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Decline and extinction of Shrikes *(Laniidae)* as breeding birds in Flanders (Northern Belgium)

An analysis of all published observations since 1985

by Dries VAN NIEUWENHUYSE[1]

Introduction

Population trends in shrikes *Laniidae* have been very negative in most European countries for the last thirty years (TUCKER *et al.*, 1994). In Belgium the Red-backed Shrike *Lanius collurio* and the Great Grey Shrike *Lanius excubitor* showed dwindling population numbers during the eighties (BAUGNIET & LHOEST, 1988). Since the end of that decade, the situation of the Red-backed shrike has improved significantly (VAN NIEUWENHUYSE, & VANDEKERKHOVE, 1989; VAN NIEUWENHUYSE, 1992; KOWALSKI, 1999). Recently its populations have reached levels as seen in the early sixties. At the same time, the situation of the Great Grey Shrike remained negative (ROTHHAUPT & VAN NIEUWENHUYSE, 1997).

In Flanders (Northern Belgium), the negative trend has led nevertheless to the extinction of both species. Indeed, the positive trend in *Lanius collurio* observed elsewhere is not seen in the current evolution of populations in this region. We review here all recent data and discuss the future of shrikes in Flanders.

Material and methods

Data collection

Three kinds of data were collected: breeding data (1985-1998), data on migrating birds and data on wintering birds (1985-1996).

Breeding data were gathered from local and regional breeding bird atlases (DEVILLERS *et al.*, 1988; VLAVICO, 1989; GABRIËLS, 1985; HERMANS, 1994) and the two reports (1994; 1995-1996) of the "Bijzondere Broedvogels Vlaanderen"-project (DEVOS & ANSELIN, 1996; ANSELIN, DEVOS & KUIJKEN, 1998). The breeding data were recorded

(1) "Het Speihuis", Speistraat 17, B - 9550 Sint-Lievens-Esse (Herzele).

as number of breeding pairs per location per year, no individual observations were included on a day-to-day basis.

The data on migrating and wintering birds were collected from "Recente meldingen in Vlaanderen" by SYMENS (1985-1996) as published in *Oriolus*. The data on migrating and wintering birds are recorded as individual observations of one bird at a certain time and place for a certain period.

The time spent by wintering birds is not always mentioned in detail in publications. Such wintering birds are arbitrarily recorded as being present from December 21st until March 20th the following year. The time spent wintering is the time between the two extreme dates of record +1 day, multiplied by the number of birds present.

Results

Breeding data of shrikes in Flanders

Red-backed Shrike *Lanius collurio*

The species suffered a strong decline recently ending up in near extinction. The species disappeared from the following locations in the indicated years : Hageven (1980), Oostnieuwkerke (1986), Stamproyerbroek (1987), Klein-Brabant (1989), Balen-Hulsen (1989), Meerhout (1989) (GABRIËLS, 1989), Sint-Huibrechts-Lille (1990), Lozerheide (1990), Lommel (1991), Zwarte Beek valley (1992), Jeker valley (1992), De Holen (1993) (HERMANS, 1994 and 1995). All other areas were abandoned before that period.

Besides a few isolated breeding pairs, the only region in Flanders where the species still bred in a small cluster until recently is Limburg. The evolution in Limburg (eastern province of Flanders) is documented by GABRIËLS (1985), HERMANS (1994 and 1995). In 1985 the species was still to be found in Limburg in 42 one km-quadrants, while in 1992 only 13 quadrants were occupied. The trend in Northern-Limburg and at Sint-Maartensheide is shown in Fig. 1. In 1994, only nine territories were found (DEVOS & ANSELIN, 1996) in Flanders, one in the Zwinbosjes (Knokke-Heist, east-coast) and 8 territories at the Sint-Maartensheide, Bree. In 1995 and 1996, there were still eight and six breeding pairs respectively, with only four reproducing successfully in both years. In 1997, only five pairs were found (Anselin, pers. comm.). Isolated breeding pairs were found in Sint-Huibrechts-Lille (1995), De Maatjes (Kalmthout) (1996) and Knokke (1996) (ANSELIN, DEVOS & KUIJKEN, 1998). In 1998 no breeding Red-backed Shrikes were recorded in Flanders (Anselin, pers. comm.).

Great Grey Shrike *Lanius excubitor*

The Great Grey Shrike is already extinct. DEVOS & ANSELIN (1996) give an upper and a lower estimation of population numbers since 1972. The following locations were abandoned in the indicated years : Klein-Brabant (1994), Kempen (Antwerp) (1989) and

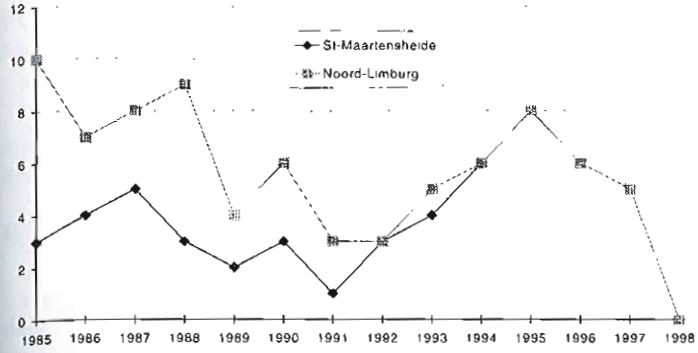


Fig. 1 - *Breeding population of the Red-backed Shrike in Limburg and Sint-Maartensheide from 1985-1998. - Population nicheuse de la Pie-grièche écorcheur dans le Limbourg et à Sint-Maartensheide* de 1985 à 1998.

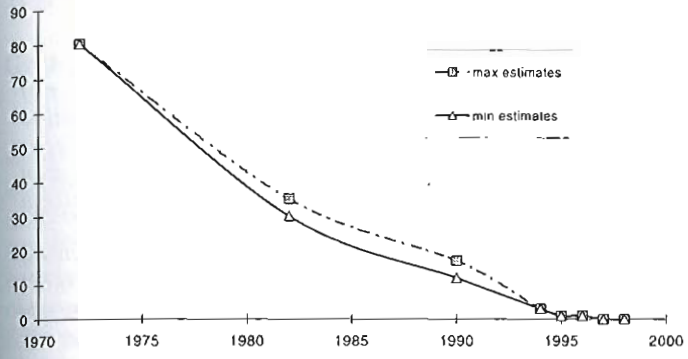


Fig. 2 - *Upper and lower estimates of the breeding population of the Great Grey Shrike in Flanders from 1972-1998. - Estimations de la population nicheuse de Pie-grièche grise en Flandre entre 1972 et 1998.*

Kempen (Limburg) (1993) (COECKELBERGH, 1989). Other areas were abandoned before that period. Three breeding pairs were observed in 1994 in the Demer valley (Testelt, Webbekom and Messelbroek). In 1995, there was one territory in Messelbroek (Demer valley) and in 1996 one territory in Zonhoven (Limburg). Since then no more breeding pairs were recorded (Anselin pers. comm.).

Since 1998 no shrikes were recorded as breeding birds in Flanders.

Wintering and migration data

A review of the total number of observations, number of individuals and the average time spent per observation per species since 1985 was made. Fig. 3 and 4 show the number of observations versus the time spent per year and per observation for *Lanius collurio* and *excubitor*.

Red-backed Shrike on migration

Except for the breeding pairs, the Red-backed Shrike is only observed on migration and stays only about one day per observation (average = 1.18 day, SD = 0.85). Fig. 4 b

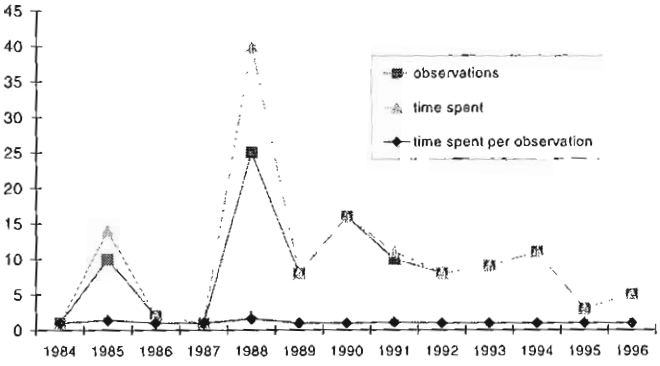


Fig. 3 - *Number of observations, total time spent and time spent per observation per year of the non-breeding Red-backed Shrike in Flanders.* -
Nombre d'observations, durée totale et durée moyenne des séjours de Pie-grièches écorcheurs non nicheuses en Flandre.

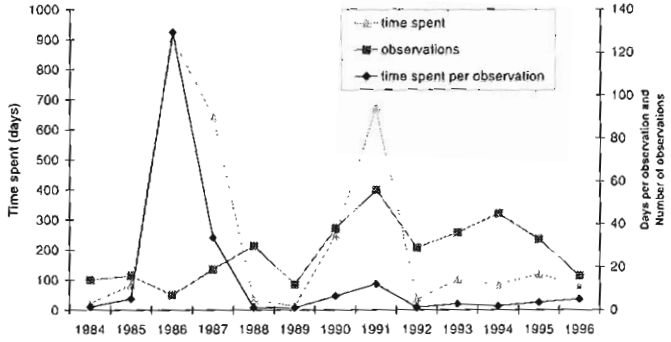


Fig. 4 - *Number of observations, total time spent and time spent per observation per year of the Great Grey Shrike in Flanders.* -
Nombre d'observations, durée totale et durée moyenne des séjours de Pies-grièches grises en Flandre.

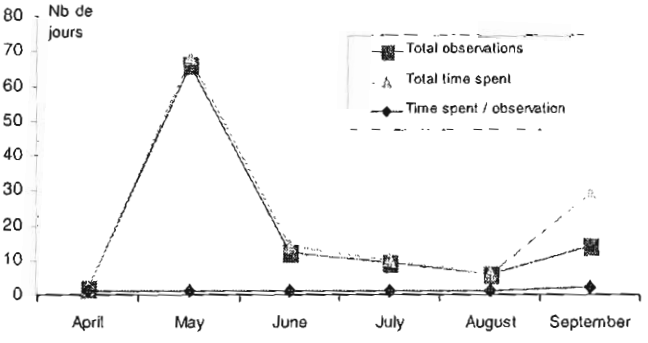


Fig. 4 b - *Distribution of the observations of the Red-backed Shrike per month during 1985-1996 in Flanders.* -
Distribution mensuelle des observations de Pie-grièche écorcheur en Flandre entre 1985 et 1986.

shows a distribution of the observations during the different months of the year. In September the average duration of stay is two days while during other months it is only one day. No further detail can be given about the gender of birds since the number of observations of males is too limited. Of 129 observation-days, only 30 are situated along the coast indicating no real preference for the coast as migration route. When grouping the observations per month and per location the Red-backed Shrike was observed in the

following locations at least 3 months of the year : Bocholt (May-July), Heist (May, July, September), Schulen (May-June, September).

Fig. 5 shows the distribution and the number of Red-backed Shrike observations-days in Flanders. The political boundaries are used to indicate the location. In most cases the location is given with more detail in the database.

Woodchat Shrike on migration

Short stays are also observed for Woodchat Shrike *Lanius senator* (average = 2 days, SD = 3.16) with only two extreme observations of 12 days. In contrast to HERROELEN (1989) the published data of the last decade reported most observations in spring (19 of 23 observations in May-June).

Great Grey Shrike wintering data

The duration of wintering stays of Great Grey Shrikes is considerable in 1986, 1987 and 1991, while other years are featuring shorter stays (Figure 3). COECKELBERGH (1989) also found some exceptional years with many wintering birds e.g. winter 1974-1975. An analysis of temperature data in Gent by BATSLEER *et al.* (1994) showed that 1986, 1987 and 1991 were the only severe winters during the analysed period. This suggests that a correlation exists between severe winter and wintering bird number. When grouping the observations per month and per location, the Great Grey Shrike was observed in the following locations in at least 4 months of the year : Aarschot (December-March), Bornem (July-April), Brecht (October-April), Eksel (October-April, August), Geel (October-January, March), Kalmthout (August-May), Kruibeke (August-March), Lommel (September-March), Mechelen (January-February, August-October), Mol (October-April), Neerijse (January-March, October), Neerpelt (October, December, January, March), Oud-Turnhout (February-April, October-November), Ravels (February-March, May, December), Schulen (January, March, May, September-October), Waasmunster (January, April, November-December), Willebroek (June-January, March-April).

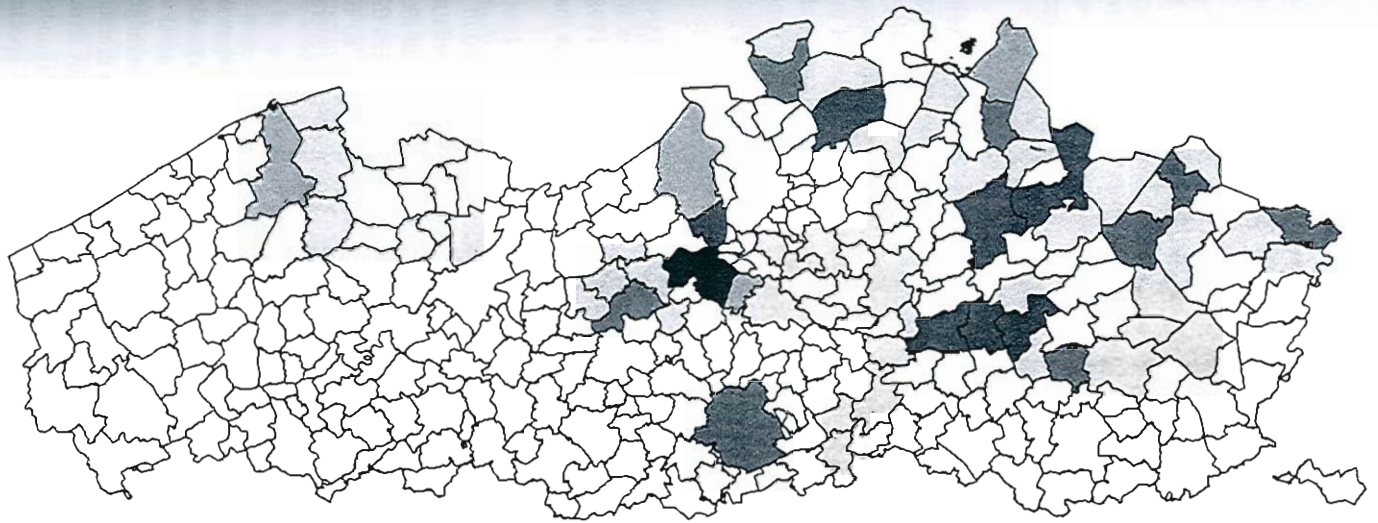
Fig. 6 shows the distribution and the number of Great Grey Shrike observation-days in Flanders. The political boundaries are used to indicate the location. In most cases the location is given with more detail in the database.

Discussion

Lanius collurio

The decline of the Red-backed Shrike in Flanders should be considered in an international context. Similar negative evolutions have taken place in the United Kingdom (PEAKALL, 1995), in Holland (VAN DIJK & HUSTINGS, 1999) and North-West France (Normandy, Brittany (CHABOT, 1999), Nord-Pas de Calais.

Fig. 5 - *Distribution of the observed days of the Red-backed Shrike during 1985-1996 in Flanders - Répartition des observations de Pie-grièche écorcheur en Flandre de 1985 à 1996 (cumul des jours d'observation).*



□ 0 (277)
□ 1-10 jours (44)
▒ 10-20 jours (4)
■ 20-80 jours (8)
■ 80-100 jours (7)
■ > 100 jours (2)

Fig. 6 - *Distribution of the observed days of the Great Grey Shrike during 1985-1996 in Flanders - Répartition des observations de Pie-grièche grise en Flandre de 1985 à 1996 (cumul des jours d'observation).*

In the UK the remaining population of about 50 breeding pairs in 1975 had totally disappeared in 1989. Causes for the decline were multiple but none was really determining. The breeding distribution shrunk at the bordering zones from a continuous range to a limited number of population clusters. Because of the site fidelity of the species (JAKOBER & STAUBER, 1989; VAN NIEUWENHUYSE, 1992), these population nuclei remained for a longer time but eventually disappeared, e.g. Hampshire (ASH, 1970), the Dutch dune areas, Wadden islands and heath and peat-moor areas in the Netherlands (VAN DIJK & HUSTINGS, 1999), Stamproyerbroek, De Wateringen Lommel, and the Zwarte Beek-valley in Flanders. In most cases no decline in the habitat quality was observed. Possibly no significant new influx of individuals takes place since the population density is so low. The local birds come back every year but gradually disappear since they are no longer replaced.

The contraction of the European breeding range to the southeast might explain the evolution around the Channel. This is a likely hypothesis since the recent population increase seen in south-east Belgium (VAN NIEUWENHUYSE, 1992; VAN DER ELST, 1990 & 1999), Luxemburg (Moes, pers. comm.), Germany (KOWALSKI, 1999), has no influence at all on the declining populations in the discussed area. The north-western border of the population is probably situated at the southern border of the Condroz. In Condroz itself no increase is seen in population numbers, while to the south of its border mainly around the Military Camp of Marche-en-Famenne a significant population growth is taking place (VAN DER ELST, 1999), as elsewhere in the core distribution area.

Recently some conservation initiatives were carried out in Flanders (HERMANS, 1995) without any lasting results. At Sint-Maartensheide only 13 potential territories are available of which eight were occupied in 1995, 6 in 1996, 5 in 1997 and none in 1998. The extent of conservation activities is currently limited to 4.5 ha. It became obvious that a viable population could not hold on such a limited surface.

The recent restoration of a peat-moor in the Netherlands (Bargerveen) resulted in a population-increase from 9 up to 145 breeding pairs between 1982 and 1996 (VAN DIJK & HUSTINGS, 1999). The managed area covers up to 2000 hectares of very mosaic-like habitat with plenty of large insects. Instead of working on a scale of a few hectares the extent of the action at Sint-Maartensheide should cover at least 100 hectares to be worthwhile. Initiatives by the government are restricted to re-allotment planning in general terms (VLM, 1993 a and b). No real large-scale measures are taken.

Among the different reasons for decline, the shrinking of the distribution range of the Red-backed Shrike in Flanders is the most important and the most difficult to tackle. In order to save the species, this phenomenon is both interesting to study and crucial to know. By better understanding the situation in areas at the border of the distribution range, more and better conservation work can be done there and in the core areas. To counter the shrinking of the range the remaining clusters should be secured on very short terms (VAN NIEUWENHUYSE, 1999). The conservation action in Limburg should be expanded to at least 100 ha of excellent shrike habitat if we expect a come back of the species

someday. Furthermore, we should establish some strategically located population clusters in nature reserves as stepping-stones as has been done in Bargerveen. Preferably this should be done in larger nature reserves in the southeast of Flanders. Special attention should go to Schulensbroek since this nature reserve has frequent visits of the Red-backed Shrike and especially Great Grey Shrike. The coastal zone of Northern France, Flanders and the Netherlands could also be considered. Buffering areas around large nature reserves could be improved significantly for both species with modest investment. Management techniques for shrikes can be found in VAN NIEUWENHUYSE (1996) and SCHÖN (1998).

Lanius excubitor

The Great Grey Shrike in Flanders is extinct as a breeding bird. Priorities should be focused on improvement and construction of new habitat in those areas where wintering birds are often seen (at least 100 Great Grey Shrike observation-days). Special attention should go to the areas in Aarschot-Diest, Brecht - Groot Schietveld, Eksel, Geel, Klein Brabant, Kruibeke, Mol, and Schulensbroek.

It is obvious that shrike conservation in Flanders is a rather risky enterprise. In combination with the Red-backed Shrike, initiatives for the Great Grey Shrike are best concentrated on Schulensbroek where many observations of both species were recorded.

Perhaps the most alarming aspect of the extinction of shrikes in Flanders is the relative ignorance of both the general public and the ornithological community.

RESUME - Diminution et extinction des pies-grièches (*Laniidae*) en tant qu'oiseaux nicheurs en Flandre. Une étude de toutes les observations publiées depuis 1985.

La diminution et la disparition de la Pie-grièche écorcheur et de la Pie-grièche grise en Flandre sont discutées. Les populations de Pies-grièches écorcheurs se sont récemment réduites à un petit groupe au Limbourg et un seul couple le long de la côte en 1996, pour aboutir à une complète disparition en 1998 (Fig.1 et 3). La diminution de la Pie-grièche écorcheur semble être liée à la diminution, au niveau international, des aires de nidification et à leur déplacement vers le sud-est. De semblables diminutions ont été constatées en Hollande, en Grande-Bretagne et dans le nord de la France. La Pie-grièche écorcheur n'est actuellement plus observée (Fig. 2 et 4) qu'en période de migration, et généralement pendant une journée tout au plus. La Pie-grièche grise n'hiverne en nombre significatf que lors des hivers rudes. Lorsque les hivers sont cléments, ses séjours sont encore plus courts.
Les lieux d'observation les plus réguliers des deux espèces sont indiqués (Fig. 5 et 6). Si nous voulons revoir des Pies-grièches en Flandre, des mesures de protection doivent être prises à une beaucoup plus grande échelle qu'actuellement, tout spécialement pour les sites de migration et d'hivernage (par ex. Schulensbroek) et pour les régions limitrophes des réserves naturelles.

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