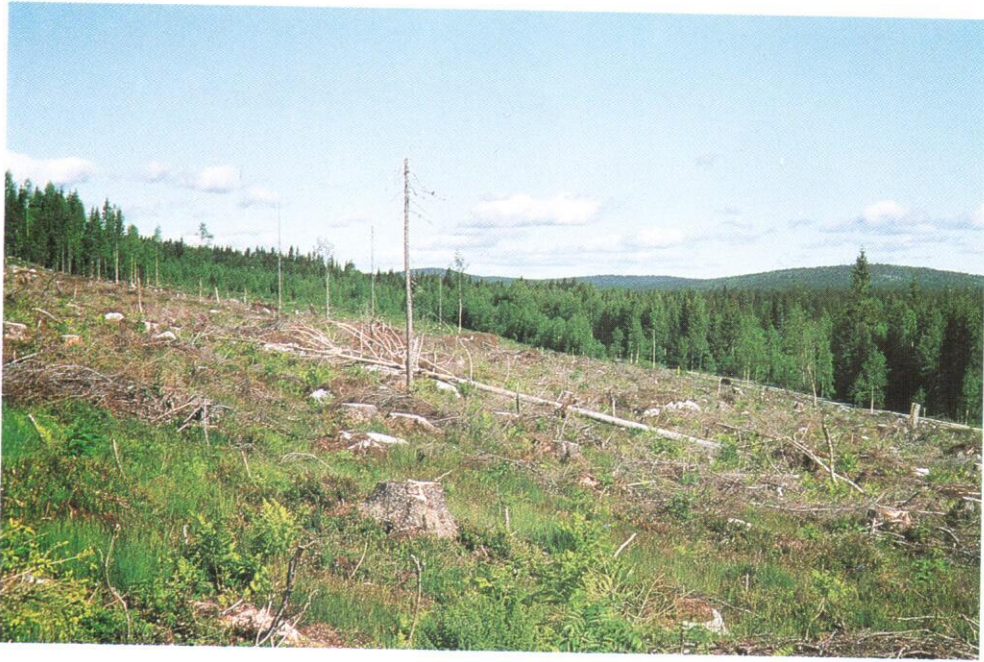


Fig. 10: Ortolan Bunting habitat in a forest clearing. Singing male in the dry remainder of a small tree near the centre of the picture. Sweden, Ångermannland, northwest of Hynghelsböle, June 15<sup>th</sup> 1993. Photo: B.-O. STOLT.



Fig. 11: Ortolan Bunting habitat in a forest clearing adjoining a meadow. Three singing males in 1992 and 1993. Sweden, Ångermannland, Nordingrå, June 13<sup>th</sup> 1992. Photo: B.-O. STOLT.