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# Brief report

## Wide fluctuations in the Finnish population of the Great Grey Shrike *Lanius excubitor* during recent decades

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During the last two decades many ornithologists in Finland have detected a decline in the numbers of Great Grey Shrikes (*Lanius excubitor*) seen on passage in southern Finland. Nowadays the species is not a common sight on extensive fields and shore meadows in late September – early October as it used to be some twenty years ago. Then even 20–30 individuals could be counted on a single day's excursion by car. To find out whether real long-term changes in the numbers of migrating Great Grey Shrikes could be demonstrated, we checked the archives from the bird observatories of Lågskär and Signilskär in the Åland archipelago between 1950 and 1994.

Lågskär and Signilskär are small, rocky islands (about 40 and 70 ha in size), in isolation out at sea (appr. 20 and 10 km from the mainland of Åland), and about 50 km apart. The open habitats, with some scattered clumps of trees and thick growths of bushes, offer good hunting areas for migrating Great Grey Shrikes. As these are very conspicuous birds and always scarce visitors on the islands, they were easy to spot and their number each day was easy to count. Differences in observation efficiency due to the number of observers (1–9) on the islands were not discovered. We considered only autumns with uninterrupted observation from late September to early November. The autumn totals were obtained by adding up the daily numbers noted, even if these also include repeated observations of the same birds that stayed for two or more days on the islands. This source of error could interfere in comparing low years with each other. Changes in migration pattern, caused for instance by weather conditions, could also affect the small sample. However, this variation would probably be fairly random and could not produce any trends over several years.

The observations of 1950 to 1959 come from Signilskär, those of 1965 onward from Lågskär. As the location, size and habitats of these islands are very similar, Great Grey Shrikes seem to occur roughly in the same numbers at both observatories. For instance, in 1983 when both islands were manned for the whole autumn, the total of shrikes was 23 at Lågskär and 20 at Signilskär. Hence, the data from both observatories are comparable.

The results (Fig. 1) show convincingly that the numbers of migrating Great Grey Shrikes, which were rather low in the 1950s, increased steeply by about fourfold around mid-1970s, and declined to the same low level again in the 1980s and early 1990s. Although there is some annual fluctuation, as expected, the overall pattern is very clear. The same trend can also be seen from the daily peak numbers recorded: in the 1950s and from 1979 onwards, the maximum number per day was 1–4, while in the mid-1970s 5–15 birds were observed on peak days.

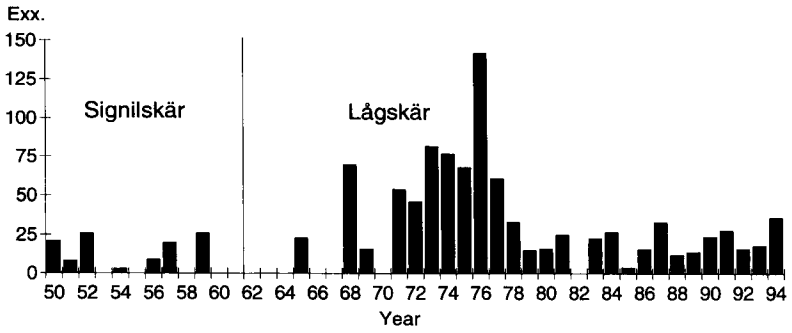


Fig. 1. The autumn totals of the Great Grey Shrikes for the period 1950–1994, combined from two bird observatories in SW Finland, Signilskär and Lågskär. Note that the zero years denote interrupted observation!

No corresponding changes have occurred in the numbers of Great Grey Shrikes overwintering in Finland. In the mid-winter counts from 1956/57 to 1993/94 (winter birdcount records in the Zool. Mus. of the Univ. of Helsinki), the yearly numbers of Great Grey Shrikes recorded have varied without any clear trend between 7 and 67 and the densities between 0.02 to 0.1 per 10 km of route. Hence, overwintering in Finland seems to be independent of the population size. The Great Grey Shrike is a partial migrant in Finland. In favourable food conditions, the migration is extended till February, but the number of shrikes staying through the winter is always very low (Mikkola 1968). Thus, it seems probable that the size of the overwintering population is determined by the availability of food.

Information on the recent population changes of the Great Grey Shrike from Sweden and Britain, as well as from the species' breeding range in Finland, are in good accordance with the above data from the Åland bird observatories, showing that these trends concern large geographic areas. At Falsterbo, the southernmost point of Sweden, the numbers of migrating Great Grey Shrikes increased more than fourfold from 1949–54 to 1973–77 (Roos 1978). Olsson (1980) has described the rapid and strong increase of the breeding population in Sweden in the 1960s, which resulted in an expansion by c. 250 km to the south till 1975. In Finland, the Great Grey Shrike population of the central breeding areas roughly doubled from the mid-1960s to the late 1970s, and the southern boundary of the range shifted strongly southwards (Huhtala 1983). Since this, a sharp decline in the numbers of Great Grey Shrikes has been reported from several areas in Sweden (e.g. Bengtsson et al. 1987, Hedgren 1987, Egnell et al. 1989), in parallel with the downward trend in Finland (Väisänen et al. 1992). In Britain, the trends in numbers of wintering Great Grey Shrikes, coming mainly from Scandinavia, almost entirely coincide with the data from Finland and Sweden: gradual increase in the 1960s and early 1970s, since then a declining trend (P. M. M. Bircham, pers. comm.).

What are the reasons for such striking changes in the populations of the Great Grey Shrike? Olsson (1980) considers that changes in forest habitats due to extensive clear-cutting since the 1950s are the most important reason for the population increase and range expansion. Large clear-cut areas have created new hunting and breeding grounds for the Great Grey Shrike, as for vole-hunting owls, and it seems likely that this habitat change initiated the strong population increase.

In Finland, as in Sweden, clear-cutting has been the prevailing practice in forestry, a dramatic and sharply criticized measure (e.g. Aarne 1994). In Finland, the large-scale drainage of wetlands, clearly concentrated to the period 1965 to 1975 (Aarne 1994: fig. 4.6), may have been a contributing factor to the population increase of the Great Grey Shrike, as ditched, drying moors offer more suitable habitats to the shrikes than wet mires. Habitat changes may also explain the downward trend since the mid-1970s, as new clear-cuts only in part compensate for the afforestation of earlier one's and in addition to this large areas of natural breeding habitats have been lost on account of the peat industry and afforestation of marshland.

Long-term climatic changes may have contributed to the population changes, as besides the Great Grey Shrike, quite a number of other northern species (e.g. *Pluvialis apricaria, Numenius phaeopus, Limosa lapponica, Philomachus pugnax, Fringilla*

*montifringilla*), which had been receding during the first half of the century, began to increase and expand to the south in the 1950s-1970s (Hildén 1986). Huhtala (1983) has stressed the significance of microclimatic factors in the habitat selection of the Great Grey Shrike.

The population increase of the Great Grey Shrike in the 1970s can not be related to the short cycles of microtine rodents (e.g. Henttonen et al. 1987), but the summers of the early 1970s were advantageous for passerines in general and the large numbers of migratory birds, observed at Signilskär and Lågskär (J. Palmgren & P. Puhjo pers. comm.), indicate that, both for nesting and migration, these years provided ample food for the shrikes.

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## Selostus: **Suuria muutoksia Suomen lapinharakkakannassa viime vuosikymmeninä.**

Monet ornitologit ovat kiinnittäneet huomiota siihen, ettei lapinharakoita näe nykyisin muuttoaikoina läheskään yhtä yleisesti kuin parikymmentä vuotta sitten. Tutkiaksemme onko lajin lukumäärissä todella tapahtunut merkittäviä muutoksia viime vuosikymmeninä, kävimme läpi Signilskärin ja Lågskärin lintuasemien aineistot 1950–94. Kunkin syksyn kokonaissummaan laskettiin päivittäin havaittujen yksilöiden määrä; vain vuodet, jolloin havainnointi oli ollut yhtäjaksoista syyskuun jälkipuoliskolta marraskuun alkupuoliskolle, kelpuutettiin mukaan.

Tulokset (kuva 1) ovat hyvin selvät. Lapinharakoita nähtiin melko vähän 1950-luvulla, sitten niiden määrät kasvoivat noin nelinkertaisiksi 1970-luvun puolivälin huippuvaiheessa ja romahtivat takaisin alhaiselle tasolle 1980-luvulla ja 1990-luvun alussa.

Tiedot lapinharakan kannanvaihteluista Ruotsissa, Britanniassa (talvehtijoita Skandinaviasta) ja Suomen pesimäalueella ovat hyvin samansuuntaiset: jyrkkä runsastuminen ja pesimäalueen laajeneminen 1950-luvulta 1970-luvun puoliväliin, sitten jyrkkä taantuminen. Suomessa vähälukuisina talvehtivien lapinharakoiden määrissä ei sen sijaan ole tapahtunut vastaavia muutoksia (talvilintulaskenta-aineisto).

Olssonin (1980) mukaan, runsastumisen pääsyynä olivat todennäköisesti valtavat avohakkuut, jotka 1950-luvulta lähtien loivat lapinharakoille erinomaista uutta saalistus- ja pesimäympäristöä. Myös laajamittainen soiden kuivatus, on voinut olla lisätekijänä Suomessa, koska kuivat suot tarjoavat lajille parempaa pesimämaastoa kuin märät. Taantuminen 1970-luvun puolivälin jälkeen voi johtua uusien, laajojen hakkuuaukkojen vähentymisestä entisten aukeiden samalla metsittyessä.

Ilmastotekijöiden mahdolliseen osuuteen viittaa se, että eräiden muidenkin pohjoisten lajien (esim. kapustarinta, pikkukuovi, suokukko ja järripeippo) kannankehitys ja pesimäalueen muutokset ovat olleet samansuuntaiset kuin lapinharakan. Lisäksi 1970-luvun suuret pikkulintukannat tarjosivat lapinharakoille runsaasti ravintoa.

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