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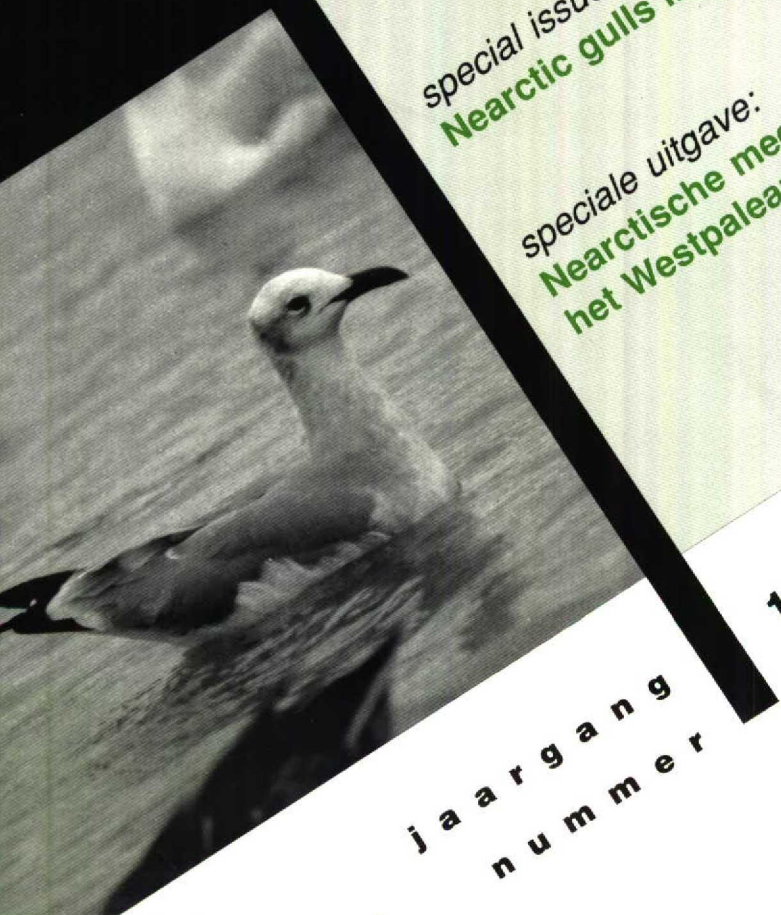

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redactie Arnoud van den Berg, Tom van der Have, André van Loon, Gerald Oreel (redactiesecretaris 020-730710), Frank Rozendaal en Hans Schekkerman; DB actueel: Max Berlijn, Ruud van Dongen en Jaap Eerdmans

fotografische redactie René Pop, Floris Burgwal 54, 2907 PH Capelle aan den IJssel, Nederland (010-4508879)

productie André van Loon (coördinatie 020-869608) en René van Rossum (lay-out)

advertenties JanJaap Brinkman (015-569353/020-851616)

redactiemedewerkers Klaas Eigenhuis, Graham Holloway, Edward van IJzendoorn, Karel Mauer en Hans van der Meulen

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dutch birding association

adres Dutch Birding Association, Postbus 75611, 1070 AP Amsterdam, Nederland

bestuur Paul Knolle (voorzitter), Enno Ebels (secretaris), Arnold Veen (penningmeester), JanJaap Brinkman (abonnementen-administrateur), Arnoud van den Berg, Teus Luijendijk, Gerald Oreel, Frank Rozendaal en Kees Tiemstra

bestuursmedewerkers Eugène van der Burg, Roy de Haas, Leo Heemskerk, Ferry Ossendorp en Wim van der Schot

travel-report service Dirk de Moes, Croeselaan 174, 3521 CH Utrecht, Nederland (030-960219)

telefoonlijnen 06-320 321 28 (vogellijn 50 cpm); 01720-38100 (inspreeklijn)

commissie dwaalgasten nederlandse avifauna

adres CDNA, Postbus 45, 2080 AA Santpoort-Zuid, Nederland

leden (1 januari 1991) Arnoud van den Berg (voorzitter), Pieter Bison (secretaris 020-715783), Rolf de By (archivaris), Klaas Eigenhuis, Gerald Oreel, Cock Reijnders, Kees Roselaar en Gerard Steinhaus; SOVON-vertegenwoordiger: Ruud van Dongen

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Drukkerij Albédon/Klop BV, Postbus 3211, 2220 CE Katwijk, Nederland

Nearctic gulls in the Western Palearctic

W (Ted) Hoogendoorn & Gerard H Steinhaus

Ring-billed *Larus delawarensis*, Laughing *L atricilla*, Franklin's *L pipixcan* and Bonaparte's Gulls *L philadelphia* are considered to breed only in the New World; Laughing Gull primarily in the Nearctic with minor populations in the Neotropics and the other three species exclusively in the Nearctic. They winter mainly from southern North America to northern and western South America. In the past, few were recorded away from the New World but after c 1965 the number of records in the Western Palearctic has increased dramatically. In this paper, we present a survey of the individuals of these species recorded in the WP up to and including 1987 and analyse their temporal and geographical patterns. Iceland Gulls *L glaucoides glaucoides* and probably most Sabine's Gulls *L sabini* recorded in the WP are also of Nearctic origin. They are, however, not treated here since their occurrence is well-documented (eg, Cramp & Simmons 1983).

materials and methods

Most records were found in the literature. Additionally, for countries with a rarities committee, the secretaries were consulted. Although the quality of record assessment differs among countries, we have refrained, mainly for practical reasons, from setting our own standards for all c 850 records (involving c 1000 individuals). As a rule, starting with a species' first record for each country which we regarded as valid, all subsequent records accepted by the national identification authorities were included. We had to make exceptions to this rule, however. Nevertheless, some records might have been included (appendices 1-4) which do not meet present-day standards of acceptance (cf Vinicombe 1988). For quick reference, the totals for each species are summarized by country (table 1).

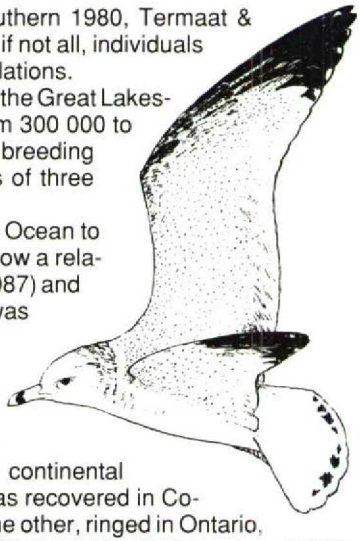
In view of the large number of Ring-billed Gulls in Britain and Ireland, it was necessary to present most of the data concerning the occurrence of that species in Britain and Ireland separately from the other WP countries. It needs to be stressed that we have greatly benefited from previous work on Ring-billed Gull in Britain and Ireland by Vinicombe (1985).

results

Ring-billed Gull

distribution and occurrence in New World, extra-WP vagrancy Ring-billed Gull breeds locally from maritime eastern Canada, throughout the Great Lakes, to the Prairie Provinces of Canada and the western USA. The eastern populations spend the non-breeding season predominantly on the Atlantic and Gulf coasts of the USA, the western populations mainly on the Pacific coast of the USA and Mexico (figure 1). Inland wintering in suitable areas is widespread. Small numbers winter in the Greater Antilles (Clapp et al 1983). The eastern and western populations appear to

be virtually isolated during the whole year (Southern 1980, Termaat & Ryder 1984). Therefore, it is assumed that most, if not all, individuals recorded in the WP originate from eastern populations.
During 1976-84, the Ring-billed Gull population in the Great Lakes-Upper Saint Lawrence River area increased from 300 000 to 700 000 breeding pairs. At the end of the 1984 breeding season, this population was probably in excess of three million individuals (Blokpoel & Tessier 1986).
Ring-billed Gull has wandered across the Pacific Ocean to the Hawaiian Islands (Berger 1972), where it is now a relatively frequent visitor in low numbers (Pratt et al 1987) and where an individual ringed in Nevada, USA, was recorded in December 1987 (David 1988), to the Line Islands (Sibley & McFarlane 1968) and to the Galápagos Islands (Small 1987, Udvardy & Säll 1987). In the Arctic, it has wandered to Greenland (Olsen 1988). Two ringing recoveries apparently constitute the only records for continental South America: one ringed in Michigan, USA, was recovered in Colombia in 1966 (cf Southern & Moore 1974) and the other, ringed in Ontario, Canada, was recovered in Brazil in 1968, the first Southern Hemisphere record of this species (Brewer & Salvadori 1978, Sick 1979).



91 Ring-billed Gull *Larus delawarensis*, first-summer, Grafarvogur, Reykjavík, Iceland, May 1982 (*Jóhann Óli Hilmarsson*)

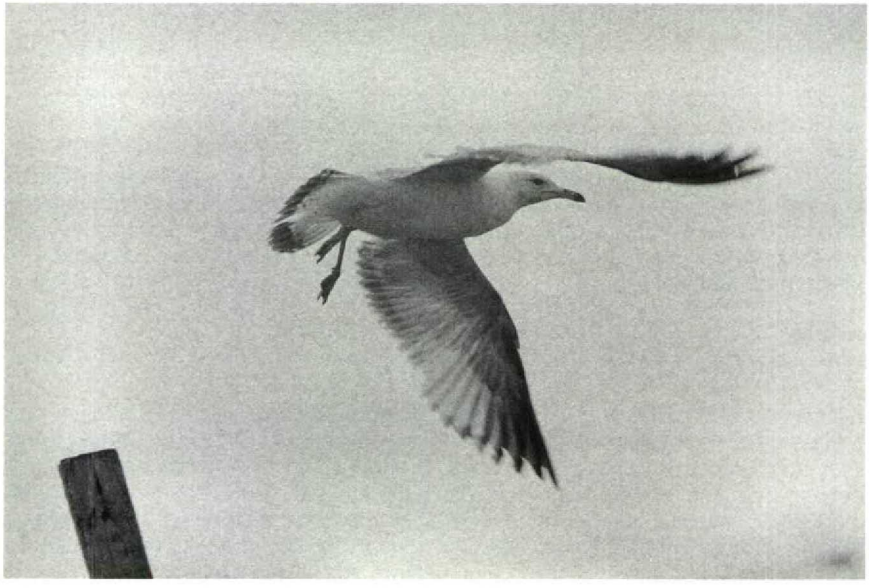


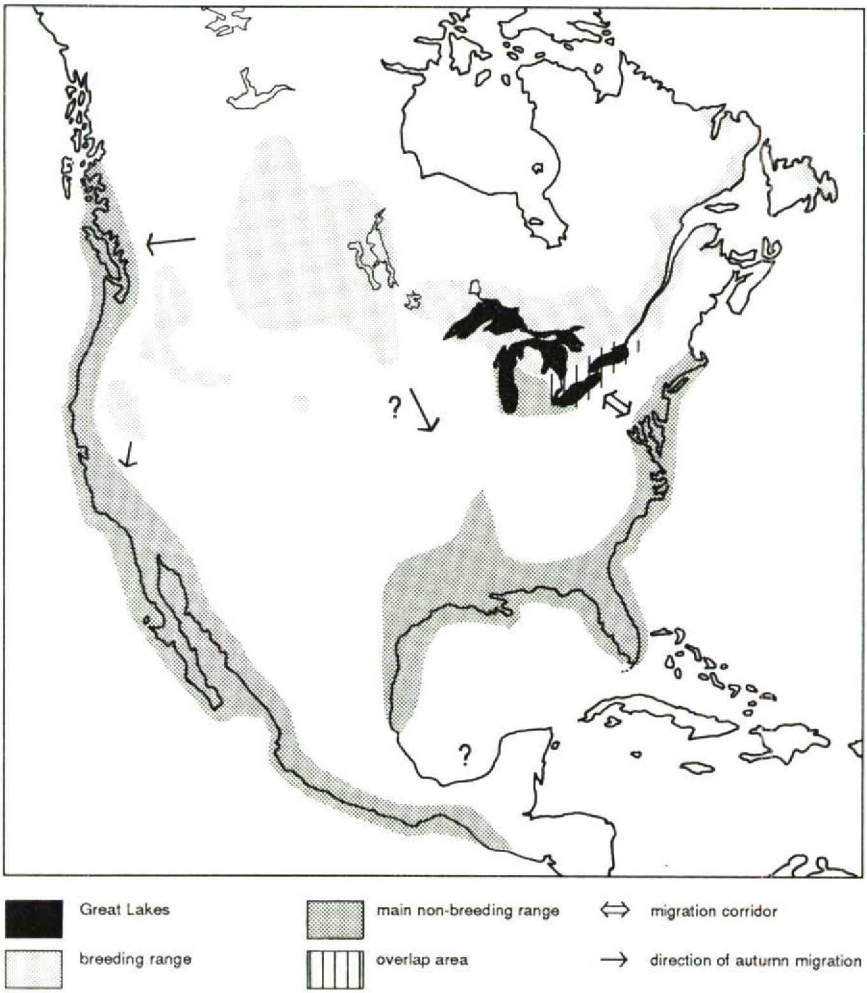
TABLE 1 Numbers of Ring-billed *Larus delawarensis* (RG), Laughing *L atricilla* (LG), Franklin's *L pipixcan* (FG) and Bonaparte's Gull *L philadelphia* (BG) recorded in WP up to 1987 by geographical unit. None have been included for Austria, Bulgaria, Cape Verde Islands, Cyprus, Czechoslovakia, Egypt, Finland, GDR, Hungary, Iraq, Israel, Italy, Jordan, Kuwait, Lebanon, Luxembourg, Malta, Poland, Rumania, Saudi Arabia, Switzerland, Syria, Tunisia, Turkey and USSR; no information was obtained for Albania, Algeria, Chad, Libya, Mali, Mauritania, Niger, Rio de Oro and Yugoslavia

geographical unit [a]	RG	LG	FG	BG
Azores	112	–	1	8
Belgium	–	–	1	1
Britain	401	45	14	48
Canary Islands	5	–	–	–
Channel Islands	3	–	–	–
Denmark	–	2	–	– [b]
Faroe Islands	–	–	1	–
France	26	5	5	2
FRG	1	–	1	–
Gibraltar	1	– [c]	–	–
Greece	–	1	–	–
Iceland	21	5	1	5
Ireland	232	4	–	8
Madeiran Islands	8	–	1	–
Morocco	4	1	–	–
Netherlands	1	–	1 [d]	1
Norway	4	–	1	1
Portugal	1	1	–	–
Spain	7	3	1	2
Svalbard Archipelago	1	–	–	–
Sweden	3	1	6	–
total	831	68	33	76

[a]Referred to as 'countries' in main text. [b]First record, 13-15 August 1988, Skagen, Nordjylland, adult (Olsen 1989, Knud Pedersen in litt). [c]First record, 15/27 November 1988, first-winter (Steve Holliday in litt). [d]First recorded in Belgium.

occurrence in WP The first Ring-billed Gull recorded in the WP was in the Azores in 1945. The next two came from Spain in 1951 and 1965. These records concerned three ringing recoveries. From 1973 onwards (Hume 1973, Vinicombe 1973), after the publication of a paper on Ring-billed Gull identification (Grant 1973), it has been observed annually in Britain and after 1980 in considerable numbers. From 1976 onwards, it was also recorded in other WP countries, including Ireland (Mullarney 1980) where an increase in numbers occurred after 1980 much to the same extent as in Britain. At the end of 1987, the total stood at 831 from 17 countries. Of these, Britain, the Channel Islands and Ireland produced 636, the Azores 112 and the remaining 13 countries 83 (table 1). During 1978-87, the average annual number in these 13 countries together was eight, with 13 in 1984 and 1985 and none in 1979 (appendix 1). The general trend in all countries was a levelling-off after the peak year 1985.

FIGURE 1 Breeding and main non-breeding ranges, direction of autumn migration in New World and migration corridor between southern Great Lakes and Atlantic coast of Ring-billed Gull *Larus delawarensis* (after Southern 1974, Weseloh & Myres 1981, AOU 1983, Clapp et al 1983, Conover 1983, Blokpoel & Tessier 1986, Findholt 1986, Godfrey 1986, Gubanich & Judd 1988)



Laughing Gull

distribution and occurrence in New World, extra-WP vagrancy Laughing Gull breeds primarily along the Atlantic and Gulf coasts of the USA and in the Caribbean. Smaller numbers breed in maritime eastern Canada, unknown numbers on islands off northern South America and in coastal northwestern Mexico. It winters along the Atlantic and Gulf coasts of the south-eastern USA, the Pacific coast of Central America and the Atlantic and Pacific coasts of northern South America (figure 2).

Laughing Gull is primarily coastal although it regularly occurs 10 or more kilometres inland in the USA (eg, Am Birds 44: 64, 71, 1990). It has increased recently as a visitor to the eastern Great Lakes and now occurs there regularly in small numbers (Paul Lehman in litt). It is rare in the interior USA, for example, Iowa's first records were established in 1989 (Am Birds 44: 99, 1990). Combined data derived from Clapp et al (1983), Buckley & Buckley (1984) and Clapp & Buckley (1984) add to a total breeding population in the USA of 300 000 pairs and indicate that this population is steadily increasing and expanding. The annual USA post-breeding population during the early 1980s probably amounted to at least one million individuals.

Laughing Gull has occurred rather frequently in the Pacific Ocean, with many records for the Hawaiian Islands (Pratt et al 1987), also on Johnston Atoll, the Line Islands and the Phoenix Islands (Sibley & MacFarlane 1968), Western Samoa (Muse et al 1980) and the Marshall Islands (Garrett 1987). In 1988, two individuals turned up in north-eastern Australia (Fisher & Fisher 1989). Vagrants have also been recorded in Greenland (AOU 1983), Senegal and The Gambia (Urban et al 1986). Only a single ringing recovery away from the normal range has been published, from Kauai, Hawaii (Telfer & Shisler 1981).

occurrence in WP The first Laughing Gull recorded in the WP was in France in 1877. The next two came from Britain in 1923 and 1957. From 1964 onwards, the species has been recorded almost annually, adding up to a total of 68 from 10 countries at the end of 1987 (table 1). During 1978-87, the average annual number in the WP was four, with nine in 1984 and none in 1982 (appendix 2).

Franklin's Gull

distribution and occurrence in New World, extra-WP vagrancy Franklin's Gull breeds only in prairie marshes of western North America. Most migrants follow a narrow corridor through the central USA and north-eastern Mexico, crossing central Mexico to the Pacific coast. The main winter range is on the Pacific coast of South America (figure 3). Small or varying numbers winter from Guatemala to the Gulf of

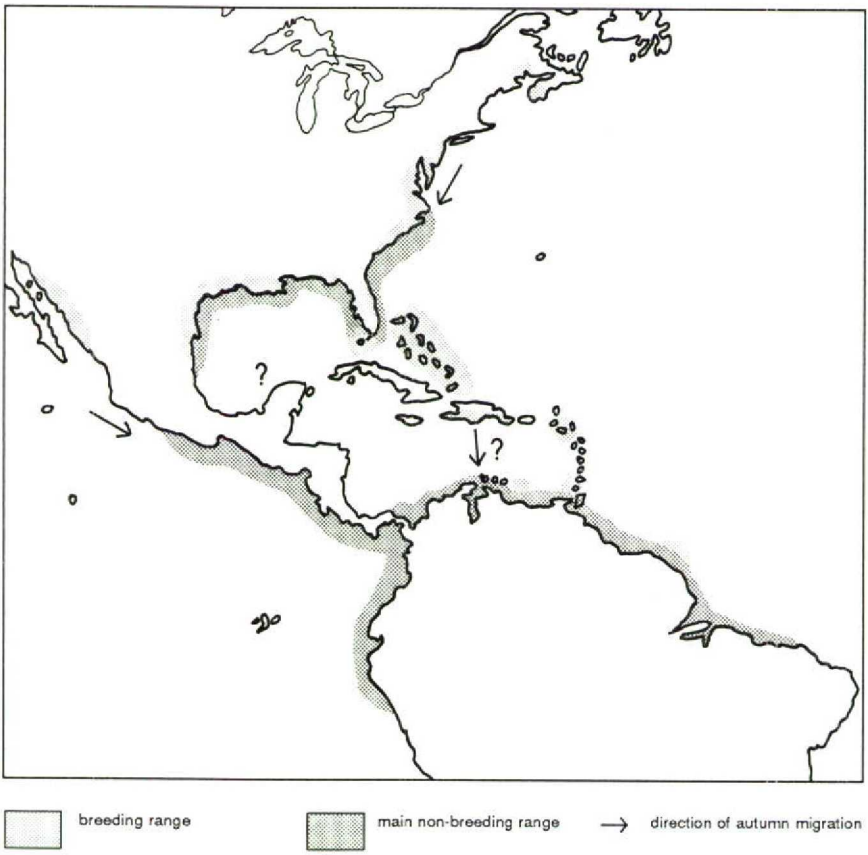


FIGURE 2 Breeding and main non-breeding ranges and direction of autumn migration in New World of Laughing Gull *Larus atricilla* (after Blake 1977, AOU 1983, Clapp et al 1983, Buckley & Buckley 1984, van Halewijn & Norton 1984, Sprunt 1984, Godfrey 1986, Morrison et al 1987, Dujardin & Tostain 1990)

Panamá and in the Galápagos Islands (Harris 1974, Clapp et al 1983). Occasionally, varying numbers occur in the Peruvian-Bolivian Andes (Plenge 1974, Hughes 1977, van Remsen & Ridgely 1980).

Data on breeding population size and trends are virtually non-existent but the total population is certainly large. 300 000 to 400 000 on a single day have been reported during migration in eastern Kansas, USA (Am Birds 43: 125, 1989). Plenge (1974) estimated an exceptional concentration of one million individuals on the coast of central Perú in November 1972. Presumably, the annual post-breeding population during the past two decades was of this order of magnitude.

Away from the areas mentioned before, Franklin's Gull is nowhere common in the

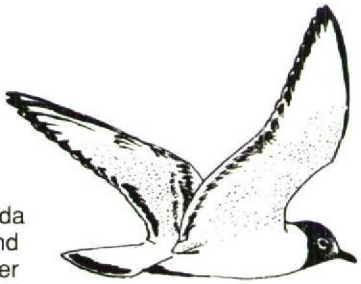
92 Laughing Gull *Larus atricilla*, first-year, Dublin, County Dublin, Ireland, July 1984 *(Oran O'Sullivan)* **93** Laughing Gull *Larus atricilla*, adult, Skagen, Nordjylland, Denmark, July 1985 *(Knud Pedersen)*

New World. Records in the eastern USA may locally still be categorized under vagrancy, with 'firsts', for example, in South Carolina in 1975 and Maryland in 1976 (Clapp et al 1983) while on well-watched Long Island, New York, the total by late 1986 stood at c 14 (cf Am Birds 41: 66, 1987). In the western USA, it is a regular migrant in limited numbers throughout California (McCaskie & Cardiff 1965), with up to 20 occurring annually (Paul Lehman in litt). Despite its scarcity on the Atlantic and Pacific coasts of North America, vagrants have occurred in many out-of-range areas and it is certainly the most distinct wanderer of the four species treated in this article. Outside of the WP, it has strayed far across the Pacific, South Atlantic and Indian Oceans, to the Marquesas Islands (King 1959), Line Islands (Clapp 1968), Hawaiian Islands (Pratt et al 1987), with an influx there in the spring of 1988 (Am Birds 42: 484, 1988), Johnston Atoll (Amerson & Shelton 1976), the Marshall Islands (Anderson 1978), eastern Australia (Eades & Debus 1982), the Caroline Islands (Pyle & Engbring 1987), Japan (Yacho 453: 1, 1984), the Falkland Islands (Bourne & Curtis 1986, Bill Curtis in litt), southern Argentina (Devillers & Terschuren 1977), the Fernando de Noronha archipelago off north-eastern Brazil (Antas et al 1988, cf Nacinovic & Teixeira 1989 who mentioned the possibility of confusion with Laughing Gull), Tristan da Cunha (Swales & Murphy 1965), Walvis Bay (Sinclair et al 1986), South Africa (Cooper & Williams 1975), where small numbers of vagrants occur, particularly in the western Cape (Sinclair 1989), Mozambique (Urban et al 1986; originally claimed as White-eyed Gull *L leucophthalmus* (Sinclair 1989, Peter Britton in litt) but not sufficiently authenticated), Kenya (not fully authenticated; Ashford 1986, Dick Ashford in litt), Marion Island (Sinclair 1981) and western Australia (Nicholls 1988). North of its normal range, it has reached Alaska, USA (AOU 1983), northern Baffin Island, Canada (Renaud et al 1981), and western Greenland (Hansen 1976). In the Caribbean, it has been recorded on Aruba (Voous 1983), Puerto Rico (Buckley & Buckley 1970) and Saint Bartholomew (Bond 1985), on the northern Atlantic coast of South America in French Guiana (Tostain & Dujardin 1989) and in western Africa in Senegal (Érard et al 1984) and The Gambia (GOS 1986).

occurrence in WP The first two Franklin's Gulls recorded in the WP were as recently as 1970, both in Britain. From 1976 onwards, it has been recorded annually and at the end of 1987 the total stood at 33 from 12 countries (table 1). During 1978-87, the average annual number in the WP was three, well-spread over the years, the extremes being 1984 and 1987 with five and 1983 with one (appendix 3). Until now, no noticeable influx has occurred.

FIGURE 3 Breeding and main non-breeding ranges and direction of autumn migration in New World of Franklin's Gull *Larus pipixcan* (after Blake 1977, Weseloh & Myres 1981, AOU 1983, NGS 1983, Godfrey 1986)

Bonaparte's Gull



distribution and occurrence in New World, extra-WP vagrancy Bonaparte's Gull breeds in inland northern North America from western Alaska, USA, east across forested areas of Canada to western Quebec. It winters on the Atlantic and Pacific coasts of North America (figure 4). Smaller numbers winter south to the Greater Antilles and inland, although rarely, as far north as southern Ontario (Clapp et al 1983).
Data on Bonaparte's Gull population trends are as scanty as for Franklin's Gull. Burger & Brownstein (1968) mentioned several concentrations in the Niagara River area, New York, USA, and Ontario, Canada, of 5000-15 000 individuals both during April-May and November-December and an unprecedented 100 000 in late November 1959. They indicated that the total population may be increasing. In mid-November 1986, again a peak number of 100 000 was estimated in the area (Am Birds 41: 82, 1987) and in mid-December 1989 an all-time high of 148 000 was counted at Erie, Pennsylvania, USA (Am Birds 43: 1214, 1989). Using Christmas Bird Count data from the south shore of western Lake Erie, USA, Dolbeer & Bernhardt (1986) deduced a nine-fold increase during 1950-84. Total population figures are not readibly available. Weighing the average proportions between total numbers of Ring-billed, Laughing and Bonaparte's Gulls yielded by Christmas Bird Counts in eastern North America (table 2) against the post-breeding population figures for Ring-billed and Laughing Gulls mentioned before provides an estimated post-breeding Bonaparte's Gull population in eastern North America of the order of magnitude of half a million individuals. Admittedly, this is a very rough figure.
In the Pacific Ocean, Bonaparte's Gull is an occasional visitor throughout the Hawaiian Islands (Pratt et al 1987). Vagrants have been recorded from Japan (Yacho 477: 6, 1986; Imai et al 1986), Greenland (AOU 1983), the Lesser Antilles (Bond 1985), Panamá (Pujals 1973) and the Netherlands Antilles (Voous 1983).

occurrence in WP The first Bonaparte's Gull recorded in the WP was in Ireland in 1848. The next five were also in the 19th century, all from Britain or Ireland. In continental Europe, one was in France in 1910. From 1948 onwards, it has been recorded fairly regularly, contrary to the other species, and at the end of 1963 the now bizarre ratio was attained of 17 Bonaparte's Gulls compared with two Ring-billed and three Laughing Gulls and not a single Franklin's Gull. At the end of 1987, the total stood at 76 from nine countries (table 1). During 1978-87, the average annual number in the WP was four, with seven in 1982 and 1986, none in 1978 and a single one in 1984 (appendix 4).

other Nearctic gulls

The events surrounding the record of a Glaucous-winged Gull *L glaucescens* ringed in south-western Canada and reportedly recovered in Switzerland are unsatisfactory (Dennis 1986) and the species has not been admitted to the Swiss list (Winkler et al 1987).
Thayer's Gull *L thayeri* breeds in Arctic Canada and north-western Greenland (Glutz

94 Franklin's Gull *Larus pipixcan*, adult, Røstlandet, Nordland, Norway, June 1979 *(Niklas Törnlund)* **95** Bonaparte's Gull *Larus philadelphia*, adult, Cornwall, Britain, winter of 1986/87 *(David M Cottridge)*

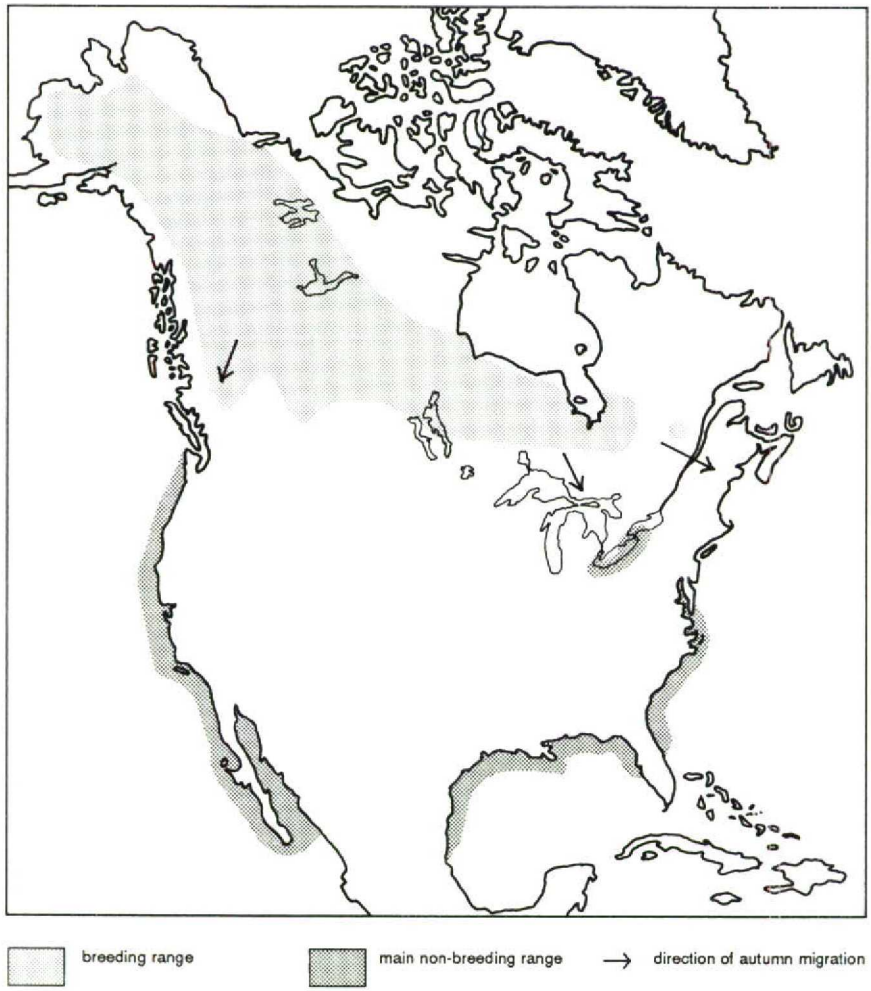


FIGURE 4 Breeding and main non-breeding ranges and direction of autumn migration in New World of Bonaparte's Gull *Larus philadelphia* (after AOU 1983, Clapp et al 1983, NGS 1983, Godfrey 1986, Braune 1987)

von Blotzheim & Bauer 1982). It is possibly a fair candidate (cf Grant 1986) for vagrancy to the WP because it breeds just north of the breeding range of Kumlien's Gull *L g kumlieni* which has been recorded a number of times on the European side of the Atlantic Ocean (Grant 1986), occurring even invasion-like in the Faroe Islands in January 1983 (Fjeldså & Jensen 1985). Identification of Thayer's Gull, especially of immatures, however, is far from straightforward (Gosselin & David 1975, Lehman 1980, Grant 1986). In March 1989, possible Thayer's Gulls were found at Galway,

TABLE 2 Numbers (in thousands) of individuals of Ring-billed *Larus delawarensis* (RG), Laughing *L atricilla* (LG) and Bonaparte's Gulls *L philadelphia* (BG) recorded in eastern North America (east of 100 W) during 1980/81-84/85 winters by Christmas Bird Counts as documented in Am Birds

winter	RG	LG	BG	proportion	
				BG/RG (%)	BG/LG (%)
1980/81	649	132	70	11	53
1981/82	618	140	162	26	116
1982/83	697	155	113	16	73
1983/84	1236	159	76	6	48
1984/85	825	192	157	19	82
mean	805	156	116	14	74

County Galway, Ireland, and Malmö, Skåne, Sweden (Birding World 2: 87, 123, 125-129, 1989). In February 1990, another one was recorded at Cork, County Cork, Ireland (Birding World 3: 91-93, 1990). If accepted by the respective national rarities committees, these will be the first three records for the WP.

There is a ringing recovery of a Herring Gull *L argentatus* of the Nearctic subspecies *L a smithsonianus* at sea off north-western Spain (Dennis 1981) which makes this subspecies a genuine vagrant to the WP. The adult plumage is similar to the western European subspecies *L a argenteus* but first-years are quite distinct (Grant 1986) and disperse on average further than adults in winter (Cramp & Simmons 1983). Nevertheless, the reported occurrence of nine first-winter individuals in Ireland during February-March 1990 (Anthony McGeehan in litt to Gerald Oreel) is quite unexpected.

discussion

In North America during the last two decades, Ring-billed and Laughing Gulls have received much research attention, including such topics as migration, seasonal distribution and population size. Considerably less is known about Franklin's and Bonaparte's Gulls (Southern 1987).

Obviously, most explanations concerning the factors affecting the occurrence of these four species in the WP are hypothetical, given the small numbers of birds involved and, particularly, the paucity of ringing recoveries. Only through the relatively large numbers of Ring-billed Gulls have some patterns emerged for that species which can be regarded as well-established. Therefore, the largely speculative nature of most of the patterns presented in the following accounts needs to be emphasized.

Ring-billed Gull

occurrence in Britain and Ireland Since Ring-billed Gulls occurred considerably more often in Britain and Ireland than in all other countries except the Azores (where coverage was irregular), an analysis of the complete WP picture up to 1987 is only possible by starting with the British and Irish situation. Table 3 shows that three major

influxes of first-years occurred: during 1980-81 (already discussed by Vinicombe 1985), 1984-85 (also noted by Brazier et al 1986 and Hutchinson 1989) and 1986-87 (also noted by O'Sullivan & Smiddy 1988).
For the periods 1981-82 to 1986-87, the number of second-years was at least 60% (1984-85) and never more than 100% (1982-83) of the number of first-years of the previous period (on average 81%), even though the differences between subsequent periods were often substantial. Likewise, the number of adults were always higher than the numbers of second-years but it should be borne in mind that adult numbers reflect all previous generations of immatures. Thus, these figures strongly indicate that most new arrivals during 1980-87 were first-years, remaining on the European side of the Atlantic Ocean as second-years, possibly until adulthood, and give further support to Vinicombe's (1985) hypotheses. Additionally, identical analyses for Britain (including the Channel Islands) and Ireland separately point to the possibility of a limited exchange between Ireland and Britain (eg, during 1981-82) and vice versa (eg, during 1984-85).
Of the 45 individuals during 1980-81 (table 3), four first-years were first recorded during November-January but the other 31 and all second-years and adults during March-July with the majority during April-May. This indicates that the influx actually took shape in spring and possibly also included a few second-years and adults as enhanced by the low numbers during 1979-80. The four November-January first-years were in south-western England and western Ireland and of the other 31 eight were in south-western England and southern Wales during March-April, 14 scattered over western England, Wales and Ireland during May-June and nine in northern Ireland in July, several staying at their original locality for some time. This suggests a slow northward movement of first-years through western Britain and Ireland from March to July.
The 44 first-years during 1984-85 came from October (two), December-mid-January (16), mid-January-March (17) and April-June (nine). This indicates a winter influx; it was much more restricted to the southern parts of Britain and Ireland than the 1980-81 influx.
The 34 first-years during 1986-87 were well-spread from November to July, up to March primarily in the southern parts of Britain and Ireland but with a peak in April in more northerly areas. This points to a long-drawn winter-spring influx.
Can the 1984-85 influx be ascribed to severe winter weather in eastern North America as Vinicombe (1985) suggested was the cause of the 1981 influx? Although the central and eastern USA winter of 1983/84 has been nicknamed the 'Siberian Express', it apparently did not cause a massive exodus of first-year Ring-billed Gulls to Britain and Ireland. Meanwhile, at Hatteras Inlet, North Carolina, USA, more than 500 000 were recorded in late December 1983 (Am Birds 38: 287, 307, 1984). By contrast, the eastern USA winter of 1984/85 started very mild, with December the mildest on record for the New York City area. However, after mid-January temperatures dropped to record lows and in late January 1985 500 000 Ring-billed Gulls were again estimated to have been in the Hatteras area (Am Birds 39: 150, 158, 1985). Yet, already during December-early January, before this cold blast, Britain and Ireland were receiving more Ring-billed Gulls than in 1981. Apparently, a major Ring-billed Gull influx in the WP is not always directly linked to severe winter weather in eastern North America. Southern (1974) showed a monumental population increase to occur at western Lake Erie annually during October-early December when this

96 Ring-billed Gull *Larus delawarensis*, adult, Bergen, Hordaland, Norway, August 1986 *(Alf Tore Mjös)* **97** Ring-billed Gull *Larus delawarensis*, first-summer/second-winter, Cornwall, Britain, August 1986 *(David M Cottridge)*

TABLE 3 Numbers of recorded first occurrences of Ring-billed Gull *Larus delawarensis* in Britain (including Channel Islands) (B) and Ireland (I) by 12-monthly period and by age class up to 1987 (12-monthly period running from 1 August of year to 31 July of next year; periods 1973-77 and late 1987 as indicated; first-year, second-year and adult age classes with 1 August as age classes dividing date, first-year running from hatching to 31 July of next year, second-year during next 12 months and adult subsequently; 23 individuals of unknown age not included)

period	first-years			second-years			adults		
	B+I	B	I	B+I	B	I	B+I	B	I
3 1973-7 1977	**3**	3	–	**5**	5	–	**4**	4	–
1977-78	**2**	2	–	**3**	3	–	**4**	4	–
1978-79	**5**	4	1	**1**	1	–	**4**	3	1
1979-80	**2**	1	1	**1**	–	1	**2**	2	–
1980-81	**35**	17	18	**6**	3	3	**4**	3	1
1981-82	**14**	9	5	**32**	22	10	**16**	13	3
1982-83	**10**	7	3	**14**	10	4	**55**	29	26
1983-84	**25**	21	4	**8**	8	–	**58**	33	25
1984-85	**44**	27	17	**15**	8	7	**62**	34	28
1985-86	**13**	10	3	**32**	21	11	**35**	22	13
1986-87	**34**	26	8	**11**	6	5	**38**	23	15
8-12 1987	**3**	2	1	**1**	1	–	**12**	7	5

area usually has the largest Ring-billed Gull concentration in North America. From here, the great majority follows a wide corridor towards the Atlantic coast (figure 1) and then further south, usually after the onset of severe winter weather. Possibly, a small proportion outflies the cold front, moving from the southern Great Lakes to the Atlantic coast. These birds could be caught up in the south-eastern ('warm') sector of a preceding low-pressure system in which the dominant winds come from the south-west and could be carried to the WP. Such lows also occur some time after the cold front has arrived (Paul Lehman in litt). Whether the 1981 influx was caused in this way remains doubtful. Many Ring-billed Gulls carried across the Atlantic Ocean show up in the Azores, Madeiran Islands or Canary Islands or on the African or Iberian coasts. The Azores in particular received good numbers in the early 1980s and Ring-billed Gull was then regarded as a winter visitor to these islands in small numbers (Gérald le Grand in litt). Individuals passing north of the Azores arrive directly in southern Britain and Ireland. This happened for the first time on a sizeable scale during December 1984-January 1985.

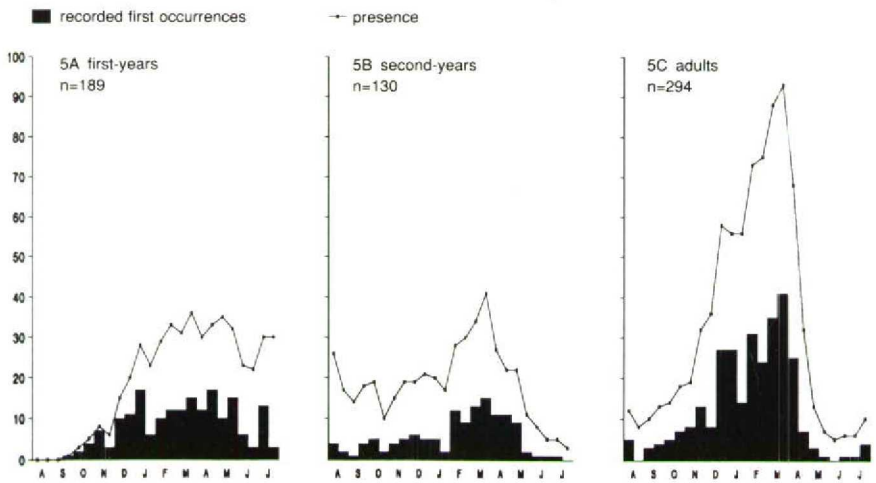
Figure 5 illustrates recorded first occurrences by half month during 1973-87, showing both arrival (cf Willemyns & de Ruwe 1989) and presence (cf Vinicombe 1985). Arrival peaks for both second-years and adults and presence peaks for all age classes occur in the second half of March. During April-May, both arrival and presence for second-years and adults drop sharply and during June-July numbers of these age classes are at their lowest. For first-years, arrival peaks in early January and late April and presence drops slightly after the March peak. These patterns point to a spring migration of second-years and adults and a dispersal of first-years, supporting Vinicombe's (1985) analysis.

98 Ring-billed Gull *Larus delawarensis*, adult, Hayle, Cornwall, Britain, August 1987 *(David M Cottridge)* **99** Ring-billed Gull *Larus delawarensis*, adult, Larache, Tanger, Morocco, January 1988 *(Arnoud B van den Berg)*

The comparatively large numbers of second-years during late summer and autumn reflect mainly long-staying first-years but the gradual reappearance of adults is more likely to be the result of a limited autumn migration than of recent arrival from the Nearctic (cf Vinicombe 1985).
There is a puzzling mid-winter low for all age classes, particularly on arrival but also on presence. It might point to the possibility that a significant proportion of those individuals which were no longer recorded died during this time of the year.

occurrence in WP Figure 6 shows the distribution by countries of all WP Ring-billed Gulls up to 1987. The Azores, Britain (including the Channel Islands) and Ireland boast 90% of all individuals. Out of five ringing recoveries (table 4), four (first-years) were recorded from the Azores and Spain which indicates that most arrive in southern regions. All five individuals belonged to eastern populations which supports the assumption that possibly all Ring-billed Gulls recorded in the WP are of eastern Nearctic origin.
Together with the December 1980 Tenerife first-year, the 37 (one first-winter, the others of unknown age) in the Azores from January to March 1981, the January and April Spain and Portugal first-years and the two April-June first-years in Iceland (appendix 1), the British and Irish records as described above fit well into a pattern of a wide-scale south-north movement of first-years in the western WP in the first half of 1981. This movement was initially directed to the north-east but upon arrival in the English Channel turned to the north-west. It could well be a reflection of the main migration route in eastern North America which has a similar turning point in the Delaware Bay-Chesapeake Bay region (figure 1). This could also explain why so few

FIGURE 5 Recorded first occurrences by half month and by age class and presence of Ring-billed Gull *Larus delawarensis* in Britain (including Channel Islands) and Ireland up to 1987 (month divided in two at 15th day with day 15 attributed to first half month; age classes and individuals as in table 3)



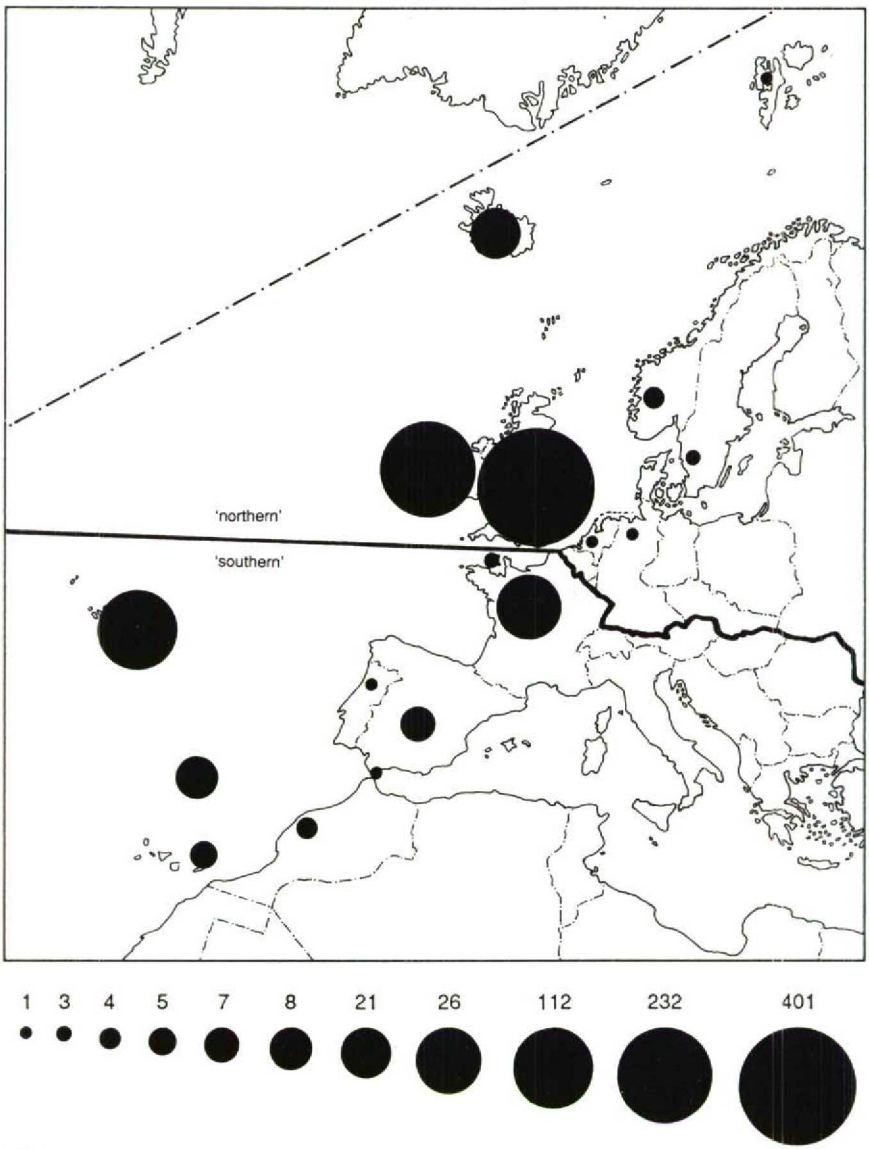
100 Ring-billed Gull *Larus delawarensis*, adult, Par, Cornwall, Britain, April 1990 *(Paul Luxton)*

have penetrated any further east than the western WP. Birds reaching or bypassing Iceland could even find their way back to North America (cf Lippens & Wille 1986). The period 1982-87 produced more or less the same pattern, with quite a few on the Atlantic islands in winter, some during winter-spring in Morocco, Gibraltar, Spain and France and during spring-summer in Iceland. As it made no sense to include the British and Irish occurrences in one histogram jointly with those from the other countries, only the latter are illustrated in figure 7. The preponderance of southern winter records is obvious and, although numbers are small, April-July produced more northern than southern records. In North America, many Ring-billed Gulls linger in the southern Great Lakes area and in the mid-Atlantic coast regions in mild winters. This explains why so many spend the winter in the south-western parts of Britain and Ireland where the winters generally are still much milder. In the WP, few migrate far south in autumn and winter and most, if not all, on the Atlantic islands are genuine new arrivals from the Nearctic.

It is remarkable that Ring-billed Gull numbers in the WP are much larger than those of the other three species, taking into account that it is less pelagic than other gulls wintering in eastern North America although it is an abundant winterer in inshore areas (Rowlett 1980, Clapp et al 1983). Also along the coast of California, USA, it is decidedly rare more than a few kilometres offshore (Paul Lehman in litt).

The main Ring-billed Gull movements in the WP can be summarized as follows: individuals of all ages, although predominantly immatures, arrive either directly in western Europe during autumn and winter or in early spring after having wintered in the Azores and other south-western areas. There is a well-marked spring migration

FIGURE 6 Distribution by countries of Ring-billed Gulls *Larus delawarensis* in WP up to 1987 (regional subdivision designed to illustrate latitudinal movements in WP as, for example, in figure 7, so chosen to attain sufficient numbers of known-age individuals in two regions (excluding Britain, Channel Islands and Ireland) and therefore fully arbitrary; 'northern' region includes geographical units largely north of 48 N, 'southern' region includes all other geographical units)



along the west coast of Britain and the Irish coasts towards Scotland and Iceland where some spend the summer. Autumn migration within the WP does not seem to have a long-distance character. The south-western parts of Britain and Ireland are favoured wintering areas.

possible breeding in WP Pairs of adult Ring-billed Gulls have been seen displaying in south-western England (Vinicombe 1985), southern Wales (Br Birds 77: 208, 1984; 78: 365, 1985; 79: 42, 1986) and northern Ireland (North Irel Bird Rep 1982-85: 67, 1987). First-years were recorded in October 1983 and 1984 in eastern Scotland (Br Birds 77: 530, 1984; 78: 555, 1985) and in September 1985 in southern Ireland (Ir Birds 3: 314, 1986). It has been suggested that the species might already breed in Europe (Vinicombe 1985, Br Birds 78: 556, 1985). The only Dutch record involved a summer adult in a Common Gull *L canus canus* colony in the Rotterdam, Zuidholland, harbour area in July 1986 (Schrijvershof & Schrijvershof 1988). It was seen interfering with Common Gulls and was possibly the first Ring-billed Gull in the WP observed in an active breeding colony of its congeners. Recently, remarkable records came from Bergen, Hordaland, Norway, where first-years were ringed in November 1989 and January 1990 (Alf Tore Mjös in litt). During 1974-75, Ring-billed

TABLE 4 Ring-billed Gull *Larus delawarensis* ringing recoveries in WP up to 1987 (all were ringed as unfledged nestlings)

ringed	locality	recovered	locality	reference
10 Jun 1945	Penetang, Georgian Bay, Lake Huron, Ontario, Canada	04 Nov 1945	Horta, Faial, Azores	Cooke (1947)
14 Jun 1950	Ossineke, Lake Huron, Michigan, USA	18 Jan 1951	Vigo, Pontevedra, Spain	Southern & Moore (1974), Dennis (1981)
27 Jun 1964	Presqu'ile Lake Ontario, Ontario, Canada	20 Jan 1965	Barbate de Franco, Cadiz, Spain	Brewer & Salvadori (1978)
08 Jul 1980	Toronto Lake Ontario, Ontario, Canada	21 Jan 1981	Deltebre, Tarragona, Spain	Dennis (1986)
21 Jun 1980	Four Brothers Island, Lake Champlain, New York, USA	28 Dec 1981	Doochary, Donegal, Ireland	Preston (1982)

Bergen, Norway, individual (appendix 1, no 123, plate 96), ringed as adult in autumn 1983, returned in September 1989 to spend its 7th consecutive winter in park in city centre, staying into 1990 (Alf Tore Mjös in litt); it might be regarded as proven champion veteran of all Nearctic gulls in WP.

101 Ring-billed Gull *Larus delawarensis*, adult, Maasvlakte, Zuidholland, Netherlands, July 1986 *(René Pop)*

Gull nests were found in a Herring Gull and Great Black-backed Gull *L marinus* colony off Prince Edward Island, Canada (Tony Lock in litt). In Alaska, USA, an adult was found in a Mew Gull *L c brachyrhynchus* colony in April 1988 (Am Birds 42: 475, 1988). In its own colonies, Ring-billed Gull seems to accept smaller gulls as breeding partners not infrequently. At Lake Ontario, New York, a probable Ring-billed x Black-headed Gull *L ridibundus* hybrid paired and nested with a Ring-billed Gull in May 1982 (Weseloh & Mineau 1986) and also the 1974 'mystery' gull at Brigantine, New Jersey, USA (Richards & Gill 1976), was probably a Ring-billed x Black-headed Gull hybrid as suggested by the authors. Laughing (p 135) and even Franklin's Gulls (p 139) were tolerated as well. Therefore, it seems possible that in the WP a Ring-billed Gull breeding pair or a mixed pair of Ring-billed Gull and any of its congeners might be found in northern regions, most likely Scotland or Scandinavia.

Laughing Gull

occurrence in WP A breakdown of the annual occurrence into three age classes (table 5) does not reveal any clear pattern. The preponderance of immatures suggests that small numbers of ocean-crossing first-years gradually build up a tiny population of adults. Some second-years were recorded following the arrival of first-years in the previous 12-monthly period but some may have been new arrivals as well. The six first-years during 1983-84 indicate the possibility of a genuine small influx in the winter of 1983/84 but several of these could relate to one individual. Laughing Gull is the most 'British' species of the four, with 66% of all individuals

FIGURE 7 Recorded first occurrences by half month and by age class and presence of Ring-billed Gull *Larus delawarensis* in WP (excluding Britain, Channel Islands and Ireland) up to 1987 for 'northern' and 'southern' regions (half months as in figure 5; age classes as in table 3; regional subdivision as in figure 6; nos 7-11, 16-27, 30-53, 60-89, 150-154 and 168-172 of appendix 1 not included)

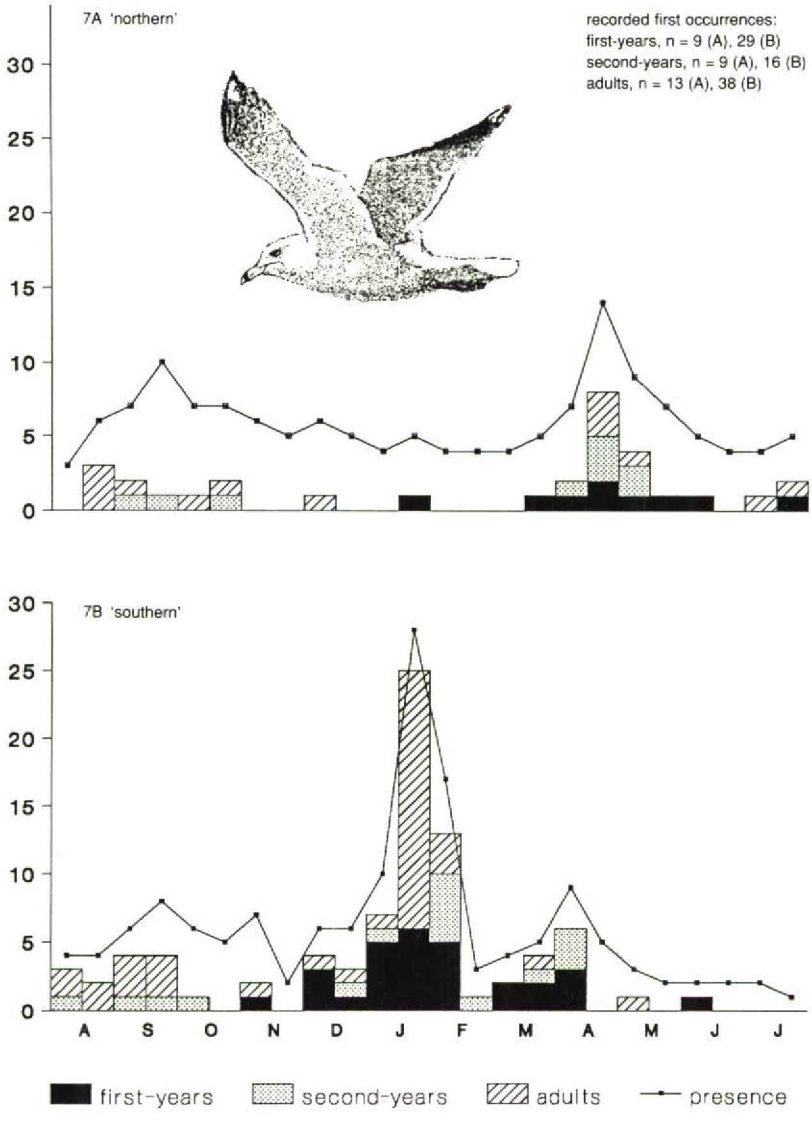


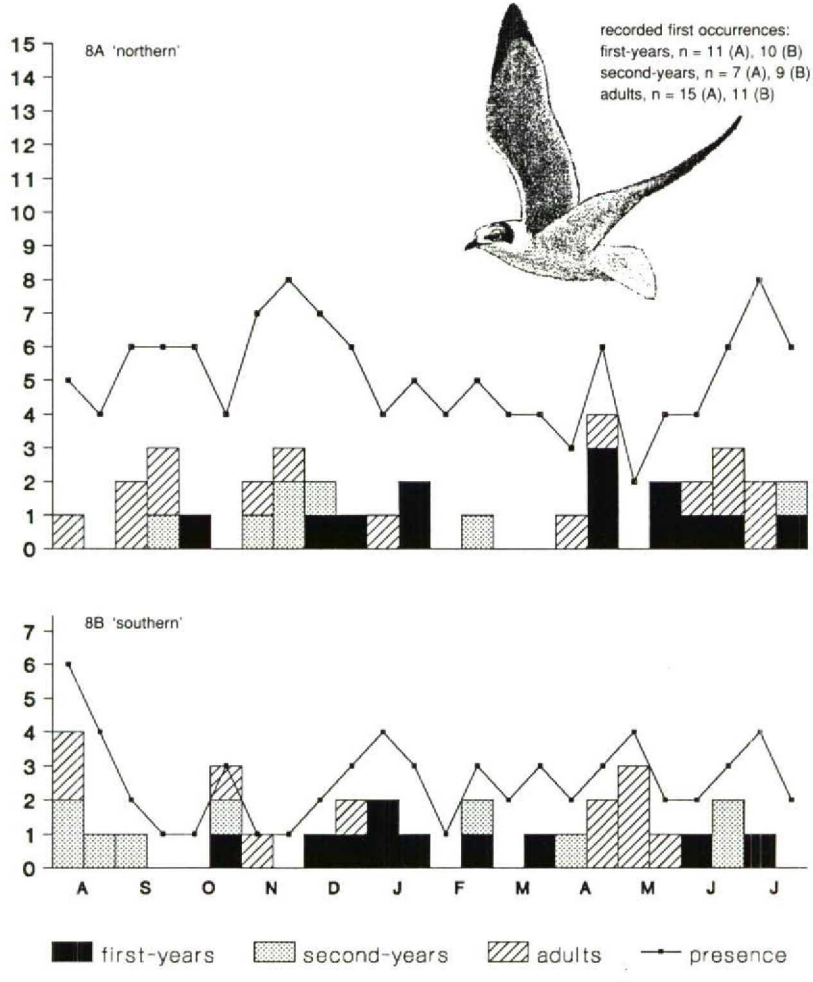
TABLE 5 Numbers of recorded first occurrences of Laughing Gull *Larus atricilla* in WP by 12-monthly period and by age class during 1957-87 (12-monthly period and age classes as in table 3; periods 1957-77 and late 1987 as indicated; no 13 of appendix 2 not included)

period	first-years	second-years	adults
12 1957-7 1977	3	3	10
1977-78	2	–	4
1978-79	–	3	2
1979-80	1	3	1
1980-81	1	3	1
1981-82	2	–	–
1982-83	–	–	2
1983-84	6	1	2
1984-85	3	1	2
1985-86	–	1	–
1986-87	2	1	2
8-12 1987	1	–	–

recorded there while all other countries stay under 8% (table 1).
Figure 8 illustrates recorded first occurrences by half month and figure 9 shows the distribution by countries of all post-war WP Laughing Gulls up to 1987 but again clear patterns are not yet emerging, only a 'non-pattern': all age groups can be expected in both northern and southern regions virtually throughout the year. Even more surprisingly, not a single individual was found south of Britain and Ireland from September to the second half of February (appendix 2). Nevertheless, some interesting points are evident. In the first place, adults prefer southern areas in spring and northern areas in summer. Additionally, presence in northern areas continues much longer than in southern areas throughout the year. However, the number of individuals contributing to this observation is very small. The occurrence of 20 individuals (including only five adults) in south-western Britain, southern Ireland and western France (appendix 2) is to be expected for a Nearctic vagrant. Sharrock (1974) noted that the 1967 Scilly first-winter coincided with an exceptional autumn influx of Sabine's Gulls associated with (north-)westerly gales.
As well as these western individuals, 21 came from eastern Britain and Shetland, two from Denmark and one from Sweden, totalling 24 (including 13 adults). In other words, more than one-third of all individuals recorded have occurred around the North Sea. Furthermore, not to be expected for this coastal species, two immatures were found in central England. Its relative scarcity in Ireland (compared with Ring-billed Gull) is also noteworthy. Combining these distributional elements, the main Laughing Gull movements in the WP could have the following pattern (cf Sharrock & Sharrock 1976): some individuals arrive as immatures in south-western Britain and southern Ireland after autumn storms have blown them across the Atlantic Ocean, disperse along British coasts to the North Sea and possibly north to Iceland. On the other hand, its scarcity in Ireland indicates that the majority cross the Atlantic Ocean at more southerly latitudes; a first-winter in The Gambia on 27 February 1984 (GOS 1986) possibly did so. Subsequently, these southern arrivals move northwards, wandering around (cf Dymond et al 1989) and adding to the southern British and North Sea coasts occurrences.

102 Laughing Gull *Larus atricilla*, second-winter, Burnham-on-Sea, Somerset, Britain, September 1988 *(Richard Hunt)* **103** Laughing Gull *Larus atricilla*, adult, Penzance, Cornwall, Britain, May 1990 *(Paul Luxton)*

FIGURE 8 Recorded first occurrences by half month and by age class and presence of Laughing Gull *Larus atricilla* in WP during 1957-87, for 'northern' and 'southern' regions (half months as in figure 5; age classes as in table 3; reason for regional subdivision as in figure 6; 'northern' region includes geographical units largely north of 53 N, 'southern' region all other geographical units, except for Britain and Ireland where subdivision is exactly at 53 N; no 13 of appendix 2 not included)

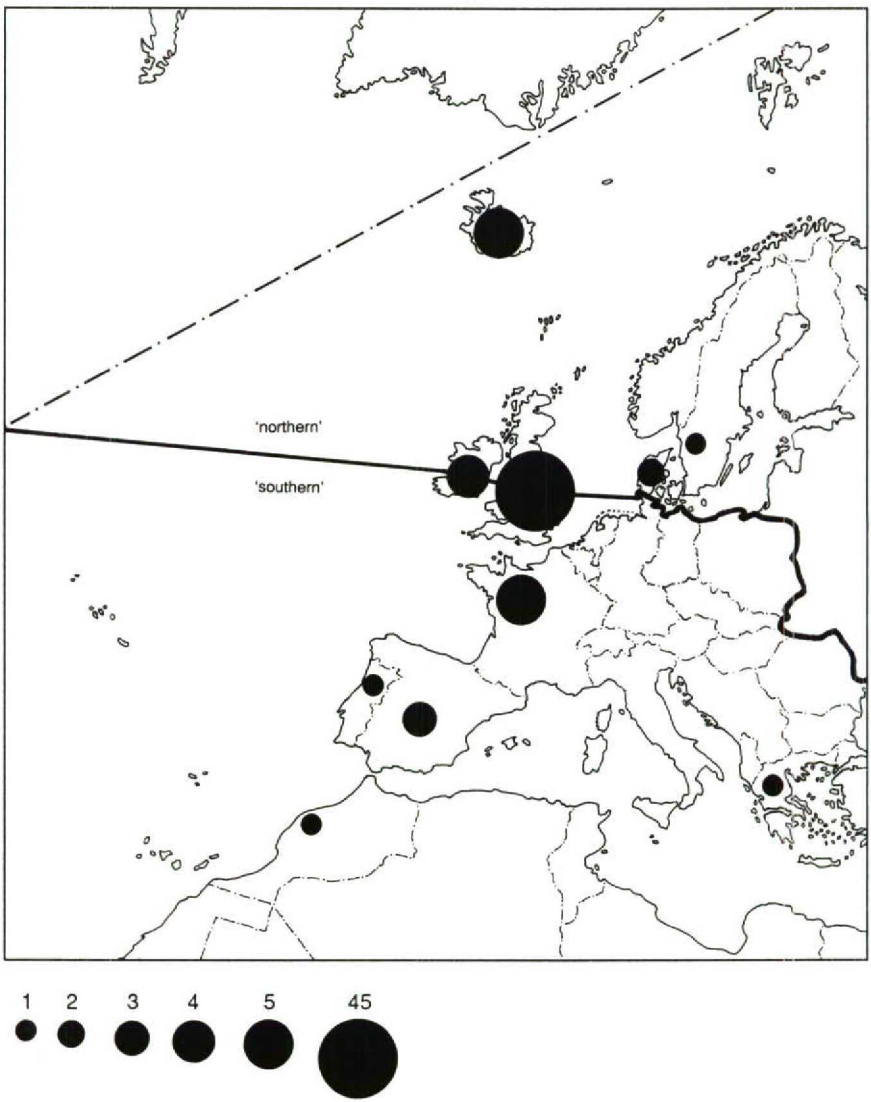


104 Laughing Gull *Larus atricilla*, first-summer, Heimaey, Vestmannaeyjar, Iceland, July 1972 (*Mats Wallin*)

Another movement of birds supposedly swept across the Atlantic Ocean by hurricanes (cf Cramp & Simmons 1983) is probably of minor importance. In October 1968, hurricane 'Gladys' brought 1000s of Laughing Gulls to Nova Scotia, Canada (Mills 1969), and could well have been the source of the individual collected in south-western Iceland in November 1968.

possible breeding in WP The number of Laughing Gulls in the WP is still small, hence the chances for future breeding here are slight. However, hybridization with congeners can not be excluded and there is a claim of a mixed possible Laughing x Grey-headed Gull *L cirrocephalus* pair observed in Senegal in May 1983 (Érard et al 1984), just outside of the WP. A female Laughing Gull was present in a western Lake Erie, Ohio, USA, Ring-billed Gull colony during 1984-86, building nests and laying eggs in both 1984 and 1985. An adult gull believed to be a Laughing x Ring-billed Gull hybrid also appeared at the colony in 1986 (Tramer & Campbell 1986, Am Birds 40: 1210, 1986). On the other hand, in April 1977, at Brigantine, New Jersey, USA, Hamer (1979) observed an adult Black-headed Gull courtship feeding a Laughing Gull and driving away intruding unpaired Laughing Gulls. Therefore, mixed pairs might be likewise formed in the WP.

FIGURE 9 Distribution by countries of Laughing Gulls *Larus atricilla* in WP up to 1987 (regional subdivision as in figure 8)



Franklin's Gull

occurrence in WP A breakdown by age (table 6) gives 16% first-years, 22% second-years and 62% adults, with most second-years occurring after first-year blank 12-monthly periods. The age structure up to 1987 differs markedly from that of Ring-billed and Laughing Gull, with comparatively fewer first-years than in the latter two species. This suggests that not only first-years but also second-years and adults find their way to the WP. Up to 1987, there has been no known case of a Franklin's Gull returning to the same area in subsequent years, contrary to the other three species.

Figure 10 illustrates recorded first occurrences by half month and figure 11 shows the distribution by countries of all WP Franklin's Gulls up to 1987. Although the numbers are small and caution must be exercised in drawing conclusions, some patterns emerge. In northern areas, there are no new arrivals from October to the second half of April and adults constitute the great majority there. Long-staying occurs particularly during winter and spring and in southern areas. First-years and most second-years arrive in southern areas after mid-winter but the lack of further patterns points to wandering of immatures as supported by the movement of a first-year British individual (appendix 3, no 15) from the Devon and Cornwall border area to Dorset in March or April 1982 (Br Birds 76: 499, 1983). Franklin's Gull is the only one of the four species for which Britain and Ireland do not hold the majority (42%) and the only one which has not been recorded in Ireland and in western Iceland. In contrast, comparatively more (21%) were recorded in Scandinavia.

The factors influencing Franklin's Gull arrival in the WP can be deduced from some observations in South America. Peterson & Watson (1971) reported small flocks at Punta Arenas in extreme southern Chile and a single bird on the Strait of Magellan in January 1969. The records of three individuals at Comodoro Rivadavia, Chubut, Argentina, in late 1975 (Devillers & Terschuren 1977) and of an adult there in December 1977 and March 1978 (Jowi de Roever in litt) indicate that the species occurs regularly on the coast of Argentina. Associated with multiple occurrences on high Andes lakes and the first trans-Andean record in Amazonian Perú, it has been suggested that crossing the Andes might occur more frequently (Schulenberg 1980). Also taking into account the Falkland Islands, Tristan da Cunha, Marion Island, western Australia, southern Africa and Senegal and The Gambia records, the arrival of probably the majority of Franklin's Gulls in the WP starts with singles or small groups crossing the southern Andes or moving through the Strait of Magellan to the Atlantic coast of South America; some are caught up in the west-wind zone and arrive in southern Africa or even bypass it getting to western Australia (cf Serventy & Whittell 1976). The central Pacific Ocean and eastern Australian records, however, indicate that it is equally possible that birds visiting Australia may have flown westwards across the Pacific Ocean (cf Pringle 1987). Those which encounter the west coast of southern Africa subsequently undertake a 'regular' northward migration and arrive in the WP. Others (eg, the Fernando de Noronha individual) follow the Atlantic coast of South America, traverse the equatorial Atlantic Ocean to western Africa and, continuing their north-north-eastern course, also find their way to the WP. Those which follow the Atlantic coasts of the WP either arrive around the English Channel (eight) and subsequently spread over Britain, or keep heading north-north-east, traverse continental Europe and reach Scandinavia. The absence of Irish and

105 Franklin's Gull *Larus pipixcan*, adult, Funchal, Madeira, Madeiran Islands, July 1979 *(Alain Guillemont)* **106** Franklin's Gull *Larus pipixcan*, adult, Funchal, Madeira, Madeiran Islands, July 1979 *(Jim Enticott)*

TABLE 6 Numbers of recorded first occurrences of Franklin's Gull *Larus pipixcan* in WP by 12-monthly period and by age class up to 1987 (12-monthly period and age classes as in table 3; periods 1970-77 and late 1987 as indicated; no 19 of appendix 3 not included)

period	first-years	second-years	adults
2 1970-7 1977	1	1	3
1977-78	–	1	2
1978-79	–	–	2
1979-80	1	–	–
1980-81	–	3	–
1981-82	1	1	1
1982-83	–	–	–
1983-84	1	–	2
1984-85	–	–	3
1985-86	–	–	3
1986-87	1	1	4
8-12 1987	–	–	–

western Icelandic records and the relatively large number of Scandinavian records give support to a South Atlantic Ocean origin of many WP Franklin's Gulls which Grandjean (1981) was the first to suggest. Alternatively, an upsurge of records on the Atlantic coast of North America is taking shape, likely to be due to increasing observer's awareness (Paul Lehman in litt). Although the species is still a rarity there, some birds, especially first-years, cross the North Atlantic Ocean and arrive in the WP roughly in the Iberian region, subsequently following the same routes as the individuals which arrive from the Southern Hemisphere. Those crossing the North Atlantic Ocean do so during the winter because in North America it is often found late in the year but seldom overwintering (Am Birds 40: 246, 1986). Therefore, the eight January-February WP occurrences (all north of 45 N) are quite interesting as the species does not winter at similar latitudes in North America at all (Paul Lehman in litt). In the winter of 1988/89, however, there was a surprising scattering of records from the interior USA (Am Birds 43: 274, 331, 1989).
Six individuals (18%) were recorded away from coastal areas, proportionally considerably more than for the three other species. The main Franklin's Gull movements in the WP can be summarized as follows: most, predominantly adults, come from the Southern Hemisphere, arriving from mid-spring onwards; others, predominantly immatures, come directly from North America, arriving during autumn and early winter. During late spring and summer, most spread over the northern half of the WP. From early winter onwards, the northernmost birds move south again.

possible breeding in WP The number of Franklin's Gulls in the WP is still very small, hence future breeding here is not likely. Hybridization, however, might occur with its closest ecological WP counterpart, Black-headed Gull. Franklin's Gull nests exclusively in marshes as Black-headed Gull commonly does (Burger 1974). An adult was observed in a Black-headed Gull colony in Brandemeer, Friesland, Netherlands, in June 1988. The bird was found dead after its discovery (Versluys & Fokkema 1990). Weseloh (1981) recorded a probable Franklin's x Ring-billed Gull pair nesting in a mixed Ring-billed and California Gull *L californicus* colony near Edmonton, Alberta,

107 Franklin's Gull *Larus pipixcan*, first-winter, Plymouth, Devon, Britain, January 1981 *(David M Cottridge)* **108** Franklin's Gull *Larus pipixcan*, first-year, Wernhout, Noordbrabant, Netherlands, June 1987 *(René Pop)*

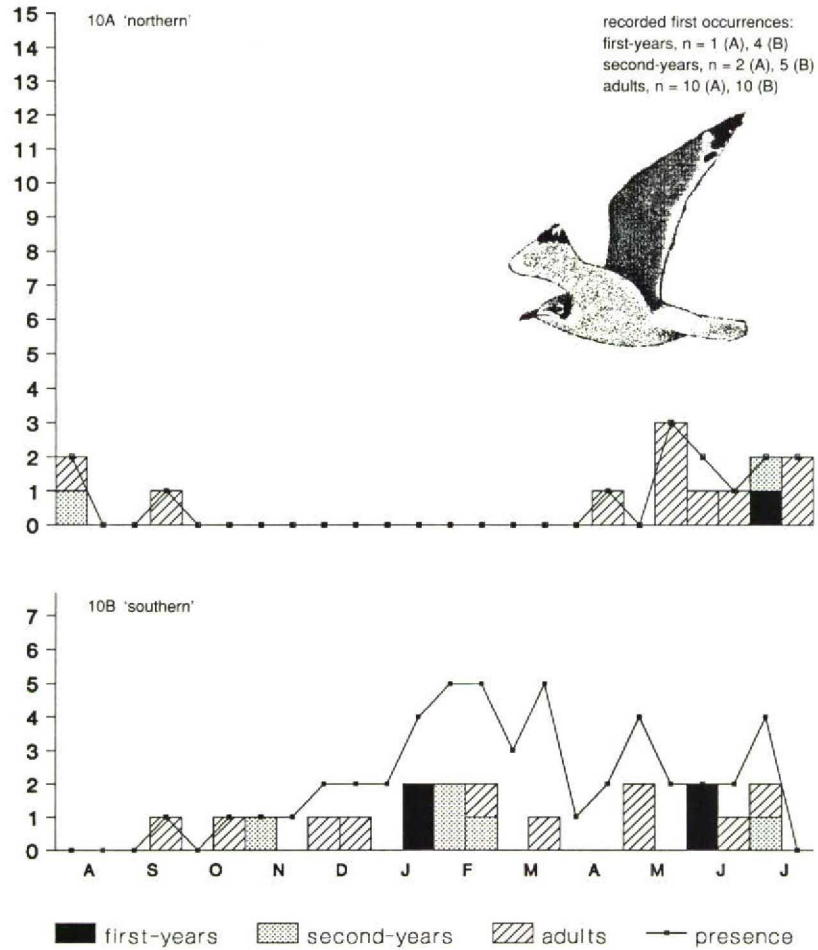
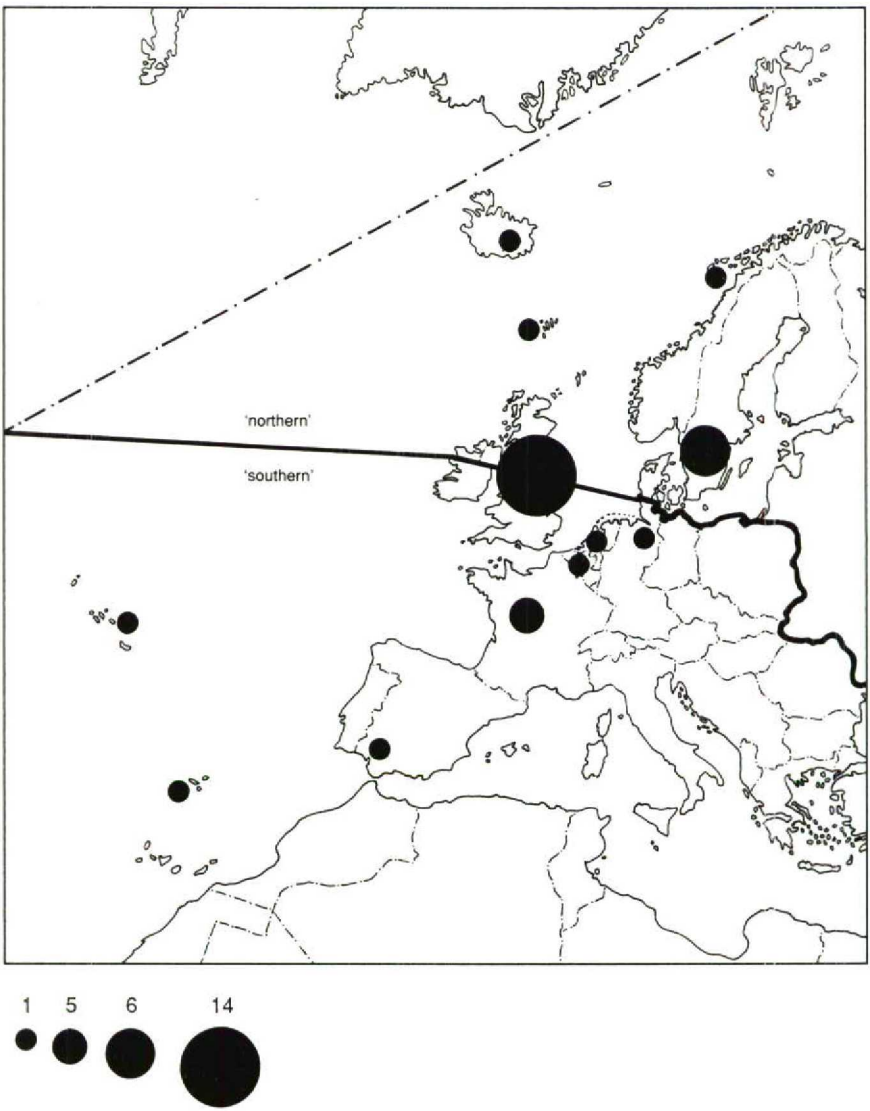


FIGURE 10 Recorded first occurrences by half month and by age class and presence of Franklin's Gull *Larus pipixcan* in WP up to 1987 for 'northern' and 'southern' regions (half months as in figure 5; age classes as in table 3; regional subdivision as in figure 8 but 54 N instead of 53 N; no 19 of appendix 3 not included)

Canada, during 1976-77. An adult Franklin's Gull in a Grey-headed Gull colony at Johannesburg, Transvaal, South Africa, during November-December 1986 apparently started building a nest and attempted to copulate with a Grey-headed Gull (Hockey et al 1988). There is even a record of an apparent mixed Franklin's x Grey-headed Gull pair in coastal Senegal in May 1983 (Érard et al 1984). It is unlikely, however, that Franklin's Gull really would have bred successfully in a tropical coastal environment.

FIGURE 11 Distribution by countries of Franklin's Gulls *Larus pipixcan* in WP up to 1987 (regional subdivision as in figure 10)



109 Franklin's Gull *Larus pipixcan*, adult, Sundre, Gotland, Sweden, June 1985 *(Tuomo Kolehmainen)* **110** Franklin's Gull *Larus pipixcan*, second-winter, Helston, Cornwall, Britain, March 1987 *(Andy R Pay)*

occurrence in WP Table 7 suggests that not only immatures but also a significant proportion of the adults are genuine new arrivals to the WP as hardly any relation can be found between the number of first-years of a specific period and the number of adults of a subsequent period. This is particularly so when one considers that numbers of adults reflect all first-years of previous periods. First-years, however, may often be overlooked.

Figure 12 illustrates first recorded occurrences by half month and figure 13 shows the distribution by countries of all post-war WP Bonaparte's Gulls up to 1987. Obviously, southern areas are preferred from late September to spring and northern areas in summer. Adults do not arrive in southern areas from the second half of April to the first half of August, pointing to a spring migration to northern areas. This is supported by a presence peak in southern areas during March-April. Sharrock (1974) pointed out that the three 1967 British individuals coincided with the Sabine's Gull influx mentioned before. The fact that eight of the 24 September-December individuals were found in the Azores with none there during other months indicates that new arrivals from North America occur in autumn.

Bonaparte's Gull's distribution in the WP is rather similar to that of Ring-billed Gull, with the great majority (91%) in the Azores, Britain, Ireland and Iceland, Britain alone boasting 63%. However, there are relatively more individuals from coastal areas of the southern and western parts of the North Sea than for Ring-billed Gull (12, of which eight from late June to September, out of 24 in total in that period). This points to some autumn migration through these areas.

The reason why Bonaparte's Gull's distribution exhibits this eastern bias, contrary to Ring-billed Gull's, can be deduced again from the Nearctic situation. Here, the species migrates in autumn in large numbers through two main routes from the interior to the Atlantic coast: 1 through the Great Lakes and then south-eastwards to the coast (Clapp et al 1983) and 2 from the Saint Lawrence River possibly overland through river valleys to the lower Bay of Fundy off south-eastern New Brunswick, Canada (Braune 1987), where at least 30 000 have been reported in late summer (Am Birds 32: 177, 1978). Although Ring-billed Gulls breeding in the Gulf of Saint Lawrence probably also use this overland migration route (Tony Lock in litt), it seems that the number of individuals using this or any other north-eastern route is proportionally much larger in Bonaparte's Gull. The supposed Bonaparte's Gull movement along the British North Sea coast might reflect the migration route in north-eastern North America.

That Bonaparte's Gull really can be involved in annual migration movements within the WP is proven by the adult which returned to St Ives, Cornwall, in 4 consecutive years (appendix 4, no 21). All 12 Cornish individuals were found during October-March. Three 19th century immatures were collected, two other immatures arrived and left during October-November but the remaining seven individuals arrived or left during March-April (the St Ives veteran three times). This adds further support to a spring migration through southern Britain and also suggests that some birds may winter further south. Pétursson (1987) suggested that some summer adults in Iceland could have come from the coasts of North America, together with Black-headed Gulls which he considered to be of Icelandic origin. However, the two species exhibit clearly different distributions in north-eastern North America which does not

TABLE 7 Numbers of recorded first occurrences of Bonaparte's Gull *Larus philadelphia* in WP by 12-monthly period and by age class during 1948-87 (12-monthly period and first-year age class as in table 3; periods 1948-77 and late 1987 as indicated; because second-winters (and second-summers) only rarely identifiable in field (Grant 1986), assignment of second-year age class meaningless; also, first-years rather unlikely to occur in WP before October, except perhaps in Azores; therefore, individuals first recorded during October-July as immatures or first-years (including two September Azores first-winters) treated as first-years while individuals first recorded during August-September as immatures or first-summer/second-winters treated as adults; nos 35-37 of appendix 4 not included)

period	first-years	adults
2 1948-7 1977	8	18
1977-78	–	1
1978-79	–	1
1979-80	3	3
1980-81	4	–
1981-82	1	5
1982-83	2	6
1983-84	–	–
1984-85	–	2
1985-86	4	3
1986-87	1	3
8-12 1987	1	–

support Pétursson's (1987) suggestion. In winter, Bonaparte's Gull is scarce in Nova Scotia, Canada, and only occasionally recorded in Newfoundland, Canada (John Wells in litt to Birgit Braune), while the great majority of Black-headed Gull winter records in North America comes from these provinces (Montevecchi et al 1987, cf Christmas Bird Count reports 1978-87 in Am Birds). In spring, Bonaparte's Gull has been recorded in Newfoundland only once in this century up to August 1981 (John Wells in litt to Birgit Braune). These facts make it unlikely that Bonaparte's Gulls would join Black-headed Gulls on migration to Iceland. Moreover, it can not be expected that adults on their way to the breeding grounds would migrate to the north-east, instead of following their normal route to the north-west. In summary, Bonaparte's Gull's main movements in the WP have the following nature (cf Cramp & Simmons 1983). Individuals of all ages arrive either directly in southern Britain or through the Azores after autumn storms or in winter. In spring, they migrate through western Britain and Ireland to Scotland and Iceland where some, mainly adults, spend the summer. The autumn migration occurs primarily through eastern towards southern Britain which is the area with the highest number of winter records in the WP. Bonaparte's Gull remains nearly as much in the extreme western WP as Ring-billed Gull and it is the only one of the four species which has not been recorded in the Mediterranean. Only one individual was recorded away from the coast, though not far inland.

possible breeding in WP As long as Bonaparte's Gull numbers remain small, breeding can not be expected. Hybridization has not been reported and does not seem likely because of the peculiar habit of the species of nesting in coniferous trees

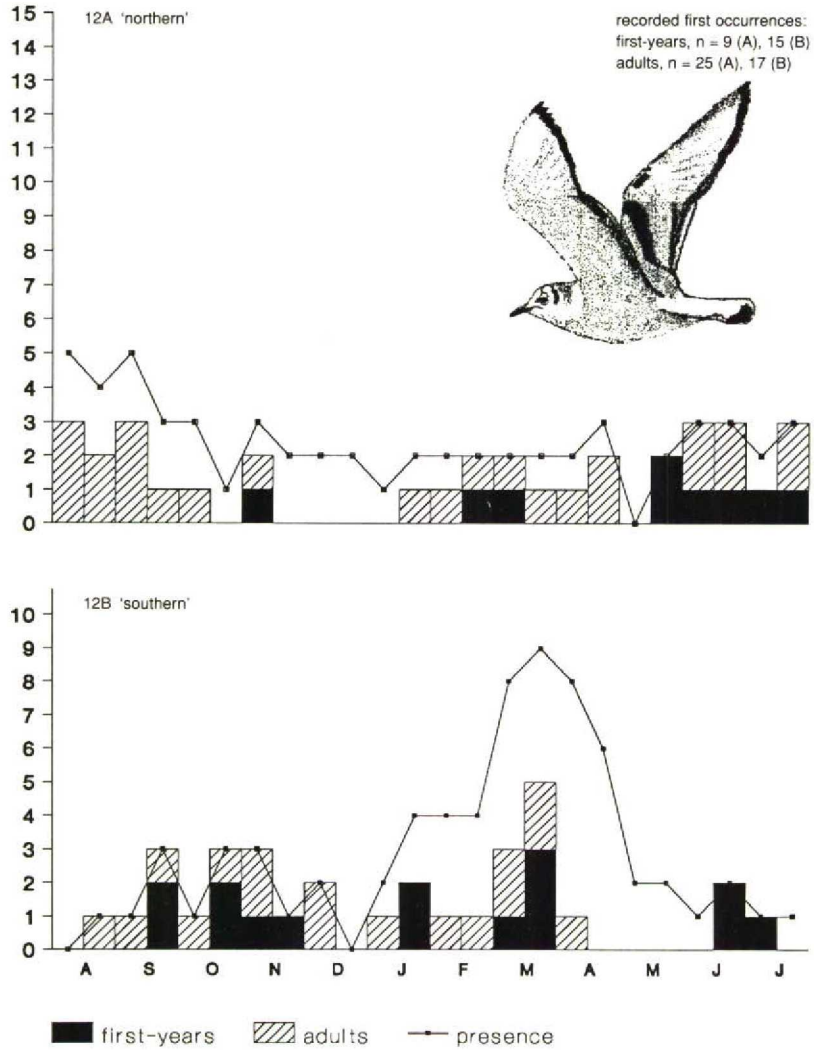
in small dispersed colonies (Randall 1962). However, in Iceland two (appendix 4, nos 13 and 43) were seen among breeding Black-headed Gulls. The 1955 individual was aggressive towards the observer and was possibly paired with a Black-headed Gull (Pétursson 1987). Since breeding in reeds or on flat ground is occasionally recorded in North America (Symons 1968, Lamont 1980), the possibility of hybridization with Black-headed Gull cannot be completely excluded.

increase in WP

The four species occur now regularly in the WP although in most countries they are still very rare or not recorded. Only 24 individuals (2.8%) penetrated east beyond mainland coastal areas bordering the Atlantic Ocean and the North Sea, 11 of these being Franklin's Gulls.
For a rough estimate of the relative abundance (A) of each species, the total numbers of individuals in the WP since 1978 (T) were compared with the presumed average annual post-breeding populations during 1978-87 (P) in North America (excluding the western Ring-billed and Bonaparte's Gull populations) as A = 100 000 T/P. Taking for P the estimated post-breeding or early winter population figures given in the species accounts, A comes out at c 25 for Ring-billed, c 4 for Laughing, c 3 for Franklin's and c 8 for Bonaparte's Gull. That Franklin's Gull has the lowest relative abundance is not surprising, considering its rarity in eastern North America and the long distance it has to cover from southern South America. However, why is

111 Bonaparte's Gull *Larus philadelphia*, adult, Skagen, Nordjylland, Denmark, August 1988 *(Erik Christophersen)*

FIGURE 12 Recorded first occurrences by half month and by age class and presence of Bonaparte's Gull *Larus philadelphia* in WP during 1948-87 for 'northern' and 'southern' regions (half months as in figure 5; age classes as in table 7; regional subdivision as in figure 8 but 52 N instead of 53 N; nos 35-37 of appendix 4 not included)



112 Bonaparte's Gull *Larus philadelphia*, first-summer, IJmuiden, Noordholland, Netherlands, June 1988 *(Hans Gebuis)* **113** Bonaparte's Gull *Larus philadelphia*, second-winter (same individual as in plate 112), IJmuiden, Noordholland, Netherlands, September 1988 *(Ed J M Veling)*

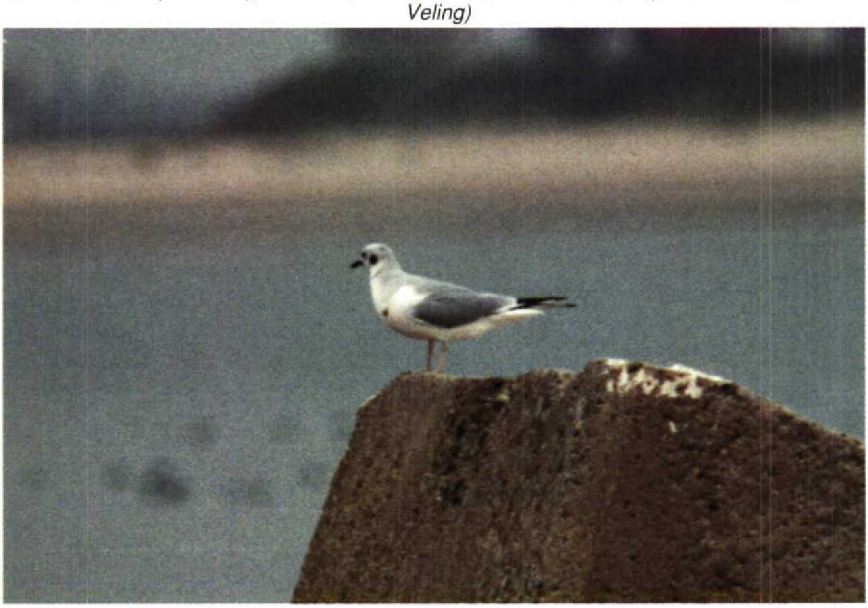
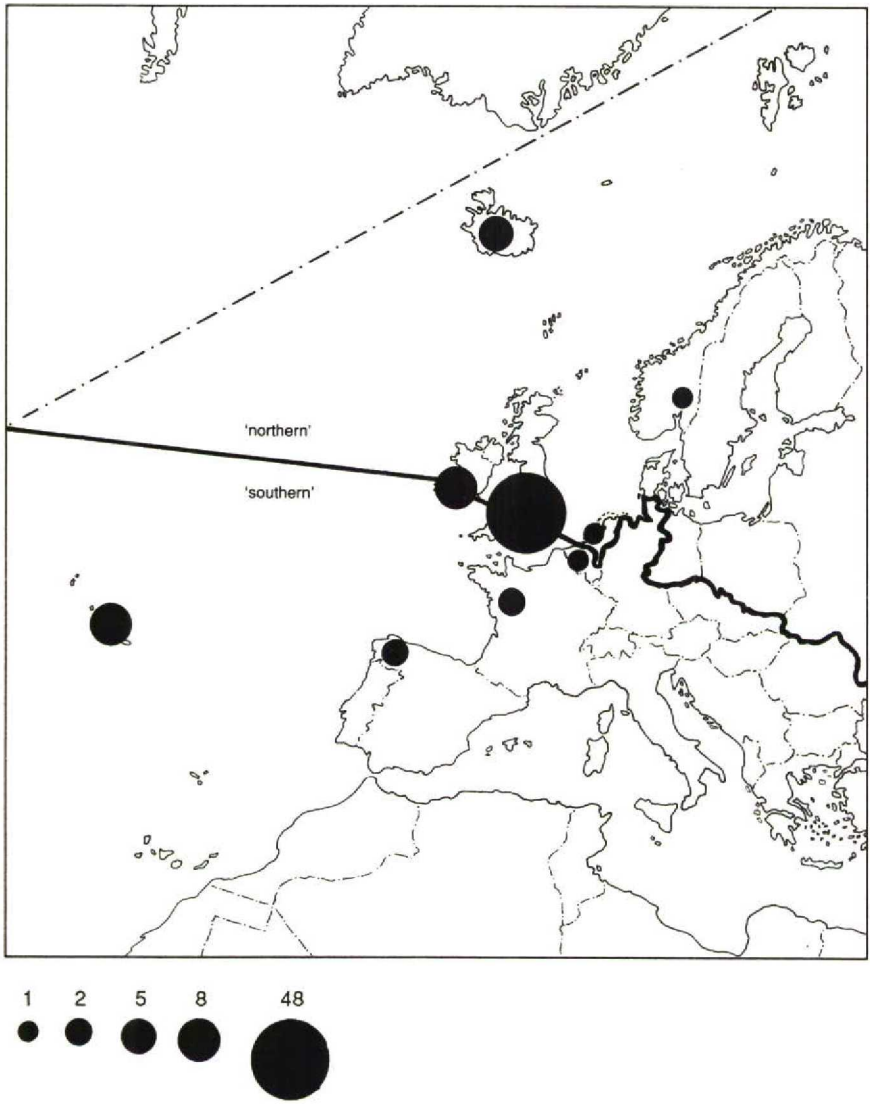


FIGURE 13 Distribution by countries of Bonaparte's Gulls *Larus philadelphia* in WP up to 1987 (regional subdivision as in figure 12)



114 Bonaparte's Gull *Larus philadelphia*, first-winter, Ritthem, Zeeland, Netherlands, February 1990 *(Arnoud B van den Berg)* **115** Bonaparte's Gull *Larus philadelphia*, adult, Seaforth, Merseyside (formerly Lancashire), Britain, April 1990 *(Steve Young)*

Bonaparte's Gull scoring better than Laughing Gull, and why is Laughing Gull doing only slightly better than Franklin's Gull? The answer to the first question is most likely to be found in a comparison of the migrational habits in eastern North America of the first two species in autumn and early winter. Bonaparte's Gull migrates over longer distances than Laughing Gull while only northern Laughing Gulls migrate over any substantial distance, southern populations being more sedentary. Moreover, Bonaparte's Gulls follow easterly routes while Laughing Gulls normally do not migrate east at all. It will be hardly possible to find an answer to the second question as Franklin's Gull normally does not migrate east as well but due south and for thousands of kilometres. Therefore, the above figures at least emphasize the wandering abilities of the latter species. Taking into account that Ring-billed Gull is less migratory than Bonaparte's Gull, the high relative abundance of the former could point to overvaluated WP figures. Possibly, the c 800 recorded individuals since 1978 reflect a commuting population which has arrived here in waves and which has never exceeded one or two hundred individuals. After such waves, numbers can temporarily be considerably lower.

It is far from easy to fully establish the reason for the spate of records after c 1965. Is this largely due to increased field activities and identification abilities as well as better equipment of growing numbers of skilled birders, or is it a matter of genuine increase in vagrancy to the WP, or both? The first-mentioned phenomenon undoubtedly accounts to a substantial degree for the ever-increasing numbers of records, judging from the many records in Britain and Ireland compared with few in some observer-poor countries in the south-western WP which are probably equally well-positioned from a geographical point of view. Also, 19 out of the 24 Icelandic individuals were recorded in the south-western part of this country, where most of the human population is concentrated, while the entire southern coast seems to be suitable. More or less the same applies to Britain and Ireland, where most were found at well-watched sites near urban areas (cf Vinicombe 1985, Madden 1987), but to what degree is this 'observer effect' accounting for the increase in each of the four species?

The number of Ring-billed Gulls recorded in Britain and Ireland has increased recently to the extent that the species has been removed from the British rarities committee list (Br Birds 80: 422, 1987). In the early 1980s, it was considered regular in small numbers in the Azores. It seems almost certain that, due to the recent population growth in eastern North America, Ring-billed Gull records have increased noticeably on the European side of the Atlantic Ocean because so many would not have gone unnoticed in the past. Nevertheless, small numbers probably did occur before 1973 but remained unidentified, as proven through the ringing recoveries from the Azores and Spain. Laughing Gull may also be increasing here because the number recorded during 1978-87 was nearly three times the number during 1968-77 which may surpass the observer effect because this is a conspicuous species. Certainly, the increase is less than that of Ring-billed Gull and possibly it just matches the expansion of the eastern Nearctic population.

Franklin's Gulls recorded during 1978-87 number 4.5 times all previous individuals. This probably reflects a genuine increase in the WP. Whether this increase is related to population growth in North America cannot be ascertained.

Bonaparte's Gull seems to be the only one of the four which is not substantially increasing here. It is inconspicuous, with few in continental Europe and possibly the

relatively slow increase (twice as much during 1978-87 compared with 1968-77) is to a considerable extent covered by the observer effect. Also, the proportionally high number before 1965 is a good indication that its increase here is slower than that of the other three species.

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samenvatting

NEARCTISCHE MEEUWEN IN HET WESTPALEARCTISCHE GEBIED Dit artikel behandelt het voorkomen van de Nearctische Ringsnavelmeeuw *Larus delawarensis*, Lachmeeuw *L atricilla*, Franklins Meeuw *L pipixcan* en Kleine Kokmeeuw *L philadelphia* in het Westpalearctische gebied. Drie van de vier soorten werden verzameld voor ze in het veld werden waargenomen. Sinds c 1965 is een sterke toename van het aantal gevallen tot stand gekomen, het sterkst bij de Ringsnavelmeeuw (tabel 1, appendices 1-4).

Het merendeel van de Ringsnavelmeeuwen komt niet verder dan het westen van de WP: de Azoren, West-Groot-Brittannië en Ierland. De aantallen elders in Atlantische kustgebieden van de WP zijn aanzienlijk kleiner en meer naar het oosten is de soort een grote zeldzaamheid.

Waarschijnlijk komen Ringsnavelmeeuwen van alle leeftijdsklassen maar vooral onvolwassen vogels aan, hetzij in herfst en winter rechtstreeks vanuit Noordamerika in het westen van Europa, hetzij in het vroege voorjaar na te hebben overwinterd in de Azoren en andere zuidwestelijke gebieden. Er is een duidelijke voorjaarstrek door Zuidwest-Engeland, Zuid-Wales en de Ierse Zee, tot aan IJsland. Zuidwest-Groot-Brittannië levert de meeste winterwaarnemingen.
Opmerkelijk bij de Lachmeeuw zijn de 24 individuen rond de kusten van de Noordzee en het – ten opzichte van Ringsnavelmeeuw – relatief geringe aantal in Ierland. Vermoedelijk komen veel onvolwassen Lachmeeuwen in de herfst in Zuidwest-Groot-Brittannië aan en verspreiden zich over de Britse kusten tot rondom de Noordzee. Andere maken waarschijnlijk de oceaanoversteek op zuidelijker breedten.
De Franklins Meeuw is de meest uitgesproken zwerver van de vier. Het is de enige waarvan de meerderheid van de gevallen niet voor rekening van Groot-Brittannië en Ierland komt en die zelfs op de Ierse lijst nog ontbreekt. Veel waarnemingen komen echter uit Scandinavië. Wellicht bereiken vooral adulte Franklins Meeuwen de WP via de Zuidatlantische Oceaan vanuit het overwinteringsgebied aan de westkust van Zuidamerika en komen de onvolwassen vogels rechtstreeks uit Noordamerika over.
Het verspreidingspatroon van de Kleine Kokmeeuw in de WP komt grotendeels overeen met dat van de Ringsnavelmeeuw hoewel er verhoudingsgewijs meer gevallen zijn rond de Noordzee. Vermoedelijk komen ook de verplaatsingen binnen de WP in belangrijke mate overeen met die van Ringsnavelmeeuw.
De enorme toename van het aantal waarnemingen van de vier soorten gedurende de laatste c 20 jaar is ongetwijfeld in belangrijke mate het gevolg van het sterk verbeterde waarnemingspotentieel. Niettemin is het aantal Ringsnavelmeeuwen dermate spectaculair toegenomen dat vrijwel zeker kan worden gesproken van een reële toename, parallel aan de sterke populatiegroei in Noordamerika. Ook bij de Lachmeeuw en de Franklins Meeuw is mogelijk sprake van een reële toename. De Kleine Kokmeeuw is waarschijnlijk niet wezenlijk toegenomen in de WP.

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W (Ted) Hoogendoorn, Notengaard 32, 3941 LW Doorn, Netherlands
Gerard H Steinhaus, Brugakker 11-42, 3704 WC Zeist, Netherlands

APPENDIX 1 Records of Ring-billed Gull *Larus delawarensis* in WP (excluding Britain, Channel Islands and Ireland) up to 1987[a]

001 04 11 1945, Horta, Faial, Azores, 1w, Cooke (1947). **002** 18 01 1951[b], Vigo, Pontevedra, Spain, 1w, Dennis (1981). **003** 20 01 1965, Barbate de Franco, Cádiz, Spain, 1w, Brewer & Salvadori (1978). **004** 20 07 1976, Ny-Ålesund, Vest-Spitsbergen, Svalbard Archipelago, as, Larsen (1977). **005** 28 04 1978, Göteborg, Västergotland, Sweden, 2s, Wallander & Mogren (1983). **006** 03/04 09 1978, Miðsandur í Hvalfirði, Borgarfjarðarsýsla, Iceland, ad, Pétursson (1987). **007-009** 12 12 1979/into 01 1980, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **010-011** 10 03 1980, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **012** 21 03-13 10 1980, Garður & Elliðaárvogur, Gullbringusýsla & Reykjavík, Iceland, 1w/1s, Pétursson & Skarphéðinsson (1982). **013** 22/23 04 1980, Elliðaárvogur, Reykjavík, Iceland, as, Pétursson & Skarphéðinsson (1982). **014** 05/07 05 1980, Elliðaárvogur, Reykjavík, Iceland, 1s, Pétursson & Skarphéðinsson (1982). **015** 10 12 1980, Santa Cruz, Tenerife, Canary Islands, 1w, Keith Emmerson in litt. **016-027** 04 01/11 02 1981, Populo, São Miguel, Azores, un, Gérald le Grand in litt. **028** 13 01 1981, Ribeira Grande, São Miguel, Azores, 1w, Gérald le Grand in litt. **029** 21 01 1981, Deltebre, Tarragona, Spain, 1w, Dennis (1986). **030** 11 02 1981, Ribeira Grande, São Miguel, Azores, un, Gérald le Grand in litt. **031** 14 02 1981, Ribeira Grande, São Miguel, Azores, un, Gérald le Grand in litt. **032-035** 18 02 1981, Ribeira Grande, São Miguel, Azores, un, Gérald le Grand in litt. **036-047** 05 03 1981, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **048-049** 11 03 1981, Ribeira Grande, São Miguel, Azores, un, Gérald le Grand in litt. **050-053** 24 03 1981, Anifes, São Miguel,

Azores, un, Gérald le Grand in litt. **054** 12/23 04 1981, Peniche, Alto Estremadura, Portugal, 1s, Moore (1983). **055** 13 04-25 05 1981, Elliðaárvogur & Tjörnin, Reykjavík, Iceland, 2s, Pétursson & Skarphéðinsson (1983). **056** 21 04-29 09 1981, Elliðaárvogur & Tjörnin, Reykjavík, Iceland, 1s, Pétursson & Skarphéðinsson (1983). **057** 10/17 06 1981, Miðsandur í Hvalfirði, Borgarfjarðarsýsla, Iceland, 1s, Pétursson & Skarphéðinsson (1983). **058** 12 09 1981, Miðsandur í Hvalfirði, Borgarfjarðarsýsla, Iceland, 1s, Pétursson & Skarphéðinsson (1983). **059** 25 09 1981, Leiruvogur í Mosfellssveit, Kjósarsýsla, Iceland, 1s/2w, Pétursson & Skarphéðinsson (1983). **060-107** 27 01 1982, Cabo de Praia, Terceira, Azores, 30 imm + 18 aw, Gérald le Grand in litt. **108** 07 02 1982, Puerto del Rosario, Fuerteventura, Canary Islands, 1w/1s, Jelle Scharringa in litt. **109-110** 03/04 03 1982, Arrecife, Lanzarote, Canary Islands, 1w/1s, Bos & de Heer (1982). **111** 22 03 1982, Saint-Agnant, Charente-Maritime, France, as, Blanchon et al (1983). **112-113** 15 04 1982, Plovan, Finistère, France, 1s + 2s, Blanchon et al (1983). **114** 21 04-29 05 1982, Grafarvogur, Reykjavík, Iceland, 1s, Pétursson & Ólafsson (1984). **115** 22 04 1982, Grafarvogur, Reykjavík, Iceland, 2s, Pétursson & Ólafsson (1984). **116** 01 05 1982, Wenningstedt (Sylt), Schleswig-Holstein, FRG, as, Eschenauer (1982). **117** 07 05/15 06 1982, Fossvogur & Tjörnin, Reykjavík, Iceland, 2s, Pétursson & Ólafsson (1984). **118** 19 05/22 09 1982, Tjörnin, Reykjavík, Iceland, 1s, Pétursson & Ólafsson (1984). **119** 11 08 1982, Essaouira, Essaouira, Morocco, 1s/2w, Hoogendoorn (1982). **120** 01 01 1983, Vila do Porto, Santa Maria, Azores, 1w, Gérald le Grand in litt. **121** 10 04 1983, Essaouira, Essaouira, Morocco, 2s, O'Sullivan (1984). **122** 20 08/10 09 1983, La Rochelle, Charente-Maritime, France, 2w, Dubois et al (1984). **123** mid 10 1983-into 1990, Bergen, Hordaland, Norway, aw, Bentz (1986). **124** 07 12 1983/12 03 1984, Funchal, Madeira, Madeiran Islands, 1w, Bourne (1984). **125** 07 12 1983/07 02 1984, Funchal, Madeira, Madeiran Islands, 1w, Bourne (1984). **126** 21 12 1983 c, Europa Point, Gibraltar, aw, Steve Holliday in litt. **127** 16 01/07 02 1984, Funchal, Madeira, Madeiran Islands, 1w, Rod Martins in litt. **128-129** 16/22 01 1984, Funchal, Madeira, Madeiran Islands, 1w + aw, Rod Martins in litt. **130** 01 02 1984, Ribeira Grande, São Miguel, Azores, 2w, Gérald le Grand in litt. **131-139** 08 02 1984, Anibanas, São Miguel, Azores, 2 1w + 4 2w + 3 aw, Gérald le Grand in litt. **140** 18/20 02 1984, Sant Carles de la Ràpita, Tarragona, Spain, 2w, de Juana et al (1985). **141** 16 03 1984, Vanersborgsviken, Västergotland, Sweden, 1w, Alström (1986). **142** 17 03/22 04 1984, Douarnenez, Finistère, France, 1w, Dubois et al (1986b). **143** 17 03/21 04 1984, Douarnenez, Finistère, France, 1w, Dubois et al (1986b). **144** 18 03 1984, Douarnenez, **145** Finistère, France, 2w, Dubois et al (1986b). 25 08/26 09 1984, Höfn í Hornafirði, Austur-Skaftafellssýsla, Iceland, 2s/aw, Pétursson & Ólafsson (1986). **146** 22 09 1984, Pénestin, Morbihan, France, aw, Dubois et al (1986a). **147** 17 10/10 11 1984, Sandgerði, Gullbringusýsla, Iceland, 2w, Pétursson & Ólafsson (1986). **148** 09 12 1984, Brusand, Rogaland, Norway, aw, Bentz (1989). **149** 21 12 1984, Funchal, Madeira, Madeiran Islands, 2w, Alexander Zino in litt. **150-154** winter 1984/1985, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **155** 05 02 1985, Skhirat, Rabat, Morocco, 1w, van den Berg (1989). **156** 13 06/05 07 1985, Batz-sur-Mer, Loire-Atlantique, France, 1s, Dubois et al (1986b). **157** 02 08 1985, Batz-sur-Mer, Loire-Atlantique, France, aw, Dubois et al (1986b). **158** 15/23 08 1985, Batz-sur-Mer, Loire-Atlantique, France, 2s, Dubois et al (1986b). **159** 18 08 1985, Sundahöfn, Reykjavík, Iceland, 2s, Pétursson & Ólafsson (1988). **160** 31 08 1985, Batz-sur-Mer, Loire-Atlantique, France, 2s/aw, Dubois et al (1986b). **161** 01/07 09 1985, Batz-sur-Mer, Loire-Atlantique, France, as, Dubois et al (1986b). **162** 06 09/08 11 1985, Le Croisic, Loire-Atlantique, France, 2w, Dubois et al (1987). **163** 21 09/09 11 1985, Pénestin, Morbihan, France, aw, Dubois et al (1988). **164** 27 09 1985, Batz-sur-Mer, Loire-Atlantique, France, aw, Dubois et al (1986b). **165** 28 09 1985, Batz-sur-Mer, Loire-Atlantique, France, 2w, Dubois et al (1986b). **166** 13 10 1985, Saint-Clément (Ré), Charente-Maritime, France, 2w, Dubois et al (1986b). **167** 24/29 10 1985, Húsavík, Suður-Þingeyjarsýsla, Iceland, aw, Pétursson & Ólafsson (1988). **168-172** winter 1985/1986, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **173** 04 01 1986, Guérande, Loire-Atlantique, France, 1w, Dubois et al (1987). **174** 05 01 1986, Candelaria, Tenerife, Canary Islands, 1w, David Palmer in litt. **175** 15 01 1986, Funchal, Madeira, Madeiran Islands, 2w, Simon & Jill Warwick in litt. **176** 18/19 01 1986, Málaga, Málaga, Spain, aw, de Juana et al (1988). **177** 05 04/18 05 1986, Bouin, Vendée, France, 1s, Dubois et al (1987). **178** 11 04 1986, Merja Zerga, Kenitra, Morocco, 2s, van den Berg (1989). **179** 19 04 1986, Breiðdalsvík, Suður-Múlasýsla, Iceland, as, Pétursson & Ólafsson (1989a). **180** 15/16 05 1986, Tjörnin & Vatnsmýri, Reykjavík, Iceland, 2s, Pétursson & Ólafsson (1989a). **181** 06/13 07 1986, Europoort, Zuidholland, Netherlands, as, Schrijvershof & Schrijvershof (1987). **182** 20 08/27 10 1986, Bergen, Hordaland,

Norway, 2s/aw, Bentz (1988). **183** 04 09/11 11 1986, Pénestin, Morbihan, France, aw, Dubois et al (1987). **184** 31 12 1986/10 01 1987, Laxe, La Coruña, Spain, 1w, Eduardo de Juana in litt. **185** 10 01 1987/09 04 1988, Camariñas & Laxe, La Coruña, Spain, 1w/2s, Eduardo de Juana in litt. **186** 28 01 1987, Champagné-les Marais, Vendée, France, 1w, Dubois et al (1988). **187** 31 01 1987, Bergen, Hordaland, Norway, 1w, Bentz (1989). **188** 07 02 1987, Funchal, Madeira, Madeiran Islands, 1w, Alexander Zino in litt. **189** 29 04 1987, Sandgerði, Gullbringusýsla, Iceland, 2s, Pétursson & Ólafsson (1989b). **190** 30 04/10 05 1987, Gerðar í Garði, Gullbringusýsla, Iceland, as, Pétursson & Ólafsson (1989b). **191** 10 05 1987, La Rochelle, Charente-Maritime, France, as, Dubois et al (1988). **192** 20 07 1987, Stenåsa, Öland, Sweden, 1s, Hirschfeld (1988). **193** 11 09/06 12 1987, Pénestin, Morbihan, France, aw, Dubois et al (1988). **194** 04 11 1987, la Lasse (Ré), Charente-Maritime, France, aw, Dubois et al (1989). **195** 06 12 1987, Dunkerque, Nord, France, aw, Dubois et al (1989).

Not listed: 401 in Britain (Hume 1973, Vinicombe 1973, Smith et al 1975, Dymond et al 1976, O'Sullivan et al 1977, Rogers et al 1978-82, 1984-89, Dave Britton in litt), three in Channel Islands (Rogers et al 1984, 1986, 1988) and 232 in Ireland (Mullarney 1980, Preston 1981-85, Brazier et al 1986, O'Sullivan & Smiddy 1987-89, Oran O'Sullivan in litt), bringing total to 831. Not included: 13 01 1968, Braunschweig, Niedersachsen, FRG (Berndt & Rahne 1968, Glutz von Blotzheim & Bauer 1982, Cramp & Simmons 1983, Peter Barthel in litt); 15 12 1973, La Baule, Loire-Atlantique, France (Boulva 1975, Cruon & Vielliard 1975, Cramp & Simmons 1983, Dubois & Yésou 1986); 05 04 1984, Sopot, Gdańsk, Poland (Skakuj 1988); 01 12 1984, Staad, Sankt Gallen, Switzerland, and (reportedly same individual) 24 12 1984, Steinach, Sankt Gallen (Zbinden 1985, Peter Willi in litt); 29 01 1985, Luxburg, Thurgau, Switzerland (Winkler et al 1987); 25 02 1985, Gdynia, Gdańsk (KFSOPTZ 1988); 10 12 1985/07 03 1986, Konstanz, Baden-Württemberg, FRG, and (reportedly same individual) 29 01 1986, Bottighofen, Thurgau (Winkler et al 1987, BS 1989); 19 01 1987, Hel, Gdańsk (Tadeusz Stawarczyk in litt). 19 records in Iceland up to 1984 were counted as 15 individuals (cf Pétursson & Ólafsson 1989b). Numbers for Azores mentioned by le Grand (1983) are rough estimates and numbers defined in that paper for 1978-80 should be regarded as 'possibles'.

[a] Data for each record: 1 next serial number of newly recorded individual(s); 2 initial (and final) date(s) recorded; oblique indicates continuous period though bird(s) not necessarily recorded on all intermittent days; hyphen indicates either markedly discontinuous period or substantial absence in between occurrences at different localities or series of seasons in successive years; 3 locality/ town where first recorded; for localities on islands, island names are included between brackets; for some individuals which were recorded longest or much later at different locality such is defined after &; 4 province/county/ department, etc; island (as part of archipelago); use of & analogous to 3; 5 geographical unit (mostly countries or archipelagos); 6 plumage(s) during stay; 1w = first-winter, 1s = first-summer, 1y = first-year, 2w = second-winter, 2s = second-summer, jv = juvenile, im = immature, aw = adult winter, as = adult summer, ad = adult, un = unknown (or imperfectly known); oblique indicates either intermediate plumage or birds moulting through successive plumages; 7 source; this is usually most important reference regarding record, often including original description; many other references were taken into account as well but omitted here for sake of brevity. [b] Erroneously dated as recovered in 1952 by some authors. [c] Erroneously dated 1984/85 winter by Finlayson & Cortés (1987).

APPENDIX 2 Records of Laughing Gull *Larus atricilla* in WP up to 1987. Data as in appendix 1.

01 29 06 1877, Le Crotoy, Somme, France, as, Ménégaux (1912). **02** 02/09 07 1923, Eastbourne, Sussex, Britain, as, des Forges (1968). **03** 20 12 1957, Abberton Reservoir, Essex, Britain, aw, Marshall (1968). **04** 18/20 01 1964, Göteborg, Västergotland, Sweden, 1w, Albrektsson & Berndtsson (1965). **05** 22 04 1965, Brélès, Finistère, France, as, Clapham et al (1966). **06** 11 05 1966, Dungeness, Kent, Britain, as, Buck & Taylor (1967). **07** 31 10 1967, St Agnes, Scilly, Britain, 2w, Wallace (1972). **08** 02 04 1968, Loch Lomond, Dunbartonshire, Britain, as, Mitchell (1980). **09** 04 08 1968, Portivy, Morbihan, France, 1s, le Toquin (1968). **10** 12 08 1968, Tivoli, Cork, Ireland, 1s, Preston (1975). **11** 14 11 1968, Heimaey, Vestmannaeyjar, Iceland, ad, Pétursson (1987). **12** 17 02/ 06 10 1969, Radipole Lake, Dorset, Britain, 1w/2w, Smith et al (1970). **13** 26 12 1971, Sandgerði á

Miðnesi, Gullbringusýsla, Iceland, im, Pétursson (1987). **14** 18/19 07 1972, Heimaey, Vestmannaeyjar, Iceland, 1s, Pétursson (1987). **15** 21 04 1974, Loch Skerrols (Islay), Argyllshire, Britain, as, Verrall (1977). **16** 05 05 1974, Holiwell Point, Essex, Britain, as, Rogers et al (1987). **17** 12 05 1974, Arcachon, Gironde, France, as, Campredon (1975). **18** 07 07 1975, Höfn í Hornafirði, Austur-Skaftafellssýsla, Iceland, as, Pétursson (1987). **19-20** 30 08 1975, Low Hauxley, Northumberland, Britain, jv, Rogers et al (1987). **21** 13 09 1975, Fair Isle, Shetland, Britain, ad, Dymond et al (1976). **22** 03 08 1977, Mersey Estuary, Lancashire, Britain, as, Rogers et al (1978). **23** 13 11-02 12 1977, Wherstead & Felixstowe, Suffolk, Britain, aw, Rogers et al (1978). **24** 10 12 1977/27 03 1978, St Ives Bay & Newlyn Bay, Cornwall, Britain, 1w, Rogers et al (1980). **25** 25 04 1978, Tifnit, Agadir, Morocco, as, Kennerley (1979). **26** 16 05 1978, Hilbre, Cheshire, Britain, 1s, Rogers et al (1979). **27** 19/20 05 1978, Nant-y-Moch Reservoir & Llyn Syfydrin, Cardiganshire, Britain, as, Rogers et a (1979). **28** 19 09 1978, Flamborough Head, Yorkshire, Britain, as, Rogers et al (1980). **29** 22 09/into 12 1978, Loch Ken, Kirkcudbrightshire, Britain, 2w, Rogers et al (1979). **30** 23 09/07 10 1978, Fairburn Ings, Yorkshire, Britain, as/aw, Rogers et al (1979). **31** 13 11 1978, Bridlington, Yorkshire, Britain, 2w, Rogers et al (1980). **32** 24 02 1979, Donna Nook, Lincolnshire, Britain, 2w, Rogers et al (1980). **33** 06 10 1979, Huttoft Bank, Lincolnshire, Britain, 1w, Rogers et al (1980). **34** 20 02 1980, Baiona, Pontevedra, Spain, 2w, Eduardo de Juana in litt. **35** 13 04 1980, Radipole & Lodmoor, Dorset, Britain, 2s, Rogers et al (1981). **36** 22 06/05 07 1980, Hayle, Cornwall, Britain, 2s, Rogers et al (1981). **37** 23 06/14 07 1980, Hirta (St Kilda), Outer Hebrides, as, Rogers et al (1981). **38** 08/14 09 1980, Bossington & Porlock, Somerset, Britain, 2w, Rogers et al (1982). **39** 29 11 1980, Ogston Reservoir, Derbyshire, Britain, 2w, Rogers et al (1981). **40** 06 06 1981, Porto, Douro, Portugal, 1s, Preiswerk (1981). **41** 21/22 06 1981, Seal Sands, Durham, Britain, as, Rogers et al (1983). **42** 25 06/21 08 1981, Shannon Airport Lagoon, Clare, Ireland, 2s/aw, Preston (1983). **43** 27/28 12 1981, Colwyn Bay, Denbighshire, Britain, 1w, Rogers et al (1982). **44** 30 12 1981/03 01 1982, Slimbridge & Frampton-on-Severn, Gloucestershire, Britain, 1w, Rogers et al (1985). **45** 08/09 01 1983, Troon, Ayrshire, Britain, aw, Rogers et al (1984). **46** 15 06 1983, Fetlar, Shetland, Britain, as, Rogers et al (1984). **47** 05 09 1983, Humberside Wildfowl Refuge, Yorkshire, Britain, ad, Rogers et al (1986). **48** 20 10 1983, Radipole Lake, Dorset, Britain, aw, Rogers et al (1984). **49** 06 01 1984, Axe Estuary, Devon, Britain, 1w, Rogers et al (1985). **50** 22 01 1984-31 03 1987, Blaydon & Newcastle, Durham & Northumberland, Britain, 1w/aw, Rogers et al (1988). **51** 25/29 01 1984, Cobh, Cork, Ireland, 1w, Preston (1985). **52** 16 04-28 12 1984 (to 1985), Hull & Thorpe-on-Hill, Yorkshire & Lincolnshire, Britain, 1s/2w, Rogers et al (1985). **53** 27 05-14 08 1984, Kent Estuary & High Foulshaw, Lancashire, Britain, 1s/2w, Rogers et al (1985). **54** 10 06/03 07 1984, Dublin Bay, Dublin, Ireland, 1s, Preston (1985). **55** 23 07 1984, Filey, Yorkshire, Britain, 2s, Rogers et al (1985). **56** 15/23 08 1984, Alexandroupolis, Evros, Greece, as, Hart (1986). **57** 14 12 1984, Hull, Yorkshire, Britain, 2w, Rogers et al (1988). **58** 15/19 01 1985, Edgbaston Reservoir, Warwickshire, Britain, 1w, Rogers et al (1987). **59** 16/31 03 1985, La Turballe & Batz-sur-Mer, Loire-Atlantique, France, 1w, Dubois et al (1986b). **60** 18 06/02 09 1985, Vejlerne, Nordjylland, Denmark, 1s/2w, Olsen (1987). **61** 03/06 07 1985, Skagen & Hirtshals, Nordjylland, Denmark, as, Olsen (1987). **62** 21/30 11 1985, Warrington & Woolston Eyes, Cheshire, Britain, 2w, Rogers et al (1987). **63** 08 08 1986, Dungeness, Kent, Britain, as, Rogers et al (1987). **64** 28 08 1986, Sant Carles de la Ràpita, Tarragona, Spain, 2w, de Juana et al (1988). **65** 26 10 1986, St Mary's, Scilly, Britain, 1w, Rogers et al (1987). **66** 20 11 1986, Stevenston Point, Ayrshire, Britain, aw, Rogers et al (1987). **67** 08/12 07 1987, Sant Jaume d'Enveija, Tarragona, Spain, 1s/2w, Eduardo de Juana in litt. **68** 14/20 12 1987, Húsavík, Suður-Þingeyjarsýsla, Iceland, 1w, Pétursson & Ólafsson (1989b).

Not included: 11 05 1972, Sankt Lorenzen, Kärnten, Austria (Wruss 1973, Glutz von Blotzheim & Bauer 1982, Cramp & Simmons 1983); 17 09 1975 Saint-Efflam, Côtes-du-Nord, France (Dubois & Yésou 1986); 14 09 1980, Sidi Moussa-Oualidia, El Jadida, Morocco (Thévenot et al 1981); 07 05 1981, Fuengirola, Málaga, Spain (Ardeola 29: 186, 1982); 04/06 10 1987, Utlängan, Blekinge, Sweden (Hirschfeld 1988); for Britain, the old (until 1974) county system has been adopted (cf Dymond et al 1989).

APPENDIX 3 Records of Franklin's Gull *Larus pipixcan* in WP up to 1987. Data as in appendix 1.

01 21 02/16 05 1970, Farlington Marshes, Hampshire, Britain, aw, Billett & Grant (1971). **02** 04 07 1970, Arlington Reservoir, Sussex, Britain, 2s, Rogers (1972). **03** 20 05 1976, 60 nautic miles SW of Tórshavn, Faroe Islands, as, Grandjean (1981). **04** 26 01/27 02 1977, Angers, Maine-et-Loire, France, 1w, Beaudoin (1979). **05** 24 07 1977, North Gare, Durham, Britain, as, Blick (1979). **06** 13 11 1977/30 03 1978, Lowestoft, Suffolk, Britain, 2w, Brown (1979). **07** 03 05 1978, La Puebla del Rio, Sevilla, Spain, as, Terry Bond in litt. **08** 24 07 1978, Visingsö, Småland, Sweden, as/aw, Jönsson & Wennberg (1981). **09** 16/17 06 1979, Røstlandet (Røst), Nordland, Norway, as, Ree (1980). **10** 9/10 07 1979, Funchal, Madeira, Madeiran Islands, as, Alexander Zino in litt. **11** 02/06 07 1980, Irvine, Ayrshire, Britain, 1s/2w, Clugston (1983). **12** 02/13 08 1980, Farhult, Skåne, Sweden, 1s/2w, Jönsson & Wennberg (1981). **13** 01 02 1981, Canche estuary, Somme, France, 2w, Kérautret (1981). **14** 05/11 07 1981, Isle of Canna, Inverness-shire, Britain, 2s/aw, Rogers et al (1982). **15** 22 01-07 05 1982, Plymouth & Hillbrook Lake & Radipole Lake, Devon & Cornwall & Dorset, Britain, 1w/1s, Rogers et al (1983). **16** 21/22 02 1982, Miribel-Jonage, Rhône, France, 2w, Siblet & Thonnerieux (1984). **17** 22 05/early 06 1982, Mälaren & Asköviken, Västmanland, Sweden, as, Larsson et al (1983). **18** 29 12 1983-27 01 1984, Martin Mere & Frodsham, Lancashire & Cheshire, Britain, aw, Rogers et al (1985). **19** 19 05 1984, Severn Beach, Gloucestershire, Britain, un, Rogers et al (1985). **20** 15 06 1984, Santa Cruz, Flores, Azores, 1s, Gérald le Grand in litt. **21** 22 06/01 07 1984, Devoran, Cornwall, Britain, as, Rogers et al (1985). **22** 21/26 09 1984, Höfn í Hornafirði, Austur-Skaftafellssýsla, Iceland, as/aw, Pétursson & Ólafsson (1986). **23** 29 10 1984, Dunkerque, Nord, France, aw, Dubois et al (1986b). **24** 06 06 1985, Sundre, Gotland, Sweden, as, Delin (1987). **25** 06/14 08 1985, North Boisdale (South Uist), Outer Hebrides, Britain, as/aw, Rogers et al (1986). **26** 10 12 1985, Korz (Ouessant), Finistère, France, aw, Dubois et al (1986b). **27** 22 03 1986, Aber Dysynni, Merionethshire, Britain, as, Rogers et al (1988). **28** 20/24 09 1986, Salzgitter-Heerte, Niedersachsen, FRG, aw, BS (1989). **29** 02 02-28 03 1987, Helston & Hayle & Marazion, Cornwall, Britain, 2w, Rogers et al (1988). **30** 19/25 04 1987, Solberga, Öland, Sweden, as, Hirschfeld (1988). **31** 11/17 05 1987, Northwich, Cheshire, Britain, as, Rogers et al (1988). **32** 17 05 1987, Umeå, Västerbotten, Sweden, as, Hirschfeld (1988). **33** 08 06/11 07 1987, Nieuwmoer & Wuustwezel, Antwerpen, Belgium, Wernhout & Achtmaal, Noordbrabant, Netherlands, 1s/2w, Symens et al (1988), Hoogendoorn (1988).

Not included: 16/17 06 1979, Røstlandet (Røst), second individual (Ree 1980); 24 12 1979, Mølen, Vestfold, Norway (Ree 1980); 04 09 1980, Scheveningen, Zuidholland, Netherlands (Glutz von Blotzheim & Bauer 1982, Hoogendoorn 1988); 16 11 1980, Mølen (Michaelsen 1985); 29 10 1983, Torremolinos, Málaga, Spain (de Juana et al 1985); 09 10 1985, Mølen (Bentz 1988); 12 11 1985, Mølen (Bentz 1987); for Britain, the old (until 1974) county system has been adopted (cf Dymond et al 1989).

APPENDIX 4 Records of Bonaparte's Gull *Larus philadelphia* in WP up to 1987. Data as in appendix 1.

01 01 02 1848, River Lagan near Belfast, Antrim, Ireland, aw, Thompson (1848). **02** about end 04 1850, Loch Lomond, Dunbartonshire, Britain, as, Leith (1851). **03** 04 01 1865, Falmouth, Cornwall, Britain, im, Rodd (1880). **04** 10 01 1865, Penryn, Cornwall, Britain, im, Rodd (1880). **05** early 11 1870, St Leonards, Sussex, Britain, un, Saunders (1889). **06** 24 10 1890, Newlyn, Cornwall, Britain, 1w, Harting (1891). **07** 24 03 1910, L'Aiguillon-sur-Mer, Vendée, France, 1w, Seguin-Jard (1910). **08** 11 02 1948, Swillington Ing, Yorkshire, Britain, as, Dawson & Allison (1948). **09** 14 11 1948, Newhaven, Sussex, Britain, aw, Alder & James (1950). **10** 24 06 1951, Langney Point, Sussex, Britain, 1s, Harber (1952). **11** 30 04 1954, Seltjarnarness, Gullbringusýsla, Iceland, as, Ingólfsson & Garðarsson (1957). **12** 11 07 1955, Seaton Sluice, Northumberland, Britain, 1s, Little (1956). **13** 20/24 07 1955, Hafnarfjörður, Gullbringusýsla, Iceland, as, Pétursson (1987). **14** 06 10 1956, Langstone Harbour, Hampshire, Britain, ad, Cohen (1957). **15** 20 06 1961, Portobello, Sussex, Britain, im, Swaine (1962). **16** 30 10 1961, Sidmouth, Devon, Britain, im, Swaine (1962). **17** 04 11 1963, Morecambe, Lancashire, Britain, im, Harber et al (1964). **18** 17 08 1967, Oldshoremore, Sutherland, Britain, aw, Parkin & Parkin (1968). **19** 02 09 1967, Bacton Gap, Norfolk, Britain, 1s/2w,

Rogers et al (1987). **20** 23/25 10 1967, Newlyn, Cornwall, Britain, ad, Rogers et al (1987). **21** 16 03 1968-31 01 1971, St Ives, Cornwall, Britain, ad, Smith et al (1972). **22** 28 08 1968, Cheddar Reservoir, Somerset, Britain, im, Smith et al (1969). **23** 20 06 1969, Filey, Yorkshire, Britain, im, Rogers et al (1987). **24** 14 03 1970, Durlston Head, Dorset, Britain, ad, Smith et al (1973). **25** 26 09 1970, Cley, Norfolk, Britain, im, Smith et al (1971). **26** 04/08 09 1971, Dawlish Warren, Devon, Britain, im, Smith et al (1972). **27** 26/27 02 1972, Luthrie, Fife, Britain, 1w, Oliver (1973). **28** 08/11 08 1972, Rygge, Østfold, Norway, as/aw, Ree (1974). **29** 07 06 1973, Scourie, Sutherland, Britain, 1s, Mackenzie-Grieve & Byrne (1974). **30** 13 09 1973, Flamborough Head, Yorkshire, Britain, im, Smith et al (1974). **31** 09/12 04 1975, Christchurch Harbour, Hampshire, Britain, ad, Dymond et al (1976). **32** 26/27 06 1975, Loch Indaal (Islay), Argyllshire, Britain, ad, Dymond et al (1976). **33** 12 09 1975, Claggain Bay (Islay), Argyllshire, Britain, ad, Dymond et al (1976). **34** 12 08/02 10 1977, Teesmouth, Durham, Britain, 1s/2w, Rogers et al (1978). **35-37** 05/28 11 1977, Ponta Delgada, São Miguel, Azores, un, Gérald le Grand in litt. **38** 26 07 1979-03 02 1980, Bangor, Down, Ireland, ad, Hutchinson (1989). **39** 21 08 1979, Seacombe Ferry, Cheshire, Britain, 1s/2w, Rogers et al (1981). **40-42** 16/22 09 1979, Ponta Delgada, São Miguel, Azores, 2 1w 1 ad, Gérald le Grand in litt. **43** 12/13 06 1980, Botnsdalur í Hvalfirði, Borgarfjarðarsýsla, Iceland, as, Pétursson & Skarphéðinsson (1982). **44** 15/23 07 1980, Farlington Marshes, Hampshire, Britain, 1s/2w, Rogers et al (1982). **45** 17/18 11 1980, Falmouth, Cornwall, Britain, 1w, Rogers et al (1982). **46** 13 03 1981, Ramore Head, Antrim, Ireland, 1y, Preston (1982). **47** 16 03-08 06 1981, Mount's Bay & Radipole Lake & Hengistbury Head, Cornwall & Dorset & Hampshire, Britain, 1y, Rogers et al (1982). **48** 18 07/08 08 1981, Tacumshin Lake, Wexford, Ireland, 1s, Preston (1982). **49** 04 10 1981, Grindavík, Gullbringusýsla, Iceland, 1s/2w, Pétursson & Skarphéðinsson (1983). **50** 03 01 1982, Gent/Gentbrugge, Westvlaanderen, Belgium, aw, van den Steen et al (1987). **51** 27 03/21 04 1982, Penzance, Cornwall, Britain, 1w, Rogers et al (1983). **52** 27 03 1982, Penzance, Cornwall, Britain, ad, Rogers et al (1983). **53** 23/24 04 1982, Seaforth, Lancashire, Britain, ad, Rogers et al (1983). **54** 25 06/11 07 1982, Fetlar, Shetland, Britain, as, Rogers et al (1983). **55** 01 11 1982, Corme, La Coruña, Spain, 1w, de Juana et al (1988). **56-57** 14 12 1982, Ponta Delgada, São Miguel, Azores, aw, Gérald le Grand in litt. **58** 29 01 1983, Barn Elms Reservoirs, Surrey, Britain, 1w, Rogers et al (1984). **59** 27 02/07 03 1983, Caherdaniel, Kerry, Ireland, ad, Preston (1984). **60** 05 03 1983, Swanpool, Cornwall, Britain, ad, Rogers et al (1984). **61** 06/end 03 1983, Sandymount, Dublin, Ireland, ad, Preston (1984). **62** 12 06 1983, Akrakot á Álftanesi, Gullbringusýsla, Iceland, as, Pétursson & Ólafsson (1985). **63** 06/07 11 1984, Bardsey, Caernarvonshire, Britain, ad, Rogers et al (1985). **64** 08 04 1985, Wexford Harbour, Wexford, Ireland, ad, Brazier et al (1986). **65** 04 08 1985, IJmuiden, Noordholland, Netherlands, as, van Dongen & de Rouw (1987). **66** 25 01/15 03 1986, Drift Reservoir & Newlyn, Cornwall, Britain, 1w, Rogers et al (1987). **67** 08 02 1986, Laxe, La Coruña, Spain, aw, de Juana et al (1988). **68** 14 03-29 05 1986, Kenfig Pool & Rhymney River, Glamorgan & Monmouthshire, Britain, 1s, Rogers et al (1987). **69** 21 03 1986, Gilkicker Point, Hampshire, Britain, 1s, Rogers et al (1987). **70** 24 03/18 04 1986, Wexford Harbour, Wexford, Ireland, as, O'Sullivan & Smiddy (1987). **71** 30 05 1986, Fort William, Inverness-shire, Britain, 1s, Rogers et al (1987). **72** 02 11 1986/22 04 1987, Drift Reservoir & Newlyn, Cornwall, Britain, ad, Rogers et al (1989). **73** 17 01 1987, Whitburn, Durham, Britain, aw, Rogers et al (1988). **74** 17/26 02 1987, Ogston Reservoir, Derbyshire, Britain, aw, Rogers et al (1988). **75** 23 05 1987, Loch of Spiggie (Mainland), Shetland, Britain, 1s, Rogers et al (1988). **76** 22 10 1987, An Aod Meur (Ouessant), Finistère, France, 1w, Dubois et al (1989).

Not included: 19/20 04 1960, Scheveningen, Zuidholland, Netherlands (Kist 1961, Limosa 48: 109, 1975, Glutz von Blotzheim & Bauer 1982, Cramp & Simmons 1983, van IJzendoorn & de Heer 1985); 27 01 1963, Walem, Antwerpen, Belgium (Ludwig et al 1963, Glutz von Blotzheim & Bauer 1982, Cramp & Simmons 1983, Jo van den Steen in litt); 10 02 1975, 's-Gravenzande, Zuidholland, Netherlands and 08 04 1975 Noordwijk, Zuidholland, Netherlands (Limosa 50: 48, 1977, Glutz von Blotzheim & Bauer 1982, Cramp & Simmons 1983, van IJzendoorn & de Heer 1985); for Britain, the old (until 1974) county system has been adopted (cf Dymond et al 1989).

dutch birding

postal address Dutch Birding, Postbus 75611, 1070 AP Amsterdam, Netherlands

fax address Dutch Birding, c/o IVN (Paul Böhre), Amsterdam, Netherlands, +31-20266091

editors Arnoud van den Berg,Tom van der Have, André van Loon, Gerald Oreel (editorial secretary +31-20730710), Frank Rozendaal and Hans Schekkerman; DB actueel: Max Berlijn, Ruud van Dongen and Jaap Eerdmans

photographic editor René Pop, Floris Burgwal 54, 2907 PH Capelle aan den IJssel, Netherlands (+31-104508879)

production André van Loon (co-ordination +31-20869608) and René van Rossum (lay-out)

advertising JanJaap Brinkman (+31-15569353/+31-20851616)

editorial assistants Klaas Eigenhuis, Graham Holloway, Edward van IJzendoorn, Karel Mauer and Hans van der Meulen

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address CDNA, Postbus 45, 2080 AA Santpoort-Zuid, Netherlands

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