

Taimyr Gulls: evidence for Pacific winter range, with notes on morphology and breeding

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The Taimyr peninsula in the northern part of central Siberia, Russia, hosts a significant breeding population of gulls *Larus* that belong to the assemblage of large white-headed gulls. It is as yet unclear where these gulls spend the winter. Along with this, there is a lack of agreement about their taxonomic status. Genetic analysis has shown that they represent a distinct population, ie, with a measurable degree of genetic differentiation and without obvious introgression (Liebers 2000, Liebers et al 2001, Liebers & Helbig 2002, Liebers et al 2004). In this paper, we simply refer to this breeding population as Taimyr Gulls *L. taimyrensis* (cf Filchagov et al 1992).

The lack of long-distance ring recoveries is one of the reasons for uncertainties and confusion about the wintering areas of Taimyr Gulls. Grant (1982) states that the wintering range is not known but quotes Vaurie (1965) who suggested the Caspian Sea as wintering area. Cramp & Simmons (1983) indicate that Taimyr Gulls spend the winter along the shores of the eastern Mediterranean, in

the Caspian Sea area, along the Arabian Sea to western India, and partly also along coasts in eastern Africa. Glutz von Blotzheim & Bauer (1982) mention that Taimyr Gulls may winter in roughly the same area but clearly state that firm data like recoveries are lacking. Both sources assume that Taimyr Gulls migrate in a south-westerly direction towards the Indian Ocean. Possible confusion in these regions with, eg, Heuglin's Gull *L. heuglini* and Caspian Gull *L. cachinnans* is one of the reasons for an unclear picture.

In contrast, several more recent sources state that Taimyr Gulls migrate in a south-easterly direction towards the Pacific Ocean and that they spend the winter in coastal areas between Kamchatka, Russia, and Hainan, China. Il'icev & Zubakin (1990) mention that Taimyr Gulls breeding east of western Taimyr migrate in a south-easterly direction towards the Pacific. Kennerley et al (1995) indicate that almost all large white-headed gulls wintering in Hong Kong, China, are Taimyr Gulls and they mention two long-distance ring re-



3 Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult in breeding colony, Bird Islands, Mys Vostochny, Taimyr, Russia, 8 July 1991 (*Jan van de Kam*)

4 Taimyr Gulls / Taimyrmeeuwen *Larus taimyrensis*, breeding pair, Bird Islands, Mys Vostochny, Taimyr, Russia, 8 July 1991 (*Jan van de Kam*)





FIGURE 1 Map of Taimyr peninsula, central Siberia, Russia

coveries, both of birds which had migrated in a south-easterly direction towards the Pacific. Del Hoyo et al (1996) indicate that Taimyr Gulls spend the winter in the same area as shown by Cramp & Simmons (1983) but they state that birds breeding on eastern Taimyr winter along the north-western Pacific as well.

In conclusion, not much is known about the precise wintering areas. We obtained new long-distance ring recoveries and the results are presented in this paper. We also present data on distribution and breeding biology and we give a description of the general appearance of adults, illustrated with photographs taken on Taimyr. It should be noted that Olsen & Larsson (2004) do not provide photographs of Taimyr Gull.

Study area and methods

The Taimyr peninsula is the northernmost region of mainland Eurasia (figure 1). It covers more than 400 000 km² and lies between 69°N and 77°N, and it stretches for 1000 km from the Yenisey bay (80°E) eastwards to 114°E. Almost the whole of Taimyr is situated in the tundra zone. Many international ornithological expeditions to Taimyr have been undertaken since 1989. Taimyr Gulls were

- 5 View over House Island, one of the Bird Islands, with large colony of 394 (2004), 412 (2005) and 340 (2006) breeding pairs of Taimyr Gull *Larus taimyrensis*, Mys Vostochny, Taimyr, Russia, 9 August 2006 (Bram Feij)





6 Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult trapped on nest, Bird Islands, Mys Vostochny, Taimyr, Russia, 22 July 2008 (*Jim de Fouw*) **7** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult trapped on nest, Bird Islands, Mys Vostochny, Taimyr, Russia, 22 July 2008 (*Jim de Fouw*). Note primary moult (p1-2 shed). **8** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult in breeding colony, Mys Vostochny, Taimyr, Russia, 9 August 2006 (*Bram Feij*) **9** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult in breeding colony, Mys Vostochny, Taimyr, Russia, 9 August 2006 (*Bram Feij*)

studied and ringed during many of these expeditions but often only as a side-project. Sergei Kharitonov has visited Medusa bay (73°21'N, 80°32'E) in western Taimyr, 17 km south of Dikson, several times since 1997, mainly to carry out research on geese, waders and gulls (eg, Kharitonov 2009). Bart Ebbsing has visited Mys Vostochny (in the mouth of the Pyasina river, 74°08'N, 86°43'E) in north-western Taimyr, 205 km east-northeast of Dikson, for a long-term research project on Dark-bellied Brent Goose *Branta bernicla* in several years between 1990 and 2008 (eg, Ebbsing & Mazurov 2005-07). Klaas van Dijk (1993) and Holmer Vonk (1994) spent a breeding season at Mys Vostochny for research on waders as mem-

bers of a delegation of the Foundation Working Group International Waterbird and Wetland Research (WIWO, see Vonk (2003) and van Dijk (2011)). Blood samples used in the genetic studies by Dorit Liebers refer to individuals from colonies at Mys Vostochny. The database of the Bird Ringing Centre of Russia was checked for relevant information. In addition, we used Filchagov et al (1992) and Rogacheva (1992) as general sources and checked all available reports and papers from recent expeditions. Unpublished data are incorporated as well. The description of the general appearance of adults is based on field observations and photographs of birds in the field as well as in the hand.



10 Taimyr Gull / Taimyrmeeuw *Larus taimyrensis* in breeding colony, Mys Vostochny, Taimyr, Russia, 22 June 2005 (*Vasily Grabovsky*) **11** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult in breeding colony, Mys Vostochny, Taimyr, Russia, 17 July 2008 (*Laurent Demongin*) **12** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult trapped on nest, Oleni islands, Medusa bay, Taimyr, Russia, 25 June 2001 (*Leon Peters*). Record 7 in appendix 1. **13** Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, egg and chick, Bird Islands, Mys Vostochny, Taimyr, Russia, 10 July 2005 (*Raymond Klaassen*)

Results

Description of adults

Adults generally resemble Herring Gull *L. argentatus* in size and shape. The upperparts coloration is darker than in Herring Gulls breeding in the Netherlands, being more similar to Yellow-legged Gulls *L. michahellis* breeding in the Mediterranean. The legs are short to medium in length and rather firm. Most individuals exhibit dull yellow legs but variation is extensive, legs being pink or greyish in some individuals. The iris is pale yellow or ochre, with a variable amount of dark speckling. The orbital ring and gape are usually orange-red. The bill is relatively short, firm and rather blunt

with a weak gonydeal angle and with an extensive red gony spot restricted to the lower mandible. The wing pattern usually shows an isolated mirror in a largely black p10, relatively small apical spots to the outer primaries and dark markings extending to p4. There are some indications (Willems et al 2002; Pierre Yésou in litt) that adults at Medusa bay exhibit, on average, a darker mantle than birds at Mys Vostochny. In late June 2001, breeding adults at Medusa bay had started primary moult (p1-2 shed). Details on morphometric characters of 24 ringed individuals (23 adults, 1 sub-adult) are presented in appendix 1. See Musch & Tinbergen (1996) for video images taken at Mys Vostochny in 1994-95 and see plate 21 (page 149)

in Kennerley et al (1995) for a colour photograph of adults in a breeding colony in the estuary of the Nizhnyaya Taimyra river taken in 1990.

Adults show variation in several field characters but assortative mating with regard to leg colour or any other characteristic was not observed during a detailed study at Mys Vostochny (Grabovsky 1991), and neither in various other colonies visited all over Taimyr (Filchagov et al 1992, Yésou 2002). In more recent years, there were also no indications for assortative mating in the colonies at Medusa bay and at Mys Vostochny (including 2008; Roeland Bom & Jim de Fouw pers comm). This means that we have no indications that two species breed on Taimyr (contra, eg, del Hoyo et al 1996).

Distribution and numbers on Taimyr

Taimyr Gulls breed all over Taimyr in colonies on islands along the coast, in inland areas along rivers and near lakes with islands and rocky outcrops, and in low densities on the tundra near small ponds. Filchagov et al (1992) estimated that 10 000-12 000 pairs breed on Taimyr with concentrations on islands in the estuary of the Nizhnyaya Taimyra river (c 1200 pairs) and on islands near Mys Vostochny. The islands near Mys Vostochny harbour the largest known colony with up to 2518 breeding pairs, counted in 2004. At least 180 pairs were counted in colonies along the eastern shore of the Yenisey bay around Medusa bay in 1999 (Willems et al 2002). A small island at Middendorf bay in northern Taimyr held a breeding colony of 100+ pairs in 1994 (Åke Lindström in litt). Highest numbers reported from eastern Taimyr are c 40 pairs around Pronchishcheva lake (75°16'N, 112°28'E) in 1991 (Spiekman & Groen 1993, Schekkerman & van Roomen 1995). Prokosch & Hötter (1995) mentioned that many birds were present nearly everywhere along the coast eastwards from Shturmanov (76°00'N, 96°30'E) in the second half of July 1989, but numbers were not indicated.

Phenology on Taimyr

Arrival at the breeding sites always preceded arrival of the expeditions, which never arrived before 1 June. Breeding colonies are occupied yearily, but the gulls can only breed successfully in colonies on islands which are out of reach of Arctic Foxes *Alopex lagopus*. Lemming *Lemmus sibiricus/Dicrostonyx torquatus* is the main food item of the gulls and the number of breeding pairs is higher in lemming peak years. In 2006, a year with very few lemmings, 1503 occupied nests

were counted on 15 islands at Mys Vostochny, 76% of the number of nests found on the same islands in 2005, a lemming peak year. In 1990, an intermediate lemming year, the first egg was found on 10 June and it was deduced from hatching that the first egg had been laid on 8 June (Grabovsky 1991, Filchagov et al 1992). Between 5 and 12 July 2006, the mean clutch size at Mys Vostochny was 2.34, based on 1861 nests with at least one egg. In that year, the first egg hatching was registered on 11 July (326 checked nests) and six nests with hatching eggs were found on the next day (186 checked nests). In 2001, a year with very few lemmings, breeding phenology was intensively studied at Medusa bay. On 11 June, one completed nest and six initiated nests were found, and hatching started on 11 July. This all means that chicks born on Taimyr will be able to fly from around 10 August if we assume a fledging period of at least one month (Cramp & Simmons 1983).

We have no firm data on the timing of departure from Taimyr. On 12 August 1993, 350 (two subadults, all others adults) were counted around the rubbish dump at Dikson. In 2000, southwards migration at Medusa bay was observed from 28 July onwards. Peters (2006) noted a sudden and strong southward movement at Medusa bay on 29 July 2001, which may have involved failed breeders. Obvious southward migration of 10s of gulls per hour was observed again from 3 August onwards.

Ringling activities on Taimyr

Between 1977 and 2008, c 750 Taimyr Gulls (c 680 chicks, c 75 adults and a subadult) were ringed with the majority at Mys Vostochny (c 465 chicks, c 42 adults and a subadult). Almost all adults were trapped on the nest. The adults were colour-ringed in 1995 (15 with red colour-rings with four digits), in 2005 (two) and in 2008 (c 12). At Medusa bay, 32 adults were trapped on the nest in 2001-02 and marked with orange wing-tags. In 1977, c 20 chicks were ringed in the lower streams of the Bikada river, east of Lake Taimyr. Another 51 chicks were ringed in the estuary of the Nizhnyaya Taimyra river in 1990 (Prokosch & Hötter 1995). Finally, 143 chicks were ringed at Middendorf bay in 1994 (Grönlund & Melander 1995). As far as we know, no other significant ringling activities have taken place on Taimyr. Birds ringed in 1977 and after 2000 have been provided with metal rings issued by the Bird Ringing Centre of Russia (MOSKVA). Metal rings from foreign ringling schemes were used in 1990 (HELGOLAND GERMANIA), 1991 (GDANSK POLAND),



14 Taimyr Gull / Taimyrmeeuw *Larus taimyrensis*, adult in breeding colony, Mys Vostochny, Taimyr, Russia, 13 July 2007 (*Gerard Müskens*)

15 Taimyr Gulls / Taimyrmeeuwen *Larus taimyrensis*, adults in breeding colony, Mys Vostochny, Taimyr, Russia, 17 July 2008 (*Laurent Demongin*)



Taimyr Gulls: evidence for Pacific winter range, with notes on morphology and breeding

TABLE 1 Details of long-distance ring recoveries of Taimyr Gulls *Larus taimyrensis* ringed as chick (1-5) or as breeding adult (6) on Taimyr peninsula, Russia. Distances and directions based on constant geographical courses (loxodromes).

Ring number	Ringling date Recovery date	Ringling place Finding place and finding circumstances
1 MOSKWA D 435871	30 July 1977	Bikada river mouth, eastern Taimyr, Krasnoyarsk territory, Russia (74°50'N, 105°30'E)
	5 November 1977	Ribnovsk, Okha district, Sakhalin province, Russia (53°15'N, 141°48'E); found dead, hit by wires, reported as gull, ring sent back; 2864 km south-east (145°)
2 RADOLFZELL JC 35419	5 August 1994	Bird Islands, Mys Vostochny, north-western Taimyr, Krasnoyarsk territory, Russia (74°06'N, 86°25'E)
	September 1996	Zavyalova island, Magadan province, Russia (59°02'N, 150°34'E); dead, found beached, no species indicated, ring sent back; 3067 km east-south-east (121°)
3 RADOLFZELL JC 35470	10 August 1994	Bird Islands, Mys Vostochny, north-western Taimyr, Krasnoyarsk territory, Russia (74°06'N, 86°25'E)
	28 September 1994	Adnikan river mouth, near Chegdomyn, Khabarovsk territory, Russia (51°06'N, 133°00'E); found dead, reported as gull, ring sent back; 3331 km south-east (139°)
4 STOCKHOLM 90A 16664	16 August 1994	Middendorf bay, northern Taimyr, Krasnoyarsk territory, Russia (75°58'N, 94°09'E)
	19 October 1994	Tit Ary along Lena river, Yakutia republic, Russia (61°15'N, 127°45'E); dead, shot, reported as 'Herring Gull', ring not sent back; 2049 km south-east (141°)
5 STOCKHOLM 9146452	16 August 1994	Middendorf bay, northern Taimyr, Krasnoyarsk territory, Russia (75°58'N, 94°09'E)
	16 September 1995	Grafsky Bereg village, near Lena river, Yakutia republic, Russia (62°48'N, 129°41'E); dead, shot, reported as goose, ring not sent back; 1964 km south-east (137°)
6 MOSKWA DS 00xxxx orange wing-tag	25-28 June 2001	Oleni islands, Medusa bay, western Taimyr, Krasnoyarsk territory, Russia (73°22'N, 80°26'E)
	December 2001- February 2002	near Yuzhno-Sakhalinsk, Sakhalin province, Russia (46°52'N, 142°45'E); sight record of bird with orange wing-tag, reported as 'Herring Gull'; 4228 km south-east (132°)

1993-94 (RADOLFZELL GERMANIA), 1994 (STOCKHOLM SWEDEN, Middendorf bay) and 1995 (COPENHAGEN DENMARK). Note that almost 40% of the gulls were ringed in 1994, a lemming peak year, with 143 chicks ringed on 16 August at Middendorf bay and 150 chicks ringed between 5 and 10 August at Mys Vostochny. Almost all of these chicks had nearly fledged.

Adults breeding at Medusa bay show a strong site fidelity to their breeding colonies and two marked adults were recorded many times in Dikson. There are no records of birds moving from colonies at Mys Vostochny to colonies at Medusa bay, or vice versa. A colour-ringed bird known as 'Red K015', trapped as breeding adult on the nest in 1995, was still recorded as a breeding bird at Mys Vostochny in 2006.

Long-distance ring recoveries

Up to the end of 2010, the ringing activities have yielded six long-distance recoveries (table 1, figure 2; one sighting of a wing-tagged bird and five reports of birds found dead). Note that the recovery circumstances, including the date of recovery, of some might be less precise than shown in the table. Three birds (record 3-5) were reported from inland areas during autumn migration. Two of them (4-5) were recovered along the middle part of the Lena river near Yakutsk, a region where gulls do not winter. The recovery site of record 3, along a tributary of the Amur river and 400 km from the coast, is also unsuitable for wintering gulls. This individual was recovered 49 days after ringing and had flown 3331 km. Three birds were recovered from the surroundings of the Sea of Okhotsk. One (record 2) came from an island

south of Magadan in September and was reported as a beached corpse (species not indicated), with an inaccurate finding date. Two (record 1 and 6) were reported from Sakhalin. The first (1) was reported as having flown into wires on 5 November, 98 days after ringing, near Ribnovsk, close to the sea shore. The second (6) refers to a wing-tagged gull seen in southern Sakhalin, based on information sent by a hunter to the Bird Ringing Centre of Russia that a 'Herring Gull' with wing-tags was seen in the winter of 2001/02. More details are not available. We are not aware of other large white-headed gulls marked with orange or red wing tags in this part of Asia at that time. Japanese researchers, however, had just started a project on Black-tailed Gull *L. crassirostris* breeding on islands in northern Japan close to Sakhalin, and they used red (Teuri island) and pale blue (Rishiri island) wing-tags with numbers in 2001, so confusion may have been possible. There are also two observations of Taimyr Gulls wearing a metal ring which could not be read (completely), an adult photographed in Pohang, South Korea, on 15 November 2001 (Michiaki Ujihara in litt), and a second calendar-year bird with a MOSKWA ring photographed at Choshi, Japan, in February 2007 (Andreas Buchheim in litt; one of 106 chicks ringed at Mys Vostochny in 2006).

The number of recoveries is low but they show a strongly coherent pattern, indicating that Taimyr Gulls spend the winter along the Pacific coast of Asia.

Discussion

Migration route

The Bay of Bengal is situated due south of Taimyr but neither Cramp & Simmons (1983), del Hoyo et al (1996) nor Olsen & Larsson (2004) indicate that large white-headed gulls winter in substantial numbers in this area. This is supported by recent observations (Andreas Buchheim in litt, but see Li et al 2009). It is likely that the Himalayan mountains and the huge deserts north of it are a blockade for a direct north-south flyway for Taimyr Gulls. Moreover, all recoveries point at a south-easterly

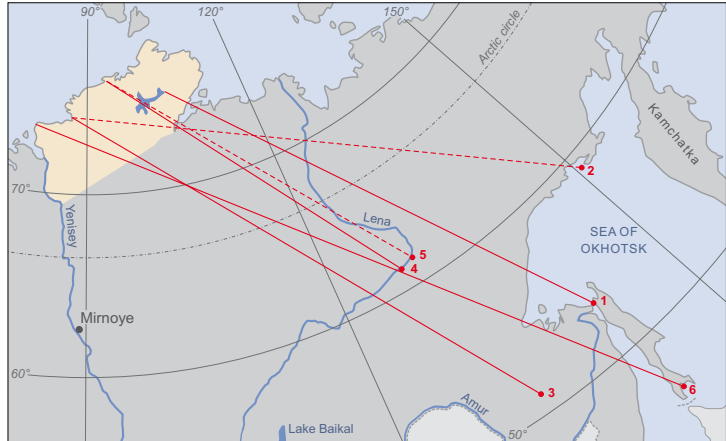


FIGURE 2 Recovery sites of Taimyr Gulls *Larus taimyrensis* ringed on Taimyr peninsula, Russia. Numbers refer to table 1; direct recoveries with solid line, indirect recoveries with broken line.

migration towards the wintering area. Three recoveries reveal that Taimyr Gulls occur inland during migration and all show that birds migrate to the wintering area by crossing the mainland of Asia. In particular record 4, a direct recovery of a first-winter bird in October, is a clear demonstration of this migration pattern. A similar route is also very likely for record 3, a direct recovery of a first-winter bird from an inland area in September, and for record 1, a direct recovery of a first-winter bird in early November. Rogacheva (1992) presents data on visible migration of 'Herring Gulls' near Mirnoye (62°18'N, 89°01'E), along the Yenisey river, 1300 km south-southeast of Dikson. During spring migration, 1000-2000 gulls were recorded yearly between 9-11 May and 3-5 June, with a peak in the last decade of May. Intensive autumn migration was seen on 27-28 September (1978) and on 12-15 October (1979). Gulls migrating along Mirnoye will pass the region of Lake Baikal and thus spend the winter in areas along the Pacific, as this route is the shortest and easiest way for migrating gulls towards a favourable wintering area. The most likely explanation is that the migrants at Mirnoye are Taimyr Gulls. Furthermore, Taimyr Gulls seen migrating southwards along Medusa bay in late-July and August could well concern individuals using the same migration route.

To sum up, the available information indicates that Taimyr Gulls fly overland in a south-easterly direction towards the wintering area. It is very well possible that many individuals migrate along large rivers like the Yenisey and the Lena towards the Pacific.

Wintering areas

Several members of the assemblage of large white-headed gulls spend the winter along coasts of the north-western Pacific between the Bering Street in the north and Hainan in the south (Olsen & Larsson 2004, Li et al 2009), and our recoveries support sources like Il'icev & Zubakin (1990), Kennerley et al (1995), del Hoyo et al (1996), Lee et al (2000) and Shimba (2007) that Taimyr Gulls also winter in this region. The recoveries (figure 2) indicate that the Sea of Okhotsk might be an important wintering area but it is unclear whether this is indeed the case. Slaty-backed Gull *L schistisagus* is a common resident in this harsh region and Glaucous Gull *L hyperboreus* is a common winter visitor to the Sea of Okhotsk (Il'icev & Zubakin, 1990, del Hoyo et al 1996, Olsen & Larsson 2004). Furthermore, a large area of the Sea of Okhotsk is part of the winter range of the population of Vega Gull *L (vegae) vegae* breeding east of the Lena river (Olsen & Larsson 2004, see also Il'icev & Zubakin 1990). However, identification problems combined with a lack of ornithologists visiting large areas of the Sea of Okhotsk during winter (Kondratyev et al 2000, Li et al 2009) make it impossible to conclude if indeed significant numbers of Taimyr Gulls spend the winter here.

We consulted Nial Moores and Michiaki Ujihara and both independently concluded (in litt) that what they call *taimyrensis* looks very similar to Taimyr Gulls photographed on Taimyr, based on similarity in structure, mantle colour and coloration of bare parts (see also Moores (2003) and Ujihara & Ujihara (2008)). Nial Moores noted that *taimyrensis* shows distinct differences in comparison with Vega Gull and Mongolian Gull *L (vegae) mongolicus* with regard to moult patterns and head streaking and in behaviour (cf Yésou 2001), and that first-winter birds and immatures can be easily distinguished as well. He considers *taimyrensis* a typical autumn and spring migrant in coastal waters around Korea, arriving in late September or early October, with a peak in October and in early November, and peaking again in March-April. Nial Moores stated that *taimyrensis* is a rather pelagic gull, feeding in large unmixed flocks around fishing boats in Korean waters of the Yellow Sea in March-April. Nial Moores indicated that the majority does not spend the winter in Korea but in areas further south and he roughly estimated that the total number spending the non-breeding season along the north-western coasts of the Pacific runs in the lower 10 000s. This estimate does not differ widely from the population size indicated by Filchagov et al (1992). Furthermore, Kennerley et

al (1995) stated that Taimyr Gull is by far the most numerous large white-headed gull wintering in Hong Kong, usually present between late October and late March.

During mid-winter, large white-headed gulls are relatively common in coastal areas in southern Korea and along the coast of China between the Yellow Sea and Hainan, including Taiwan (eg, Li et al 2009). Both Vega Gull and Mongolian Gull are regarded as rather common but there are no long-distance recoveries of Vega Gull, due to a lack of ringing in the breeding areas. In contrast, the Bird Ringing Centre of Russia has many recoveries of Mongolian Gulls, ringed by Sergey Pyzhyanov and co-workers at Lake Baikal (figure 3). Many recoveries are from coastal areas around the Yellow Sea, five birds were recovered from the direct surroundings of the Sea of Okhotsk, and some others were from sites in a direction towards the Sea of Okhotsk. These recoveries and recent observations in southern Korea of three wing-tagged Mongolian Gulls from breeding colonies in north-eastern Mongolia (Vogelwarte 45: 73, 2007) confirm that Mongolian Gull is a common visitor to coastal areas in China and Korea during the non-breeding season (contra Collinson et al (2008), but in support of Moores (2003) and Moores et al (2009)). Recent sightings of six other wing-tagged Mongolian Gulls (Andreas Buchheim in litt) underscore these findings. No ringed Mongolian Gulls have been recovered from Hong Kong and surroundings, with the nearest recovery 350 km north-east of Hong Kong. The lack of recoveries from coastal areas around the South China Sea fits with findings of Kennerley et al (1995) that Mongolian Gull is a scarce visitor to Hong Kong, outnumbered by Taimyr Gull by more than 20:1.

Taimyr Gulls in Japan

Recent sources disagree about the current status of Taimyr Gull in Japan. Fujimaki et al (2000) and Lee et al (2000) state that Taimyr Gull does not occur in Japan but Olsen & Larsson (2004), on the other hand, suggest that they probably mainly winter in Japan. Ujihara & Ujihara (2008) present several photographs, all taken in Japan. Hoogendoorn et al (1996) have made detailed studies of large white-headed gulls wintering in southern Japan. They showed that c 5-10% must be attributed to Taimyr Gull and they stated that Taimyr Gull occurs less regularly in more northern regions during winter. Gibbins (2003) studied large white-headed gulls wintering at Choshi near Tokyo, and concluded that c 5% fell outside the range of Vega Gull and Mongolian Gull and very

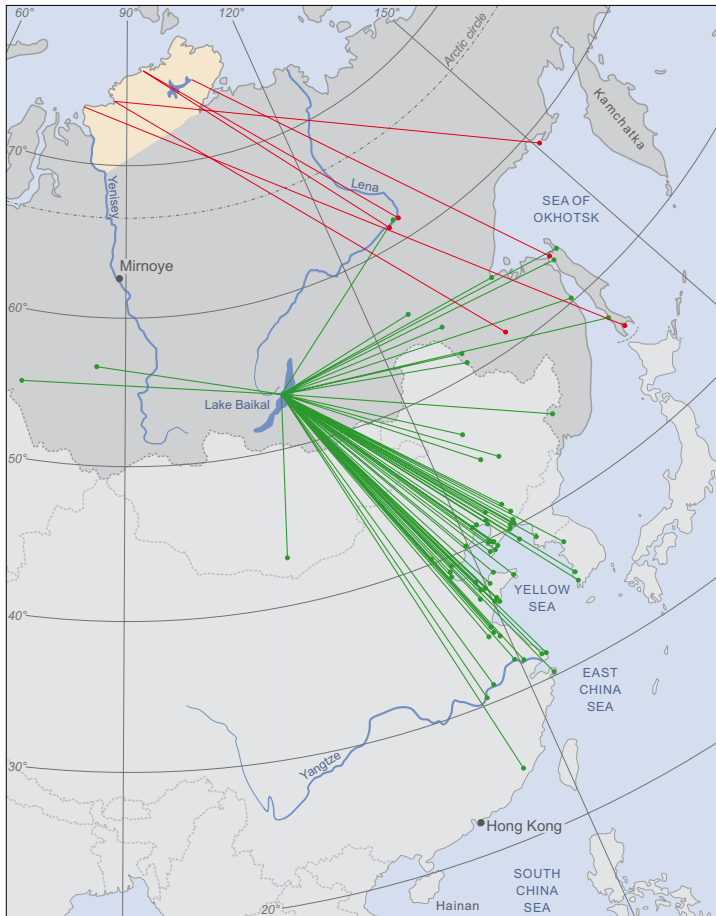


FIGURE 3 Ringing and recovery sites of Taimyr Gulls *Larus taimyrensis* (red lines, see figure 2 for details) and recovery sites of Mongolian Gulls *L. (vega) mongolicus* ringed at Lake Baikal, Siberia, Russia (green lines; source: Bird Ringing Centre of Russia)

likely had to be attributed to Taimyr Gull. Besides that, Hoogendoorn et al (1996) suggested that Mongolian Gull is probably scarcer in Japan than Taimyr Gull, which is supported by the recoveries in figure 3, as to date no gull ringed at Lake Baikal has been recovered in Japan. None of the wing-tagged Mongolian Gulls has been observed in Japan either (Andreas Buchheim in litt).

Conclusions and further research

Our ring recoveries indicate that Taimyr Gulls spend the winter in coastal areas in the north-western Pacific and that they cross the mainland of Asia in a south-easterly direction when migrat-

ing from the breeding grounds towards the wintering areas. The number of recoveries is low but this is, eg, also the case for almost all species of waders breeding on Taimyr (Tomkovich et al 2000). We have some indications, but no ring recoveries, that Taimyr Gulls might predominantly winter in a quite mild environment, most likely in coastal areas of the East China Sea and the South China Sea. More observations of birds marked on Taimyr and more insight in the winter ecology are needed to establish its core winter range and to get a better picture of the migration route.

Furthermore, observations of marked birds are necessary to clarify if Taimyr Gulls also spend the winter in coastal areas around the Arabian Sea, or elsewhere along a south-westerly flyway. Recent sources indicate that gulls resembling Taimyr Gulls spend the winter in low numbers in southern Iran (Scott 2007) and Bahrain (Yésou & Hirschfeld 1997). The same may be true for the small number of unidentified large white-headed gulls seen at Okha, western India, described and depicted in Buchheim (2006).

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Samenvatting

TAIMYRMEEUWEN: BEWIJZEN VOOR PACIFISCH OVERWINTERINGS-
GEBIED EN GEGEVENS OVER MORFOLOGIE EN BROEDEN Taimyr-
meeuwen *Larus taimyrensis* zijn grote witkoppige meeu-
wen die broeden op het Taimyrschiereiland in het uiter-
ste noorden van Centraal-Siberië, Rusland (figuur 1).
Het is niet goed bekend waar ze overwinteren. Oor-
zaken zijn een gebrek aan terugmeldingen en onzeker-
heid over herkenning buiten de broedgebieden. Daarom
wordt een korte beschrijving gegeven van het uiterlijk,
geïllustreerd met foto's uit het broedgebied, en wordt
kort ingegaan op het voorkomen op Taimyr.

Tussen 1977 en 2008 werden c 750 Taimyrmeeuwen
op Taimyr geringd en er zijn tot en met 2010 zes terug-
meldingen bekend van elders (tabel 1). De terugmeldin-
gen duiden op een zuidoostelijke trekroute en op de
noordwestelijke Pacifische kust als overwinteringsge-
bied (figuur 2). De resultaten zijn niet in overeenstem-
ming met suggesties in oude handboeken dat Taimyr-
meeuwen naar het zuidwesten vliegen en rond het
Arabische schiereiland, langs de Kaspische Zee of in
Oost-Afrika overwinteren. Verwarring met Heuglins
Meeuw *L heuglini* en met Pontische Meeuw *L cachin-
nans* ligt hieraan ten grondslag. Het aantal terugmeldin-
gen is laag en daarom is niet uitgesloten dat sommige
Taimyrmeeuwen elders overwinteren. Foto's uit de
broedgebieden zijn bestudeerd door ornithologen in
Oost-Azië. Dat leidde tot de conclusie dat meeuwen die
zij *taimyrensis* noemen sterk lijken op de broedvogels
van Taimyr en dat het om dezelfde populatie moet gaan.
In de discussie wordt ingegaan op een meer precieze
omgrenzing van het wintergebied. Er is nauwelijks iets
bekend over de winterecologie van Taimyrmeeuwen en
veel ogenschijnlijk geschikte gebieden in Oost-Azië
worden niet of nauwelijks bezocht door ornithologen.
Een vergelijking wordt gemaakt met trekpatronen en
wintergebieden van Mongoolse Meeuw *L (vegae) mon-
golicus* (figuur 3) en er blijken aanwijzingen te zijn dat
Taimyrmeeuwen vermoedelijk verder zuidelijk overwin-
teren, wellicht vooral langs de kusten van de Oost-
Chinese Zee en Zuid-Chinese Zee. Waarnemingen van
gemerkte vogels zijn nodig om dit vermoeden te beves-
tigen. Hetzelfde geldt voor het al dan niet vaststellen van
het overwinteren van een deel van de populatie langs de
kusten van het Arabische schiereiland.

References

Buchheim, A 2006. Adult large white-headed gulls at
Okha. *Birding Asia* 5: 40-53.
Collinson, M, Parkin, D, Knox, A, Sangster, G & Svensson,
L 2008. Species boundaries in the Herring and Lesser
Black-backed Gull complex. *Br Birds* 101: 340-363.
Cramp, S & Simmons, K (editors) 1983. *The birds of the
Western Palearctic* 3. Oxford.
van Dijk, K 2011. Breeding ecology of waders and other
birds at Mys Vostochny in 1993. WIWO-report 88.
Nijmegen.
Ebbinge, B & Mazurov, Y 2005-07. Pristine wilderness of
the Taimyr peninsula. Report 2004-06. Moscow.
Filchagov, A, Yésou, P & Grabovsky, V 1992. Le Goéland
du Taimyr: répartition et biologie estivales. *L'Oiseau et
RFO* 62: 128-148.

Fujimaki, Y, Kawaji, N, Morioka, H, Urano, E & Yanagi-
sawa, N 2000. Check-list of Japanese birds. Sixth edi-
tion. Tokyo.
Gibbins, C 2003. Identification of adult Vega Gull: field
observations from Japan, February 2003. Website:
www.surfbirds.com. [Accessed 23 November 2008.]
Glutz von Blotzheim, U & Bauer, K (editors) 1982. *Hand-
buch der Vögel Mitteleuropas* 8/I. Wiesbaden.
Grabovsky, V 1991. [On the breeding of Herring Gulls in
the Pyasina river mouth]. *Mat 10th Ornithol Conf
Minsk* 2 (1): 164-165. [In Russian.]
Grant, P J 1982. Gulls: a guide to identification. Calton.
Grönlund, E & Melander, O 1995. Swedish-Russian tun-
dra ecology expedition 1994. Report. Stockholm.
Hoogendoorn, W, Moores, N & Morioka, T 1996. [The
occurrence and field identification of adult Herring
Gulls with yellow legs in Japan.] *Birder* 10: 64-73; 99.
[In Japanese.]
del Hoyo, J, Elliott, A & Sargatal, J (editors) 1996. *Hand-
book of the birds of the world* 3. Barcelona.
Il'icev, V & Zubakin, V 1990. *Handbuch der Vögel der
Sowjetunion* 6/1. Wittenberg.
Kennerley, P, Hoogendoorn, W & Chalmers, M 1995. Iden-
tification and systematics of large white-headed gulls in
Hong Kong. *Hong Kong Bird Rep* 1994: 127-156.
Kharitonov, S 2009. Breeding site fidelity and foraging
pattern in Taimyr Gull in the Medusa bay vicinities.
*Mat Scien Conf Problems of animal study and protec-
tion in the north Syktyvkar*: 221-222.
Kondratyev, A, Litvinenko, N & Kaiser, G 2000. Seabirds
of the Russian Far East. Report. Ottawa.
Lee, W, Koo, T & Park, J 2000. A field guide to the birds of
Korea. Seoul.
Li, D, Bloem, A, Delany, S, Martakis, G & Quintero, J
2009. Status of waterbirds in Asia in 1987-2007.
Wetlands International report. Kuala Lumpur.
Liebers, D 2000. Phylogeographische Differenzierung
und Verwandtschaftsbeziehungen von Großmäwen.
PhD-thesis. Greifswald.
Liebers, D, Helbig, A & de Knijff, P 2001. Genetic differ-
entiation and phylogeography of gulls in the *Larus
cachinnans-fuscus* group. *Mol Ecol* 10: 2447-2462.
Liebers, D & Helbig, A 2002. Phylogeography and coloni-
zation history of Lesser Black-backed Gulls as revealed
by mtDNA sequences. *J Evol Biol* 15: 1021-1033.
Liebers, D, de Knijff, P & Helbig, A 2004. The Herring
Gull complex is not a ring species. *Proc R Soc Lond B*
271: 893-901.
Moores, N 2003. A consideration of the Herring Gull as-
semblage in South Korea. Website: www.birdskorea.
org. [Accessed 31 January 2008.]
Moores, N, Park J & Kim, A 2009. The Birds Korea check-
list 2009. Busan.
Musch, J & Tinbergen, T 1996. *Onze Rotgans in Siberië*.
Video. Wageningen.
Olsen, K M & Larsson, H 2004. *Gulls of Europe, Asia and
North America*. Second edition. London.
Peters, L 2006. Bird migration at Medusa bay in June-
August 2001. Student report. Groningen.
Prokosch, P & Hötter, H 1995. Faunistik und Naturschutz
auf Taimyr. *Corax* 16: 1-264.
Rogacheva, H 1992. The birds of central Siberia. Husum.
Schekkerman, H & van Roosten, M 1995. Breeding wa-
ders at Pronchishcheva Lake in 1991. WIWO-report
55. Zeist.

Taimyr Gulls: evidence for Pacific winter range, with notes on morphology and breeding

- Scott, D 2007. A note on large white-headed gulls in Iran. *Podoces* 2: 143-145.
- Shimba, T 2007. A photographic guide to the birds of Japan and north-east Asia. London.
- Spiekman, H & Groen, N 1993. Breeding performance of arctic waders in relation to lemming densities in 1992. WIWO-report 33. Zeist.
- Tomkovich, P, Lappo, E & Syroechokovski, E 2000. Ringing and migratory links of Taimyr waders. *Heritage of the Russian Arctic*: 458-475.
- Ujihara, O & Ujihara, M 2008. Japanese Gull Site. Website: www23.tok2.com/home/jgull/gullidentifi_.htm. [Accessed 20 November 2008.]
- Vaurie, C 1965. The birds of the Palearctic fauna. A systematic reference. Non-Passeriformes. London.
- Vonk, H 2003. Breeding birds at Mys Vostochny in 1994. WIWO-report 52. Zeist.
- Willems, F, van Turnhout, C, van Kleef, H & Felix, R 2002. Breeding birds of Medusa bay in 1998 and 1999. WIWO-report 77. Zeist.
- Yésou, P 2001. Phenotypic variation and systematics of Mongolian Gull. *Dutch Birding* 23: 65-82.
- Yésou, P 2002. Systematics of *Larus argentatus-cachinnans-fuscus* complex revisited. *Dutch Birding* 24: 271-298.
- Yésou, P & Hirschfeld, E 1997. Which large gulls from the *Larus fuscus-cachinnans-argentatus* complex occur in Bahrein? *Sandgrouse* 19: 111-121.

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APPENDIX 1 Morphometric characters of 24 Taimyr Gulls *Larus taimyrensis* (23 adults, 1 subadult) trapped on Taimyr peninsula, Russia, in 1990-2005. Wing measured as maximum chord, bill from tip to start of feathering, tarsus by bending toes back to c 90° and from this bend to notch on back of intertarsal joint. Weight in grams, other measurements in mm. Coloration of iris is estimate of % dark on pale yellow basis. V = Mys Vostochny, M = Medusa bay, 5-22 trapped by SK on nest on Oleni islands (measurements taken by Oscar Langevoord and Leon Peters); 1-3 from Prokosch & Hötter (1995); 4 accidentally caught in trap for foxes; 2 aged as third calendar-year (all others as after third calendar-year). Ringing schemes: DFH = HELGOLAND GERMANIA, DFR = RADOLFEZELL GERMANIA, RUM = RUSSIA MOSKWA.

Site	Ringing scheme	Ring number	Date	Wing	Bill	Total head	Tarsus	Weight	Iris	Leg colour	
V	1	DFH	3091601	29 June 1990	454	–	126	–	935	–	–
V	2	DFH	3091602	29 June 1990	468	57.8	138	–	1380	–	–
V	3	DFH	3091603	29 June 1990	430	50.5	122	–	–	–	–
V	4	DFR	JC 28951	8 June 1993	443	49.3	–	68.4	880	–	yellow
M	5	RUM	DS 006501	25 June 2001	465	59.4	134	69.6	1010	–	–
M	6	RUM	DS 006502	25 June 2001	452	53.5	124	69.3	970	–	–
M	7	RUM	DS 006503	25 June 2001	465	55.3	133	74.8	1240	–	–
M	8	RUM	DS 006504	25 June 2001	485	56.0	135	70.9	1110	–	yellowish
M	9	RUM	DS 006505	25 June 2001	425	51.1	118	66.7	870	–	yellow
M	10	RUM	DS 006506	25 June 2001	450	54.2	124	64.2	880	–	yellow
M	11	RUM	DS 006507	25 June 2001	425	51.6	127	68.5	1000	–	pinkish
M	12	RUM	DS 006508	25 June 2001	440	55.6	132	63.5	1050	–	orangy
M	13	RUM	DS 006509	26 June 2001	440	54.0	123	66.6	1000	–	yellow
M	14	RUM	DS 006510	26 June 2001	460	60.6	138	67.6	1120	95%	yellow-flesh
M	15	RUM	DS 006511	26 June 2001	455	55.0	121	67.0	930	10%	yellow
M	16	RUM	DS 006512	26 June 2001	435	48.0	121	72.0	1060	40%	yellow
M	17	RUM	DS 006513	26 June 2001	420	49.3	118	64.9	920	<5%	yellow-orange
M	18	RUM	DS 006514	26 June 2001	445	52.3	123	64.7	990	10%	yellow
M	19	RUM	DS 006515	26 June 2001	435	51.8	123	63.8	940	<5%	yellow; webs pink
M	20	RUM	DS 006516	26 June 2001	440	51.5	124	70.3	1060	70%	yellow; webs orange
M	21	RUM	DS 006517	26 June 2001	440	51.3	123	66.2	1020	<2%	yellow
M	22	RUM	DS 006518	28 June 2001	445	51.0	118	62.0	1130	80%	yellow
V	23	RUM	ES 010594	6 July 2005	440	53.5	–	–	1050	–	–
V	24	RUM	ES 010592	7 July 2005	472	52.7	–	–	1200	–	–
Mean (both sexes combined)					447	53.3	126	67.4	1030		
SD					16.2	3.2	6.4	3.3	124		
N					24	23	21	19	23		