PRESENT STATUS OF RAZORBILLS *ALCA TORDA* IN RUSSIA: OCCURRENCE, POPULATION AND MIGRATIONS

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SUMMARY


Within the boundaries of Russia, Razorbills *Alca torda* breed on islands along the northeastern coast of the Kola Peninsula, on islands in the Kandalaksha and Onega bays in the White Sea, and, since the early 1990s, along the Russian coast of the Gulf of Finland. Currently, among these sites, 4,000–4,300 breeding pairs occur, or 6% of the total number of the *A. t. torda* subspecies. Over 80% of the Russian Razorbill population breeds on islands in Onega Bay, where the species’ population has been increasing during the last 20 years. Data from ringing indicate that Razorbills breeding on islands in the Barents and White seas have wintering sites along the coasts of Norway, Denmark and Great Britain, indicating possible exchange among these breeding populations.

Key words: *Alca torda*, Barents Sea, Gulf of Finland, migrations, population overlap, Razorbill, White Sea

INTRODUCTION

Two subspecies of Razorbills are currently recognized: *Alca torda torda* and *A. t. islandica* (Vaurie 1965, Cramp 1985, Dickinson & Remsen 2013), and the eastern boundary of the range for *A. t. torda* lies within Russian territory (Fig. 1). The total population of that subspecies is estimated at 187,000–207,000 individuals or 62,000–70,000 pairs, a number that is increasing everywhere except in Norway and Greenland, where the dynamics are not clear (Hentati-Sundberg 2011, Herrmann et al. 2013, Cherenkov et al. 2014, Barret et al. 2006). The most significant growth of the population (on the average, 3.4% yr⁻¹) has been recorded in Finland (Hario & Rintala 2014).

In the Barents Sea within the boundaries of Russia (Fig. 2), Razorbill breeding locations are found on islands along the northeastern coast of the Kola Peninsula as far east as Dvorovaya Guba Bay, and probably on the southern island of the Novaya

![Fig. 1. Locations in northwestern Russia of areas shown in Figures 2, 3 and 4.](image1)

![Fig. 2. Razorbill colonies on the northern (Barents Sea) coast of the Kola Peninsula; dot size indicates size of colony (see key on figure).](image2)
Zemlya Archipelago (Tatarinkova & Golovkin 1990, Krasnov et al. 1995, Strøm et al. 1995, Tertiński et al. 2000, Kalyakin 2001). In the White Sea (Fig. 3), Razorbills breed on islands in Kandalaksha and Onega bays (Bianki 1967, Cherenkov et al. 2014). Razorbill colonies have been present in the Russian part of the Gulf of Finland, on the Bolshoi Fiskar and Virgins archipelagos, since the early 1990s (Fig. 4). Whether Razorbills were breeding in the region earlier has remained unproven owing to insufficient ornithological observations between 1940 and 1987. In the first half of the 20th century, Finnish authors drew the eastern limit of the species’ range along the present-day Russian-Finnish boundary (Suomalainen 1937). Estonian ornithologists who performed studies in the southern sector of the Gulf of Finland in the early 1970s did not find them on the islands off the Kurgalsky Peninsula or on other islands of the region (Renno 1976); in May 1962, however, an adult bird ringed in Finland was caught near Bolshoi Fiskar Island, Kola Peninsula, Barents Sea.

It is still unclear what the species’ status is on Lake Ladoga. All of the authors who have written about Razorbills breeding on the lake (Paatela 1947, Neufeldt 1958, Koskimies 1979, Malchevsky & Pukinsky, 1983) have referred to the papers by I. Hilden (1921a, b). The latter reported (based on interviews with local people) that the Razorbill was a common breeding species occurring in abundance on Yalayansari (Jalajansaari) Island. Later publications lack data on the bird breeding on the islands in Lake Ladoga (Malchevsky & Pukinsky 1983, Zimin et al. 1993, Medvedev & Sazonov 1994, Mikhaleva & Birina 1997, Boyarinova & Kavokin 1998). Equally absent are data on migrant and vagrant individuals in this region.

**MATERIALS AND METHODS**

When visiting islands in the Onega Bay, we counted or estimated the number of Razorbills, both on the water and in aerial flocks circling above the colony. To obtain the number of nesting pairs, the total number of recorded birds was multiplied by a coefficient of 0.67 (Walsh et al. 1995). Surveys were carried out in the last 10 days of June or in the first 5 days of July. On Malaya Sennukha Island, observations were performed yearly (except 1993 and 1998), while other colonies were surveyed every 3–5 years (Table 1). In addition to our own materials obtained in 1988–2015, we used data acquired by V.V. Bianki (1963, unpubl. data) in the early 1960s. About 460 islands altogether have been surveyed in the Onega Bay (not counting the Solovetski Islands), 63 of which were regular Razorbill breeding localities.

Data were collected as a part of studies of waterfowl breeding populations and migrations in the Gulf of Finland as follows: during 1990–1999 and 2005–2015 on the Kurgalsky Peninsula and on small islands off its coasts; and in 2010–2015 on Bolshoi and Maly Fiskars islands, and in archipelagos Dolgiy Rif and Dolgiy Kamen’, Ryabinnik, Gogland, and Sommers. Some islands were surveyed in 2012–2015, including Nerva, Bolshoi and Maly Tuters, Seskars, Moschchyn (Lavansaari), Maly (Peninsaari), Vigrund, Northern and Southern Virgins (Viirit) and Rodsher islands. The islands known as breeding areas were examined from the third week of May to the beginning of June, from the third week of June to early July, and again in the third week of July. Surveys included a complete search for nests and nestlings on islands and counts of adult birds on the water. If no eggs or nestlings could be found (for example, in a deep and narrow crevice between rocks), bird presence was established by droppings and feathers at the hole entrance. In addition, 23 sea counts were performed from vessels in the eastern part of the Gulf in 2010–2015, from the beginning of May to the third week of November. Finally, we analyzed most of the published data as well as records of the expeditions of 1991–1992, 1994–1995 and 2005–2006 in the archives of the Laboratory of Ecology and Protection of Birds, St. Petersburg State University.

Data on Razorbill numbers and distribution among the islands of the Barents Sea and the Kandalaksha Bay of the White Sea...
are taken from published papers. Information on recovered rings (110 recoveries), provided by the Bird Ringing Centre of Russia, is included in our analysis.

RESULTS

Population numbers and dynamics

The size of the Razorbill population in the Barents Sea (within the boundaries of Russia) is estimated at 300–350 pairs. At the Seven Islands archipelago, 347 pairs were recorded in 1929, 250 pairs in 1960 (Gerasimova 1962), only 76 pairs in 1991 (Krasnov et al. 1995), and 176 pairs in 2008 (Melnikov & Osadchiy 2009). Ainov Islands, near the northernmost coast of Scandinavia, were inhabited by 35 pairs in the early 1960s; the population was reduced to three to eight pairs in 1960–1980 (Tatarinkova 1990), and no breeding pairs were recorded in 1998 and 2002 (Tatarinkova & Chemyakin 1999, Ivanenko 2007). A few tens of pairs were recorded nesting on Bolshoi Arskiy Island, Gorodetsky Point, in the Korabel’naya Guba and Dvorovaya Guba bays (Tertitski et al. 2000).

In Kandalaksha Bay of the White Sea, there were 25 breeding pairs recorded on Srednie Ludy Island and 50 pairs on Zayachyi Ludy (the Tarasikha archipelago) (Bianki 1967); 27 pairs were observed on Srednie Ludy in 1992 (Koryakin et al. 2000), and 66 pairs were recorded on the Tarasikha archipelago in 1998 (Shklyarevich 1999). In 2006, 80 pairs were found on the islands off the Karelia coast between the Kandalaksha and Onega bays (Fig. 3).

In Onega Bay of the White Sea, the breeding areas are concentrated in the southern portion, from the Borshovtsy Islands to Pur-Luda and Nyaya; they also occur among islands farther off, in the Kem Skerries islands group (where one of the largest colonies included 650 pairs); other breeding colonies are known in the bay center, on Salma-Ludy and Sennukha islands. The colonies are long-lived; some have been known for >100 years, for example, those described by I.K. Tarnani (1892) on Sennukha Islands (he erroneously called these the Top Islands) and on Sredniy Martyan Island (in all probability, Sredniy Island in Kem Skerries). Information about Razorbill nesting on the Solovetski Islands (Dementyev 1951, Kozlova 1957), however, appears to be erroneous. The species has not been recorded breeding there during the last 30 years of continuous observations and surveys of these islands (Cherenkov et al. 2014).

In the early 1960s, the Razorbill population in Onega Bay was estimated at 1 600 pairs (Bianki 1963, 1967). In 1991–1999 we counted about 2 650 pairs, and the total number (taking into consideration unexplored islands) was estimated at about 2 750 pairs. As recent records show, the population is growing and has reached about 3600 pairs at present. A comparison of data for particular islands shows distinct population growth during recent decades, the birds’ numbers having increased more than twofold since the 1960s. Although the number of breeding birds in individual colonies (in the larger ones, in particular) has grown markedly, it is noteworthy that the number of colonies has not changed (Table 1, Fig. 5).

In the east of the Gulf of Finland, Razorbills are concentrated on Bolshoi Fiskar and Virgins archipelagos and on Rodsher Island

### TABLE 1

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<td>85</td>
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ND = no data.

<sup>a</sup> Bianki 1963; Bianki et al. 2006, unpublished data by V.V. Bianki.

<sup>b</sup> Counts 2013.
(more than 95% of the total population) (Table 2). Those islands are situated in the deeper parts of the Gulf (Fig. 4). The first Razorbill breeding area found was on Remisaar Island on the Kurgalsky Reef, with eight to 10 pairs nesting there yearly in 1988–1990 (Bubyreva et al. 1993). Five nesting pairs were recorded on the Virgins Archipelagoes in 1991 (Noskov et al. 1993). In 1995, 14 nests were found in the Bolshoi Fiskar Archipelago (Iovchenko et al. 2004), and three more were found on Vigrund Island. In 2010, 54 nests were found on Rodsher Island. This chronology seems to be related to the dates the islands were first surveyed, rather than to the process of the species' dispersal. As an example of actual dispersal, three nests were found on Maly Fiskar Island in 2005 and one nest was found on Nerva Island in 2012, both locations where previous surveys had not found any Razorbills.

Except for Remisaar Island on the Kurgalsky Reef, where the Razorbill stopped breeding after 1996 (Mandryka et al. 2013), the colonies on the remaining islands have persisted to the present day (Table 2). The temporary disappearance of breeding birds from Yuzhny Virgin and Rodsher islands in 2012 (Table 2) may be attributed to foxes Vulpes sp., which reached the islands across the frozen bay. The breeding bird population was restored soon after the foxes disappeared, which suggests a sizeable reserve of birds in the population.


To summarize population trends, results of the Razorbill surveys within Russian territory showed population growth on islands in the Gulf of Finland of the Baltic Sea and in the Onega Bay in the White Sea. On the islands in Kandalaksha Bay (White Sea), however, as well as on the Murman coast of the Barents Sea, the population size remained steady throughout the entire observation period (Table 3). However, on the Murman coast we observed a redistribution of the population, with growth in the east and decrease in the west.

**Migrations**

Razorbills usually arrive at the Eastern Murman Islands at the end of April (Belopolski 1957). After the young birds go to sea in the autumn, migration begins immediately, with the Razorbills moving gradually towards wintering areas. Based on recovered ringed birds, the main wintering region for Razorbills that nest on islands off the Kola Peninsula is along the coast of Norway. Of 17 Razorbills ringed in the Barents Sea, 14 were found during the non-nesting period in Norway, two in Denmark and one in Germany.

We have no precise data on the timing of Razorbill arrival in the White Sea colonies, as the latter are practically inaccessible in spring. In Kandalaksha Bay, the Razorbill appears at the nesting places in the second week of May at the latest (Bianki 1967). Their arrival in Onega Bay usually falls on the first half of May, as indicated by the initiation of egg laying. In all probability, bird appearance on particular islands depends on local ice conditions. At present, as indicated by the peak of hatching, the majority of birds breeding in the colonies of Onega Bay should depart on their

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### TABLE 2

_Counts of Razorbill nests in the eastern part of the Gulf of Finland_

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ND = no data.
summer-autumn migration during the second half of July. By the middle of August, practically all Razorbills have departed. As shown by ringing results, wintering areas of Razorbills from the White Sea and the Barents Sea have considerable overlap, both being along the Norwegian coast. Of 84 Razorbills ringed in Kandalaksha and Onega bays, 68 were recovered in Norway, seven in Denmark, and the remaining five from Great Britain, Greenland, Faroe Islands, Holland and Sweden, yielding one ring recovery each.

Part of the Onega Bay population migrates promptly and may be found in their wintering area, on the southern coast of Norway, as early as mid-October. However, some can be found in the White Sea close to their nesting places at the same time or even somewhat later. Razorbills were repeatedly recorded in September–October on the Solovetsky and Kuzova islands; they are also known to occur during that period in Kandalaksha Bay and near Zhizhgin Island (Bianki 1967). The latest occurrences were recorded on the Solovetsky Islands on 25 September 1983, 14 September 1987, 3 October 1990 and 26 October 2003, and on the Kuzova islands on 9 October 2002. When observing the autumn flight at the end of September–early October in 1999 and 2004, 68 and 85 birds were counted, respectively (Lehikoinen et al. 2006). Among those recorded on 4–7 October 2004, 46 individuals were moving west or southwest, which does not fit into the general picture of the species’ migration and was probably related to searching for food. All of the birds for which age could be determined appeared to be yearlings. It is not inconceivable that the Razorbills recorded in the inner regions of the White Sea in September–October were young birds that had gone astray from the main flyway.

In the Gulf of Finland, some birds remained in the open water area as far east as the Tolbukhin Lighthouse (near the entrance to Nevskaya Guba). Their departure for wintering areas was noted during the first week of October (Kouzov et al. 2013). During a single day, one to eight birds were observed flying westward over the open water. The last migrating individuals were recorded during mid-November. In warm winters, the Razorbills may occasionally stay in the open water in the Gulf of Finland for the entire winter. In the absence of observations, however, this is conjecture.

### DISCUSSION

By the middle of the 20th century, it was generally agreed that the main part of the Razorbill population in Russia was confined to the East Murman islands (Dementyev 1951). That assumption was evidently due to the absence of data on their populations on islands in Onega Bay. At present, the population of this species in Russia may be estimated at 4 000–4 300 breeding pairs, or 6% of islands in Onega Bay. At present, the population of this species in Russia was evidently due to the absence of data on their populations on the islands of Kandalaksha Bay (Tatarinkova & Golovkin 1990). However Razorbills may come to the Murman coast together with murres *Uria* spp. in February (Krasnov, pers. comm.), penetrate the northern part of the White Sea, and finally reach the inner areas of the bays.

It is also not clear to what extent the populations are isolated from each other. In one case, an adult male Razorbill found in the colony on Severnaya Tupichikha Island in Onega Bay on 24 July 1986 had been ringed as a fledgling on 26 July 1982 on Gagarkina Luda in Kandalaksha Bay. Therefore, assuming a conservative philopatry, the birds of Kandalaksha and Onega bays form a single reproductive population. To cite another example, a bird ringed as a nestling on 23 July 1961 on Krestovaya Salma-luda (64°32’N, 35°36’E) in Onega Bay was caught on 2 August 1970 near Tuters Island (59°51’N, 27°10’E) in the Gulf of Finland. This fact, together with the occasional occurrence of birds on the inner lakes of Finland (Lehikoinen et al. 2006), indicates that at least some of the birds fly over land and, therefore, gene exchange is quite possible between populations inhabiting the Baltic and White seas. To clarify these issues, specific research using GLS loggers or satellite transmitters, along with genetic studies, are needed.

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### REFERENCES


