

# New longevity records of Black-headed Gull, with comments on wear and loss of aluminium rings

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**B**lack-headed Gull *Chroicocephalus* (formerly *Larus*) *ridibundus* is a common and widespread breeding bird in the Palearctic. Well over 2 million individuals have been ringed in the last 100 years and this has led to several longevity records (Černý 1939, Perdeck & Speek 1963, Rydzewski 1978, Staav 1998, Fransson et al 2010). We obtained three new longevity records not listed in Fransson et al (2010), of which details are presented in this paper. Consequences of the use of poor quality metal rings in assessing longevity records are discussed as well. They confirm findings of an earlier study (Majoor 1995) that aluminium rings should no longer be used to ring Black-headed Gulls.

## **Arnhem 3.275.396**

On 25 June 1978, Fred Koning was ringing birds at Amsterdamse Waterleidingduinen (AWD) near Zandvoort, Noord-Holland, the Netherlands. Arnhem 3.275.396 was one of the 80 chicks ringed that day. In the 1970s, several breeding colonies were situated at AWD with in total c 8000 pairs, but almost no gulls have bred there after 1985 (Vader 2009). On 11 April 2009, Benny Middendorp made one of his regular ring reading visits to the Benthuizerplas colony, Zoetermeer, Zuid-Holland, the Netherlands. This colony with c 400 pairs is located on a few islets in a suburban area. The visits are part of a 'Retrapping Adults for Survival' (RAS) study and the gulls are lured with

**28** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, Benthuizerplas, Zoetermeer, Zuid-Holland, Netherlands, 21 March 2011 (*Benny Middendorp*). The world's oldest Black-headed Gull (ringed as chick on 25 June 1978), here almost 33 years old. Same bird as in plate 30 and 31.





**29** Black-headed Gulls / Kokmeeuwen *Chroicocephalus ridibundus*, Zoetermeer, Zuid-Holland, Netherlands, 20 May 2009 (*Benny Middendorp*). Birds of nearby Benthuiserplas breeding colony after being lured by food. World's oldest Black-headed Gull (plate 28) often recorded at this site.

food to an open area near the colony; see Middendorp (2009) for details. On that day, BM saw a ringed adult with an unfamiliar ring number and he could read the inscription (Arnhem 3.275.396) with his telescope. BM observed the bird at Benthuiserplas on 11 other days in 2009, two days in April, five in May, and four in June, with 22 June as the last day. The bird behaved like other local breeding birds but it attained no full adult summer plumage. Observations were not carried out inside the breeding colony, so it is unknown if it held a breeding territory or if it had a nest. The bird returned to Benthuiserplas on five days between 16 March and 8 April 2010, and again on 21 March 2011 (plate 28). **Other sightings** are lacking, despite extensive visits (at least twice a week by a few people) in the period March-July in 2010 and 2011, and there are no other records of this individual. BM was able to obtain several photographs and video images.

The incomplete summer plumage in 2009 (plate 30) indicates that its physical condition was in decline. Its short stay at the colony in 2010 and in 2011, just prior to the main period of egg-laying, are other indications that it suffered senescence

(senility, Reed et al 2008). The bird was ringed as a chick that was still unable to fly, so it must have hatched in June 1978. The time between ringing and the last sighting was 32 years, 8 months and 24 days (distance 30 km, direction south). Currently, this individual is the world's oldest Black-headed Gull.

#### **Arnhem 3.129.942 (white LCA)**

On 11 May 1972, researchers of the Royal Netherlands Institute for Sea Research (NIOZ) trapped c 135 Black-headed Gulls near a breeding colony on Vlieland, Friesland, the Netherlands, by luring them to a canon-net with small pieces of fish. All adults trapped that day were probably local breeding birds although they were not trapped on the nest as stated in Majoor (2002). Two of them were recovered in a later breeding season on the small island of Griend, Friesland (distance 18 km, direction east). The first, Arnhem 3.129.855, was found dead in the breeding colony on 29 June 1982 (Baas & Bakker 1982). The second, Arnhem 3.129.942, was recorded for the first time on 28 April 2000. It was intentionally trapped with a clap-net by René Oosterhuis and the following



**30** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, Benthuizenplas, Zoetermeer, Zuid-Holland, Netherlands, 8 May 2009 (Benny Middendorp). Same bird as in plate 28 and 31. Note incomplete summer plumage.



**31** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, Benthuizenplas, Zoetermeer, Zuid-Holland, Netherlands, 16 March 2010 (Benny Middendorp). Same bird as in plate 28 and 30. Note strong similarity in pattern of hood in the three different years.

measurements were taken: weight 294 g, wing length 306 mm, total head-and-bill length 82.7 mm, tarsus length 44.9 mm, and bill depth at gonys 8.8 mm. The bird was in full adult summer plumage and based on its measurements it was a male (Palomares et al 1997). The aluminium ring (figure 1) was replaced by a stainless steel ring (Arnhem 3.557.150) and the bird was released with a colour-ring 'white LCA' on the left tarsus. This colour-ring enabled Klaas van Dijk and RO to identify LCA on 12 other days between 5 and 29 May 2000, and again on 10 days between 8 May and 5 June 2001. In 2001, this bird was also in full adult summer plumage. Most observations were carried out when it was sitting on the beacon of Griend, in the centre of the breeding colony (plate 32), but we did not try to locate its nest exactly. However, it was seen landing near the beacon, and it showed territorial behaviour on the landing

site as well. We therefore assume that, in both years, it held a breeding territory on Griend. Despite prolonged efforts in 2002 and later on, LCA has not been observed on Griend anymore (Date Lutterop pers comm).

On 5 May 2002, Bob Loos saw a colour-ringed Black-headed Gull foraging on a grassy verge along a road in Den Helder, Noord-Holland. BL noted that it was an adult with a white colour-ring on the left leg and a metal ring on the right leg and he read the inscription of the colour-ring (LCA) with his binoculars. BL did not note anything unusual in the bird's physical condition or behaviour. To our knowledge, breeding birds from Griend do not make foraging flights to Den Helder, 46 km from Griend. We interpret the observation in Den Helder as an indication that LCA was not breeding anymore on Griend in 2002, underscored by the lack of further records from Griend.

This bird was aged as after second calendar-year in May 1972, so it was born in 1970 or earlier. The time between ringing and the last sighting was 29 years, 11 months and 24 days. It was at least almost 32 years old when seen for the last time (31 years and 11 months, given that most chicks born in the Wadden Sea hatch in late May) and possibly one or more years older. This individual is currently the second oldest Black-headed Gull.

FIGURE 1 Aluminium ring Arnhem 3.129.942 (record 2 in table 1) of second oldest Black-headed Gull *Chroicocephalus ridibundus*, 27 years and 11 months after ringing on tibia



**Arnhem 3.148.964**

On 26 June 1971, the late Ulbe Rijpma ringed this bird as a chick on the salt marshes east of Zwarte

Haan, Friesland; on 10 June 2002, it was found dead by Anne Rutten as washed ashore at Mokbaai, Texel, Noord-Holland. It was in full adult summer plumage and the cause of death was unknown. The aluminium ring on the tibia was very thin and scalloped along both edges but the ring number was still easy to read. The bird was estimated to have been dead for at least a few weeks but not longer than two months. There are no other observations of this individual. The time between ringing and finding was 30 years, 11 months and 15 days (distance 71 km, direction west-south-west). Both the precise date of hatching and of death are unknown but it is likely that the bird was just less than 31 years old when it died.

### **Other longevity reports**

An overview of longevity reports in Black-headed Gull is presented in table 1. A strong increase in ring reading activities by birdwatchers since the early 1980s explains why seven out of 10 longevity records concern ring readings of healthy birds, and that just three of them concern birds found dead. Not all ringing schemes keep good records

of their longevity records so we can not exclude that there are more individuals with an age of c 30 years. Furthermore, not all re-ringed birds continue to be identifiable throughout the rest of their life, as ringing schemes not always link the original ring number with the number of the replaced ring.

Cramp & Simmons (1983) mention a longevity record of 32 years and 1 month but this record is currently considered as insufficiently documented, although it is still quoted by sources like del Hoyo et al (1996) and Maumary et al (2007). Cramp & Simmons (1983) mention Rydzewski (1978) as source, and the record is also listed in Rydzewski (1973). It concerns Helgoland 7180847, ringed on 14 May 1922, age unknown, and recovered in June 1954. The precise date of recovery is unknown and details on the recovery circumstances are not given either. Glutz von Blotzheim & Bauer (1982) do not mention this record and it is also not mentioned by Staav (1998, 2001). Besides that, Helgoland 7180847 is not listed in the overviews with all known ring-recoveries of Black-headed Gulls ringed in Austria and Germany (Krauß 1959, Zink 1959abc, 1960).

**32** View over Griend, Friesland, Netherlands, 26 May 2011 (*Date Lutterop*). This small island holds largest breeding colony of Black-headed Gull *Chroicocephalus ridibundus* in north-western Europe. Arnhem 3.129.942 (LCA, the second oldest, table 1) had a breeding territory close to the beacon in 2000 and 2001.



*New longevity records of Black-headed Gull, with comments on wear and loss of aluminium rings*

TABLE 1 List with 10 oldest Black-headed Gulls *Chroicocephalus ridibundus*, in order of reached age. Hatching date fixed at end of May in each year. Sources: Perdeck & Speek (1963) (5); Fransson et al (2010) (4, 9); FMNH (2011) (4); Gibson (2011) (8, 9); Robinson & Clark (2011) (8); sightings by Tseard Hiemstra (10) and Hans van Muiswinkel (7).

Ring number	Ringing date Recovery date	Ringing details Finding details
1 Arnhem 3.275.396	25 June 1978 21 March 2011	Zandvoort, Noord-Holland, Netherlands; chick; aluminium ring on tibia Zoetermeer, Zuid-Holland, Netherlands; last sight record; 32 years, 10 months
2 Arnhem 3.129.942, resp 3.557.150 (+ white LCA)	11 May 1972 5 May 2002	Vlieland, Friesland, Netherlands; after second calendar-year; aluminium ring on tibia Den Helder, Noord-Holland, Netherlands; last sight record; at least 31 years, 11 months
3 Arnhem 3.148.964	26 June 1971 10 June 2002	Zwarte Haan, Friesland, Netherlands; chick; aluminium ring on tibia Texel, Noord-Holland, Netherlands; found dead; 31 years
4 Helsinki S-049023	17 June 1968 17 February 1999	Sääksmäki, Tampere, Finland; chick; steel ring on tarsus Monster, Zuid-Holland, Netherlands; found dead; 30 years, 9 months
5 Leiden 119358	23 June 1932 5 October 1962	Vlieland, Friesland, Netherlands; chick; aluminium ring on tibia Vlieland, Friesland, Netherlands; found exhausted, soon died; 30 years, 4 months
6 Arnhem 3.230.965	22 June 1979 30 June 2009	Lauwersmeer, Groningen, Netherlands; chick; aluminium ring on tibia Groningen, Groningen, Netherlands; last sight record; 30 years, 1 month
7 Bruxelles 3T15071, resp Arnhem 3.555.578	13 January 1980 14 March 2009	Turnhout, Antwerpen, Belgium; first-winter; aluminium ring on tibia Huizen, Noord-Holland, Netherlands; last sight record; 29 years, 10 months
8 London EH56982	13 November 1980 2 March 2010	London, England; first-winter; incoloy ring on tarsus London, England; last sight record; 29 years, 9 months
9 London EH42857	6 March 1979 23 January 2007	London, England; after first-winter; incoloy ring on tarsus London, England; last sight record; at least 29 years, 8 months
10 Moskwa E321231	5 June 1958 15 January 1988	Lake Babite, Riga, Latvia; chick; aluminium ring on tibia Leeuwarden, Friesland, Netherlands; last sight record; 29 years, 8 months

Boekema (1987) mentions Stavanger 608652, ringed as chick in Norway on 25 June 1955, and claimed to be last seen in Groningen, Groningen, the Netherlands, on 13 February 1986 (30 years and 8 months). However, these observations relate to a bird wearing a ring of Ås, another Norwegian ringing scheme. Ås 608652 had been ringed on 8 April 1976 as after first-winter in Oslo, and was therefore only at least almost 12 years old when last seen in Groningen. Bakken et al (2003) do not mention the record in Boekema (1987) and list a longevity record of 26 years and 8 months.

### Wear and loss of metal rings

Above, we have listed several records of individuals wearing an aluminium ring for c 30 years or more, and one might therefore conclude that there are no serious problems when using aluminium rings to mark Black-headed Gulls. However, we strongly disagree with this, and we will make our case below. The aluminium alloyed rings (hereafter aluminium rings) currently used in, eg, the

Netherlands, by Vogelwarte Helgoland in Germany and formerly in Belgium have a composition of 96.5% aluminium, 3.1% magnesium, 0.25% manganese and 0.15% chromium. All examples presented below refer to Black-headed Gull.

### Unequal rate of ring loss

A metal ring is often the only way to identify individuals. Therefore, ring loss will almost always mean that it is unknown if a particular bird is dead, or that it has lost its ring. Table 2 gives an overview of reports of ring loss. One bird lost the metal ring just six years after ringing, some after c 15 years, and one bird after 22 years. There is a huge variation in the length of time before the aluminium ring fell off but all lost it long before the currently known maximum life span of almost 33 years. Plate 33 depicts record 2, at that time it had lost its aluminium ring at least five years earlier.

Perdeck & Speek (1963) mentioned that the return address of Leiden 119358, 30 years and 3

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TABLE 2 Reports of ring loss of aluminium rings on Black-headed Gull *Chroicocephalus ridibundus*. Time elapsed is number of years and months between date of ringing and first date of observation without ring (gulls were still identifiable through other markings). Date of hatching fixed on end of May. Sexing according to Palomares et al (1997). **1** and **3** from Hein (2009), **2** depicted on plate 33.

	<b>1</b>	<b>2</b>	<b>3</b>
ring number	Kaunas 352858	Matsalu U-492415	Helgoland 5269922
position of metal ring	tarsus	tibia	tarsus
sex	unknown	male	unknown
year of birth	1989	1991	1983
date of ringing	20 June 1989	14 June 1991	30 October 1983
last date with metal ring	15 October 1994	25 February 2003	15 February 1998
first date without metal ring	autumn 1995	13 March 2006	2 September 1998
<b>time elapsed</b>	<b>6 years, 3 months</b>	<b>14 years, 9 months</b>	<b>14 years, 10 months</b>
last observation	3 March 2005	13 April 2011	22 February 1999
age at last observation	15 years, 9 months	19 years, 10 months	15 years, 9 months
	<b>4</b>	<b>5</b>	<b>6</b>
ring number	Arnhem 3.225.936	Arnhem 3.352.441	Arnhem 3.212.175
position of metal ring	tarsus	tarsus	tarsus
sex	female	male	unknown
year of birth	1975	1981	≤1977
date of ringing	1 February 1976	20 December 1981	30 December 1978
last date with metal ring	14 December 1991	15 March 1999	12 February 1999
first date without metal ring	28 December 1991	11 February 2000	22 December 2000
<b>time elapsed</b>	<b>15 years, 11 months</b>	<b>18 years, 2 months</b>	<b>22 years, 0 months</b>
last observation	23 March 1998	27 September 2002	17 December 2004
age at last observation	22 years, 10 months	21 years, 4 months	≥27 years, 7 months

**33** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, adult winter, Amsterdam, Noord-Holland, Netherlands, 2 March 2011 (*Ruud G M Altenburg*). Ringed as chick in Estonia in June 1991 (aluminium; record 2 in table 2), incoloy (nickel-iron-chromium alloy) ring added in Poland in March 1995, colour ring added in Amsterdam in March 2006 (on latter date, its original Estonian aluminium ring was already lost); afterwards seen in five different countries (Britain, Estonia, France, Latvia and Netherlands). **34** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, Groningen, Groningen, Netherlands, 27 June 2009 (*Klaas van Dijk*). Bird of 30 years old in full summer plumage (record 6 in table 1). Note aluminium ring on left tibia (upside down).





FIGURE 2 Aluminium ring Arnhem 3.275.396 on tibia of world's oldest Black-headed Gull *Chroicocephalus ridibundus*, Zoetermeer, Zuid-Holland, Netherlands, 16 March 2010 (far left) and 21 March 2011 (other three) (Benny Middendorp). Note almost absence of wear after more than 32½ years.

months after ringing (record 5 in table 1 and at that time the longevity record), was totally unreadable, and that only three of the six digits could be read easily. On three different places, the ring was only 2 mm high. It could only be identified as a Leiden ring after an exhaustive comparison with many different types of metal rings from various ringing schemes used for Black-headed Gull in those days. Additionally, the ringer reported that all chicks on Vlieland in 1932 had been ringed on the tibia, in agreement with the details supplied by the finder. On 31 March 1939, Černý (1939) trapped a Black-headed Gull in Prague, Czech Republic, ringed 24 years and 10 months before and at that time the longevity record. The ring was extremely thin, 'as thin as a piece of paper', and it was strongly scalloped along both edges. The return address, Lotos Austria, was still readable but the last digit of the number, 41235 or 41233, was partly illegible. In contrast, the aluminium ring Arnhem 3.275.396 was still easy to read when it was already almost 33 years on the tibia (figure 2) and the same was the case with Arnhem 3.230.965, on the tibia for just over 30 years (record 6 in table 1, plate 34). All digits of Arnhem 3.129.942 were still well readable, 28 years after ringing

(figure 1) but the ring was thin and easy to remove. So, some gulls definitely can keep an aluminium ring for a very long period, whereas others loose the ring much earlier.

#### Tarsus or tibia?

It is noteworthy that all individuals wearing an aluminium ring for around 30 years or more and listed in table 1 had been ringed on the tibia. One might therefore conclude that aluminium rings should be placed on the tibia, following the recommendation in Perdeck & Wassenaar (1981). Rings on the tarsus often suffer from irregular wear of the lower edge, especially where the ring rests against the tarsus. This means that the lower edge becomes irregularly scalloped. Eventually, this will cause loss of part of the inscription (figure 3). Aluminium rings on the tarsus are also sensitive to gaping (plate 35-36) and such rings get lost quite easily. Hein (2009) concluded that aluminium rings of Vogelwarte Helgoland on the tarsus fell off after 15-25 years, and five out of the six examples which suffered ring loss had been ringed on the tarsus (table 2). This all means that aluminium rings on the tarsus get lost easier and earlier than similar rings on the tibia.

FIGURE 3 Aluminium ring Arnhem 3.323.861 from Black-headed Gull *Chroicocephalus ridibundus*, 18 years and 7 months after ringing on tarsus. Ringed as chick near Oostzaan, Noord-Holland, Netherlands, in June 1980, last observation in Amsterdam, Noord-Holland, on 1 January 2006.



35 Aluminium ring Arnhem 3.431.752 on tarsus of Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, 23 years and 5 months after ringing, Leiden, Zuid-Holland, Netherlands, 13 November 2011 (Maarten van Kleinwee). Same bird as in plate 36.



However, the process of wear and loss does not only affect rings on the tarsus. Gaping does not occur frequently on rings on the tibia and the wear is often quite uniform. This type of abrasion is caused by the continuous rubbing of the belly feathers against the ring. As a consequence, aluminium rings on the tibia have a greater chance of becoming illegible, and the general public will less likely report an illegible ring to the national ringing scheme. In 1993, Frank Majoor obtained a special permit to retrap Black-headed Gulls with worn aluminium rings in and around Hilversum, Noord-Holland. Over 15 000 individuals had been ringed in this area in 1977-85, and seven examples of tibia rings removed from these gulls are presented in figure 4. The images clearly reveal that some rings showed such a rapid wear that the return address and one or more digits were already illegible after c 10 years. We have several more records of birds with a similar rapid wear of aluminium rings on the tibia, and eventually such individuals will fly around with a blank metal ring. There are, however, also examples of

birds with an aluminium ring on the tibia from the same series as the ones shown in figure 4 that are still well readable, eg, Arnhem 3.355.513 (ringed as first-winter on 24 November 1982, last seen on 18 March 2010; 27 years and 4 months) and Arnhem 3.383.964 (ringed as first-winter on 11 December 1984, last seen on 5 January 2009; 24 years and 1 month).

Thus, putting an aluminium ring on the tibia is no good long-term alternative to solve the problem of wear and loss. Perdeck & Wassenaar (1981) based their recommendation on a 12-year study but this time span is definitely too short, as many individuals live much longer.

#### *Some examples from Griend*

We illustrate the process of wear with four examples of aluminium rings removed from breeding birds on Griend (figure 5); see van Dijk & Oosterhuis (2010) for details of the research carried out on Griend. **1** Bruxelles 2T83383 (tarsus) was trapped on the nest on 22 May 2000 and the last digit of the number was only readable after

**36** Black-headed Gull / Kokmeeuw *Chroicocephalus ridibundus*, male, adult winter, Leiden, Zuid-Holland, Netherlands, 4 January 2011 (*Maarten van Kleinwee*). Arnhem 3.431.752, 22 years and 7 months old, ringed as chick at Delfzijl, Groningen, Netherlands, on 11 June 1988. Note gaping and strong wear of aluminium ring on tarsus (upside down). Ring had moved down to below hind toe on 13 November 2011 (see plate 35). Retrapped in Leiden on 25 December 2011: white colour-ring E0TU added, aluminium ring replaced by stainless steel ring Arnhem 3.729.911.







FIGURE 4 Aluminium rings of Vogeltrekstation Arnhem removed from tibia of eight Black-headed Gulls *Chroicocephalus ridibundus*; 1-7 wintering at Hilversum, Noord-Holland, Netherlands (intentionally trapped, re-ringed with stainless steel ring), 8 found dead; see table 3 for details.

TABLE 3 Details of aluminium rings of Vogeltrekstation Arnhem on tibia of eight Black-headed Gulls *Chroicocephalus ridibundus* and depicted in figure 4. Time elapsed is number of years and months between date of ringing and date of removal (**8** found dead). Date of hatching fixed on end of May. Sexing according to Palomares et al (1997).

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
ring number	3.355.423	3.355.515	3.355.568	3.383.368
sex	male	male	male	male
year of birth	1982	1982	1982	1983
date of ringing	17 August 1982	24 November 1982	11 January 1983	31 March 1984
ring removed	9 November 1993	26 August 1994	11 December 1993	19 October 1994
<b>time elapsed</b>	<b>11 years, 3 months</b>	<b>11 years, 9 month</b>	<b>10 years, 11 months</b>	<b>10 years, 7 months</b>
last observation	21 February 1994	11 February 2000	17 December 2004	8 March 2004
age at last observation	11 years, 9 months	17 years, 8 months	22 years, 7 months	20 years, 9 months
	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
ring number	3.383.461	3.383.782	3.393.639	3.348.481
sex	male	male	female	unknown
year of birth	1983	≤1982	≤1983	≤1980
date of ringing	16 April 1984	29 May 1984	6 January 1985	8 January 1982
ring removed	10 December 2002	10 December 1995	21 December 1995	18 June 1985
<b>time elapsed</b>	<b>18 years, 8 months</b>	<b>11 years, 6 months</b>	<b>10 year, 11 months</b>	<b>3 years, 5 months</b>
last observation	18 February 2003	10 December 1995	12 March 1996	-
age at last observation	19 years, 9 months	≥13 years, 6 months	≥12 years, 9 months	-

etching with 30% hydrochloric acid by Eddie Fritze in Denmark (see also Fritze 2007). This male had been ringed as after first-winter on 10 January 1986 at Esen, West-Vlaanderen, Belgium. So the ring was already illegible after a time span of 14 years and 4 months, less than half the current longevity record. **2** Bruxelles 3T74457 (tarsus) was also strongly worn when the bird was trapped on the nest on 21 May 2001. This female had been ringed on 26 January 1987 as after first-winter at Kurne, West-Vlaanderen (time span 14 years and 4 months). **3** Arnhem 3.357.667 (tarsus; upside down), was ringed as a chick on the salt marshes near Holwerd, Friesland, on 18 June 1984. This male was trapped on the nest on 24 May 2000, 15 years and 11 months after it had been ringed. The ring was already quite thin and irregularly abraded and showed the characteristic beginning of scalloping of the lower edge. For sure, the second digit would become illegible in due time. **4** Arnhem 3.407.490 (tibia) was ringed as a breeding bird on the nest on 10 May 1986, also near Holwerd. We retrapped this female on the nest on 24 May 2000. The upper part of the return address of the ring had become partly illegible after only 14 years. This bird is the only confirmed record of breeding dispersal from elsewhere towards Griend (distance 47 km, direction west-south-west).

**Discussion**

The results clearly underline the conclusions of Majoor (1995) that when Black-headed Gulls continue to be ringed with aluminium rings – on the tarsus as well as on the tibia – long-term studies (including assessing longevity records) are strongly hindered by ring loss and illegible rings. Our findings are in agreement with the results of many other studies on wear and loss of metal rings on gulls, terns and other long-lived seabirds (eg, Coulson 1976, Harris 1980, Hatch & Nisbet 1983, Ludwig et al 1995, Stienen & Brenninkmeijer 1995). Black-headed Gull is a long-lived species



FIGURE 5 Aluminium rings removed from four Black-headed Gulls *Chroicocephalus ridibundus* breeding on Griend, Friesland, Netherlands (upper three on tarsus, lower on tibia). All trapped on nest and ring replaced by stainless steel ring, Arnhem 3.357.667 upside down; see text for details. Note irregular scalloping of lower edge.

as well, with an annual survival of adults of 90% (Prévoit-Julliard et al 1998). During a long-term study in London, England, Gibson (2011) saw 30 individuals of over 20 years old, and 28 breeding birds out of 109 ringed birds (26%) on Griend reached an age of at least 15 years. Most had been ringed as adult, so their real age might even be (much) higher. We have not investigated sex-biased wear and loss of rings but we do not rule out that this also occurs (see Coulson (1976) for

FIGURE 6 Stainless steel ring Helsinki S-049023 of Black-headed Gull *Chroicocephalus ridibundus*, 30 years and 8 months after ringing on tarsus (Benny Middendorp). Found dead near Monster, Zuid-Holland, Netherlands (record 4 in table 1), collection J van Kruijssen.



female-biased rate of weight loss of metal rings in Herring Gull *L argentatus* and see Mills (1972) for female-biased loss of metal rings in Red-billed Gull *L scopulinus*).

Only hard metal rings can solve the problem of wear and loss. Many ringing schemes already issue hard metal rings to mark Black-headed Gulls. Birds in Britain and Ireland get incoloy rings, a nickel-iron-chromium alloy, and to date no examples of excessive wear of these type of rings are known to us. Many other ringing schemes issue rings of stainless steel, an iron alloyed ring with currently 17.2% chromium, 12.6% nickel, 2.6% molybdenum and 1.7% manganese. Stainless steel rings are currently used in, eg, Finland (since 1960s), Sweden (since late 1970s), Belgium (since late 1980s), the Netherlands (since 1995), Lithuania (since 2003) and Denmark. To date, we have no knowledge of excessive wear of stainless steel rings as well. As an example, a stainless steel ring, on the tarsus for 30 years and 8 months, is depicted in figure 6. However, some ringing schemes still only issue rings of an inferior durability and other ringing schemes, including Vogeltekstation Arnhem, have not yet put a ban on using aluminium rings to mark gulls. We urge all ringing schemes to stop issuing low-quality metal rings for gulls, and we urge ringers to use only rings of stainless steel or incoloy. The future will tell if the current extensive use of hard metal rings will lead to new longevity records.

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### Samenvatting

NIEUWE LEEFTIJDRECORDS BIJ KOKMEEUW EN OPMERKINGEN OVER RINGSLIJTAGE EN RINGVERLIES Dit artikel documenteert drie nieuwe leeftijdsrecords bij Kokmeeuw *Chroicocephalus ridibundus*. De oudste vogel werd op 25 juni 1978 als nestjong geringd bij Zandvoort, Noord-Holland, en voor het laatst gezien op 21 maart 2011 bij Zoetermeer, Zuid-Holland, 32 jaar, 8 maanden en 24 dagen na het ringen. De vogel was hier tijdens het broedseizoen van 2009 en op vijf dagen tussen 16 maart en 8 april 2010 ook al gezien. De op één na oudste vogel werd op 11 mei 1972 als adult (na tweede kalenderjaar) geringd bij een broedkolonie op Vlieland, Friesland, en werd op 28 april 2000 teruggevangen op Griend, Friesland. De vogel had in 2000 en in 2001 een broedterritorium op Griend en werd op 5 mei 2002 voor het laatst gezien in Den

Helder, Noord-Holland. De vogel was in 1970 of eerder geboren en was in mei 2002 dus ten minste bijna 32 jaar oud. Het derde nieuwe leeftijdsrecord is een vogel die op 26 juni 1971 als nestjong bij Zwarte Haan, Friesland, werd geringd en die op 10 juni 2002 dood werd gevonden op Texel, Noord-Holland. Een overzicht van andere gevallen wordt gegeven (tabel 1) waarbij wordt opgemerkt dat de vermelding in Cramp & Simmons (1983) en in del Hoyo et al (1996) van een Kokmeeuw van 32 jaar en 1 maand vanwege gebrek aan documentatie niet langer als leeftijdsrecord kan worden beschouwd.

Voor wetenschappelijk onderzoek moet een metalen ring langer meegaan dan de maximale levensduur van de vogel. Dit is het geval bij de roestvrijstalen (rvs) ringen die momenteel in toenemende mate worden gebruikt. Ook de incoloy ringen (een legering van nikkel, ijzer en chroom) van de British Trust for Ornithology (BTO) hebben een levensduur van enkele 10-tallen jaren. In diverse landen krijgen Kokmeeuwen echter nog steeds een aluminium ring, tegenwoordig een legering met een klein percentage magnesium, mangaan en chroom. Een overzicht van ringslijtage en ringverlies bij Kokmeeuwen met aluminium ringen (in de meeste gevallen aan de tarsus) wordt gegeven met de conclusie dat er sprake is van sterke individuele variatie in de snelheid van ringslijtage en ringverlies. Bij sommige vogels valt de ring al na minder dan 10 jaar af, bij andere kan de ring meer dan 30 jaar blijven zitten. Het ringen aan de tibia is geen duurzaam alternatief, vooral omdat de kans aanzienlijk is dat de ring uiteindelijk onleesbaar wordt. De conclusie is dat de kans klein is dat een aluminium ring 33 jaar of langer om de poot van een Kokmeeuw blijft zitten. Er wordt daarom gepleit voor een verplichting om deze soort te voorzien van ringen van hard metaal (rvs of incoloy).

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