The numbers and origins of Black-tailed Godwits on the Eden Estuary, Fife.

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SUMMARY

The Eden Estuary has most northerly substantial population of wintering Black-tailed Godwits in Britain. The population has been increasing over the last 50 years. There are also passage migrants, particularly in spring, perhaps from other British estuaries. Their bill measurements and a ringing recovery show that the population may be entirely Icelandic in origin.

INTRODUCTION

The Black-tailed Godwit Limosa limosa is not a particularly common wader in Scotland and the most northerly population occurs on the Eden Estuary, Fife. The inner part of the estuary has long been their haunt and Grierson (1962) noted that the wintering population was about 35 in the 1950s and 1960s, whilst up to 100 could be seen in autumn. However, up to at least the 1930s it was regarded as an uncommon species (Grierson 1962). The first aim of this article is to describe the more recent changes in the population size, both the seasonal changes and the long term change, based on the British Trust for Ornithology's Birds of Estuaries Enquiry. There are two sub-species of Black-tailed Godwit in Europe; Limosa limosa limosa and L.l. islandica. The latter breeds in Iceland and has richer red breeding .plumage and shorter bill than the mainland population (Salomonsen 1935). It has been speculated that the Eden Estuary birds belong to the Icelandic population since a male from Tentsmulr had a short bill length (Vernon 1963). However, it Is not known If this applies to all birds In this population. In October 1991 the Tay Ringing Group made a large catch of Black-tailed Godwits allowing an examination of their biometrics. The second aim is to determine the breeding origin from the bill measurements.

METHODS

Counts were made at high tide as the birds roosted on the grazed salt marshes at Guardbridge. Counts made as part of the Birds of Estuaries Enquiry were obtained from the BTO. Annual indices (the Underhill Index) of the population were derived, using the data from 1970 to 1990 and the months of September to April (Underhill 1989). The seasonal pattern was described by calculating the monthly median counts for the years 1979-80 to 1990-91, years for which there was complete surveys. Part of the roosting population was trapped with a cannon net on 21 October 1991 and the bill lengths were measured using dial callipers. The bill length distribution was bimodal (females have longer bills than males) and therefore analysed by the graphical method of Harding (1949) and Cassie (1954) to obtain mean values for the males and females. The birds were also ringed and recoveries are reported.

RESULTS

The population size

The population was at its smallest in June, increased to a peak in September and decreased slightly over the winter. There was then a larger peak in April and rapid emigration in May (Fig. 1). The annual index showed a slight decrease between 1970 and 1977 followed by steady increase (Fig. 2). The winter population in 1990-91 was 88 (based on the December-February counts).

Biometrics

The bill length distribution is shown in Figure 3. The graphical analysis gave means 4: S.D.s of 82.0 4: 4.0 mm and 96.0 *j*_ 5.4 mm for males and females respectively.

Fig 1

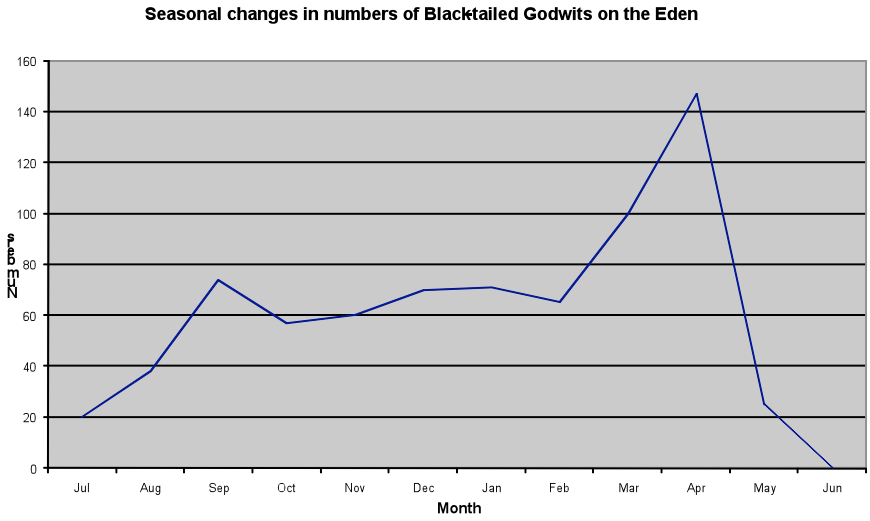


Fig 2

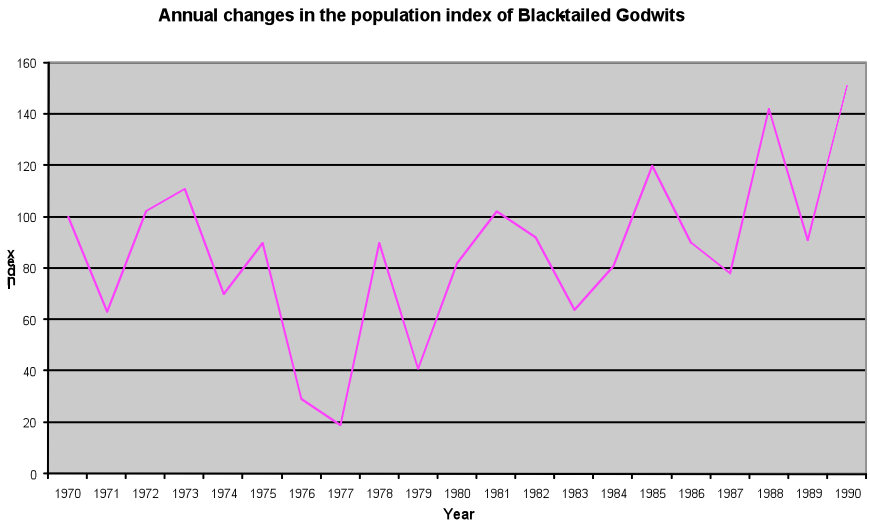
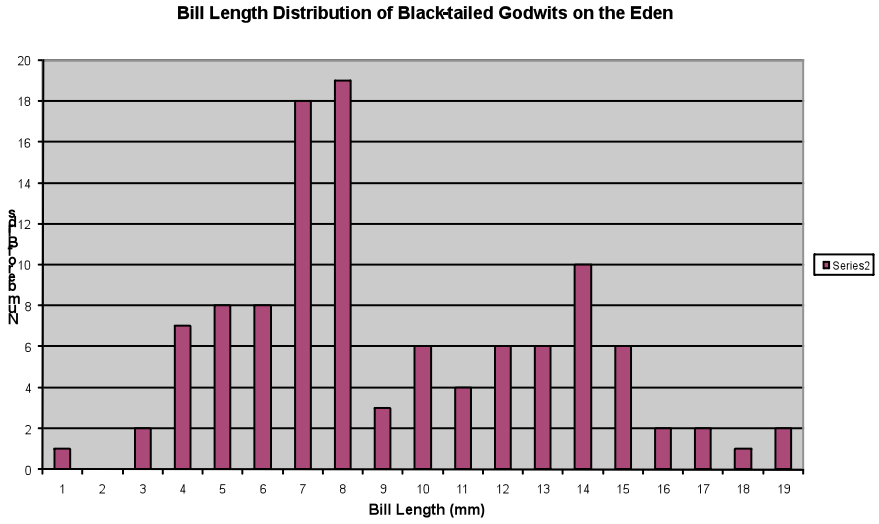


Fig 3



RECOVERIES

There have been four ringing recoveries from the Eden estuary. One was taken by a cat on 17 May 1992 at Ovisholt, Hraungerdishr, Arnes in south- west Iceland (6357'N, 2046'W), two first-year birds were retrapped on the Wash on 31 July 1992 and one was found freshly dead after cold weather at Pointe D'Arcy, L'Aiguillon, Vendee, France (4617'N, 1017 'W) on 25 January 1985.

DISCUSSION

The results show that the Eden Estuary is both a stopover site, particularly in spring, and a wintering site for Black-tailed Godwits. The recoveries on the Wash show that they pass through to other British estuaries. Further work is required, perhaps using colour-ringing, to determine the full extent of the movements of these birds. The population on the Eden appears to be healthy in that it is increasing. From being an uncommon bird up to the 1930s and having a average winter population of about 35 in the 1950s and 1960s (Grierson 1962) there has been a steady increase during the 1980s to a wintering population of about 90. Cramp & Simmons (1983) give values of 91.1 mm and 106 mm for the bill lengths of males and females of the nominate race and 79.6 and 89.5 mm for the Icelandic race respectively. That latter values, which were based on only 9 birds, are closer to the Eden birds (82 mm and 96 mm) suggesting that the 'bulk, if not all, of the Eden birds are Icelandic. The ringing recovery in south-west Iceland supports this interpretation.

ACKNOWLEDGEMENTS

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