

Spectacled Guillemot Keimafuri (Jpn) *Cephus carbo*

## Morphology and classification

Classification: Charadriiformes Alcidae

Total length: 37cm      Wing length: 191.80-197.60mm  
 Bill depth: 39.24-46.05mm      Tarsus length: 35.50-39.12mm  
 Tail length: 50.39-54.52mm      Weight: 576-760g

Total length after Takano (1982). Other measurements are the average of adult birds (n = 5) (Minami et al. 1991).

## Appearance:

Spectacled Guillemots are paler than black but darker than chocolate in the summer plumage. They have a white spectacle which surrounds the eye and extends to the nape. The feet and mouth are bright red. Both males and females are the same in plumage. Incidentally, the Japanese name of Spectacled Guillemots is derived from "Kema fure (red foot)" of the language of the Ainu, an indigenous people in Japan. They are also called "Aka-ashi (red foot)" by the locals in Teurito Island off the northwestern coast of Hokkaido, northern Japan (Photo 1).

In the winter plumage, on the other hand, they are black on the upperpart and white on the underpart, still with a white spectacle (Photo 2).

The fledglings are brown on the upperpart and white on the underpart with brown speckles. They also have a white spectacle (Photo 3).

## Vocalization:

In the breeding period, Spectacled Guillemots very frequently call in a shrill voice like "Fi-fi-fee-fee" on the ground, at sea and even in the nesting burrow.



Photo 1. Adult Spectacled Guillemots in summer plumage calling on a rock.



Photo 2. Spectacled Guillemots in winter plumage.



Photo 3. Juvenile Spectacled Guillemot.

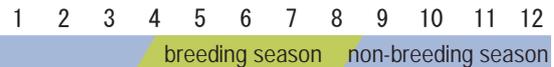
## Distribution and Habitat

## Distribution:

Spectacled Guillemots breed in the seaboard of Far East Russia from Sakhalin to Kamchatka as well as Japan. In Japan, they breed in Hokkaido (Teurito Island, Matsumae-kojima Island, Kiritappu Point, Daikokujima Island and Yururijima Island), Aomori Prefecture (Shiriyazaki Point) and the Northern Territories (Habomai, Kunashiri, Shikotan and Etorofu Islands of the Krill Islands). In Teurito Island off the northwestern coast of Hokkaido, for instance, the breeding population sharply declined from 7,000 birds in late June 1949 (Austin & Kuroda 1953) to 3,000 birds in 1963 (Kuroda 1965) and 294 birds in 1994 (Fukuda et al. 1995).

Historical breeding sites included such areas as Sanganjima Islet of Iwate Pref. (Fumio Sato pers. comm.), Ozumijima Islet of Yamagata Pref. (Takahashi 1972) both in northern Honshu, the Nemuro Peninsula (the vicinity of Hanasaki port), eastern Hokkaido (Abe & Matsuki 1968), the Etomo Peninsula of Muroran City (Austin & Kuroda 1953) and Esan Point of the Oshima Peninsula, both in southern Hokkaido (Kuroda 1965).

## Life history



## Breeding habitat:

Spectacled Guillemots nest in the holes and crevices of sheer sea cliffs, steep rocky slopes and reefs.

## Breeding period:

In the Shiretoko Peninsula, northeastern Hokkaido, for instance, Spectacled Guillemots return to the breeding grounds soon after the sea ice left the coast from mid- to late March, depending on the years. Based on the period when the parent birds begin to deliver food to the nest, it is estimated that they lay eggs from mid- to late May. The eggs hatch from mid- to late June and the nestlings fledge from late July to early August. They usually leave the breeding grounds in late August.

## Egg and incubation period:

The clutch size is two eggs. There is no report on the incubation period. The egg size is  $65.4 \pm 2.4$ mm (SD) by  $44.5 \pm 0.57$ mm (n = 15) (Sakurazawa 2001).

## Nestling and fledging periods:

The nestling period is 40-45 days in Teurito Island, northwestern Hokkaido (Thoresen 1984). In Bentsenjima Islet off Shiriyazaki Point, Aomori Pref., northern Japan, on the other hand, one nestling of a two-chick brood fledged 43 days after hatching and the other 53 days after hatching (Sakurazawa 2001).

In Teurito Island, the nestlings just before fledging were 460-620g in weight (67.6-91.2% of adult weight), 124.9-149.8mm in wing length (64.3-77.1% of adult wing length). The feeding frequency was  $9.8 \pm 1.4$  (SD) times per day (n = 1) (Minami et al. 1991).

## Diet and foraging behavior

The diet of the nestlings consists of rockfish (*Sebastes minor*), Pacific sand lance (*Ammodytes personatus*) and tidepool gunnel (*Pholis nebulosa*) in Teurito Island (Minami 1991). The observation conducted in the Shiretoko Peninsula in 2007 showed that the food parent birds delivered to the nest was comprised of Pacific sand lance (7 sightings), *Gymnocanthus herzensteini* sculpin (1), sculpin sp. (3), Elkhorn sculpin *Alicichthys elongatus* (1), flounder (1), and tidepool gunnel (2). The observation of 2008 also showed that the staple food was Pacific sand lance (23 sightings), followed by tidepool gunnel (6) and Japanese anchovy (2). Spectacled Guillemots were observed to carry sandfish as well in other years. The stomach contents of Spectacled Guillemots captured in the Pacific seaboard of the Tohoku region (northern Japan) in winter included flatheads, octopuses, small crabs (Austin & Kuroda 1953), *Reptomucenus lunatus* and *Octopus ocellatus* (Kuroda 1955).



Photo 4. A flock of sand lance (staple food of Spectacled Guillemots)

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In the Shiretoko Peninsula, Spectacled Guillemots mostly foraged in areas with the sandy floor at a depth of less than 50m. When I made an underwater survey of the area where they most frequently foraged, a large number of sand lance occurred and came out of the sandy floor as well.

## Topics of ecology, behavior and conservation

### ● In the Shiretoko Peninsula

In the Shiretoko Peninsula, northeastern Hokkaido, the breeding grounds are limited to the northwestern coast of the peninsula and the seaboard from Puyuni Point east of Utoro Town to the cliff of Shiretoko Five Lakes. This area coincides with the sightseeing spot. The Spectacled Guillemot population of the peninsula decreased from 140 birds in 2004 to 98 in 2008 and 96 in 2009 (Fig. 1). Since it is assumed that birds whose population has dropped below 100 individuals are at a risk of extinction, the population of the peninsula is faced with the threat of local extinction.

The population decline of Spectacled Guillemots in Shiretoko can be attributed to small sightseeing boats that have started to increase since the Shiretoko Peninsula was nominated as a World Natural Heritage Site (Photo. 5). The sightseeing boats sail at a speed of about 40 kph up to more than 20 times a day in the habitat of Spectacled Guillemots and the vicinity of their breeding grounds. Spectacled Guillemots are observed trying frantically to escape the boats many times a day, and they have moved the breeding sites to the area that the boats do not approach.



Photo 5. A pleasure boat sailing close to spectacled Guillemots.

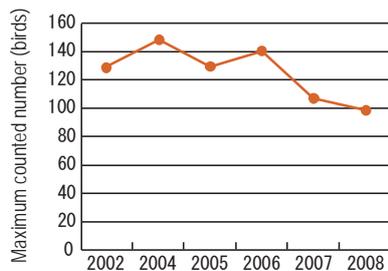


Fig. 1. Annual fluctuation in the number of Spectacled Guillemots in the Shiretoko Peninsula.

### ● Conservation issues and future tasks

It is a bright side of an unfortunate circumstance that fixed net fishery, instead of gill net fishery, is operated mainly for salmon off the western coast (Shari side) of the Shiretoko Peninsula because gill nets which correspond to mist nets pose a serious threat to diving seabirds but fixed nets do not entail a high risk of by-catching these birds including Spectacled Guillemots.

However, the route of sightseeing boats conflicts with the area that Spectacled Guillemots use in the breeding period as mentioned above. In order to solve this problem, the Ministry of the Environment has since 2002 taken the initiative in starting a conference for considering "the proper use of a coastal area" in terms of Spectacled Guillemot conservation with the cooperation of sightseeing boat traders, travel agents, a local fishermen's cooperative association, Shari Town officials and seabird research workers. However, some sightseeing boat traders felt repelled by the conference, saying "Although seabird conservation may be important, we make a living out of operating sightseeing boats".

It is necessary to conserve the habitat of Spectacled Guillemots by indefatigably explaining their value and the importance of Shiretoko as their habitat to the sightseeing boat traders to gain their

understanding and establish rules for the seabird-friendly use of a coastal area.

There is also a need to continue the population and breeding monitoring of Spectacled Guillemots that has been carried out since 2002 along with other wildlife monitoring because it is important to establish the mechanisms to take prompt action when an unusual change arises in order to maintain the healthy ecosystem allowing for the stability of Spectacled Guillemot population.

### ● Activities to popularize the knowledge of Spectacled Guillemots

I also sell "Tenugui (Japanese hand towels)" with a motif of Spectacled Guillemots as a souvenir to raise them from obscurity (Photo. 6). The proceeds are intended for the conservation of Spectacled Guillemots, though they may be actually negligible, but I think it a first step toward their conservation to draw attention to them. In addition, I have made the pamphlet "Seabirds of Shiretoko" that introduces seabirds of the Shiretoko Peninsula, and have distributed it in the local nature facilities, such as the Shiretoko Museum and Shiretoko Nature Center.



Photo 6. Japanese hand towel ("Tenugui") with a motif of Spectacled Guillemots. (Available only in Japan)

## Literature

- Abe M. & Matsuki M. 1968. The birds in Hanasaki Port in Nemuro City. *Tori*, 18:227-246. [J]
- Austin O.L. & Kuroda N. 1953. The birds of Japan: Their status and distribution. *Bull. Mus. Comp. Zool. Harvard*, 109:279-613.
- Fukuda Y., Watanuki Y., Hayashi E. & Kato A. 1995. Change in seabird populations and the nesting sites (excluding the Common Guillemot & Rhinoceros Auklet). Report on the study of the marine animal state such as the Common Guillemots. 1992-1994. Environment Research Center of Hokkaido, Pp.16-22. [J]
- Kuroda N. 1963. Seabird survey in Teurito Island (Attachment land birds). *J. Yamashina Inst. Ornithol.* 3:365-383. [J]
- Kuroda N. 1965. Bird survey in Hokkaido. *J. Yamashina Inst. Ornithol.* 4:224-268. [J]
- Kuroda N. 1955. Bird survey in northern Pacific coast region in winter. *Vogel*, 12:5-29. [J]
- Minami H., Shiomi K. & Ogi H. 1991. Morphological Characteristics and Functions of the Spectacled Guillemot, *Cephus carbo*. Bulletin of the Faculty of Fisheries Hokkaido University (<http://hdl.handle.net/2115/24087>) 42:160-181. [J+E]
- Sakurazawa I. 2001. The breeding ecology of the Spectacled Guillemot *Cephus carbo* in Bentenjima Island of Yazaki Port in Aomori Prefecture. Hokkaido University Faculty of Fishery. Master's thesis. [J+E]
- Takano S. 1982. Field Guide to the Wild Bird in Japan. Wild Bird Society of Japan. Tokyo. [J]
- Takahashi T. 1978. The birds of Choukaisen and Tobishima. Report of integrated science survey on Mt. Choukaisen and Tobishima Island. Yamagata integrated science survey committee, pp.173-203, 412pp. [J]
- Thoresen A.C. 1984. Breeding phenology and mid-seasonal social behavior of the Sooty-Guillemots on Teuri Island Japan. *Western Bird*, 15:145-158.

Languages of literature cited other than English: [J] in Japanese, [J+E] in Japanese with English summary.

## Author

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Thirteen years have already passed since I moved from Teurito Island to Utoro of Shiretoko. I have appealed for the conservation of Spectacled Guillemots for eight years. The Ministry of the Environment is very positive about their conservation. It is a crucial timing now for the success of their conservation.