

## Recoveries

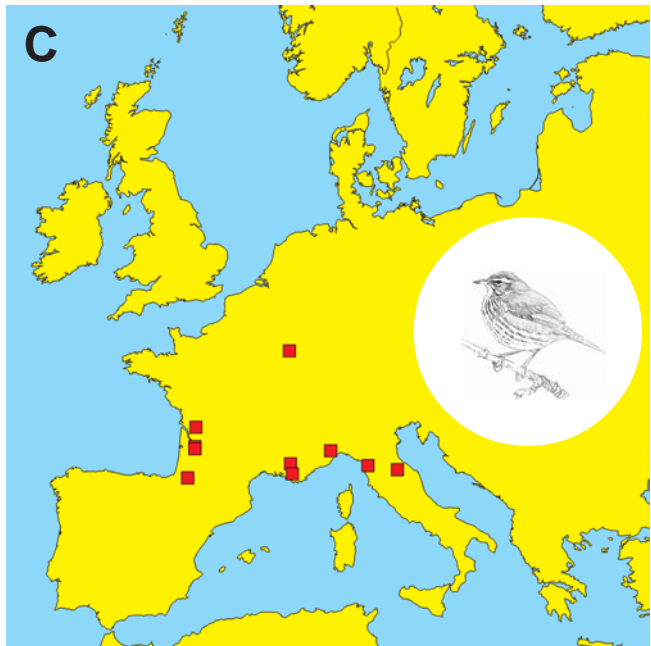
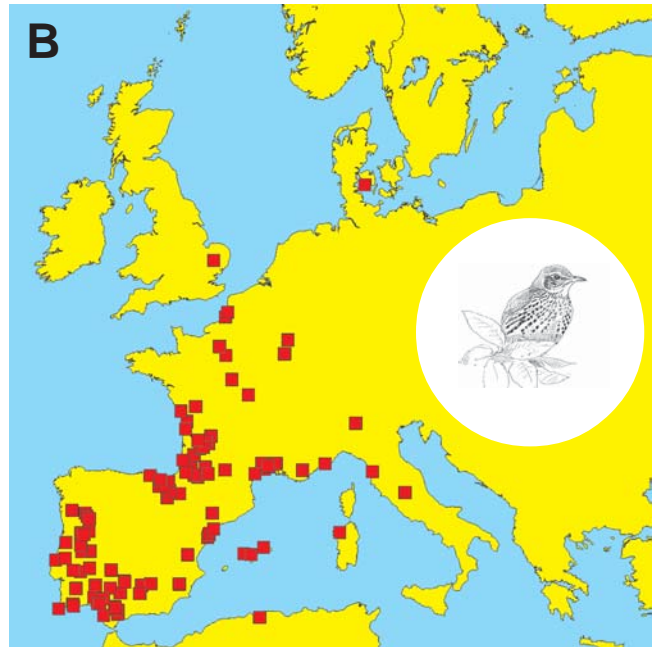
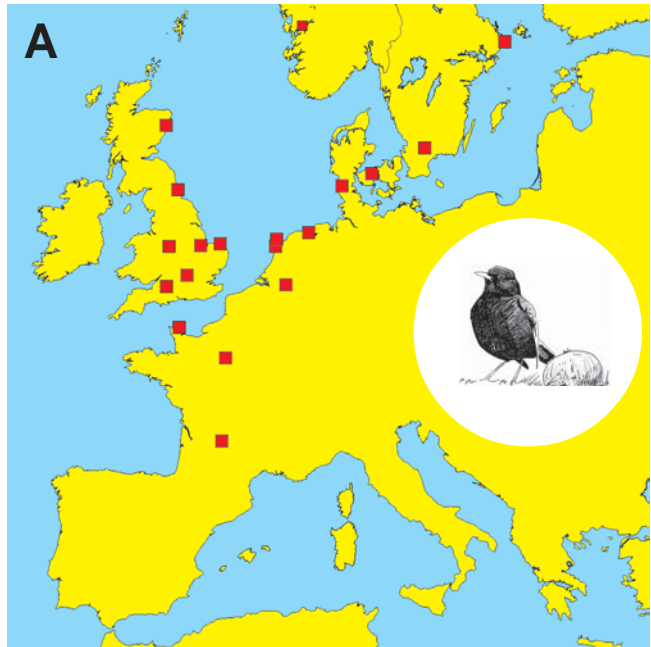
The original purpose of ringing was to find out where birds spend the winter, where they breed, and which routes they use to migrate between these two areas, by mapping recoveries of ringed individuals. Ringing nestlings means the breeding site of the birds is known, which adds value to any subsequent recovery. However, many species put their nests in inaccessible places or where attempted ringing may cause damage or disturbance. Also, many birds need to be ringed in order to generate a single recovery – something that applies especially to small passerines. Here, the large-scale trapping of fully grown migrating birds of various species at bird observatories makes an important additional contribution.

Of all the 846,000 birds ringed at Falsterbo only 5,801 (0.7 per cent) had been recovered prior to 2004. These recoveries are spread among 136 species. For small passerines – by far the most commonly trapped birds at Falsterbo – the recovery rate in many cases is less than 0.5 per cent. For certain species, such as Willow Warbler and Goldcrest, it is as low as one per 1,000.

Put simply, one can say that the larger the bird, the higher the recovery rate. In larger passerines like thrushes, the recovery rate is about 1–3 per cent. For larger birds like swans, ducks, raptors, waders and gulls, the recovery rate is higher still. Thus, for Common Teal, about 23 per cent of the ringed birds are recovered, for Sparrowhawk about 12 per cent and for Common Snipe about 8 per cent. Most of the recovered Common Teal and Common Snipe have been shot. Hunting or ringing activity in a certain region may therefore produce a distorted image of the wintering areas for a particular species (cf. Reed Warbler recoveries in Belgium, Fig.12).

One recovery of a ringed Robin (top), requires, statistically, 435 ringed birds. In the Song Thrush (middle), 67 ringed are enough to get one recovery. A high recovery rate is found in the Teal (bottom), where every fourth ringed is recovered, often shot. Photos: Jens B Bruun (Robin), Jan-Åke Hillarp (Song Thrush) och P-G Bentz (Teal).





### Closely related species with different wintering areas

Fig. 11 shows the recoveries of three species of thrush (Blackbird, Song Thrush and Redwing) during winter. All three winter within Europe but have different ranges. Blackbirds migrate mainly in a west-south-west direction and spend the winter in the British Isles, while Song Thrushes and Redwings winter in south-west Europe. Redwing recoveries are on average somewhat more easterly than those of Song Thrush. The separate wintering areas probably originate from a long-term evolutionary process that reflected more favourable conditions for Blackbirds on the British Isles while Song Thrush and Redwing preferred the conditions in

Fig. 11. Recoveries of Blackbird *Turdus merula* (A), Song Thrush *T. philomelos* (B) and Redwing *T. iliacus* (C), ringed at Falsterbo and recovered during winter (Dec - Feb). Maps: Thord Fransson. Sketches: Peter Elfman.

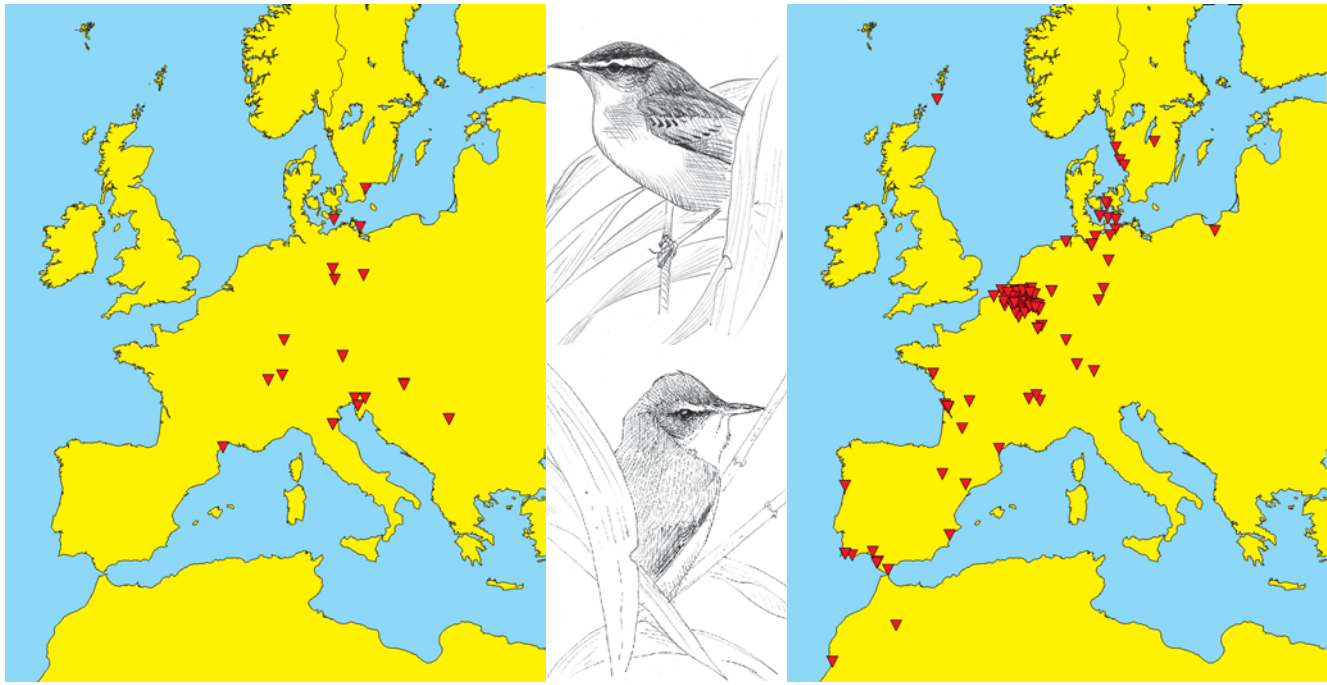


Fig. 12. Recoveries of Sedge Warbler *Acrocephalus schoenobaenus* (left) and Reed Warbler *Acrocephalus scirpaceus* ringed at Falsterbo and found during autumn migration (more than 100 km from Falsterbo). The recoveries show the separate migration routes in two closely related long-distance migrants. The accumulation of Reed Warbler recoveries in Belgium is a result of intense ringing activity. Maps: Thord Fransson. Sketches: Peter Elfman.

southern Europe. A glance at a larger set of Redwing recoveries shows that the species has a very wide wintering area, ranging from the Caucasus to Portugal.

Winter recoveries of passerines that winter south of the Sahara are very rare and only vaguely hint at where the birds actually spend the winter. Recoveries during migration may, however, indicate which parts of Africa certain species are heading for. As an example we chose two other closely related species, Sedge Warbler and Reed Warbler. Sedge Warblers show a straight southerly direction, indicating wintering areas around Lake Chad, while Reed Warblers typically migrate in a south-westerly direction through western Europe towards their winter quarters in West Africa.

### Migration in the wrong direction – why?

Birds do not always fly in the expected direction when they migrate. They may, for example, encounter bad weather on spring migration and temporarily be forced to return south (cf. p. 39) until better conditions allow them to resume their onward migration. In similar ways strong winds, disorientation or migration barriers may cause deviation from the intended migratory direction. For many birds, in particular for young ones, the passage of the Baltic Sea constitutes such a migration barrier.

A large-scale analysis of 725 recoveries of 20 passerine species ringed at Falsterbo Bird Observatory during autumn migration showed that many birds performed backward migratory movements and returned inland

into Scania (40 per cent of all recoveries, Åkesson et al. 1996). Backward migration was particularly frequent during the first ten days after capture, when 64 per cent of all recoveries were in the “backward sector”, between north-west and east. The same patterns were observed in all selected species, irrespective of whether they were partial, irruptive or long-distance migrants (Fig. 13). It also occurred both in diurnal and nocturnal migrants. A common feature was that birds found moving in the wrong direction had lower average fat loads when trapped compared to those trapped while heading in a forward migratory direction.

Of the recoveries of reverse irruption species or partial migrants like Blue Tit, Coal Tit and Jay, a high proportion took place more than ten days after trapping. The probable conclusion is that many birds decided to spend the winter in inland Scania. Among long-distance migrants there were considerably fewer recoveries in reverse directions more than ten days after capture.

One reason for birds to perform “backward migration” may be an insufficient fat load for flight over the sea, while their decision not to remain on the Falsterbo peninsula may reflect tougher competition for food due to the large numbers of migrant birds in the area. Also, the risk of predation is probably much higher at Falsterbo than anywhere else in Sweden on account of the presence of large numbers of migrating Sparrowhawks. To avoid this discomfort, it may be that the birds simply

Fig. 13. Proportions of recoveries in reverse directions (315-89°, pale blue), forward directions (135-269°, dark blue) and other directions (90-134° and 270-314°, medium blue) in different groups of migrants, ringed at Falsterbo during autumn migration. Short-distance migrants include Coal Tit, Blue Tit, Great Tit, Jay, Greenfinch and Siskin, temperate migrants include Winter Wren, Hedge Accentor, Robin, Song Thrush, Goldcrest, Starling and Reed Bunting and long-distance migrants include Yellow Wagtail, Redstart, Sedge Warbler, Reed Warbler, Whitethroat, Garden Warbler and Willow Warbler. From Åkesson et al. 1996.

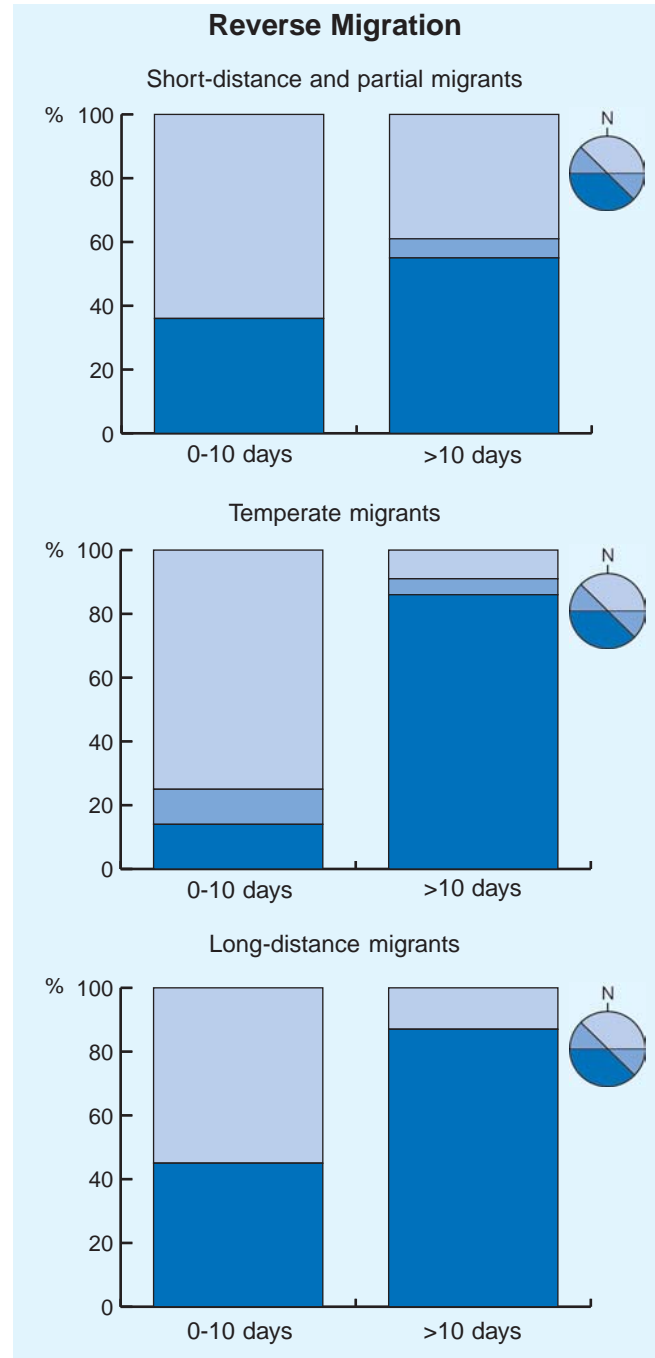






Fig. 14. Recoveries of birds ringed Falsterbo and found more than 4,000 km away. The blue dot shows the ringing site of a Sandwich Tern, controlled at Falsterbo. Map: Thord Fransson. Photos: Jens B Bruun (Shrike), P-G Bentz (Sandpiper) and John Larsen (Swallow).

move back inland in search of a suitable resting site where they can replenish their fat loads and then continue migration. This theory is supported by a similar analysis of recoveries conducted at an inland site in central Sweden, which showed that migration in the “wrong” direction was very infrequent if the ringing site was surrounded by land.

### Long-distance recoveries

Recoveries from far away are perhaps the most exciting ones, since they provide proof of the amazing feats of migratory birds. Such recoveries are quite rare and only 36 out of 5,801 recovered birds ringed at Falsterbo were found more than 4,000 km away. Out of these, four were reported from south of the equator (Fig. 14). The most distant was a Barn Swallow found in October 2003 at Witbank, Transvaal, South Africa, 9,229 km SSE of Falsterbo. It is a shade surprising that three out of the four recoveries south of the equator relate to passerines; most long-distance recoveries are usually for waders and terns. Another recovery relates to a Sandwich Tern ringed in Namibia and controlled more than 4,000 km away at Falsterbo. In addition to the recoveries on the map in Fig. 14, there is also one of a (dead) Common Redstart on a boat on the middle of the Atlantic west of the Canary Islands.

### “Oldies”

Recoveries also shed light on the ages that birds can attain (Table 5). Larger birds usually are longer lived than passerines and most of the “oldies” are thus found among ducks, waders and gulls. Some of these recoveries date back to the wader trapping in 1964-75. However, the oldest of them all is a Sandwich Tern, ringed as a nestling in Denmark in May 1977 and controlled at Nabben in July 2000 – just over 23 years later.

As expected, there are only a few small passerines in the list (Chaffinch and Reed Warbler). The Chaffinch was at least one year old when ringed in 1981 and it

was recovered in Finland ten years later. There are three nine-year-old Reed Warblers, which probably were breeders at Flommen since they were controlled during several intermediate seasons. Between each breeding season, they migrated to West Africa and back again, a journey of about 10,000 km. This equates to a lifetime journey of 90,000 km, which means that these tiny creatures of 15 grams flew more than twice round the world!

Table 5. Examples of “oldies” in the Falsterbo recovery list. Some cases (birds which were not aged at the ringing occasion) are labelled >years.

	Age (years)
Sandwich Tern <i>Sterna sandvicensis</i>	23
Mute Swan <i>Cygnus olor</i>	22
Dunlin <i>Calidris alpina</i>	>21
Teal <i>Anas crecca</i>	20
Herring Gull <i>Larus argentatus</i>	20
Redshank <i>Tringa totanus</i>	17
Wood Sandpiper <i>Tringa glareola</i>	17
Great Spotted Woodpecker <i>Dendrocopos major</i>	17
Starling <i>Sturnus vulgaris</i>	>17
Shelduck <i>Tadorna tadorna</i>	16
Great Black-backed Gull <i>Larus marinus</i>	16
Common Sandpiper <i>Actitis hypoleucos</i>	>15
Common Buzzard <i>Buteo buteo</i>	>14
Lesser Black-backed Gull <i>Larus fuscus</i>	14
Arctic Tern <i>Sterna paradisaea</i>	14
Oystercatcher <i>Haemaphys ostralegus</i>	13
Knot <i>Calidris canutus</i>	13
Curlew Sandpiper <i>Calidris ferruginea</i>	13
Jay <i>Garrulus glandarius</i>	13
Magpie <i>Pica pica</i>	13
Shoveler <i>Anas clypeata</i>	12
Ruff <i>Philomachus pugnax</i>	12
Common Snipe <i>Gallinago gallinago</i>	>11
Chaffinch <i>Fringilla coelebs</i>	>11
Song Thrush <i>Turdus philomelos</i>	10
Reed Warbler <i>Acrocephalus scirpaceus</i>	> 9