

COUNTING OF GOLDEN PLOVERS Pluvialis apricaria ON PASSAGE : SOME RESULTS OF TWO COUNTRY-WIDE SURVEYS IN THE NETHERLANDS

by Mennobart van Eerden and Peter Keij

Introduction

Golden Plovers breed in a vast area ranging from Iceland, The British Isles and Fennoscandia to the Soviet Union east of the Urals. The species inhabits boreal and subarctic tundras in the North and moorlands, bogs and lowland heath in the South (Voous 1960). Like many other species of Palearctic waders Golden Plovers winter in western Europe but, unlike others, they are not confined to a marine coastal habitat in winter (Glutz von Blotzheim 1975): they are scattered over a large part of Europe, occurring particularly in Ireland, Great Britain, France, the Iberian Peninsula and Morocco. In mild winters small numbers occur in the countries bordering the North Sea.

Because they forage inland and because most emphasis in recent years has been on counting coastal waders, very little is known about their total numbers (Prater 1974). Information on numbers would give insight into the proposed relationship between population size and total area of wintering grounds of waders (Swennen 1976, Hulscher 1975). In winter and while on passage Golden Plovers forage on pasture land, arable fields, saltmarshes and other more or less man-influenced habitats. The birds are generally easy to see because they feed in open country and not in ditches (like many Tringa species) which would make counting difficult. Thus, counting over a large area to estimate the total population size is possible because: (a) knowledge of habitat preference reduces the total area that needs to be covered by observers, and (b) knowledge of dates of passage means that counts can be planned in the period of maximum concentration.

This paper gives some preliminary results of two country-wide surveys in the Netherlands and makes proposals for international counting in November 1979.

Methods

Previous detailed counts of relatively small parts of Golden Plover habitat showed that highest numbers of birds are in the Netherlands during November. According to Glutz von Blotzheim (1975) they delay their autumn migration further south as long as possible, only moving early if forced to do so by severe weather conditions. Delayed migration may also minimise the risk of reaching the Mediterranean area while it is still dry in late autumn. Ringing recoveries support the idea that, in autumn, the birds stop in the countries bordering the North Sea. Of birds ringed in the Netherlands only 3% of all recoveries (n = 536) in later years occurred in France or further south before December. In the Netherlands the birds return mainly from the beginning of March onward, spring passage usually peaking in April. Thus, the weekends of 20-21 November 1976 and 2-3 April 1977 were chosen for the nation-wide counts.

Observers contacted through regional coordinators were given pre-printed record sheets. Each flock found was noted separately, both on a topographical map and on a record sheet. Information on flock behaviour (foraging, resting, flying) and habitat (pasture land, arable land, saltings, etc.) was also noted. Based on previous detailed counts mean "counting speed" was estimated at about 1000 ha per hour so, according to experience and available time, observers were not asked to cover more than 5000 ha per person per day. Counts were made from roads; the observers travelled by bicycle, motorbike or car and made regular stops. In good visibility a one km band adjacent to each side of the road could easily be counted. From dikes around vast polders observers could see much further. Almost complete coverage was obtained and only a few remote parts had to be visited on foot and/or by boat. Because the birds were not subject to a tidal rhythm like coastal waders (except at a few coastal sites) the whole daylight period could be used for surveying. During both counts all suitable habitat in the Netherlands was examined, comprising over two million ha, which required about 2000 man-hours for each count.

Numbers and foraging area

Total numbers for November were 405,164 and, for April, 286,577. Golden Plovers on migration proved to be meadow birds: 95% in November and 77% in April were feeding on grassland (Table 1). When seen on arable land, the birds were generally resting, especially on freshly ploughed fields, before they were harrowed. In spring foraging flocks also occurred on winter wheat, winter colza and stubble fields.

Most birds foraged in flocks not exceeding 300, although the largest assemblies contained over 5000. Ninety percent of birds occurred in the coastal provinces during both counts (see figs. 1 & 2). Short vegetation seemed to be preferred and the birds were particularly numerous in areas intensively grazed by cattle and sheep in summer. The vast treeless grassland polders were favourite areas and all were situated in alluvial low lying parts of the Netherlands. Small grassland fields with trees in the field boundaries are never used. Recently fenced grasslands only supported very small numbers. In general grasslands in alluvial areas (both coastal and along the rivers Rhine, Meuse, Waal and IJssel - see figs 1 & 2) seemed to be the preferred areas. Birds were seen on arable fields only where pastureland was nearby. Extensive areas of arable land without grasslands were avoided, especially in autumn. In spring huge flocks of Golden Plovers sometimes gathered on ploughed fields, tumbling down after aerial display flights.

April and November

Totals in April were about 30% lower than those in November. Other counts in 1977/78 and 1978/79 seem to support this result. Whether the period of stay in spring is shorter or whether the birds are elsewhere to the North and East of the Netherlands is not known. It may be that a more direct route is used by part of the population from the Mediterranean winter quarters on migration to the Russian breeding sites as Glutz von Blotzheim (1975) suggested. Alternatively part of the difference could be due to over-winter mortality. Although fewer birds are present in April, their distribution is almost identical to that in November (Figs 1 & 2). Table 2 lists mean and maximum number in the best areas (> 1500 per 25 km²) in six provinces. Again the similarity between the two counts is obvious; the highest densities occur in the north-east and the lowest in the south-west of the Netherlands. Even on a smaller scale the birds prefer certain polders and within these consistently chose particular fields. Many observers had local knowledge about these favourite feeding sites and very often noted their use year after year.

Typical behaviour in spring is the spiralling up high into the sky, an aerial performance in which over 3000 birds may be involved. The plovers can stay in the air for minutes and are very difficult to detect except by their frequent calling. Soaring on stiff wings against the wind usually ends in a steep descent after which the birds gather, e.g. on a ploughed field. Because of this behaviour counting becomes difficult and if a group is missed in spring it is likely to be a big one.

Table 1. Percentage of Golden Plovers on grassland, arable land and flying in November and April in 10 provinces in the Netherlands.

	November			April		
	grass	arable	flying	grass	arable	flying
Groningen	98.8	0.4	0.8	75.6	20.8	3.6
Friesland	96.7	1.4	1.8	87.7	12.3	?
Drenthe	93.5	1.8	4.7	79.1	6.7	14.1
Overijssel	98.6	-	1.4	93.0	5.6	1.4
Gelderland	98.4	1.6	-	88.0	11.0	1.0
Utrecht	91.0	7.0	2.0	?	?	?
Noord-Holland	95.5	1.1	3.4	81.1	4.7	13.9
Zuid-Holland	96.8	0.1	3.1	93.5	5.9	0.6
Zeeland	77.9	15.6	6.5	13.7	79.7	6.6
Noord-Brabant	97.9	2.1	-	27.0	66.8	6.2
Overall	95.8	1.9	2.3	77.5	18.9	3.6

Total birds: November 370,000 April 267,000

Table 2. Mean and maximum numbers per 25 km² of Golden Plovers in the best areas in six provinces in the Netherlands.

	Mean		Maximum	
	November	April	November	April
Groningen	4540 (11)	4605 (14)	7844	10831
Friesland	4494 (22)	3104 (17)	21021	8249
Noord-Holland	3564 (24)	3619 (6)	11720	5966
Zuid-Holland	3052 (9)	3477 (7)	10680	8124
Overijssel	3061 (3)	3599 (4)	4220	6763
Zeeland	2165 (4)	2682 (3)	3021	4200
Rest	2137 (2)	-	2773	-
Nederland	3786 (75)	3641 (51)	21021	10831

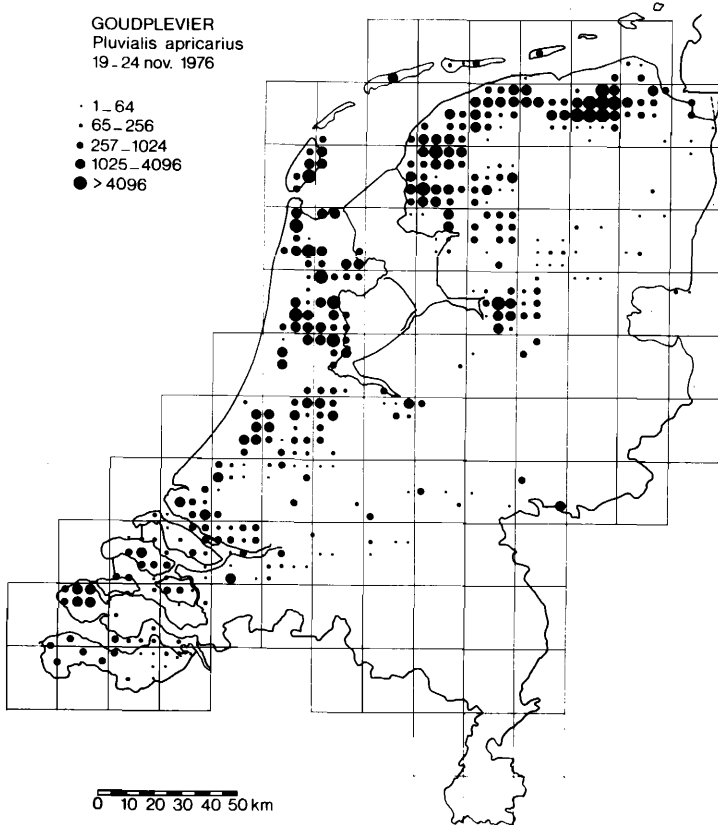


Figure 1. Distribution of Golden Plovers in the Netherlands as shown by counts on 19-24 November 1976

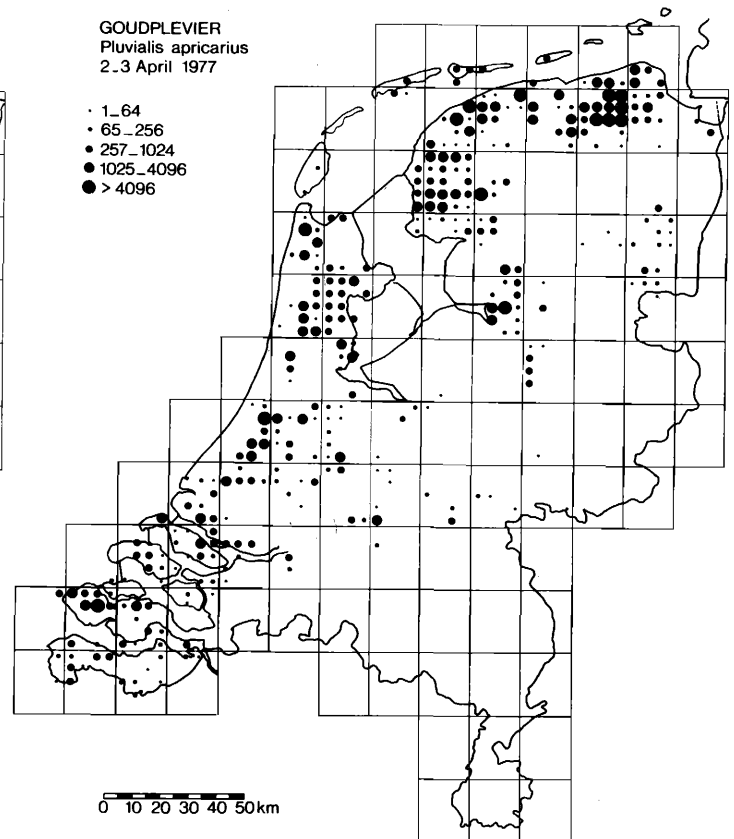


Figure 2. Distribution of Golden Plovers in the Netherlands as shown by counts on 2-3 April 1977

The bottle-neck hypothesis

Published counts of small areas indicate highest autumn (October and November) numbers in Denmark, Western Germany, The Netherlands and Belgium. A brief survey of the published ringing results (Glutz von Blotzheim 1975) supports the idea of concentration in these countries in late autumn. Of the birds ringed in The Netherlands and recovered at least one breeding season later (records to 1 January 1974), few were reported in countries south of and including France (3), compared to 15 in Denmark. However, Golden Plovers are still present in Norway, Sweden and Finland (each 1) in October. In November none have been reported from Fennoscandia and few birds seem to be present in Denmark (2). Also relatively few are shot in October and November further south (11) compared to the total bag in these countries in December (51), January (60) and February (76). This leads to the preliminary conclusion that Golden Plovers are maximally concentrated in the countries bordering the North Sea in November, just before the first cold spells force the birds to move further south.

Further counts and some results from Western Germany and Denmark in November 1978

Results in counting in Denmark and Western Germany are very promising. Although the counts did not completely cover these countries and are predominantly coastal, large numbers were detected. According to data provided by Meltotte, 63,722 Golden Plovers were counted mid-November 1978 in Denmark. Similarly counts in Neidersachsen (Lower Saxony) produced 46,122 birds as submitted by Henneberg. The raw data are presented in Figs. 3 & 4. In order to extend our present knowledge about numbers and distribution of the species an international count is planned for 24-25 November 1979. We hope to organise counts to cover as much of Denmark, Western Germany, The Netherlands and Belgium as possible. We should also welcome additional information from southern Norway and Sweden as well as France or further south. Based on the situation in the Netherlands Fig.3 shows the main areas where Golden Plovers are to be expected on the continent (mainly based on height and soil types: "Marschboden"). The situation for the more easterly coasts and for Denmark is less predictable.

Probably the easiest way to organize counting is through local co-ordinators. To get an idea about the completeness of the count we ask organisers to contact us before October 15th. (Regrettably, this paper arrived after Bulletin 26 had gone to press, so all we could do was to insert a preliminary note of the request for counters in that Bulletin - Eds.) Please contact: Mr. Cor Smit, Research Institute for Nature Management, Postbox 59, 1790 AB De Burg Texel, The Netherlands.

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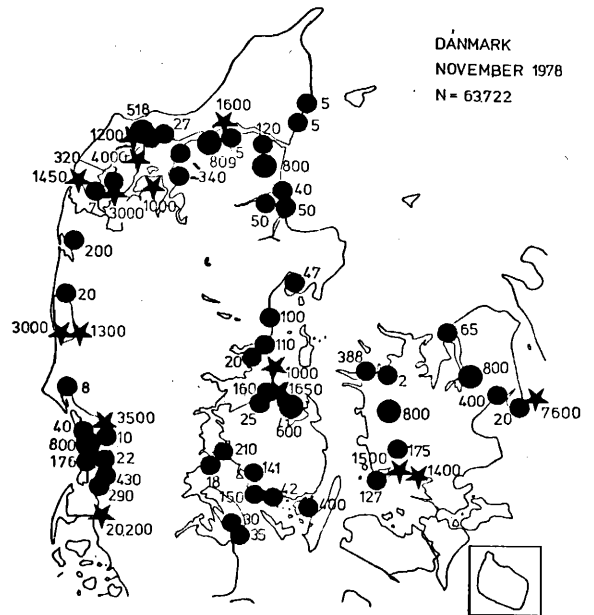
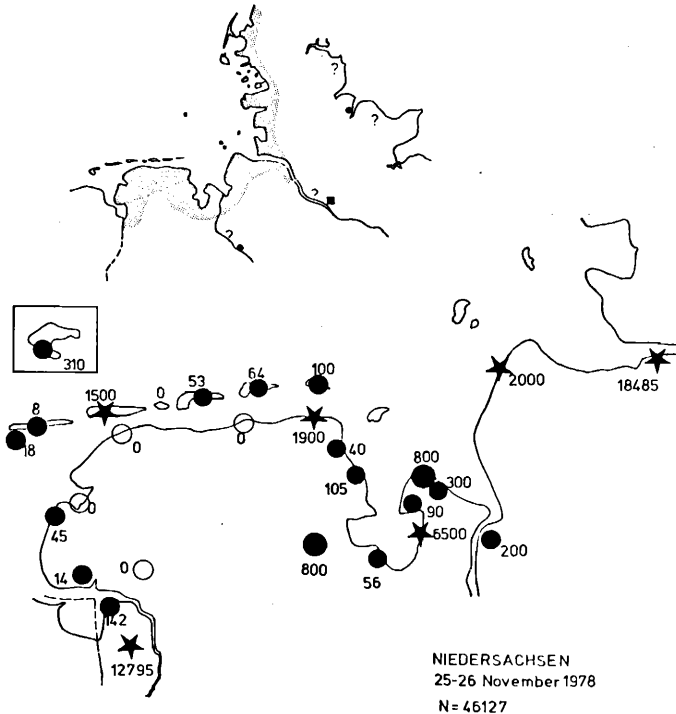


Figure 3. Distribution of Golden Plovers in Lower Saxony as shown by counts on 25-26 November 1978, with inset the main areas where Golden Plovers are to be expected (see text).

Figure 4. Distribution of Golden Plovers in Denmark as shown by counts in mid-November 1978.