

Current state of Black-tailed Godwits *Limosa limosa limosa* breeding in France

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In recent decades, the NW Europe population of the nominate subspecies of the Black-tailed Godwit, *Limosa limosa limosa*, has been in steep decline. As no changes in survival have been apparent so far, these declines are likely to have been caused by declines in recruitment, possibly due to decreasing quality and availability of breeding habitat. Most nominate Black-tailed Godwits breed in agricultural grasslands in the Netherlands and, to some extent, in Germany. Here we show that, in contrast to the general decreasing trend, numbers of breeding pairs have actually increased at the southernmost limit of their distribution in France, from 51 pairs in 1985 to 164 pairs in 2011. We review current knowledge of this godwit population as a basis for a demographic study.

INTRODUCTION

The decline of the nominate subspecies of the Black-tailed Godwit *Limosa limosa limosa* has now been in progress for several decades at a rate of ~5% per year (Gill *et al.* 2007). Most *limosa* Black-tailed Godwits breed in the Netherlands (45,000–50,000 individuals; BirdLife International 2004), where they prefer herb-rich grasslands with high water tables coincident with non-industrial dairy farming (e.g. Groen *et al.* 2012). There are also smaller populations breeding in Germany (6,000–7,300 ind.), Belgium (1,100–1,300 ind.) and Denmark (700–725 ind.). *Limosa* godwits winter in W Africa, mostly in the rice plantations of Senegal, Gambia, Guinea-Bissau and in the flood plains of the Niger in Mali (Kirby & Scott 2009). Recently, a wintering population has also been discovered in the Doñana wetlands in S Spain (Marquez-Ferrando *et al.* 2011). During northward migration, these godwits stage for several weeks in harvested but unploughed wet rice-fields in Portugal and Spain (Lourenço *et al.* 2010). Largely, the decline in population size appears to reflect poor breeding habitat quality and low recruitment rates rather than reduced survival outside the breeding season (Kleijn & van Zijl 2004, Kleijn *et al.* 2010, Schekkerman & Beintema 2007, Schekkerman *et al.* 2009).

The estuaries of W France are known to be important for migrating and wintering Icelandic Black-tailed Godwits *L. l. islandica* (Robin 2011). In France, nominate Black-tailed Godwits mostly occur in spring in the wetlands of the Charente Maritime and Vendée departments, and also in the Basse Vallée Angevine in the Maine-et-Loire department,

mixing then with migrant Icelandic godwits en route to the Netherlands (Gill *et al.* 2007). The year to year variation in the numbers of staging birds may reflect variations in the extent of flooded grasslands in France (Jensen & Perennou 2007, Kuijper *et al.* 2006).

In contrast to the decline in the numbers of pairs further north, a small core of breeders in France has expanded over the last few decades (Robin & Dulac in press). However, except for knowledge of the number of breeding pairs, we know very little of the wintering range, migration and recruitment of this population at the southern breeding limit. Here, our aim is to review information on distribution, numbers and habitat-use of Black-tailed Godwits breeding in France as a basis for a programme of research into their demographics.

METHODS

Estimates of the breeding population of Black-tailed Godwits in France were derived from national surveys in 1984, 1995 and 1996 (Issa & Boutin 2010), and more recent surveys of rare and endangered breeding birds in France by Robin & Dulac (in press) for the period 2001–2011. Likely breeding areas were identified based on the knowledge of local naturalists in each region (Table 1). The number of breeding pairs in individual fields was estimated by walking a loop-transect twice in April and May, or in May if there was a single survey. An estimated range of the number of breeding pairs was determined for each discrete area from a minimum based on the number of pairs observed with clear breeding behaviour to a maximum that included pairs whose breeding status was

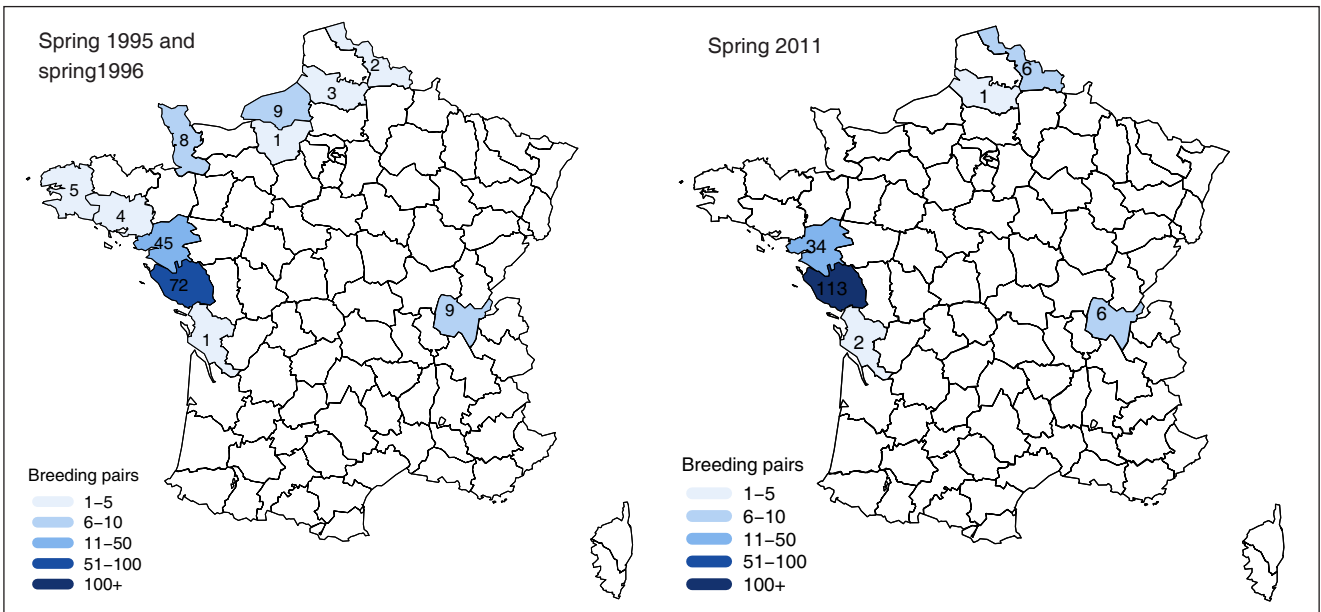


Fig. 1. Estimated maximal number of breeding pairs of breeding Black-tailed Godwits per department in 1995–1996 from Issa & Boutin (2010) and in 2011 from Robin & Dulac (in press).

Fig. 2. (right) Population trend of continental Black-tailed Godwits breeding in France. The black line shows the mean number of pairs, and grey shading indicated the range between the minimum and maximum estimates (Robin & Dulac in press); also shown is the slope of the decline in the overall population of the subspecies estimated by Gill *et al.* 2007.

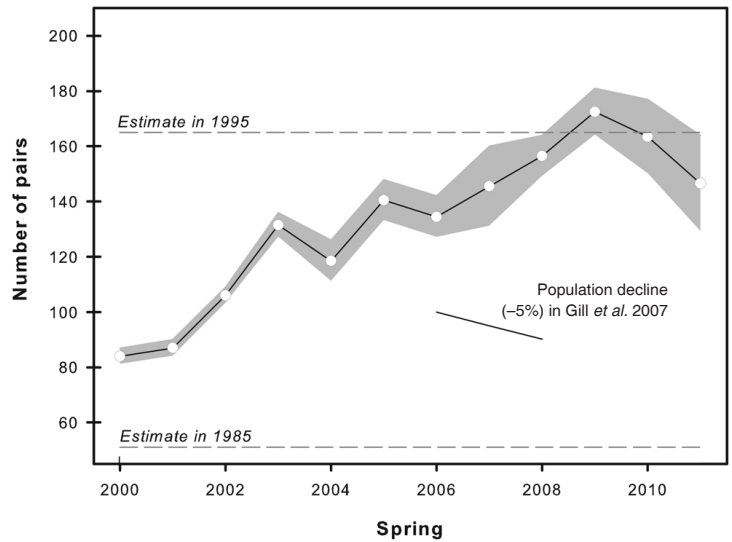
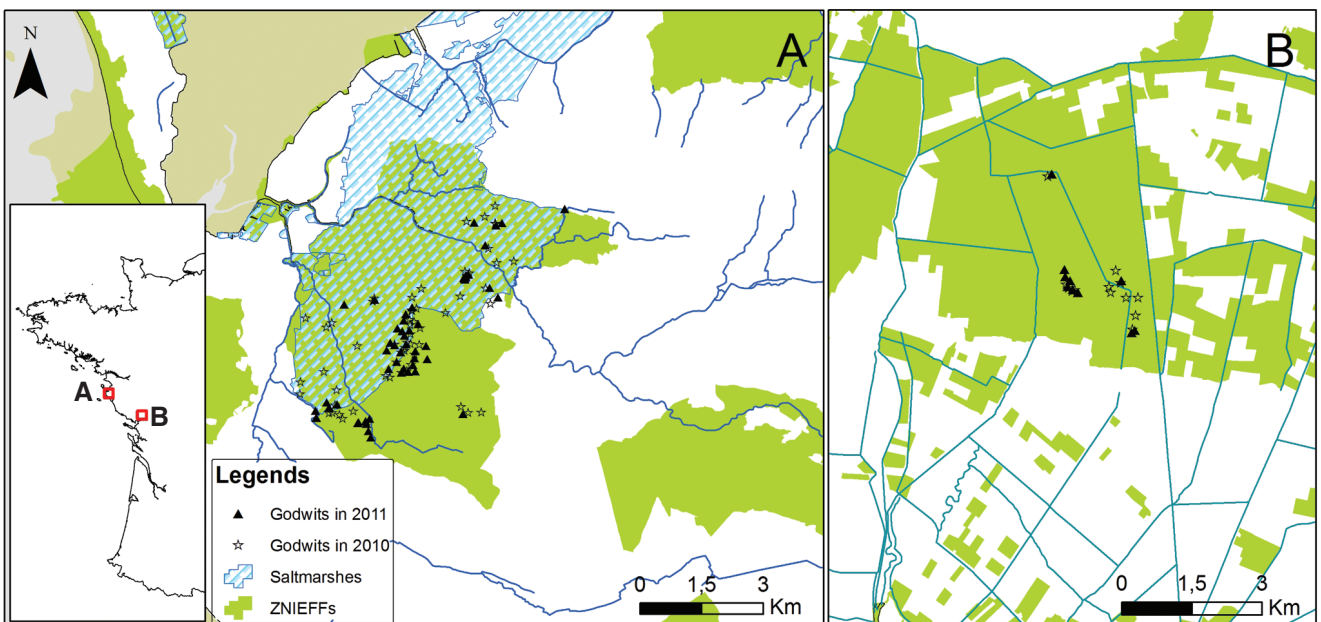


Fig. 3. (below) Location of pairs of Black-tailed Godwits in spring 2010 and 2011 in (A) the Marais Breton, Vendée, and (B) the North part of Marais Poitevin, Vendée (regional nature reserve of la Vacherie). Natural Zones of Animal and Plant Ecological Interest (Zones Naturelles d'Intérêt Ecologique, Faunistique et Floristique) are indicated in green and saltmarshes by blue hatching.



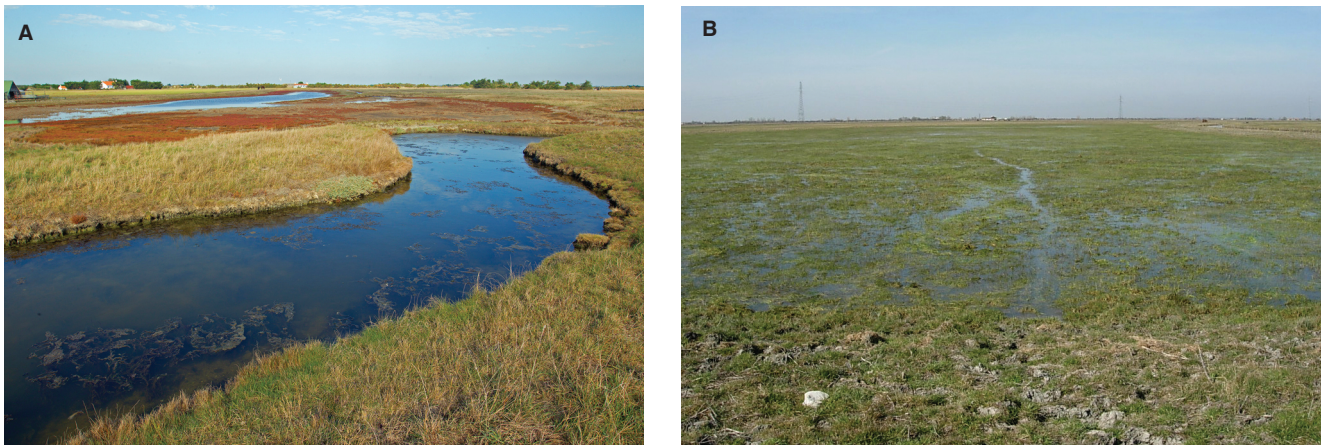


Fig. 4. Typical breeding meadows used by Black-tailed Godwits at: **(A)** Marais Breton in northern Vendée (photo: Louis-Marie Préau) and **(B)** Marais Poitevin in southern Vendée (photo: Jean-Pierre Guéret).

water levels and vegetation structure are managed for waders (Fig. 3B). Most of the areas in which godwits breed are large, open meadows with steadily lowering water tables during the breeding season and a degree of cattle grazing (Fig. 4B).

Summary of research plans

The nominate *limosa* subspecies of the Black-tailed Godwit is classified as vulnerable (BirdLife International 2004) and is protected by a 5-year hunting moratorium in France covering 2007–2012. Despite this special status, few studies have been carried out on Black-tailed Godwits in France. Recruitment rates in particular are completely unknown. Moreover, as *limosa* godwits occur in France as late as end of October (database of the Nature Reserve of Moëze-Oléron), it is uncertain whether the birds that are present in autumn are local breeders or come from elsewhere in Europe. This needs special attention, especially if there are any moves to allow the resumption of hunting in late August or early September. To fill these knowledge gaps, a colour-ringing programme was initiated in 2012 in the two main breeding areas in Vendée, Marais Breton and Marais Poitevin (Fig. 3). The study aims to document: (1) individual site-faithfulness and habitat use; (2) (local) recruitment and survival, (3) the length of the post-breeding period, and (4) the wintering areas used by this most southerly breeding population. Do they go to W Africa or stay in Iberia?

These studies should help site managers to adjust and optimize agro-environmental schedules and other management measures (timing of mowing, nest protection, water level). We also hope they will generate data that will inform decisions on the hunting moratorium.

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