Results of a coordinated count of Eurasian Golden Plovers *Pluvialis apricaria* in Europe during October 2008

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The Eurasian Golden Plover is a species that is inadequately covered by standard European monitoring schemes, largely due to its terrestrial passage and wintering habitats. This paper reports on the second attempt at an international coordinated survey of autumn passage birds at a time when they are most concentrated in the smallest areas. In October 2008, professional and volunteer surveyors searched for Eurasian Golden Plovers in 16 countries, eight more than in the previous survey in October 2003, including significant figures from Iceland and Lithuania. In total, 1,068,507 Eurasian Golden Plovers were counted, representing an apparent 1% decline since 2003. However, country-level coverage was variable and the apparent shortfall is within the margin of survey error. Country-level trends are discussed in relation to coverage and autumn weather patterns.

INTRODUCTION

Recent decades have seen a growing interest in the changing distribution and abundance of Eurasian Golden Plovers *Pluvialis apricaria* in NW Europe. As one of a handful of wader species that falls through the net of standard estuarine wader monitoring in Europe it requires dedicated surveys to enumerate its status (Gillings 2005). For the first time a coordinated survey in 2003, organised by the International Wader Study Group (IWSG), encompassed the main countries where birds of Scandinavian/Russian breeding origin were concentrated on passage in October (Rasmussen & Gillings 2007) but with record counts in S Sweden, and no organised surveying further north or east, questions remained as to how many birds were missed, for example in the Baltic. Coverage of birds from the Iceland/Faeroes flyway was poor, partly due to lack of coverage in Iceland, but also because once individuals arrive in Britain and Ireland they spread over a very large area and coordinated census coverage is not feasible. The International Wader Study Group "International Workshop on Passage and Wintering Eurasian Golden Plovers" held in 2005 in Cork, Ireland, recommended a rolling programme of coordinated counts every 6 years (Gillings 2005) and this paper reports on the second international survey in October 2008. For further discussion of flyway definitions and taxonomic issues see Rasmussen & Gillings (2007).

METHODS

Essentially, the 2008 survey employed the same methods as the 2003 survey (Rasmussen & Gillings 2007), using country organisers contacted under the umbrella of the IWSG. Individual countries chose a method befitting the scale of abundance and aggregation of the species, and also the practical limitations of the density of observers (Table 1). Several countries with established monitoring networks organised coordinated and synchronised counts of large parts of the October range of the species. In others, coverage was more *ad hoc* with some areas being covered but in a less systematic manner. Alternatively, country totals were simply the sum of any casual records received. Fieldwork took place in October when Eurasian Golden Plovers are most concentrated on migration. Ideally all observations were made during 15–22 Oct 2008. Methods ranged from almost complete censuses, through casual observations, to extrapolated densities. Thus in Denmark, where the majority of individuals occupy a relatively small number of well-known sites, observers undertook a near-complete census, combined with casual observations; all were reported to the website *www.dofbasen*.dk. In Finland, where the species has largely departed by October, BirdLife Finland kindly provided access to a database of the few Golden Plover sightings that arose through general birdwatching. In Iceland, sightings on wetlands were supplemented by extrapolated density estimates on farmland (Gunnarsson 2009). Other countries used a mixture of these techniques (Table 1).

For reporting we follow Rasmussen & Gillings (2007) in producing separate totals of birds of "Continental" versus "Atlantic" origin. This is largely on practical grounds because it becomes progressively more difficult further south, or later in the winter, to allocate counts to *P. a. altifrons* or *P. a. apricaria* due to mixing of the populations on shared wintering grounds.

RESULTS

Most countries participating found Eurasian Golden Plovers flocks (Table 2) and in total over 1 million were reported. Only Latvia returned a zero count despite searches of known areas or sites. Also in Bulgaria only 3 Golden Plovers were reported despite extensive coverage. In Iceland, 4,459 individuals were counted on mudflats and the coastal strip of unfrozen lowlands. Based on counts in this latter area, an approximate density of 5 individuals/km^2 was derived and used to give an overall estimate of 7,662 individuals for the whole country. Coverage in the Czech Republic was good and included negative returns from 25 sites in addition to the 4 sites with positive counts. For the first time coordinated searching was undertaken in Estonia, Latvia and Lithuania (Pakstyte 2009). With little previous information from these countries, it is impossible to assess the extent of coverage but the reported 22,244 individuals in Lithuania is noteworthy and is an indication that significant numbers could be present in these countries during October. Elsewhere within the Continental group coverage was generally good. In the UK and Ireland, coverage of wetlands was good but coverage of farmland was poor; therefore the degree of underestimation is unquantifiable but could be substantial.

DISCUSSION

The 2008 total of 1.07 million Eurasian Golden Plovers is very similar to the 1.08 million reported in 2003, but differences in coverage mean that these headline figures should be interpreted with caution. The 2008 total for the countries surveyed in both years is 1,031,852, which is 5% less than in 2003. Further inspection of the data shows that this small difference is the result of 10% fewer birds in the Continental group and 26% more in the Atlantic group.

There was considerable heterogeneity at the country level in the change in numbers between surveys. Some differences may be impossible to distinguish from survey error. However, the results suggest that numbers in the south and west of the Continental region were generally lower whereas those in the north and east were generally higher. This pattern is consistent with the hypothesis that mild conditions in northern areas allowed birds to remain longer. Weather data from S Sweden (Swedish Meteorological and Hydrological Institute) support this to some extent: August and Septem-

Table 1. Field methods and data sources used in each European country to assess Eurasian Golden Plover numbers.

Country	Method/Source	Organiser
Belgium	Wetland Bird Surveys plus casual sightings	Koen Devos
Bulgaria	Searches of wetlands and lakes	Svetla Dalakchieva
Czech Republic	Area searches	Vojtěch Kubelka
Denmark	Coordinated counts plus casual sightings reported on *www.dofbasen.dk*	Lars Maltha Rasmussen
Estonia	Area searches	Jaanus Elts
Finland	Sightings from Tiira online observation system	Teemu Lehtiniemi
Germany	Coordinated counts	Johannes Wahl
Hungary	Casual sightings	György Szimuly
Iceland	Casual sightings plus extrapolated density estimates	Tómas Grétar Gunnarsson
Latvia	Area searches	Andris Avontins
Lithuania	Area searches	Egle Pakstyte
Netherlands	Coordinated counts	Romke Kleefstra
Poland	Coordinated counts	Włodzimierz Meissner
Republic of Ireland	Irish Wetland Bird Survey plus sightings from Bird Atlas and BirdTrack online observation system	Olivia Crowe
Sweden	Coordinated counts and sightings from Artportalen online observation system	Martin Green
United Kingdom	Wetland Bird Survey plus sightings from Bird Atlas and BirdTrack online observation system	Simon Gillings

Table 2. Numbers of Eurasian Golden Plovers counted in Oct 2008 in European countries. For each country the main population group to which birds can be ascribed is given. Quality indicates the approximate level of completeness of the count. For reference, figures from Oct 2003 are repeated along with the percentage change between 2003 and 2008 (n.c. = Not counted in 2003).

Country	Major population group	Total 2008	Quality	Total 2003	% change
Belgium	Continental	3,229	Good	[2000]	
Bulgaria	Continental	3	Good	n.c.	
Czech Republic	Continental	94	Good	n.c.	
Denmark	Continental	270,774	Good	380,000	–29%
Estonia	Continental	887	Unknown	n.c.	
Finland	Continental	1,210	Unknown	n.c.	
Germany	Continental	193,231	Good	220,000	–12%
Hungary	Continental	138	Unknown	n.c.	
Latvia	Continental	0	Unknown	n.c.	
Lithuania	Continental	22,244	Good	n.c.	
Netherlands	Continental	167,160	Good	180,000	–7%
Poland	Continental	52,630	Good	22,000	+139%
Sweden	Continental	139,557	Good	115,000	+21%
Iceland	Atlantic	7,662	Good	n.c.	
Republic of Ireland	Atlantic	56,841	Underestimate	24,000	+137%
United Kingdom	Atlantic	152,847	Underestimate	143,000	+7%
Total counted		**1,068,507**		**1,084,000**	–1%
Total, predominantly of Continental group		**851,157**		**917,000**	–7%
Total, predominantly of Atlantic group		**217,350**		**167,000**	+30%

ber mean temperatures were similar in the two periods but October mean temperatures were markedly higher in 2008 than 2003 (9.4°C versus 5.9°C respectively). A similar situation was apparent in NE Germany. Further south there is evidence that golden plovers move only when cold weather fronts arrive (Jukema *et al.* 2002) and it would be interesting to test whether the same phenomenon operates in S Scandinavia and the Baltic countries, and whether the timing of cold fronts has changed in recent decades. On-going monitoring in the Baltic States will be especially valuable in this regard. Already follow-up surveys in Latvia have found a location holding up to 1,500 golden plovers which may have been occupied (but was not surveyed) in 2008.

The higher total reported in the Atlantic group is difficult to interpret. Given that the *c.*153,000 counted in the UK is perhaps only 60% of the true October total (Gillings & Fuller 2009), the 26% increase falls within the realms of survey error. In the UK, Wetland Bird Survey figures indicate a 2% decrease between Oct 2003 and Oct 2008 (WeBS unpubl. data). The Irish Wetland Bird Survey indicates a 13% decrease between winter 2003/04 and winter 2008/09, though this is based on mid-winter not October counts. Little can be concluded about the change in numbers of the Atlantic group based on these figures.

The 2008 survey has been successful not only in synchronising counts internationally but also in promoting interest in this species, and Northern Lapwings *Vanellus vanellus* with which golden plovers are often associated. Several regional analyses have followed the 2008 survey and shown associations with arable farmland in addition to the more expected wetland and intertidal habitats (e.g. Kleefstra *et al.* 2009, Meissner *et al.* 2010, Rasmussen *et al.* 2008, Ryslavy 2009, Schulze 2010). In Estonia, the appearance of Eurasian Golden Plovers on arable land away from coastal meadows was a surprise to many of the surveyors and this stresses the importance of checking a variety of open habitats in order to increase the accuracy of country totals. In Germany, Lapwing was included on the count form as an optional species. This was very rewarding in many regards: a) knowledge of the species' distribution and numbers has much improved in many regions, b) many more nil counts of Golden Plovers were received, simplifying the judgement of coverage and c) it was very motivating for counters as many more could report more than just "0 Golden Plovers".

The methods employed in the 2003 and 2008 surveys seem to be effective for gaining snapshot estimates of Eurasian Golden Plover abundance in the Continental group but more detailed work is required to determine whether the country level differences detected between 2008 and 2003 are real or arise because of a change in the timing of southward migration. Gaining a comparable level of coverage throughout the Atlantic group requires a considerable investment in survey effort, probably including randomised surveys, and this is unlikely to be possible on a regular basis. According to the original 6-year plan the next survey is due in October 2014.

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Eurasian Golden Plovers (and a few Northern Lapwings) roosting at Titchwell, Norfolk, SE England, October 2011. (Photo: Jan van de Kam.)