

jäljellä. Emo oli kohentanut pesän neljää munaa ympäröiväksi siistiksi untuvakiehkuraksi, josta ei enää hevini huomannut, että pesästä oli poistunut poikue. Pesä tarkastettiin viimeisen kerran 1. päivänä elokuuta, jolloin emo edelleenkin jatkoi hautomistaan.

Perämeren alueella tukkasotkan pesien joutuminen nousevan meriveden uhkaamiksi ja pesien korottaminen on tavanomaista (mm. Merilä ym. 1975, Merilä & Vikberg 1980), jolloin pesän korotusmateriaaliin hautautuu usein munia. Sen sijaan kerran pesäainesten alle joutuneiden munien kaivaminen esiin on poikkeuksellista (Merilä & Orell, julkaisematon). Tässä tapauksessa naaras mitä ilmeisimmin oli menettänyt poikueensa pian pesästä lähdön jälkeen. Naaraalla on edelleenkin ollut riittävästi hautomisviettiä jäljellä palatakseen pesälleen kunnostamaan sen.

Andersson & Komu (1966) totesivat kaksi tapausta, joissa haahka hautoi tyhjää pesää, mahdollisesti menetettyään poikueensa.

Tukkasotkan kokonaishaudonta-ajaksi (normaali n. 26 vuorokautta; Mihelsons & Blums 1976) kertyi vähintään 40 vuorokautta (kun ei lasketa pois sitä aikaa, jonka naaras vaelsi poikastensa kanssa). Sorsalinnuista esimerkiksi jouhisorsa saattaa hautoa erittäin pitkään, jos munat eivät kuoriudu (Sowls 1955). Hildén (1976) on todennut vastaavanlaisia pitkiä haudonta-aikoja haahkalla, tukkasotkalla, lapasorsalla, lapinsirillä, urpaisella sekä tali-, sini- ja hömötiäisellä.

Summary: Tufted Duck returning to brood in nest after departure of ducklings

In 1975 some females of the Tufted Duck were marked with white hen feathers at Hailuoto, in the northern part of the Gulf of Bothnia (65°N, 24°E), to study the movements of the broods. One of the females laid the first of her eggs on 11 June. Soon after she had commenced laying, the sea level rose about 40 cm and the

female had to collect new nest material to raise her nest heap. During this activity four eggs were buried under the nest cup. Four eggs were stolen by crows or other animals and three hatched. During hatching the female uncovered the four buried eggs. By 17 July the female and the three ducklings had left the nest. Surprisingly, on 27 July the female was seen back in her old nest. She had repaired the nest wall and was brooding the four remaining eggs. At the last visit on 1 August, the female was still brooding. The authors consider that the female had lost her hatchlings at the very start of the post-breeding period, when her inclination to brood was still strong enough to make her return to the old eggs.

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Wintering areas of Great Black-backed and Herring Gulls from Heinäsaaret, the arctic USSR, and the northern Baltic in 1930—40

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During the early years of organized bird ringing activity in Finland (1928—33), a few ringers (mainly E. Merikallio, B. Kasantsev, O. Hytönen and D. Wikström) had the opportunity to ring gull chicks on the island group of Heinäsaaret (c. 69°45' N, 31°30' E), now in the Soviet Union. The few recoveries of these birds known to us today, illustrate both the migration route and the extent of the wintering area of these northern populations of Great Black-backed (*Larus marinus*) and Herring Gulls (*L. argentatus*). Recently, Stanley et al. (1981) discussed the origin of Herring Gulls wintering in the London area in Britain, and concluded that they are mainly birds from high latitudes, arctic Norway and Russia. It is interesting to compare this recent sample with the early Finnish records.

The Herring Gull established itself in the Finnish archipelago in the Gulf of Finland in the early 1930s (Bergman 1939). Some chicks were ringed in those early years, together with a number of Great Black-backed chicks. Records of the recoveries of these birds will also

be considered here, in order to compare their winter distribution with that of the arctic birds. Recent recoveries (1960—80) of the two species show that birds from both the Gulf of Finland and the Gulf of Bothnia are short-range migrants, wintering within the Baltic (Kilpi & Saurola, unpubl.).

Most of the birds recovered in 1930—40 were found in fresh condition, usually having been shot by the recoverer (N=65 of which 70 % had been shot). Only 15 % of them were reported as merely "found". Thus, the distribution of the recoveries mainly reflects the distribution of persons inclined to shoot gulls. As in nearly all recovery studies on larger birds, the relation between the main distribution of the finders, and the main distribution of the birds, remains unknown. In the case of the Herring Gull it is presumably safe to assume that the birds gather near urban centres, to feed on man-made food, such as garbage, but this is unlikely to be the case with the Great Black-backed Gull.

Some individuals of both species from Heinäsaaret

Table 1. Distribution of recoveries by age-class. The recoveries of the birds from Heinäsaaret were made in August—November (migration period), December—March (winter) and April—May (spring migration). For the birds from the Finnish coast only the winter recoveries (December—March) have been included.

Age	<i>Larus marinus</i>		<i>Larus argentatus</i>	
	Heinäsaaret	Finnish coast	Heinäsaaret	Gulf of Finland
(1yr)	4	3	18	20
(2yr)	—	1	4	7
(3yr)	1	1	1	2
(4yr)	—	—	1	—
(5yr)	—	—	2	—
Total	5	5	26	29

travelled very far in the non-breeding season, the maximum distances being 3145 and 2612 km for the Great Black-backed and the Herring Gull, respectively. Two recoveries of Herring Gulls in winter north of the Arctic Circle indicate that the wintering area was extensive. Great Black-backed Gulls travel even farther than Herring Gulls. Both species migrate southwards along the Norwegian coast.

The Herring Gulls from the Gulf of Finland utilized the southern part of the Baltic in winter, according to the recoveries presented here. The distribution of the recoveries in the 1930s is the same as that shown by a recent sample (Kilpi & Saurola, unpubl.); evidently, no noticeable changes have occurred in the southern limit of the wintering range during the last 50 years. Herring Gulls from the Gulf of Finland seem to be extremely scarce in the North Sea in winter. Due to the very low number of recoveries of the Great Black-backed Gull, its winter-range remains uncertain. It may have contracted during recent decades, the bird now wintering closer to the breeding area.

Most Herring Gulls from Heinäsaaret seemed to winter on the North Sea coast of Norway and Denmark (Fig. 1). These migration and wintering patterns apply, however, mainly to juvenile birds performing their first migration (see Table 1). Some of the gulls obtained by Stanley et al. (1981) originate from the same general area as the birds from Heinäsaaret. Thus, there seems to have been no significant change in the total wintering area of these arctic gulls during recent decades. Our results agree with those from other studies (Bianki 1977, Dementiev et al. 1969, Haftorn 1971). Johansen (1978) analysed a small sample of Herring Gulls ringed on the Norwegian coast (c. 62°N) and concluded that at least juvenile birds moved southwards considerable distances. According to Haftorn (1971), migration in both species may be age-dependent, adults being more sedentary. Stanley et al. (1981) did not discuss the age of the birds, but from their paper it appeared that adults occur among the Herring Gulls from arctic areas found in Britain in winter. Age has been reported to influence the migratory patterns of several Herring Gull populations (Gross 1940, Parsons & Duncan 1978). More field data are needed to assess the size of the wintering areas and the area occupied by different age-classes of Great Black-backed and Herring Gulls from NW Europe. Although the climate is the most likely reason from the migration of the two species both in arctic Norway and Russia and within the Baltic, the migratory habits differ. Herring Gulls from the Gulf of Finland have a restricted wintering area compared with their arctic conspecifics. This is probably due to the extensive use of man-made food, such as garbage, the occurrence of which seems to be very clumped and predictable, judged from extensive use during the last 50 years. Arctic birds may use natural food, utilizing tidal beaches, and may also have to move farther between patches of food. Herring Gulls wintering on the W coast of Sweden seem to exploit natural habitats for feeding whenever possible (Kihlman & Larsson 1975). The Great Black-backs may make longer journeys because they use man-made food sources less than the Herring Gull (Götmark 1982).

Although it may be possible to outline the general

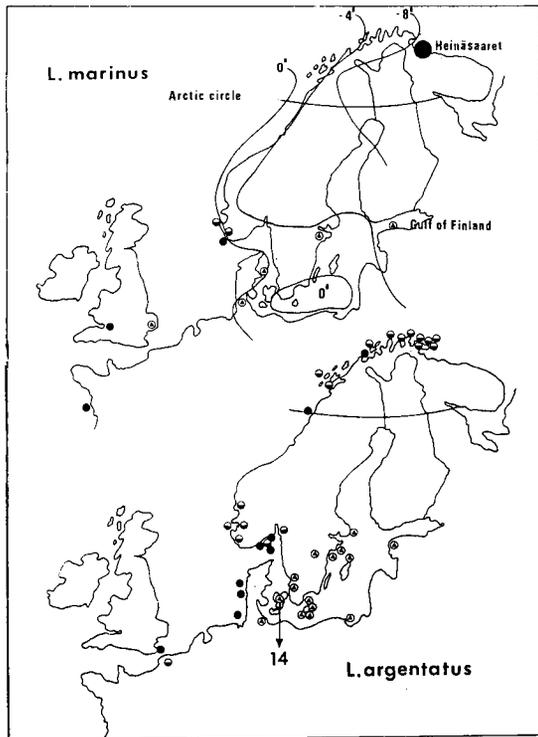


Fig. 1. Recoveries of Great-backed and Herring Gulls marked at Heinäsaaret (winter = filled circles, migration periods = half-filled circles) and the Finnish coast, mainly the Gulf of Finland (only winter, circles with triangles). January isotherms according to Angervo & Leiviskä (1944).

migratory pattern and the areas used by specific populations with the aid of ring recoveries, changes occurring over comparatively short periods of time may escape notice. Most ring recovery studies use material gathered over long periods — several decades — and recent changes may be overlooked. In the present case it appears that no significant changes have occurred in the movements of arctic gull populations.

Selostus: Petsamon Heinäsaarten ja Suomen rannikon meri- ja harmaalokkien talvehtimisalueet

Kirjoituksessa tarkastellaan vuosina 1928—33 Petsamon Heinäsaarilla suomalaisilla renkailla merkittyjen meri- ja harmaalokkien talvehtimisalueita. Vertailuaineistona esitellään Suomen rannikolla rengastetuista meri- ja harmaalokeista vuosina 1930—40 saadut talvilöydöt. Petsamon meri- ja harmaalokit talvehtivat hyvin laajalla alueella Norjan ja Tanskan rannikoilta Ranskaa ja Brittein saaria myöten. Englantilaisten pyyntitulokset viime vuosilta viittaavat siihen, että Petsamon harmaalokkien talvehtimisalue on edelleenkin yhtä laaja. Myös Suomenlahdella syntyneiden lokkien talvehtimisalue näyttää 1930-luvulla olleen sama kuin nykyään: kaikki löydöt ovat Itämeren piiristä. Heinäsaarten ja Suomenlahden harmaalokit eivät talvisinkaan joudu toistensa kanssa tekemisiin.

Merilokkilöytöjä on liian vähän tarkempaan tarkasteluun. Mahdollisesti Suomenlahden merilokkien talvehtimisalue on nyt suppeampi kuin viisikymmentä vuotta sitten. Ainakin 1930-luvulla Itämeren ja Petsamon merilokit olivat talvisin toistensa kanssa kosketuksessa.

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Tukkimiehentäit *Hylobius abietis*, Col. Curculionidae, kalalokkiyhdykskunnan *Larus canus* ravintona

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Kalalokin *Larus canus* ravintoa on Suomessa tutkittu niukasti. Omnivoreina kalalokit käyttävät elinalueensa ravintomahdollisuuksia tehokkaasti hyväkseen, ja niiden ravinnossa erilaisilla selkärangattomilla on merkittävä osuus (v. Haartman ym. 1967). Turun saaristossa Lemmetyinen (1964) havaitsi kalalokkien syövän erityisesti kauran jyviä ja sinisimpukoita *Mytilus edulis*, jotka muodostivat 75 % ravinnosta. Kaloja esiintyi 16 %:ssa oksennuspalloista. Hyönteisiä, lähinnä rantavyöhykkeessä eläviä kovakuoriaisia, tavattiin vajaassa 4 %:ssa näytteistä. Saalas (1943) mainitsee kalalokin voivan pyydystää myös haitallisia kärsäkkäitä.

Eräessä tanskalaisessa tutkimuksessa tarkastettiin lähes 2900 kalalokin mahaa (Haftorn 1971). Hyönteisten esiintymisfrekvenssi oli 51 %. Kasviravintoa (26 %) ja jätteitä (22 %) tavattiin niinkään runsaasti. Kaloja ja lie-roja lokit olivat syöneet huomattavasti vähemmän (molemmat 12 %).

Useat brittiornitologit (Oldham 1932, Betts 1949, Vernon 1970, 1972, Ewing & Ewing 1975, Picozzi 1981) ovat kiinnittäneet huomiota kalalokin hyönteisravintoon. Vernonin (1970) mukaan lie-roja olivat kalalokin pääravintoa ruohikkomailla kun sääolot matojen pyyntiin olivat suotuisat. Hyönteisiä lokit söivät matojen siirtyessä kui-