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SHORT COMMUNICATION

The Abundance of the Common Murre, *Uria aalge* (Pontoppidan, 1763) (Charadriiformes: Alcidae), in Peter the Great Bay, Sea of Japan

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Abstract— A large-scale survey of the sea coast of Peter the Great Bay, Sea of Japan conducted in 2017–2023 showed that currently the only nesting ground in Primorsky krai for the Common Murre, *Uria aalge* (Pontoppidan, 1763), is Karamzin Island. According to the results of several, including quadcopter-based, censuses, the number of common murres has been estimated at between 7000 and 8000 pairs.

Keywords: colonial birds, abundance, distribution, Peter the Great Bay, common murre

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The Common Murre, *Uria aalge* (Pontoppidan, 1763), is a low-abundance locally nesting species, which usually migrates and winters in Primorsky krai. According to literature data, common murre colonies were previously observed on some islands of Peter the Great Bay. Thus, according to Firsov, common murres "formed a large nesting colony" on Russky Island in 1906 [13]. Although none of the subsequent researchers found breeding common murres on the island, the information on species nesting there (with or without reference to the above-mentioned evidence) is repeatedly mentioned in the literature [2, 3, 5, 6, 11]. According to the reports of local residents, common murres allegedly nested on Furugelm and Vera islands in Peter the Great Bay [5], but all the following detailed surveys of these islands did not find nesting common murres there [11, our data] (Fig. 1).

In Primorsky krai, in addition to Peter the Great Bay, a nesting ground was also reported for Olga Bay. According to Labzyuk [4], this species was low in abundance in the northern part of the coast in the early 1970s. Common murres nested in single pairs and groups of three to four pairs. The females captured there on August 2, 1972 and June 18, 1973 had brood patches; a fledgling was captured on August 8, 1974. Adult females were captured in Olga Bay on July 31 and September 4, 1975 [7] but no information on breeding or summering of the considered species from this area was available subsequently.

To update data on the distribution and abundance of seabird colonies, we surveyed the coast of Peter the Great Bay from Cape Ostrovok Falshivy to Cape Povorotny, including all islands and sea stacks, in 2017–2018 [10]. The survey has shown that currently in Primorsky krai the only nesting ground of common murres is Karamzin Island located in Peter the Great Bay.

Karamzin Island is a natural monument of local significance. It is a rocky island devoid of tree/shrub vegetation with an elevation of up to 107 m and a total area of 0.09 km^2. A large colony of seabirds is located here, which, in addition to the common murre, includes the Streaked Shearwater *Calonectris leucomelas* (Temminck, 1836), Swinhoe's Storm Petrel *Oceanodroma monorhis* (Swinhoe, 1867), the Japanese Cormorant *Phalacrocorax capillatus* (Temminck et Schlegel, 1849), the Pelagic Cormorant *Ph. pelagicus* (Pallas, 1811), the Slaty-Backed Gull *Larus schistisagus* (Stejneger, 1884), the Black-Tailed Gull *L. crassirostris* (Vieillot, 1818), the Spectacled Guillemot *Cepphus carbo* (Pallas, 1811), the Ancient Murrelet *Synthliboramphus antiquus* (J.F. Gmelin, 1789), and the Rhinoceros Auklet *Cerorhinca monocerata* (Pallas, 1811).

This colony was first surveyed in 1965–1966. Some researchers estimated its size at 150 pairs [8], while others, at 200 pairs [5]. In 1970, about 800 pairs nested there; in 1982, it was 600–700 pairs [11, 14]. According to the latest published information [12], the num-

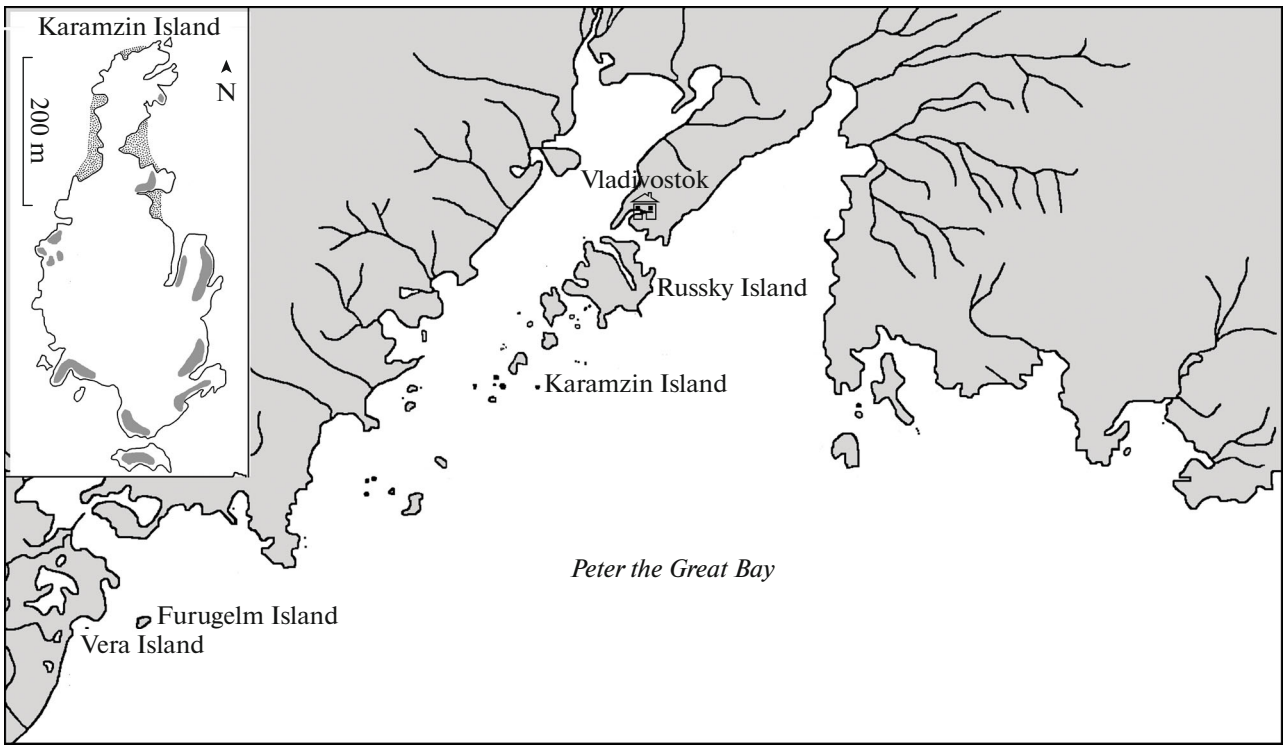

Fig. 1. A schematic map of Peter the Great Bay. Aggregations of common murre on Karamzin Island are shaded in gray (inset).

ber of common murres on the island was estimated at approximately 1900 individuals. However, the publication does not specify the year when the census was conducted and the basis for the expert estimation of number.

To perform the bird census, we visited the colony in 2017–2023: on May 31, 2017, and May 7, 2023, we photographed the perimeter of Karamzin Island with Panasonic Lumix FZ 50 (2017) and Nikon D800 (2023) cameras; on May 26, 2019, and May 28, 2021, with a Phantom 4 Pro quadcopter. We noted that the main aggregations of common murres were located in the southern part of the island, where rocky cliffs are at their highest (Fig. 1, inset).

When counting common murres at colonies it is commonly accepted to take the number of counted individuals as the number of breeding pairs, assuming that one of the partners is currently outside the colony [1, 9].

An analysis of photographs revealed the presence of 4620 common murres in 2017, 6472 in 2019, 8887 in 2021, and 7670 in 2023.

Taking the fact into account that the number of counted birds may exceed the number of breeding pairs (due to a prolonged egg-laying season or presence of non-breeding and immature birds) and not ruling out the probability of missing some birds during the census (those sitting in crevices, behind rocks, or hidden by a bulk of birds in the foreground), we estimate the number of common murres currently nesting on Karamzin Island at between 7000 and 8000 pairs. For a more accurate census of breeding birds, it is necessary to conduct selective counts of common murres present at sample plots with subsequent counting of the number of incubated eggs, which will provide data for calculating the ratio of breeding birds to those present at the colony. For the common murre, the value of this factor for a single colony was shown to remain rather constant from year to year (see Hedgren, 1975 and Birkhead, 1978, cited by [15], and [16]). This will not only allow a more accurate estimation of the number of common murres breeding on the island but will also make it possible to compare the obtained data with those of subsequent monitoring.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This work does not contain any studies involving human and animal (bird) subjects. Observation was conducted from a distance.

CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

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