

Relationship between Common Sandpipers *Actitis hypoleucos* breeding along the River Lune, England, and those fattening for migration near its mouth with a model of their onward migration

PHILIP K. HOLLAND

32 Southlands, East Grinstead, West Sussex, RH19 4BZ, UK. pkandcjholland@aol.com

Keywords: Common Sandpiper, *Actitis hypoleucos*, migration, England

The River Lune starts at 54.26°N, 2.26°W where small streams from the Pennine Hills of England meet. The Lune then has a meandering route providing areas that in the United Kingdom would be considered good Common Sandpiper *Actitis hypoleucos* breeding habitat (Fig. 1). Tributaries that have a few breeding sandpipers (e.g. the Rawthey and Wenning) join at roughly 20 km intervals. After approximately 70 km, the river reaches the outskirts of Lancaster (a city of 50,000 people) and a weir, below which the habitat is not particularly suitable for breeding and is highly disturbed. Downstream of Lancaster, the river is flanked by saltmarsh that is contiguous with the Morecambe Bay Ramsar site. Near the mouth a small river (the Conder) that meanders through the saltmarsh (at 54.00°N, 2.50°W) provides a feeding site for Common Sandpipers after breeding.

In 1950–51, the breeding population of the upper half of the Lune and its tributaries was surveyed and found to contain 60 pairs (Cuthbertson *et al.* 1952). I repeated this survey in 1990 and found a similar distribution on the Lune though some of the narrower tributaries had been deserted; my estimate was 55 pairs. The lower half of the Lune has been surveyed as part of the UK Waterways Bird Survey (WBS) since 1974 and has recorded between 35 and 65 pairs. Thus in round terms there are about 100 breeding pairs along the

Lune and if each pair raised one young there would be about 300 birds ready to migrate south at the end of the breeding season.

Common Sandpipers can be found from late Jun to early Aug around the mouth of the Lune where freshwater streams flow through the saltmarsh. In this study, birds have been ringed at one such stream where peak numbers are typically 12 individuals in Jul. There is probably three times that number dispersed among the streams that join the Lune between Lancaster city and Morecambe Bay. Therefore the passage in this area amounts to, very approximately, 1,000 bird-days. The hypothesis leading to my study is that, as a Common Sandpiper decides to leave its breeding territory, it moves down the river on which it bred to the channels in the saltmarsh at the mouth where it stays for a few days, probably laying down resources for onward migration. To test this, Common Sandpipers were colour-ringed on the saltmarsh between 1992 and 2004 as weather, tides and work commitments allowed. Birds were caught in a single-shelf mist-net across the Conder at dusk at low tide. Observers along the Lune were asked to contribute to this project by reporting colour-ringed birds and I also searched for them along the river throughout the breeding season for, typically, 30 hours each year. Observations (including negative results) were received from 15 people.

None of the 60 birds (41 adults and 19 juveniles) ringed near the mouth of the Lune at the end of the breeding season were ever seen in a subsequent year along the whole length of the same river where Common Sandpipers breed. The WBS methodology typically involves eight visits and the river between Lancaster and Kirby Lonsdale is split into seven survey sections, of which I covered one myself. Thus over the 12 years there were around 600 surveys and it is judged that if most of the 60 ringed at the mouth were Lune breeders at least some would have been seen along the river in a subsequent year.

During the period of my study, another 39 Common Sandpipers were ringed on various tributaries of the Lune, but none of these were ever found around the mouth. However, one ringed as a juvenile was reported breeding on the River Kent in a later year, and another was recaptured on the south coast of England at Farlington, Hampshire, and others were reported at the place they were ringed.

The Common Sandpipers caught near the mouth of the Lune on the Conder were putting on weight. The mean weight of all birds caught was 66 g, and the range was 47–84 g (N = 60). Early weights were close to the normal breeding season weight of about 50 g, steadily increasing to around 80 g before departure; the six heaviest birds were 80, 80, 81, 81, 82 and 84 g (5 adults and 1 juvenile). From observation

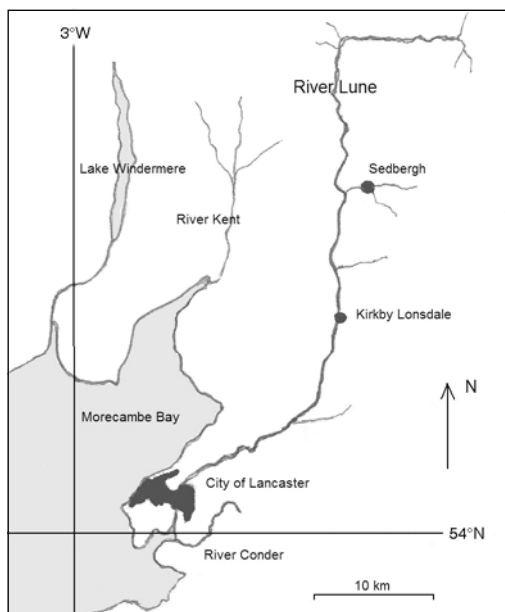


Fig. 1. Location Map showing the rivers Lune and Conder and other places mentioned in the text.

of the colour-ringed birds, individuals stayed for around two weeks. Their food was probably the amphipod *Corophium volutator* as they fed with frequent pecks on very small prey and *Corophium* was very abundant, but they also took some of the polychaete *Hediste diversicolor*.

Sixteen of the birds caught around the mouth of the Lune were re-sighted there in later years; one of these was ringed in 1996 and seen in four of the following five summers. Some were seen many years after ringing: one ringed in 1992 was seen in 2001 and another from 1993 was seen in 2002. Observations of birds on the saltmarsh at the end of the breeding season were made by me and six collaborators.

From the 60 Common Sandpipers caught near the mouth of the Lune, there were two recoveries:

- a bird ringed as a chick at Alwinton, Northumberland, UK (55.21°N, 2.08°W) on 18 Jun 1988 was found on the River Conder on 8 Jul 1993, 12 Jul 1995 and 18 Jul 1999 (distance 156 km);
- a bird ringed as a juvenile on the River Conder on 4 Aug 2001 was found on likely breeding grounds at Langhaugh, near Peebles, S Scotland (55.40°N, 3.04°W) on 29 May 2003 (distance 177 km).

It is likely that the first became part of the Northumberland breeding population so both of these come from a contiguous breeding region of NE England/SE Scotland, several hours flight from where they fattened on the Conder.

The results of the study indicate that the hypothesis can be rejected and that the breeding population of the Lune is distinct from the group that fattens around the mouth of the river at the end of the breeding season. Thus, rather than around 300 local Common Sandpipers pausing for a few days, the Lune mouth birds comprise around 50 individuals that probably originate from breeding grounds further north and stay for two to three weeks to fatten before southward migration.

This is consistent with the following other observations:

- My experience from many years studying Common Sandpipers on their breeding grounds is that at the end of the season the adults simply disappear. Usually I do not see them go and they are not seen anywhere locally. However, on very rare occasions late in the season I have seen a bird fly up high and disappear out of sight. This is quite different to their behaviour while breeding when they rarely fly more than about 5 m above the ground. Unfortunately I have never known the colour-ring code of a high flier so I have not been able to link such observations with an individual's departure.
- The number of Common Sandpipers seen flying along the river through Lancaster is far less than might be expected if 300 birds were using the river as their initial route.
- UK ringing recoveries show birds in the south of England on passage that have been ringed typically 200 km north while breeding (Wernham *et al.* 2002).

My observations indicate that Common Sandpipers normally leave the breeding territory once their role in the breeding cycle has been completed, flying southwards at the end of a day (usually females leave first, then males, then juveniles). They will find a good place to fatten with other Common Sandpipers, and when a group of them is ready (typically about ten) there is much calling and around dusk or at night they fly up and away.

It appears that most birds depart at 80–84 g as suggested by the maximum weights of the birds caught on the Conder (J.E. Robson also caught one at 84 g at Denton sewage works (53.26°N, 2.08°W) on 24 Jul 1969). Birds that have just arrived in the UK in spring are around 45 g and there are plenty of records of migrants in the range 35–45 g. Assuming a departure weight of 84 g, a destination weight of 45 g and a flying speed of 60 km/hr implies a potential non-stop flight range close to 4,000 km (Davidson 1984). Thus they would have enough resources to fly to the south of the Sahara in fair conditions. The distance from England to Senegal is similar to Canada to Suriname across the W Atlantic which is a regular flight for White-rumped Sandpipers *Calidris fuscicollis* (Harrington 1999). Common Sandpipers have the advantage that in adverse conditions they can make a landfall in Iberia or Morocco where there are some late summer recoveries of British birds. They also have other options in Mauretania and the Canary Islands. There is only one definite recovery of a British-ringed Common Sandpiper south of the Sahara: a bird that was shot in Guinea Bissau in Sep 1964. Another was found in November in Moscow in the engine of an aircraft that had come from Guinea, Mali and Ghana. The wintering population of 23,730 in the mangroves of Guinea (Trolliet & Fouquet 2004), 4,000–5,000 in Sierra Leone (van der Winden *et al.* 2009) plus “tens of thousands” in Guinea Bissau (Van de Kam *et al.* 2004) is probably similar to the breeding population of the British Isles which was estimated at around 60,000 by Dougall *et al.* (2004). Therefore the mangroves of West Africa may be their most likely destination.

Among 470 Common Sandpipers weighed in the UK during Jul–Oct prior to 1974, the highest mass recorded was 84 g, while 31 birds from Morocco were 34–51 g (Brown 1974). This is consistent with a healthy low fat individual being about 45 g as suggested above; but still having some reserve. Studies during autumn migration in Spain showed a mean mass of 51 g and a range of 34–65 g with no birds increasing mass despite the fact that one bird stayed for 30 days; this was consistent with other studies in S Europe, so there is no evidence of birds doing major refuelling there (Arcas 2001).

Probably the lowest weight survivable is indicated by one found on a road in Ethiopia that weighed 30.5 g. After safe keeping overnight and delivery to a good feeding site it recovered to 43 g in 10 days (D.W. Yalden, pers. comm.).

The Common Sandpiper is extremely widespread in both the breeding and non-breeding season. Therefore different populations face different migration conditions and probably adopt different strategies. But, as far as British birds are concerned, it seems that the main strategy is to fly direct from a fattening site in Britain to the southern side of the Sahara in a single non-stop flight. There seems little point in fattening to over 80 g in Britain if the planned next stop is Iberia. It is notable that most British recoveries in Iberia in late summer are from birds ringed in the south-east of England where many are Scandinavian passage migrants that may have a different strategy to British birds (Wernham *et al.* 2002).

Many people reported presence or absence of colour-ringed birds and I am grateful for their interest and for the tolerance of landowners along the Lune. I thank Derek Yalden for commenting on a draft of this note and Humphrey Sitters for significant help with it.

Arcas, J. 2001. Body weight variation and fat deposition in Common Sandpipers during their autumn migration in the Ria de Vigo, Galicia,

- north-west Spain. *Ringing and Migration* 20: 216–220.
- Brown, S.C.** 1974. Common Sandpiper biometrics. *Wader Study Group Bull.* 11: 18–22.
- Cuthbertson, E.I., Foggit, G.T. & Bell, M.A.** 1952. A census of Common Sandpipers in the Sedbergh area. *Brit. Birds* 45: 171–175.
- Davidson, N.C.** 1984. How valid are flight estimates for waders? *Ringing and Migration* 5: 49–64 (using equation 4 on p. 64)
- Dougall, T.W., Holland, P.K. & Yalden, D.W.** 2004. A revised estimate of the breeding population of Common Sandpipers in Great Britain and Ireland. *Wader Study Group Bull.* 105: 42–49.
- Harrington, B.A.** 1999. The hemispheric globetrotting of the White-rumped Sandpiper. pp. 119–133 in *Gathering of Angels: Migrating Birds and their Ecology*. K. Able (ed.). Cornell University Press.
- Trollet, B. & Fouquet, M.** 2004. Wintering waders in coastal Guinea. *Wader Study Group Bull.* 103: 56–62.
- Van de Kam, J., Ens, B., Piersma, T. & Zwarts, L.** 2004. *Shorebirds. An Illustrated Behavioural Ecology*. KNNV publishers, Utrecht. p. 65.
- Van der Winden, J., Siaka, A., Dirksen, S. & Poot, M.J.M.** 2009. New estimates for wintering waders in coastal Sierra Leone. *Wader Study Group Bull.* 116(1): 29–34.
- Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M. & Baillie, S.R.** (eds). 2002. *The Migration Atlas: Movements of the Birds of Britain and Ireland*. T. & A.D. Poyser, London.
-