Ring recoveries of Finnish Dotterels *Charadrius morinellus*

E. Pulliainen, & L.Saari,

Pulliainen, E. & Saari, L. 1993. Ring recoveries of Finnish Dotterels *Charadrius morinellus. Wader Study Group Bull.* 67: 54-56.

Up to the end of 1990, 821 Dotterels have been ringed in Finland. There are ten recoveries from abroad. Finnish Dotterels seem to migrate in three directions: southwest (Spain, Algeria, Tunisia), south (former Yugoslavia), and southeast (former USSR, north of the Black Sea). Thus Dotterels hatched in Finland may spend their winter anywhere within the winter range of the species from Morocco to Iran. A bird shot in spring in eastern Siberia may have joined Siberian birds in its winter quarters. The *Ortstreue* of the Dotterels seems weak. Of the incubating males only about one third returned to breed on Varriotunturi, and only one of the chicks ringed there was later found breeding.

Erkki Pulliainen, Department of Zoology, University of Oulu, and Värriö Subarctic Research Station, University of Helsinki, SF-90570 Oulu, Finland

Lennart Saari, Värriö Subarctic Research Station, University of Helsinki, SF-00710 Helsinki, Finland

INTRODUCTION

Relatively few ringing recoveries of the Dotterel *Charadrius morinellus* are known (Cramp & Simmons 1983). These indicate complex inter-seasonal movements including interchange between actual and potential breeding areas as well as a weakly developed *Ortstreue*. So far, only the Austrian ringing recoveries have been analysed (Hable 1980), but some preliminary data on the Scottish population have also appeared (Thomas *et al.* 1989; Thompson & Byrkjedal 1990; Whitfield *et al.* 1991; Galbraith *et al.* in press). As many questions still remain open we wish to add to the debate by reporting the Finnish ringing recoveries up to the end of 1990.

MATERIALS AND METHODS

A total of 814 Dotterels have been ringed in Finland during 1913–1990. Up to 1967 no statistics of the age distribution (ad/pull) of the ringed birds were kept, but since 1968, 457 chicks and 112 adults have been ringed (data from the Finnish Ringing Center, University of Helsinki). No data on the sex ratio of the birds ringed are available to us, but the males probably clearly outnumber the females, as at Värriö (Fiedler 1938). Ringing has been particularly intensive at the Värriö Subarctic Research Station (67°44'N, 29°37'E), where the incubating males were ringed and controlled systematically on the northernmost summit of the Värriötunturi Fell (Värriö I, 472 m a.s.l., see Pulliainen 1970) in 1969–74. In addition, a few females and all the chicks found were ringed. On the other summits, up to 551 m a.s.l., ringing has been less systematic. In 1969–72 all the adults trapped and most of the chicks caught were also colour ringed. In 1969, however, all the chicks of the same brood were given the same ring combination thus not all the birds colour ringed could be identified individually. Losses of colour rings were recorded (even within the incubation period!) and therefore the identity of some of the birds seen remained obscure. These sightings are treated only as supplementary data.

RESULTS

Altogether, ten long-distance recoveries of Dotterels ringed in Finland have been made (Appendix 1). There seem to be three main directions: (i) predominantly southwesterly (Spain, Algeria, Tunisia), (ii) southerly (former Yugoslavia), and (iii) southeasterly (north of the Black Sea, former USSR). The direction taken by the birds does not seem to depend on the ringing locality: of the four birds ringed at Värriö and later found abroad three were recovered in Algeria and one in the Black Sea area. One case of presumed abmigration was also recorded: a chick ringed in western Lapland was shot (on migration?) nearly three years later, in late May, in Siberia, almost 4,000 km from its place of birth!

All except one of the birds recovered abroad were ringed as chicks and recovered on their first (5), second (1), third (2) or fourth (1 case) southward journey(s). By 30 August, one juvenile had already reached eastern

Spain. The recoveries in northern Africa were made between 15 October and 19 March. One adult male ringed at Värriö was recovered on 13 April nearly two years later in the Black Sea area, presumably on its spring migration. The wintering areas of Finnish Dotterels seem to be about 4,000 km from the place of birth.

Nine of the birds ringed at Värriö were later found breeding there. Only one of these was ringed as a chick (A–442399 on 3 July 1973 between Värriö IV and V) and bred successfully on the northern slope of Värriö I in 1974, c. 7 km north of its birthplace. The rest were ringed as breeding males and were later recovered one (3), two (2), three (1), four (1) and eight (1 case) years after ringing (Table 1). This last mentioned bird is so far the oldest (at least 9 years) Dotterel recorded anywhere. Of the 19 males ringed breeding on Värriö I in 1969–1973, only six (32%) were controlled in one or more years up to 1974. The proportion of controls in the number of breeding males on Värriö I caught in 1970–1974 was as follows (in 1969 seven breeding males were ringed): 33% (n=6), 60% (n=5), 0% (n=4), 60% (n=5) and 25% (n=4), respectively. Thus in 24 of the clutches in this period on Värriö I nine (38%) of the males had been recorded breeding previously. In 1972, none of the birds ringed in 1969–71 was recovered. Even one male found breeding in 1970–1971 and 1973–1974 was 'absent'.

In addition to the birds controlled breeding there seems to be a non–breeding or transient part of the population. In 1970, five ringed individuals were seen on Värriö I which were not recorded breeding on the other summits, either. Probably four of these chicks from the 1969 broods.

If the female was not sharing incubation duties with the male (six known cases out of 119 clutches, E. Pulliainen & L. Saari, unpubl.) she usually disappeared from the fell soon after completing the clutch judging from the fact that no resightings of these (admittedly few) colour–ringed females were made later in the summer.

DISCUSSION

The ringing recoveries referred to in this study indicate a weak *Ortstreue* as already mentioned by Cramp & Simmons (1983, and references there). Only one chick ringed was later confirmed breeding in the Värriö area, but at least five others were seen there in early summer. Not even the breeding males seemed to be faithful to their nesting grounds. Only 38% of the males captured at nest had bred there in some earlier year, and it seems very improbable that the actual survival rate is so low. The long–distance recoveries also indicate that the Finnish Dotterels may spend their winter anywhere within the species winter range from Iran to northwestern Africa (see Cramp & Simmons 1983). The different populations mix and some individuals may migrate to areas quite far from their place of birth. The absence of a sub-speciation despite vast and disjunct breeding range (Cramp & Simmons 1983) may be a consequence of populations mixing in the winter quarters.

The preliminary results obtained from Scotland also indicate a complex pattern (Thompson & Byrkjedal 1990): Scottish breeding birds have been found later breeding in Norway (one male bred in Norway after a nest failure in Scotland earlier in the same breeding season!), and one bird ringed as a breeder in Norway was later found breeding in Scotland. Other more recent observations from Scotland point to remarkable movements by breeding males between Scotland and Norway, but also to movements to fairly local regions in Morocco (D. P. Whitfield & D. B. A. Thompson, Scottish Natural Heritage, unpubl.).

The 'disappearance' of females from Värriötunturi after clutch completion may signify that they have migrated further in order to search from new mates. Display flights have been recorded in the latter part of the incubation period (E. Pulliainen & L. Saari, unpubl.), but our impression is that these are less common than in Norway (See Kålås & Byrkjedal 1984) indicating that new males may be sought for elsewhere (either further north in Finland, in northern Norway or in the Kola Peninsula).

According to Hable (1980), five Austrian Dotterels out of 161 ringed (3.1%) were reported from abroad: from Morocco (3), France (1) and Libya (1). The route taken was usually westward and the recoveries from Morocco were more westerly than any of the Finnish birds. Twenty–one ringed Dotterels were found in later years on the breeding grounds; one ringed as a chick was found breeding two years later only 50 m from its place of birth. The number of birds returning to Austrian breeding grounds seems to be somewhat higher than to Värriötunturi. The unringed birds seen on the Austrian breeding grounds may, however, be of a northern origin (Hable 1980). As the migration pattern of the Dotterel seems complex, an extensive ringing program on its breeding and wintering grounds should preferably be undertaken.

ACKNOWLEDGEMENTS

We are grateful to Pertti Saurola and Seppo Niiranen of the Finnish Ringing Center for allowing us to use

their Dotterel data. Paavo S. Tunkkari and Des Thompson read the paper and made many valuable suggestions for its improvements. This paper constitutes Report No. 200 from the Värriö Subarctic Research Station, University of Helsinki.

REFERENCES

Cramp, S. & Simmons, K. E. L. (eds) 1983. *The birds of the western Palearctic.* Vol. 3. Oxford University Press, Oxford. 913 pp.

Galbraith, H., Murray, S., Rae, S., Whitfield, D. P. & Thompson, D. B. A. (in press). Numbers and distribution of Dotterel (*Charadrius morinellus*) breeding in Great Britain. *Bird Study*

Hable, E. 1980. Beringungsergebnisse an der alpinen Population des Mornellregenpfeifers, *Eudromias morinellus* (L.). *Mitt. Abt. Zool. Landesmus. Joanneum* 9: 81–85.

Kålås, J. A. & Byrkjedal, I. 1984. Breeding chronology and mating system of the Eurasian Dotterel (*Charadrius morinellus*). *Auk* 101: 838–847.

Pulliainen, E. 1970. On the breeding biology of the Dotterel *Charadrius morinellus*. *Ornis Fennica* 47: 69–73.

Pulliainen, E. & Saari, L. (in press). Body mass and physical condition of breeding Dotterels *Charadrius morinellus* in Finland. *Ecologia Montana.*

Thomas, C. J., Thompson, D. B. A. & Galbraith, H. 1989. Physiognomic variation in Dotterel *Charadrius morinellus* clutches. *Ornis Scandinavia* 20: 145–150.

Thompson, D. & Byrkjedal, I. 1990. Tarkkailkaa värimerkittyjä keräkurmitsoja. *Lintumies* 25: 158.

Whitfield, D. P., Duncan, K., Murray, S., Rae, S., Smith, R. & Thompson, D. B. A. 1991. Monitoring the Dotterel *Charadrius morinellus* population of Britain. In: *Britain's birds in 1989–90: the conservation and monitoring review* (Ed. by D.A. Stroud & D. Glue), pp. 109–111. BTO/JNCC, Thetford.

Table 1. Ringing and control dates of breeding male Dotterels at Värriö.

Ring number	Ringing date	Control dates	Breeding site
A–203679	8/9/69	21/6/70	Värriö I
A–409105	5/6/70	12/6/71	Värriö I
A–409236	22/6/71	18/6/74	Värriö II
A–442320	10/6/72	31/5/73	Värriö I
A–442321	11/6/72	1/6/73, 26/6/80	Värriö I
A–442322	11/6/72	27/6/74	Värriö III
AT–003301	9/6/69	3/6/70, 27/6/71	Värriö I
AT–005505	22/6/70 27/6'/71	4/6/73, 19/6/74	Värriö I

Appendix 1. Long–distance recoveries of Dotterels ringed in Finland.

Rossitten Ringed 27 July 1937; 69°02'N, 20°51'E; pullus
F–349525 Recovered 12 November 1937; 44°22'N, 15°17'E; Yugoslavia
108 days, c. 3,000 km (Fiedler 1938)

A–93573 Ringed 13 July 1959; 68°06'N, 24°06'E; pullus
Recovered 26 May 1962; 63°30'N, 120°20'E; USSR, Siberia
1,047 days, 3,978 km, 49°

A–93622 Ringed 8 July 1960; 68°20'N, 28°24'E; pullus
Recovered 16 October 1960; 44°36'N, 33°30'E; USSR, Crimea
99 days, 2,669 km, 170°

A–226331 Ringed 8 July 1966; 69°24'N, 25°48'E; pullus
Recovered 19 March 1969; 35°42'N, 7°24'E; Algeria
948 days, 3,928 km, 206°

A–413922 Ringed 10 July 1970; 67°42'N, 29°36'E; pullus
Recovered 13 December 1970; 36°12'N, 5°24'E; Algeria
156 days, 3,829 km, 215°

A–413945 Ringed 29 June 1971; 67°41'N, 29°35'E; +1y (male)
Recovered 13 April 1973; 43°06'N, 40°40'E; USSR, Black Sea NE
653 days, 2,819 km, 160°

A–422303 Ringed 8 July 1972; 69°12'N, 21°12'E; pullus
Recovered 30 August 1972; 38°54'N, 1°24'E; Spain
53 days, 3,580 km, 209°

A–422905 Ringed 20 July 1970; 69°42'N, 26°12'E; pullus
Recovered 15 October 1971; 34°30'N, 8°42'E; Tunisia
452 days, 4,070 km, 204°

A–422351 Ringed 6 July 1972; 67°45'N, 29°45'E; pullus
Recovered 1 November 1975; 34°43'N, 3°14'E; Algeria
1,213 days, 4,052 km, 218°

A–442997 Ringed 4 July 1981; 67°45'N, 29°37'E; pullus
Recovered 7 December 1981; 36°06'N, 7°31'E; Algeria
156 days, 3,793 km, 212°