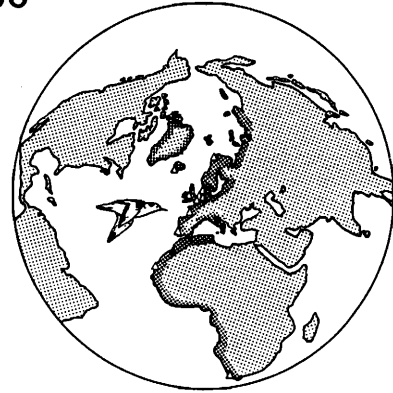


# INTERNATIONAL WADER MIGRATION STUDIES ALONG THE EAST ATLANTIC FLYWAY: PLANS FOR SPRING 1986

by Nick Davidson and Theunis Piersma



As reported in the second progress report (*WSG Bulletin* 44: 17-18), the international project in spring 1985 successfully marked waders of all 7 target species, and through catching and dye-marking sightings substantially improved our knowledge of the spring migrations of several species. The East Atlantic Flyway Project will take place again during spring 1986, but with specific objectives that differ from those in spring 1985. The major aims of the studies co-ordinated by WSG in spring 1986 will be to re-assess the spring migrations by Knots *Calidris canutus islandica* that breed in the Nearctic (Greenland and Canada). The reasons for this are outlined below. In addition we hope that some Knots of the Siberian breeding population will be dye-marked as part of studies in the Vendee and Charente maritime (France). Sightings further north of these birds will add to those seen in spring 1985 to build a more complete picture of the sequence of staging sites used during migrations in a single year.

## THE PROBLEM OF THE SPRING MIGRATIONS OF NEARCTIC KNOTS

Extensive (and intensive) catching and ringing studies in western Britain, Iceland, and the Canadian Arctic on Nearctic Knots were made during the early 1970's (see e.g. Prater & Wilson 1972, Morrison 1975, Dick *et al.* 1976). These established that Nearctic-breeding Knots leave many of their wintering sites in north-west Europe and gather on a few estuaries, especially Morecambe Bay in western England and the Dutch and German parts of the Wadden Sea, in early spring. There they accumulate large amounts of fat. Many then fly to Iceland which they use as a second and final spring staging area in early May for storage of reserves before they fly to Greenland, and across or round Greenland to parts of the Canadian Arctic. Some may reach breeding grounds in east Greenland directly from the early spring staging areas in western Europe. This was the widely accepted migration pattern, until 1985.

As one result of the studies on Knots made by the Durham/Tromsø Universities team in northern Norway in spring 1985, we now know that this is only part of the story of the spring migration of Nearctic Knots. Knots using Balsfjord in north Norway as a final spring staging site in May also belong to this Nearctic population (Davidson & Evans 1986, Davidson *et al.* in prep.). Although no Knots have been caught at their other main staging site in northern Norway, Porsangerfjord, limited information from reports of ringed birds and migration timing suggests that these birds may belong also to the Nearctic population (Davidson *et al.* in prep.). If so, northern Norway may be used as a final spring staging area by between one-quarter and one-half of the Nearctic breeding population (*islandica* subspecies), with most or all of the remainder of this subspecies using Iceland as a final staging area.

Although recoveries of ringed birds in

Balsfjord in 1985 revealed much information about the sites (chiefly the coasts of the southern North Sea) that had been used by these birds in autumn and winter, little is yet known of the sites used by these birds in early spring. Some had used the Wash as an early spring staging area in previous years, but the population there in spring is too small to account for all the Knots reaching Balsfjord.

The main objective of the 1986 WSG International Wader Migration Studies Project is thus to determine which late winter and early spring staging areas are used by Nearctic Knots that subsequently fly to Iceland and which by those that use northern Norway. In particular we aim to establish if Knots from each early spring staging area use only Iceland or Norway, or if parts of each spring population fly to both the major late spring areas. Recent evidence suggests that Iceland and Norway might be used by populations that fly to different parts of the breeding grounds (Alerstam *et al.* in prep.).

Previous work has assumed that Nearctic breeding populations overwinter largely in north-west Europe and Siberian populations in Africa. However, an increasing amount of evidence is reaching us that, at least in 1984/85, the segregation was less complete, and that some Nearctic Knots may have overwintered as far south as South Africa, and/or that some Siberian birds may have overwintered previously in western Europe (Davidson *et al.* in prep.). The spring migration studies in 1986 will help to establish whether such mixing is an exceptional or regular occurrence.

## PLANS FOR WORK ON NEARCTIC KNOTS IN SPRING 1986

Our methods will be those used in previous parts of the project (for details, see *WSG Bull.* 42: 5-9), i.e. chiefly catching, dye-marking and counting at selected sites, with observers watching for marked birds as widely as possible. Knots are a good species to study in this way since they make long non-stop migrating flights and use rather few areas on which to refuel during spring migration (see e.g. Davidson 1984). These methods have already been used to good effect on the spring migration of Siberian Knots in the earlier WSG project (Dick 1979, Dick *et al.* in prep.). Much of the work in spring 1986, as in 1985, will be undertaken as part of broader work on waders by various research groups. We will be contacting each of the groups of whom we know, and who are likely to be major participants in 1986, to discuss what help they can give the project. What follows is a summary of known plans for



Figure 1. Location of the main projects contributing to the WSG Spring Migration Project during spring 1986. Numbers refer to the list of local organisers.

1986, and some comments about the other sites for which we would particularly like help with the project. We would like to hear from anyone who could participate by counting Knots and/or watching for marked birds. We would like to hear especially from anyone who may be catching Knots during late winter and spring 1986: the Durham/Tromso study caught and ringed (with Stavanger rings) over 1700 Nearctic Knots in Norway in May 1985. We are anxious to discover as much as possible about the subsequent locations of these birds. In particular we would like any information on the measurements and weight of Knots with Stavanger rings, and the identity of other Knots caught at the same time. This information is of course additional to that which we plan to collect by ringing and dye-marking Knots in 1986.

The Durham/Tromso study plans further work in Balsfjord, northern Norway in spring 1986. As in 1985 this will involve catching and ringing, and studies of feeding ecology and body condition. In addition, the Durham/Tromso team also plan to work on the Knots in Porsangerfjord. In Iceland, the other major final spring staging post for Knots, we anticipate that observations for marked birds, and also some catching, may take place.

In late winter la Ligue pour la Protection des Oiseaux (LPO) intend to catch and dye-mark the wintering population of Knots in Vendee and Charante maritime. These birds leave their wintering grounds in March, and we aim to identify to which early spring staging area(s) they move. Similarly, Durham University plan to mark Knots leaving Teesmouth in late winter, to

establish the location of their early spring staging areas, and wintering Knots may be also dye-marked on the Essex coast as part of environmental impact studies there.

The major known early spring staging areas are north-west England, especially Morecambe Bay, and the Dutch and German parts of the Wadden Sea. Additionally, up to 10 000 Knots use the Wash as their early spring staging site. The Wash Wader Ringing Group hope to catch and mark Knots on the Wash in April and early May. Groups to catch and mark Knots also in several parts of the Dutch and West German Wadden Sea, and also on the west coasts of England. Very few Knots have been ringed in western England during the last 7 years, and so it is difficult to identify the late spring staging areas used by this part of the population from recaptures of ringed birds. We are most keen to encourage catching of Knots in western Britain during the winter and spring of 1986. Ringing of these birds in winter will increase the chances of their being identified at staging areas in spring.

Locations of the main participating groups are shown in Figure 2.

#### PLANS FOR OTHER SPECIES AND SUBSPECIES

As mentioned in the introduction, we are not planning for 1986 such an extensive marking programme on the other target species (Ringed Plover *Charadrius hiaticula*, Grey Plover *Pluvialis squatarola*, Sanderling *Calidris alba*, Dunlin *Calidris alpina* and Bar-tailed Godwit *Limosa lapponica*) as was operated in 1985. However, any additional sightings in spring of marked birds marked are very valuable, since all such observations help us to establish the links between wintering areas and spring staging areas. Additionally, LPO intends to make studies, involving dye-marking, of the movements and turnover of what are chiefly Siberian Knots passing through the Vendee in spring.

#### COLOUR-MARKS ON KNOTS AND OTHER SPECIES

The limited number of suitable colour-dyes, the large number of sites at which we anticipate birds will be marked, and the restricted areas of the plumage that can be successfully used for dye-marking in spring (when many species moult their body feathers) combine to make marking schemes of the kind needed for this project very complex. Most of the site-specific marks for spring 1986 will involve colour-dye on one or more parts of the body and a coloured PVC temporary leg-flag. For any sightings of marked birds full details of the colour-marks will be greatly appreciated. As well as the colour of dye or flag, the exact position of dye and/or flags should be noted. For leg-flags this should include whether the flag is on the left or right leg, and above or below the knee joint. For plumage dyes, note the exact position(s) on the body. This could be on one surface only: for example the mark might be on the rump and/or under-tail coverts (so that a report of dye on 'rear' of the bird could prove inadequate for identifying the exact origin of an individual bird); or on upper- and/or under-surface of wing. For Knots, a record of the extent of summer plumage of any marked birds would also be valuable. Incomplete observations should, however be reported, since it may still be possible to trace the origins of such birds.

## ORGANISATION

Much of the organisation will be as for 1985. The major difference is that the work on Knots will be co-ordinated by Nick Davidson (and not Theunis Piersma as in 1985). As in 1985 overall communication will be managed by the project co-ordinator, and to maintain good contacts with each of the main participating groups we are arranging local organisers for each. The function of a local organiser is twofold. Firstly each acts as a 'contact-person' between their group and the project co-ordinator. Secondly, local organisers are in a good position to arrange coverage of sites within their areas, so that regular checks can be made at as many sites as possible.

We should emphasise that as in 1985, WSG cannot provide financial backing for any of the separate research projects involved: the role of WSG is in co-ordinating the international aspects of the work.

Local organisers are listed below. Numbers refer to those in Figure 2.

1. Faro and Tejo estuaries, Portugal. Rui Rufino, CEMPA, Rua Filipe Folque 46, 5<sup>o</sup>, 1000 Lisboa, Portugal.
2. Spain. Dr. J. Dominguez Conde, Dept. of Zoologia, Facultad de Biologia, Santiago de Compostella, Galicia, Spain.
3. Atlantic coast of Vendee and Charente maritime, France. Denis Bredin, LPO, La Corderie Royale, BP 263, 17305 Rochefort Cedex, France.
4. The Wash, Great Britain. P. Ireland/N.A. Clark, 12 Hainfield Drive, Solihull, West Midlands B91 2PL, U.K.
5. Elsewhere in Great Britain. Nick Davidson/Chris Thomas, Dept. of Zoology, Univ. of Durham, South Rd. Durham DH1 3LE, U.K.
6. Delta area, The Netherlands. Rob Lambeck, Delta Instituut voor Hydrobiologisch Onderzoek, Vierstraat 28, 4401 EA Yerseke, The Netherlands.
7. Friesian Wadden Sea coast, The Netherlands. Theunis Piersma, Korte Nieuwstraat 4, 9724 LC Groningen, The Netherlands.
8. Wadden Sea of Niedersachsen, F.R.G. OAG Munster, Biologische Station Rieselfelder Munster, Coermuhle 181, d-4400 Munster, F.R.G.
9. Wadden Sea of Schleswig-Holstein, F.R.G. Peter Prokosch, WWF-Wattenmeerstelle, Norderstrasse 22, D-2250 Husum, F.R.G.
10. Norway. Karl-Birger Strann, Tromsø Museum, Folkeparken, N-9000 Tromsø, Norway.
11. Iceland. Gudmundur A. Gudmundsson, Inst. of Biology, Univ. of Iceland, Grensasvegur 12, 108 Reykjavik, Iceland.

We will be delighted to hear from anyone wishing to participate in the project and/or who could act as a local organiser for spring 1986. Potential contributors should, wherever possible, contact a local organiser for their area. For other areas, and for matters other than counts and dye-mark sightings, contact the project Co-ordinator, Nick Davidson.

Sightings of colour-marked waders should, as usual, be forwarded to the WSG Colour-marking Register (*Hector Galbraith, WSG Colour-marking Register, Department of Zoology, The University, Glasgow G12 8QQ, U.K.*), since not all marked birds seen during spring 1986 may have been marked as part of the project.

This notice will summarise the plans for work during spring 1986 that are known to us by the

time *Bulletin* 45 goes to press (in late November 1985). Any further developments in the plans for the project will be included in an updated version of this notice; this will be available to participants early in 1986. Full details of the project will be repeated in *Bulletin* 46 (April 1986).

## REFERENCES

- Alerstam, T., Hjort, C., Hogstedt, G., Jonsson, P.E., Karlsson, J. and Larsson, B. in prep. Spring migration of birds across the Greenland Inlandice. submitted to *Meddr. Gronland-Bioscience*.
- Davidson, N.C. 1984. How valid are flight range estimates for waders? *Ringing and Migration* 5: 49-64.
- Davidson, N.C. and Evans, P.R. (eds.) 1986. *The ecology of migrant Knots in north Norway during May 1985*. Report SRG86/1, Shorebird Research Group, University of Durham.
- Davidson, N.C., Strann, K.-B., Crockford, N.J., Evans, P.R., Richardson, J.R., Standen, L.S., Townshend, D.J., Uttley, J.D., Wilson, J.R. and Wood, A.G. in prep. The origins of Knots in arctic Norway in spring. submitted to *Ornis Scand.*
- Dick, W.J.A. 1979. Results of the WSG Project on the spring migration of Siberian Knot *Calidris canutus* 1979. *WSG Bull.* 27: 8-13.
- Dick, W.J.A., Pienkowski, M.W., Waltner, M. and Minton, C.D.T. 1976. Distribution and geographical origins of Knot *Calidris canutus* wintering in Europe and Africa. *Ardea* 64: 22-47.
- Dick, W.J.A., Piersma, T. and Prokosch, P. in prep. Spring migration of the Siberian Knots *Calidris canutus*: results of a co-operative Wader Study Group project. submitted to *Ornis Scand.*
- Morrison, R.I.G. 1975. Migration and morphometrics of European Knot and Turnstone in Ellesmere Island, N.W.T., Canada. *Bird-Banding* 46: 290-301.
- Prater, A.J. and Wilson, J.R. 1972. Aspects of spring migration of Knot in Morecambe Bay. *WSG Bull.* 5: 9-11.

*Nick Davidson, Department of Zoology, University of Durham, South Road, Durham DH1 3LE, U.K.*

*Theunis Piersma, Korte Nieuwstraat 4, 9724 LC Groningen, The Netherlands.*