

Short notes

HIGH NUMBERS OF LESSER BLACK-BACKED GULLS *LARUS FUSCUS** FORAGING AT TRAWLERS AND IN NATURAL FEEDING FLOCKS IN THE SOUTHEASTERN NORTH SEA *GROTE AANTALLEN KLEINE MANTELMEEUWEN LARUS FUSCUS ACHTER TRAWLERS EN IN NATUURLIJKE GROEPEN IN DE ZUIDOOSTELIJKE NOORDZEE*

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Up to an unprecedented 3800 Lesser Black-backed Gulls were seen foraging behind Dutch beam trawlers 35-80 km north off the Wadden Sea islands, 30 June-4 July 1997. Gulls leaving the trawlers had visibly filled gullets (pharynx) and were obviously carrying food to the colony. The observations confirm the significance of discards in the diet of Lesser Black-backed Gulls during chick-rearing. However, during other cruises in June and July 1997 in the German Bight, large flocks of 'naturally feeding' gulls were encountered. The largest flock comprised 1100 Lesser Black-backed Gulls, 560 Herring Gulls and 1000 Kittiwakes. These flocks were found in waters of 10-20 m depth and 6-30 km off the nearest colonies, in an area without fishing fleets. Earlier studies in colonies have indicated the significance of natural prey (non-discards), but reported sightings at sea of large flocks of 'naturally feeding' gulls are still quite rare.

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The breeding numbers of Lesser Black-backed Gulls *Larus fuscus* in colonies of the Wadden Sea have increased markedly during the last two decades (e.g. Fleet *et al.* 1994; Spaans 1998). Camphuysen (1993, 1995) has shown the significance of discards from beam trawlers in the diet of chick-rearing Lesser Black-backed Gulls, but indicated that the offshore distribution of this species suggested that natural prey was probably of equal importance. During ship-based seabird surveys in the southeastern North Sea in June and July 1997, large numbers of Lesser Black-backed Gulls were observed foraging at Dutch beam

Table 1. Numbers of ship-followers behind discarding Dutch beam trawlers in the south-eastern North Sea in July 1997. The distance to the nearest colony of Lesser Black-backed Gulls (km) is indicated.

Tabel 1. Aantallen scheepsvolgers bij enkele Nederlandse boomkorvissers in de Duitse Bocht, juli 1997. De afstand tot de dichtstbijzijnde kolonie Kleine Mantelmeeuwen (km) is aangegeven.

Date	2 July	2 July	3 July	3 July
Latitude	54°17'N	54°19'N	54°24'N	54°03'N
Longitude	7°28'E	7°28'E	6°58'E	7°18'E
Colony distance	59	62	77	36
<i>Fulmarus glacialis</i>	5	6	15	1
<i>Morus bassanus</i>	1	1	0	0
<i>Catharacta skua</i>	1	0	0	0
<i>Larus fuscus</i>	850	1200	3800	2200
<i>Larus argentatus</i>	30	30	50	200
<i>Larus marinus</i>	20	40	30	20
<i>Rissa tridactyla</i>	0	0	3	0

Table 2. Examples of larger (natural) multi-species feeding associations in the southeastern North Sea, summer 1997. The distance to the nearest colony of Lesser Black-backed Gulls (km) is indicated.

Tabel 2. Voorbeelden van de grotere 'natuurlijke' groepen foeragerende meeuwen in de Duitse Bocht, juli 1997. De afstand tot de dichtstbijzijnde kolonie Kleine Mantelmeeuwen (km) is aangegeven.

Date	4 June	17 June	17 June	19 June	30 June	16 July	28 July
Latitude	54°24'N	53°49'N	53°47'N	53°51'N	53°50'N	54°11'N	54°31'N
Longitude	8°10'E	7°20'E	7°17'E	8°06'E	7°48'E	8°14'E	8°10'E
Col. distance	27	11	7	12	6	15	17
<i>L. fuscus</i>	770	750	1040	280	600	400	1100
<i>L. argentatus</i>	300	250	560	130	250	70	0?
<i>R. tridactyla</i>	355	0	0	0	0	1000	0

trawlers 35-80 km off the coast, as well as in large 'natural' feeding flocks in shallower waters more closer to the breeding sites on the Wadden Sea islands.

Systematic observations were conducted on board RV *Atair*, 30 June - 4 July 1997. While steaming, all birds were counted from the top deck within a 300 m wide transect set to one side of the vessel, following methods suggested by Tasker *et al.* (1984), but these surveys included counts of ship-followers at nearby trawlers. In addition, observations of feeding flocks were gathered during various cruises on ferries and research vessels in the German Bight in June (14 days) and July (6 days) 1997. At an anchor-position (53°49'N, 7°50'E),

3 km northwest off Wangerooge (Wadden Sea islands), passage counts of gulls coming from northeasterly directions were carried out on 2 July.

The distribution of Lesser Black-backed Gulls at sea during the *Atair* cruise was very patchy. The highest density (449 birds km⁻²) was found nearly 80 km north off the coast, near a fleet of Dutch beam trawlers. Densities of over 5 birds km⁻² were otherwise rarely found away from trawlers.

Anchoring off Wangerooge on 2 July, early in the morning, 839 Lesser Black-backed Gulls were seen heading for the breeding colonies on Spiekeroog (420 ind. h⁻¹; 294 flocks, range 1-16 gulls). Late afternoon passage was only slightly less substantial (306 ind. h⁻¹), and both in the morning and in the afternoon, gulls headed directly to the colonies on Spiekeroog, arriving from directions between 30 and 50°. In total, 99% of observed gulls were adults and the majority clearly had a filled gullet, presumably full of food for the chicks.

Up to 3800 Lesser Black-backed Gulls were seen in association with a single (Dutch) beam trawler, 80 km north off Juist (Table 1) and at least 90 % of these gulls were adults. The beamtrawlers operated in small fleets rather than solitary and the gulls were seen to move from ship to ship on occasions. At intervals, hundreds of gulls were seen to leave the vessels, flying southwards in small groups, apparently towards the colonies on Langeoog and Spiekeroog (59 km away). From the largest feeding frenzy (Table 1), 892 Lesser Black-backed Gulls were seen flying south in 16 groups, presumably to colonies on the Wadden Sea islands, approximately 77 km away, later followed by another group of 110 individuals. Each of the larger groups was later seen to split up into many smaller flocks. Most of these gulls clearly carried food in the gullet, indicating intended food deliveries for the chicks.

Large numbers of Lesser Black-backed Gulls, Herring Gulls *Larus argentatus* and Black-legged Kittiwakes *Rissa tridactyla* were seen in multi-species feeding associations (MSFAs) targeting 'natural' prey (probably surface shoaling fish; the larger groups listed in Table 2). These flocks were found in waters of 10-20m depth, 6-27 km away from the nearest colonies of Lesser Black-backed Gulls on the Wadden Sea islands. Some loose flocks covered an area of about 3 km². In all, 14 such MSFAs were recorded, of which the smaller examples contained 125-400 birds (mean $\pm$ SD, 258 $\pm$ 93 ind.). Other species recorded in these flocks were Northern Gannets *Morus bassanus* (up to 25), Great Cormorants *Phalacrocorax carbo* (3), Audouin's Gull *Larus audouinii* (1), Black-headed Gulls *L. ridibundus* (30), Common Gull *L. canus* (40), Sandwich Terns *Sterna sandvicensis* (130) and 'commic' terns *S. hirundo / paradisaea* (150). All flocks were recorded far away from any trawlers.

Some Lesser Black-backed Gulls breeding on the Wadden Sea islands forage in the intertidal (cf. Walter 1997), but most feed well offshore (Noordhuis & Spaans 1992) where they normally outnumber the more coastal

Herring Gulls (Camphuysen 1995, Garthe *et al.* 1995). The observation of 3800 Lesser Black-backed Gulls at a single trawler is the highest number so far recorded in the southeastern North Sea, but flocks of over 1000 ship-followers are not uncommon. The observations suggest that a high proportion of the Lesser Black-backed Gulls foraging behind trawlers 35-80 km north off the Wadden Sea islands originated from breeding colonies at the East Frisian islands.

The sightings of large numbers of Lesser Black-backed Gulls in natural feeding flocks (MSFAs), however, are the long-wanted evidence for the (frequent) occurrence of such feeding associations and they underpin the significance of other food than discards. These gulls were probably targeting (small) surface shoaling fish, such as clupeids or sandeels. Diet studies in The Netherlands have indicated that the breeding success of these gulls is better in years that the availability of 'natural' prey is high than in years when discards are the main resource in the chick-rearing phase (Spaans *et al.* 1994).

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Tijdens vogeltellingen in de Duitse Bocht van 30 juni tot 4 juli 1997 aan boord van het onderzoeksschip Atair werden veel Kleine Mantelmeeuwen foeragerend achter Nederlandse boomkorvisseren waargenomen. In één geval ging het om een groep van maar liefst 3800 exemplaren. Waargenomen werd hoe grote groepen meeuwen na het foerageren met gevulde krop wegvlogen in de richting van de kolonies op enkele Duitse Waddeneilanden. De waarnemingen ondersteunen de al eerder gesignaleerde indruk dat visafval van grote betekenis is voor deze soort in de kuikensfase. Tijdens andere surveys in juni en juli 1997 werden echter ook grote groepen meeuwen waargenomen die zelfstandig op vis foerageerden. Dieetstudies in kolonies hadden al aangegeven dat 'natuurlijke prooien' (bijvoorbeeld haringachtigen) van fundamenteel belang zijn en dat de broedresultaten vaak tegenvielen jaren waarin dergelijk voedsel schaars was. Toch werden dergelijke groepen tot dusverre zelden gemeld door waarnemers op zee.

Camphuysen C.J. 1993. Fourageermogelijkheden voor zeevogels in de boomkorvisserij: en verkennend onderzoek. *Sula* 7: 81-104.

Camphuysen C.J. 1995. Herring Gull *Larus argentatus* and Lesser Black-backed Gull *L. fuscus* feeding at fishing vessel in the breeding season: competitive scavenging versus efficient flying. *Ardea* 83: 365-380.

Fleet D.M., Frikke J., Südbek P. & Vogel R.L. 1994. Breeding Birds in the Wadden Sea 1991. Wadden Sea Ecosystem No. 1. Wilhelmshaven.

Garthe S., Alicki K., Hüppop O. & Sprotte B. 1995. Die Verbreitung und Häufigkeit ausgewählter See- und Küstenvogelarten während der Brutzeit in der südöstlichen Nordsee. *J. Ornithol.* 136: 253-266.

- Noordhuis R. & Spaans A. 1992. Interspecific competition for food between Herring *Larus argentatus* and Lesser Black-backed Gull *L. fuscus* in the Dutch Wadden Sea area. *Ardea* 80: 115-132.
- Spaans A.L. 1998. Breeding Lesser Black-backed Gulls *Larus graellsii* in The Netherlands during the 20th century. *Sula* 12: 175-184.
- Spaans A.L., Bukacinska M., Bukacinska D. & van Swelm N.D. 1994. The relationship between food supply, reproductive parameters and population dynamics in Dutch Lesser Black-backed Gulls *Larus fuscus*: a pilot study. IBN Res. Rap. 94/9. Wageningen.
- Tasker M.L., Jones P.H., Dixon T.J. & Blake, B.F. 1984. Counting seabirds at sea from ships: a review of methods employed and a suggestion for a standardized approach. *Auk* 101: 567-577.
- Walter U. 1997. Die Bedeutung der Garnelenfischerei für die Seevögel an der Niedersächsischen Küste. Forschungszentrum Terramare Berichte Nr. 3: 1-106.

*Known as *Larus graellsii* on the Dutch list (*Ardea* 87: 148)