Breeding populations of Mediterranean Gull *Larus melanocephalus* in The Netherlands and Belgium

Peter L. Meininger [1] & Renaud Flamant [2]

[1] *Rijksinstituut voor Kust en Zee/RIKZ, P.O. Box 8039, 4330 EA Middelburg, The Netherlands*

[2] *Olmstraat 23, B-1040 Brussels, Belgium*

Note: This paper has also been published in *Sula* 12: 129-138, 1998

ABSTRACT

Before 1970, the Mediterranean Gull was a rare and irregular breeding bird in the Netherlands and Belgium. Since 1970, the species has bred annually and in increasing numbers, reaching at least 410 pairs in the Netherlands and at least 275 pairs in Belgium in 1998. Some data on habitat choice, food and breeding success are presented. Considering the population growth, the high breeding success, and the population development elsewhere in Europe, a breeding population of over 1,000 pairs in the Netherlands and Belgium around the year 2000 seems quite possible. This will, however, strongly depend on the continuing availability of suitable breeding sites.

RÉSUMÉ

Populations nicheuses de la Mouette mélanocéphale *Larus melanocephalus* aux Pays-Bas et en Belgique. Avant 1970, la Mouette mélanocéphale était un oiseau nicheur rare et irrégulier aux Pays-Bas et en Belgique. Depuis 1970, l'espèce a niché annuellement et en nombre croissant, atteignant au moins 410 couples aux Pays-Bas et au moins 275 couples en Belgique en 1998. Quelques données concernant le choix de l'habitat, le régime alimentaire et le succès reproductif sont présentés. En considérant l'augmentation de la population, le taux élevé du succès reproductif, et le développement de population en Europe, une population nicheuse de plus de 1.000 couples aux Pays-Bas et en Belgique semble assez probable vers l'an 2000. Cependant, ceci dépendra fortement de la disponibilité ininterrompue de sites propices de nidification.

INTRODUCTION

In the 1940s and early 1950s, the breeding range of the Mediterranean Gull *Larus melanocephalus* was almost confined to the NW Black Sea coast of Ukraine. In recent decades, this range has expanded and the population has increased (for reviews see Meininger & Bekhuis 1990, Chernichko 1993, Goutner & Isenmann 1993, Bekhuis *et al.* 1997). Until the early 1980s, the Mediterranean Gull was a rare breeding species in northwestern Europe (Cramp & Simmons 1983). In the 1970s, only a few pairs bred annually in Belgium and the Netherlands (e.g. Jansen & Remeeus 1978, Bekaert 1988). Since the early 1980s, numbers breeding in the Netherlands and Belgium have increased considerably, and it is obvious that this species is now becoming firmly established in these countries. Previous summaries of the breeding status in Belgium and the Netherlands were presented by Bekaert (1988) and Meininger & Bekhuis (1990), respectively. This paper

describes the spectacular development of the combined breeding population of the two countries up to and including 1998. In addition, some observations on habitat choice, food and breeding success are presented.

METHODS

Data on breeding Mediterranean Gulls were mainly collected using systematic breeding bird censuses. In the SW-Netherlands, the core breeding area in the Low Countries, these censuses were carried out as part of the 'biological monitoring programme' of the National Institute for Coastal and Marine Management/*RIKZ* (e.g. Meininger *et al.* 1998). Most Black-headed Gull *L. ridibundus* colonies in the SW-Netherlands and Belgium were visited between 10 and 31 May. Black-headed Gull nests were counted individually by a small group of experienced people that slowly walked through the colony. Mediterranean Gull nests were reported to a person only dealing with the nests of this species. Nests were identified on the basis of egg coloration, egg size, nest structure and nest material. To facilitate relocating nests, these were often marked by a 1.25 m long, bamboo stick, with a numbered, red tape flag in top. These sticks have proven to be essential in relocating nests during subsequent visits, when vegetation height had often increased to 1-1.5 m or more. The sticks were also useful for locating chicks for ringing, as even weeks old chicks were faithful to the immediate surroundings of the nest. Nests found up to 10 June were included in the total. Nests found after 10 June were considered as replacement clutches and were not included in the total. In a few cases, the sizes of relatively large Black-headed Gull colonies were estimated by expert judgement without actually counting nests, and numbers of Mediterranean Gulls in these colonies were only based on adult birds seen flying. In these cases, numbers of Mediterranean Gull may well have been (considerably) underestimated.
Elsewhere in the Netherlands, and in some smaller Belgian colonies, the data have been collected in various ways, ranging from carefully searching for nests to the occasional observation of a bird or pair in a Black-headed or Common Gull *L. canus* colony. Most data on breeding numbers outside the SW-Netherlands were submitted to SOVON for the nationwide census work on colony birds and rare breeding bird species in the Netherlands (van Dijk *et al.* 1994, 1996a, 1996b, 1997). Additional data were received through correspondence with observers.
Data presented on habitat choice, food and breeding success were obtained by the authors during their field work in the SW-Netherlands and Belgium.

BREEDING NUMBERS

Netherlands In 1933-35, a mixed breeding pair of Mediterranean X Black-headed Gull was found on Schouwen-Duiveland, Zeeland (Vijverberg 1935, Haverschmidt 1942). The first 'pure' breeding pairs of Mediterranean Gull were noted in 1959 at Scheelhoek, Zuid-Holland, and at Ossendrecht, Noord-Brabant (Japin & van der Velden 1959, Van der Vloet 1962). During the 1960s, breeding could not be confirmed each year; most pairs were then found in the SW-Netherlands. Since 1970, the species has bred annually. In the early 1970s, only one pair or a few pairs bred, slowly increasing to 10 pairs in 1980. Numbers then soared to 27 pairs in 1983, 64 pairs in 1989 and 92 pairs in 1990 (Meininger & Bekhuis 1990). Since 1991, the increase has continued, to at least 410 pairs in 1998 (Figures 1 and 2). Most colonies outside the SW-Netherlands hosted only a few pairs. Exceptions were colonies at Schoorl, Noord-Holland (up to five pairs in 1983: Meininger & Bekhuis 1990), De Krim, Overijssel (up to seven pairs in 1997; SOVON), Budel, Noord-Brabant (up to 10 pairs in 1989: Meininger & Bekhuis 1990), and Nieuwkoopse Plassen, Zuid-Holland (up to 13 pairs in

1997: SOVON). In the SW-Netherlands, there are several small settlements, but the majority of Mediterranean Gulls tend to concentrate in only a few Black-headed Gull colonies. The largest breeding colonies in the SW-Netherlands in recent years amounted to: 60 pairs in 1991 (representing 54% of the population of the SW-Netherlands), 45 pairs in 1992 (74%), 110 pairs in 1993 (69%), 110 pairs in 1994 (59%), 75 and 76 pairs in 1995 (33 and 34%, respectively), 195 pairs in 1996 (64%), 225 pairs in 1997 (63%), and 334 pairs in 1998 (87%).

Belgium In seven years between 1964 and 1976, one or two pairs bred near Lichtaert, Antwerpen (Bekaert 1988). After a probable breeding case in Het Zwin, West-Vlaanderen, in 1967 (Lippens 1968), Mediterranean Gulls have bred annually in varying numbers in this area since 1969. Peak numbers were found in 1985 (15 pairs), 1988 (13), 1996 (28), 1997 (27) and 1998 (82) (Lippens 1972, Bekaert 1988, Guido Burggraeve pers. comm., RF pers. obs.). Until 1990, the Belgian breeding population probably never exceeded 20 pairs (Bekaert 1988, Meininger & Bekhuis 1990). In 1992, the population soared to 56 pairs (including 45 pairs in a colony near Antwerpen), but was smaller during the next four years. In 1996, there were at least 123 pairs (including colonies of 23 and 68 pairs near Antwerpen), in 1997 at least 93 pairs (including 46 in a previously unknown colony in Limburg) and in 1998 at least 275 pairs (including a colony of 150 pairs near Antwerpen; Figures 1 and 2).

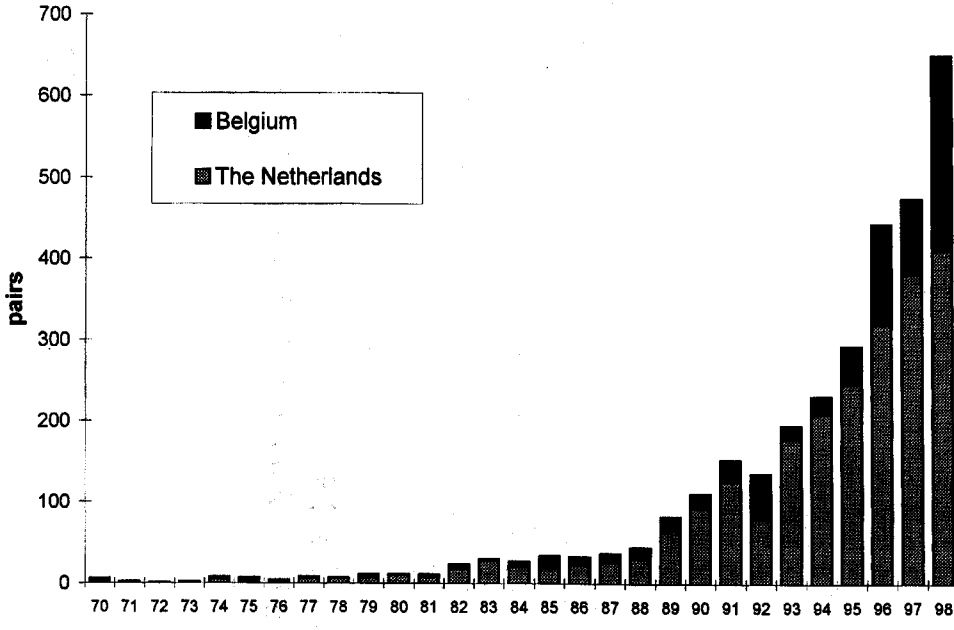


Figure 1. Number of breeding pairs of Mediterranean Gull in the Netherlands and Belgium in 1970-98.
Figure 1. Nombre de couples nicheurs de Mouette mélanocéphale Larus melanocephalus *aux Pays-Bas et en Belgique de 1970 à 1998.*

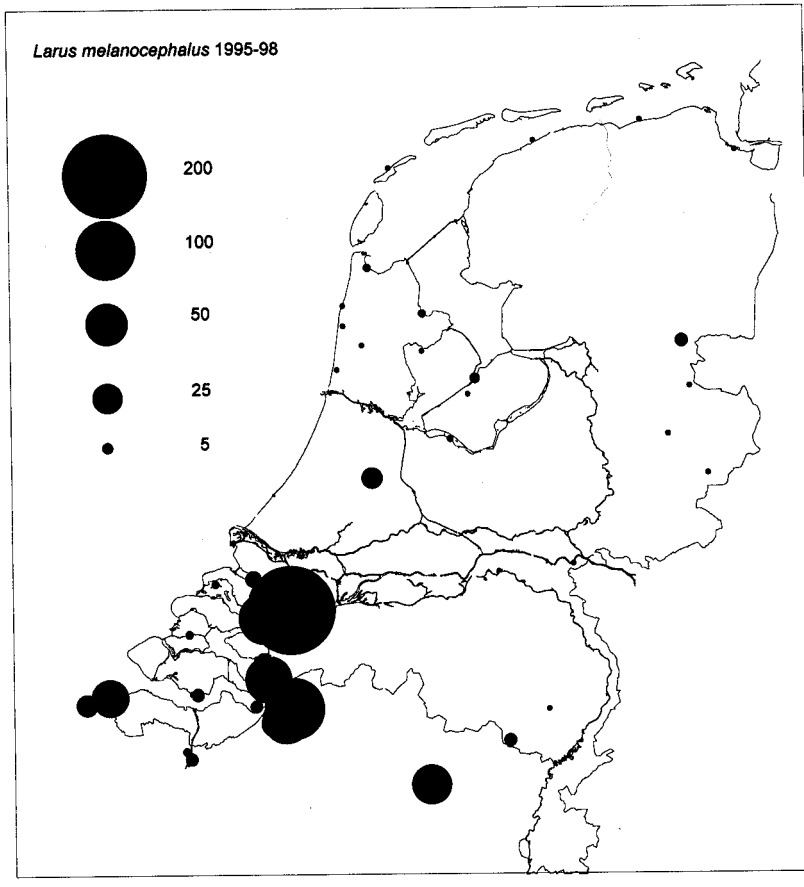


Figure 2. Breeding sites (with maximum number of pairs) of Mediterranean Gull in the Netherlands and Belgium in 1995-1998.

Figure 2. Sites de nidification (avec le nombre maximal de couples) de la Mouette mélanocéphale Larus melanocephalus *aux Pays-Bas et en Belgique en 1995-1998.*

HABITAT CHOICE

The great majority of Mediterranean Gulls breeding in the Netherlands and Belgium are found within colonies of Black-headed Gulls. Breeding sometimes occurs among or near Common Gulls (Texel, Schoorl and Kennemerduinen, Noord-Holland; Europoort and, incidentally, Hompelvoet, Zuid-Holland). In the SW-Netherlands the largest colonies are situated on recently constructed islands in freshwater areas. Most of these freshwater lakes are former estuarine areas which were dammed in the 1970s or 1980s. Other relatively large colonies are situated on silt settling basins near factories (De Krim, Overijssel; Stampersgat and Budel, Noord-Brabant; Kwaadmechelen, Limburg), temporary artificial sand flats in industrial areas (Zeebrugge, West-Vlaanderen; Lillo and Kallo, Antwerpen). Most of these areas have a relatively low vegetation cover when birds settle in early spring, but a high and

dense vegetation by the end of the breeding season. Both Black-headed and Mediterranean Gulls tolerate some small trees (remarkably often nests of the latter are clumped around or even under a tree). These sites are only suitable for breeding for a few years. When more trees emerge, the gulls select other sites. Breeding in habitats other than in these man-made environments is rare. A few pairs have bred on natural inland lakes (e.g. boggy ponds) and in freshwater marshes (Nieuwkoopse Plassen, Zuid-Holland; Ooypolder, Gelderland). Breeding in saltmarshes is confined to locations along the Westerschelde estuary (Saeftinge, Zuidgors and Het Zwin, Zeeland).
Within mixed colonies, Mediterranean Gulls tend to prefer higher and drier parts than Black-headed Gulls. Often, Mediterranean Gull nests are clustered into one or more sub-colonies. Nest density of Mediterranean Gulls is clearly higher than that of Black-headed Gulls in the same colonies.

Food

Breeding birds in the Netherlands and Belgium mainly feed in open agricultural areas, such as meadows and (recently) ploughed land, on the sandy soils of Brabant and Limburg. According to most literature, feeding areas may be as far as 30-40 km from the colony, with distances of 70-80 km even being mentioned (Glutz von Blotzheim & Bauer 1982). In the Low Countries, chicks are mostly fed with earthworms (Lumbricidae), leatherjackets (Tipulidae) and - sometimes - large quantities of beetles (Coleoptera); prey may include items as frogs *Rana* sp., mice *Microtus* sp., Tufted Duck *Aythya fuligula* ducklings, and eggs of Black-headed Gulls. Aerial feeding on insects near and above colonies has also been observed. (Meininger *et al.* 1991, PLM and RF pers obs.). During the breeding season, estuarine and marine feeding habitats are hardly visited. This is striking, since outside the breeding season the species is almost fully confined to seashore feeding (e.g. Meininger *et al.* 1993).

Breeding success

Although the reproductive output was not measured exactly, it seems that Mediterranean Gulls in the Netherlands and Belgium are more successful (fledged young/pair) than Black-headed Gulls in the same colony (Table 1). Survival of Mediterranean Gull chicks during unfavourable weather (rain, low temperatures) seems to be generally higher than in Black-headed Gulls. When mammalian predators (e.g. Norway Rat *Rattus norvegicus*, Polecat *Mustela putorius*) are active in a colony, they seem to ignore most Mediterranean Gull chicks. Small to half-grown Mediterranean Gull chicks are generally covered with a smelly annelid mash, regurgitated by the parents. This perhaps induces potential mammalian predators to switch to a clean, downy Black-headed Gull chick.
Within mixed colonies of Black-headed Gull and Mediterranean Gull, consisting of settlements on different sites (e.g. islands in Zwin, West-Vlaanderen), it appears that Mediterranean Gulls tend to stay on their nests when Herring Gulls *L. argentatus* or Lesser Black-backed Gulls *L. fuscus* fly over the colony in search of chicks, contrary to Black-headed Gulls, which immediately fly up towards the potential predator, thus leaving their chicks unattended. These observations suggest that Herring Gulls and Lesser Black-backed Gulls concentrate their predation effort on sites with a majority of Black-headed Gulls.
The breeding success of Mediterranean Gulls breeding in Common Gull colonies is usually very low (e.g. Woutersen 1990).

Table 1. ***Breeding success (fledged young/pair) of Mediterranean* Larus melanocephalus *and Black-headed Gulls* L. ridibundus *in selected colonies in the Netherlands and Belgium. Numbers (n) indicate number of pairs present.***

Tableau 1. Succès reproductif (nombre de jeunes à l'envol/couple) de la Mouette mélanocéphale Larus melanocephalus et *de la Mouette rieuse* L. ridibundus *dans un échantillon de colonies aux Pays-Bas et en Belgique. Les chiffres (n) indiquent le nombre de couples présents*

Area	Year	Mediterranean Gull		Black-headed Gull	
		success	n	success	n
Volkerakmeer, Noordplaat (NL)	1995	0.5-1	35	0.5-1	896
Volkerakmeer, Noordplaat (NL)	1996	>1	50	0.5-1	1100
Volkerakmeer, Hellegatsplaten (NL)	1995	>1	75	0.5-1	1550
Volkerakmeer, Hellegatsplaten (NL)	1996	>1	195	0.5-1	2180
Volkerakmeer, Hellegatsplaten (NL)	1997	>1	225	0.5-1	2173
Volkerakmeer, Hellegatsplaten (NL)	1998	>1	334	<0.5	4048
Volkerakmeer, Krammerse Slikken (NL)	1995	>1	76	0.5-1	1263
Kreekraksluizen NO (NL)	1995	0.5-1	18	>1	650
Kreekraksluizen NO (NL)	1996	>1	10	0.5-1	750
Kreekraksluizen NO (NL)	1997	0.5-1	64	0.5-1	683
Zeebrugge (B)	1995	0.5-1	14	?	676
Lillo, Hoge Maey (B)	1996	1.6	68	?	?
Limburg (B)	1997	1.9	46	?	?
Lillo, Solvay (B)	1998	>1	150	?	?

Discussion

The Mediterranean Gull is clearly in the process of a successful colonisation of the Low Countries. In 1990, when the Dutch/Belgian breeding population held just over 100 pairs, Meininger & Bekhuis (1990) predicted that 'a continuing increase to several hundreds of pairs should definitely not be excluded'. Considering the population growth since, the ongoing high breeding success, and the population development in other parts of Europe (e.g. Bekhuis *et al.* 1997), a breeding population of over 1,000 pairs in the Netherlands and Belgium around the year 2000 seems quite possible. On the other hand, most colonies are situated in man-made areas, many of which will become unsuitable for the species in the near future. In the near future, no new suitable islands will be constructed in the SW-Netherlands, but the continuous expansion of the harbour of Antwerp, Belgium, could result in the establishment of new but temporary suitable sites. Although the Netherlands has been successfully colonised during the 20th century by Lesser Black-backed Gull and Common Gull, the colonisation of a newly arrived gull has never been monitored so thoroughly. Extensive counting and colour-ringing programmes will undoubtedly reveal many fascinating data on origin, movements between colonies, migration patterns, survival, site fidelity, etc. Such programmes started in Italy, the Netherlands, and Belgium in 1989-90 (Boldreghini *et al.* 1992), but are now operational in many parts of the species' range (e.g. Varga *et al.* 1996, Meininger 1997). Preliminary results of the colour-ringing in Belgium and the Netherlands (1,468 Mediterranean Gulls colour-ringed in 1990-98) can be found in Meininger *et al.* (1999).

ACKNOWLEDGEMENTS

Important information on breeding numbers in Belgium was received from Anny Anselin (Instituut voor Natuurbehoud), Guido Burggraeve, Nico De Regge, Filip De Ruwe, Valère and Patrick Geers and Jos Hendrickx. Field work by PLM in the SW-Netherlands and by RF in Belgium was done with the help of many people. Floor Arts, Cor Berrevoets, François Boel, Marcel Clerckx, Geert De Smet, Marc Hebbelinck, Lyndon Kearsley, Rob Strucker, Norman van Swelm, Pim Wolf and Machiel van Wouwe in particular deserve to be mentioned. Important additional information on breeding numbers in the Netherlands was received from many observers through SOVON Vogelonderzoek Nederland. Cor Berrevoets and Pim Wolf kindly prepared the figures. Tammo Bult and Arie Spaans kindly commented on the manuscript.

REFERENCES

Bekaert, L. 1988. Nieuwe broedplaatsen van de Zwartkopmeeuw *Larus melanocephalus* in Oost-Vlaanderen in 1987, met een overzicht van alle broedgevallen in Vlaanderen. *Oriolus 54*: 166-169.

Bekhuis, J., Meininger, P.L. & Rudenko, A.G. 1997. Mediterranean Gull *Larus melanocephalus*. *In*: Hagemeijer, W.J.M. & Blair, M.J. (eds.) *The EBCC atlas of European breeding birds: their distribution and abundance*: 324-325. Poyser, London.

Boldreghini, P., Meininger, P.L. & Santolini, R. 1992. Preliminary results of ringing Mediterranean Gulls *Larus melanocephalus* in the Netherlands, Belgium and Italy. *Avocetta* 16: 73-74.

Chernichko, I. 1993. Breeding population and distribution of seabirds (gulls and terns) on the northern coast of the Black Sea and the Sea of Azov. *In*: Aguilar, J.S., Monbailliu, X. & Paterson, A.M. (eds.) *Status and conservation of seabirds. Proceedings of the 2nd Mediterranean Seabird Symposium, Calviá, 21-26 March 1989*: 125-131. Sociedad Espanola de Ornitologia, BirdLife and MEDMARAVIS, Madrid.

Cramp, S. & Simmons, K.E.L. (eds.) 1983. *The birds of the Western Palearctic*. Vol. 3. Oxford University Press, Oxford.

van Dijk, A.J., Hustings, F. & Verstrael, T. 1994. SOVON Broedvogelverslag 1992. *SOVON-monitoringrapport 1994/03*. SOVON, Beek-Ubbergen.

van Dijk, A.J., Hustings, F., Sierdsema, H. & Verstrael, T. 1996a. SOVON Broedvogelverslag 1993. *SOVON-monitoringrapport 1996/02*. SOVON, Beek-Ubbergen.

van Dijk, A.J., Hustings, F., Sierdsema, H. & Verstrael, T. 1996b. SOVON Broedvogelverslag 1994. *SOVON-monitoringrapport 1996/06*. SOVON, Beek-Ubbergen.

van Dijk, A.J., Hustings, F., Sierdsema, H. & Meijer, R. 1997. Kolonievogels en zeldzame broedvogels in Nederland in 1995. *SOVON-monitoringrapport 1997/06*. SOVON, Beek-Ubbergen.

Glutz von Blotzheim, U.N. & Bauer, K.M. 1982. *Handbuch der Vögel Mitteleuropas*. Band 8. Akademische Verlagsgesellschaft, Wiesbaden.

Goutner, V. & Isenmann, P. 1993. Breeding status of the Mediterranean Gull (*Larus melanocephalus*) in the Mediterranean basin. *In*: Aguilar, J.S., Monbailliu, X. & Paterson, A.M. (eds.) *Status and conservation of seabirds. Proceedings of the 2nd Mediterranean Seabird Symposium, Calviá, 21-26 March 1989*: 59-63. Sociedad Espanola de Ornitologia, BirdLife and MEDMARAVIS, Madrid.

Haverschmidt, F. 1942. *Faunistisch overzicht van de Nederlandse broedvogels*. Brill, Leiden.

Jansen, F.H. & Remeeus, A. 1978. Naar een definitieve vestiging van de Zwartkopmeeuw *Larus melanocephalus* in Nederland? *Limosa* 51: 88-106.

Japin, J. & van der Velden, B. 1959. Een broedgeval van een paartje Zwartkopmeeuwen (*Larus melanocephalus*) in Nederland. *Limosa* 32: 183-185.

Lippens, L. 1968. Nidification probable de la Mouette mélanocéphale, *Larus melanocephalus*, au Zwin. *Gerfaut* 58: 163.

Lippens, L. 1972. Note sur les laridés du Zwin à Knokke-sur-Mer. *Gerfaut* 60: 26-40.

Meininger, P.L. 1997. Gegevens van Zwartkopmeeuwen met kleurringen gevraagd. *Sula* 11: 198-200.

Meininger, P.L. & Bekhuis, J.F. 1990. De Zwartkopmeeuw *Larus melanocephalus* als broedvogel in Nederland en Europa. *Limosa* 63: 121-134.

Meininger, P.L., Berrevoets, C.M., Schekkerman, H., Strucker, R.C.W. & Wolf, P.A. 1991. Voedsel en foerageergebieden van broedende Zwartkopmeeuwen *Larus melanocephalus* in Zuidwest-Nederland. *Sula* 5: 138-145.

Meininger, P.L., Raevel, P. & Hoogendoorn, W. 1993. Occurrence of Mediterranean Gull at Le Portel in north-western France. *Dutch Birding* 15: 45-54.

Meininger, P.L., Berrevoets, C.M. & Strucker, R.C.W. 1998. Kustbroedvogels in het Deltagebied in 1997. *Werkdocument RIKZ/OS-98.808X*. Rijksinstituut voor Kust en Zee, Middelburg.

Meininger, P.L., Berrevoets, C.M. Flamant, R. & Hoogendoorn, W. 1999. Migration and wintering of Mediterranean Gulls *Larus melanocephalus* ringed in the Netherlands and Belgium: a progress report. *In*: Meininger, P.L., Hoogendoorn, W., Flamant, R. & Raevel, P. (eds.) *Proceedings of the 1st International*

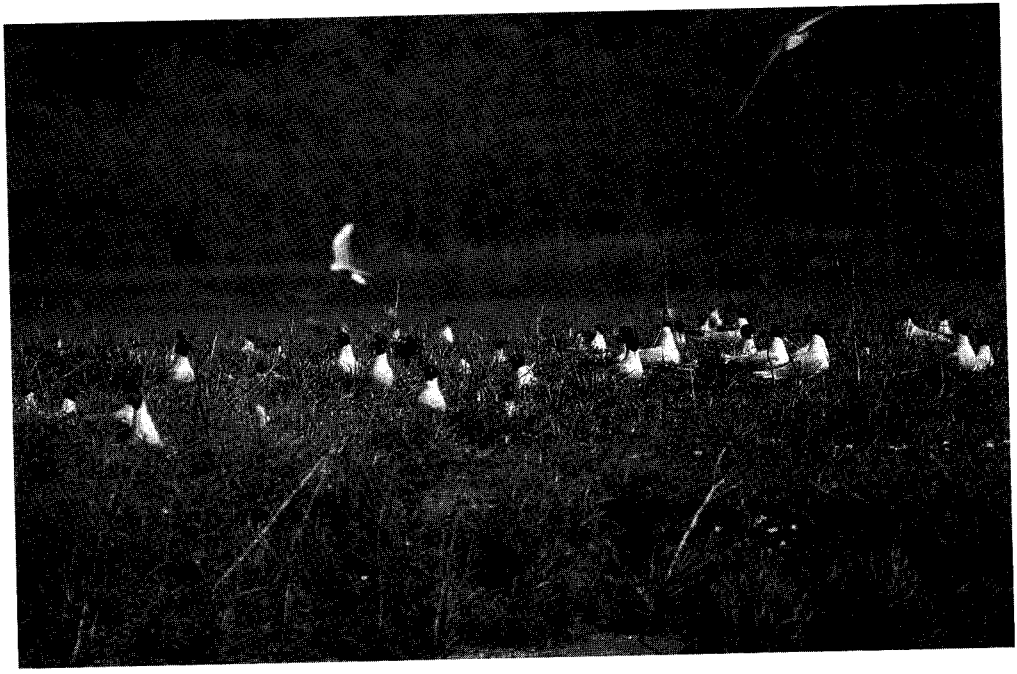
Mediterranean Gull Meeting, Le Portel, Pas-de-Calais, France, 4-7 September 1998: 69-84. EcoNum, Bailleul.

Varga, L., Veprik, R., Gergely, J., Széll, A., Csihar, L. & Staudinger, I. 1996. [First results of ringing Mediterranean Gulls in Hungary and Vojvodina]. *Túzok* 1: 116-123 [In Hungarian].

Van der Vloet, H. 1962. Broedpogingen van de Zwartkopmeeuw, *Larus melanocephalus* Temminck, nabij de Belgisch-Nederlandse grens. *Giervalk* 52: 570-575.

Vijverberg, J. 1935. *Larus melanocephalus* (Temm.), broedvogel in Nederland. *Ardea* 24: 260-261.

Woutersen, K. 1990. De Zwartkopmeeuw *Larus melanocephalus* in de duinen van Schoorl (NH). *Sula* 4: 1-11.



***Mixed colony of Mediterranean Gulls* Larus melanocephalus *and Black-headed Gulls* L. ridibundus, *Hellegatsplaten, Volkerakmeer, Zuid-Holland, The Netherlands, 13 May 1997* (photo Peter L. Meininger).**
Colonie mixte de *Mouettes mélanocéphales* Larus melanocephalus *et de Mouettes rieuses L. ridibundus, Hellegatsplaten, Volkerakmeer, Zuid-Holland, Pays-Bas, le 13 mai 1997* (photo Peter L. Meininger).