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SHORT COMMUNICATION
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A new European Shag *Gulosus aristotelis* colony discovered near Ura-Guba in the Barents Sea, Russia

En ny koloni av toppskarv Gulosus aristotelis *vid Ura-Guba i Barents hav, Ryssland*

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BREEDING EUROPEAN SHAG *Gulosus aristotelis* in the Russian part of the Barents Sea was first noted in 1932, but the population has remained small. Currently, breeding sites are known from the Seven Islands, the Gavrilovsky Islands, the Ainovy Islands, the Bazarnaya Guba, and the Pechenga Guba. Here we report the breeding of this species near Ura-Guba and in parts of the Barents Sea coast where it has not been found before.

Keywords: Arctic region | colonial birds | seabird | *Phalacrocorax aristotelis* | cormorant

Introduction

In Europe, two subspecies of the European Shag *Gulosus aristotelis* breed and winter: the Atlantic subspecies *G. a. aristotelis* and the Mediterranean subspecies *G. a. desmarestii* (Wanless & Harris 1997, BirdLife International 2017). The global population is categorized as Least Concern on the IUCN Red List (BirdLife International 2021a), with the European population estimated at 142,000–162,000 breeding individuals. Despite being relatively numerous, a decline in population numbers has been noted (BirdLife International 2021b). The Atlantic subspecies breeds in coastal areas of the North

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Atlantic (Velando & Freire 2002), with the largest population observed in the United Kingdom (27,000 pairs), and Norway (19,000 pairs; BirdLife International 2017). The Mediterranean subspecies breeds along the coast of the Mediterranean Sea, with the largest population observed in Greece (4,900) and Albania (up to 4,000 pairs; BirdLife International 2017). Smaller numbers also occur in the Black Sea (Kalyakin & Voltzit 2020, Pavlov 2021).

The northern part of the distribution of the Atlantic subspecies includes the United Kingdom and Norway. Within the United Kingdom, the population has experienced significant fluctuations (Heubeck *et al.* 2015). This has led to the inclusion of the European Shag on the UK Red List (Stanbury *et al.* 2021). Similar population fluctuations have been observed in Norway. However, recently there has been an increase in the number of large colonies of European Shag in mainland Norway, which researchers attribute to increased availability of food resources (Bustnes *et al.* 2013, Lorentsen *et al.* 2019).

The European part of the Russian Arctic (Murmansk region, Kola Peninsula) represents the eastern boundary of the range of *G. a. aristotelis*. On the Kola Peninsula, the European Shag is a rare species, and is listed in the Red Book of the Murmansk region (Konstantinova *et al.* 2014). Here, the Atlantic subspecies nests in relatively small colonies on the cliffs off the Barents Sea coast. According to published data on the status of seabird populations in the Barents and White Seas (Bianki *et al.* 1993, Anker-Nilssen *et al.* 2000), several nesting sites of the European Shag are known in the Russian part of the Barents Sea: the Seven Islands, the Gavrilovsky Islands, the Aynovy Islands, the Bazarnaya Guba, and the Pechenga Guba (Figure 1).

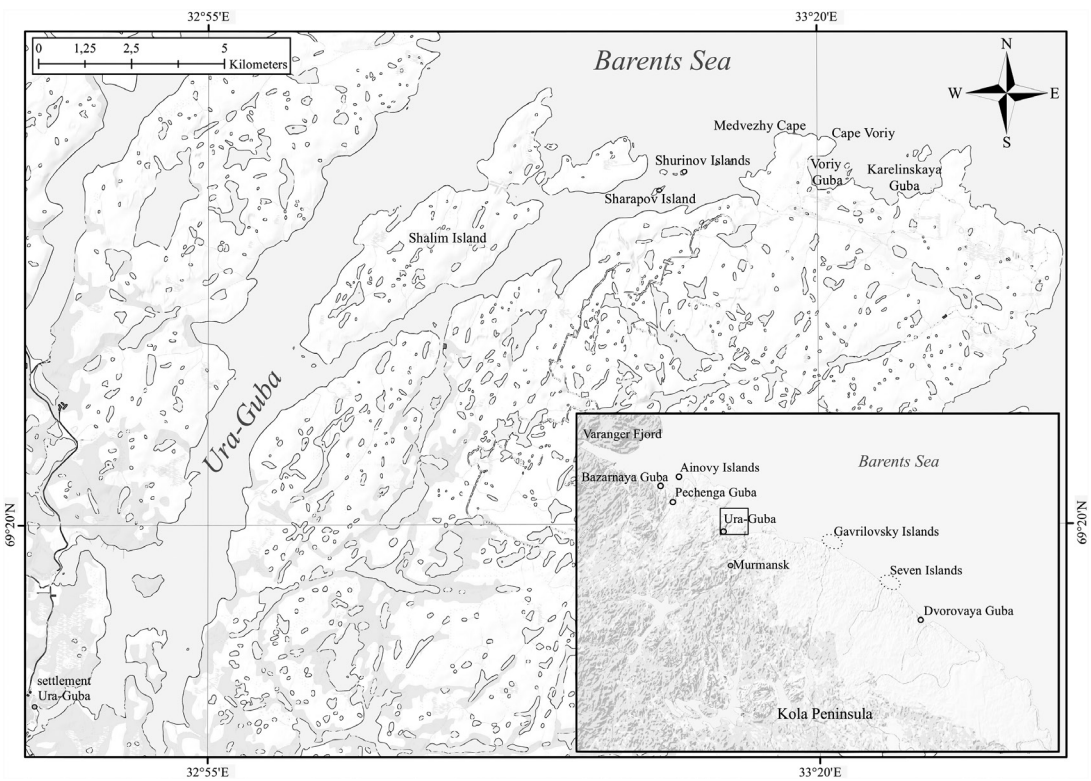

FIGURE 1. Map of the study area in the Russian Barents Sea, including the Shurinov and Sharapov islands where European Shags *Gulosus aristotelis* were identified, as well as part of the mainland, where nesting birds were found.
— En karta över studieområdet i ryska delen av Barentshav, inklusive Shurinovöarna och Sharapovön och andra platser där toppskarvar Gulosus aristotelis *observerades i studien.*

The known breeding grounds of the European Shag in the Barents Sea are mostly located in the Kandalaksha Nature Reserve. The easternmost part of the reserve on the Barents Sea is the Seven Islands (68.770030°N, 37.494445°E). In this breeding area, researchers have counted between 20 and 220 pairs of European Shags in different years (Anker-Nilssen *et al.* 2000). In 2022, Ezhov and Gurba (2022) noted that the number of breeding pairs was around 100, declining from an estimated population of 200–220 pairs in 2013 (data from the Kandalaksha Nature Reserve's Annals of Nature for 2013). European Shags also nest further to the west in the Kandalaksha Nature Reserve, in the Gavrilovsky Islands (69.169338°N, 35.9211830°E). Here, 102 pairs were recorded in 1995 (Krasnov 1995), 560 pairs in 2013, and less than 50 pairs in 2022 (Ezhov & Gurba 2022). Nesting of the European Shag was also observed on the Ainovy Islands (69.838373°N, 31.572344°E) between 1979 and 1985 (Anker-Nilssen *et al.* 2000), with 35 pairs recorded in 2002 (Ivanenko 2013).

Published materials (Priklonsky 1986, Anker-Nilssen *et al.* 2000) mention breeding European Shags also in Pechenga Guba, with 30–40 pairs between 1972 and 1982. A recent survey in June 2022 found no signs of the species there. Priklonsky (1986) also noted 30–40 pairs breeding in Bazarnaya Guba during this period, as well as 60 pairs breeding near the southern coast of the Varanger Fjord in 1977. The easternmost known breeding site of the European Shags in our study area is Dvorovaya Guba (68.434251°N, 38.216119°E). Here on the mainland seashore, 35 nests were found in 1978 but only 2 in 1992 (Anker-Nilssen *et al.* 2000).

In this paper, we report an occurrence of adult and non-breeding European Shags in the Ura-Guba of the Barents Sea, where the breeding and presence of shags have not previously been recorded.

The study

In the first half of June 2022, surveys from a vessel moving along the Ura-Guba (69.328841°N, 32.910379°E) were conducted. The vessel circled the Shalim Island (69.402932°N, 33.062363°E) before heading out to the open sea. Observations from the sea included counts of all birds encountered in flight, on the water, and on land. To achieve more accurate counts of bird aggregations, Yagnob 20×40 binoculars and a Canon EOS 60D camera with a Canon EF 70–300 mm f/4–5.6 IS USM telephoto lens were used for species identification.

The survey resulted in several sightings of groups of European Shags in Ura-Guba (Figure 1), totaling 170 adult and 37 non-breeding birds. On Sharapov Island (69.414299°N, 33.225927°E), 163 adults and 19 non-breeding birds were identified among Black-legged Kittiwakes *Rissa tridactyla*, European Herring Gulls *Larus argentatus*, and Common Eiders *Somateria mollissima*. On Shurinov Islands (69.420572°N, 33.273583°E), seven adult birds and 18 immature birds were encountered. Presently, breeding colonies cannot be confirmed on these islands.

The largest aggregations of European Shags were found on the Barents Sea coastline on the mainland (Figure 2), with 322 adults and 116 non-breeding birds counted. At least 76 nesting pairs were found between Medvezhy Cape and Cape Voriy. There were 13 pairs of European Shags nesting together with Great Cormorants *Phalacrocorax carbo* on one of the rock ledges, while the other colony consisted only of European Shags, with 63 pairs nesting together. Thus, we discovered two colonies of European Shag in an area where its breeding has not previously been observed.

This finding, compounding with published data from other ornithologists (Ezhov & Gurba 2022), suggests that a change in distribution of European Shags in the Russian part of the Barents Sea has occurred over the last ten years. Based on this we speculate that European Shags may have spread out and started breeding in small groups westwards along the coast from the study site.

Significant fluctuations in the population of the European Shag are observed throughout its breeding range (Daunt *et al.* 2008, Fortin *et al.* 2012, Fauchald *et al.* 2015, Heubeck *et al.* 2015, Cummins *et al.* 2019). Ornithologists have been studying the causes of such fluctuations for many years, and it is currently known that they are influenced by food availability (Velandoa & Freire 2002, Howells *et al.* 2017), weather, and climatic conditions (Daunt *et al.* 2001, Frederiksen *et al.* 2007, Bustnes *et al.* 2013, Newell *et al.* 2015), as well as the potential impact of plastic ingestion (Álvarez *et al.* 2018, Thompson *et al.* 2020). Due to the lack of necessary data, we cannot currently determine the cause of the redistribution of the European Shag population in the Barents Sea, which requires further investigation.

FIGURE 2. European Shags *Gulosus aristotelis* on the rocks of Karelinskaya Guba.
— *Toppskarvar* Gulusos aristotelis *vid stranden av Karelinskaya Guba.*

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Svensk sammanfattning

Toppskarven *Gulosus aristotelis* har en stor utbredning längs atlantkusten i Europa, men antalen varierar mellan områden och visar även populationssvängningar. Den nordligaste delen av utbredningsområdet utgörs av norra Norge och Ryssland i Murmansk och Kolahalvön. Dessa områden är stora och delvis svårtillgängliga vilket gör att populationsdata på häckande fågelbestånd är svåröverkomliga i regionen, i synnerhet i den ryska delen. I den här studien genomfördes en skeppbaserad inventering i Ura-Guba-området av havsfåglar, vilket resulterade i observationer av toppskarvar vid Sharapov- och Shurinovöarna, samt bevis på häckande fåglar vid kusten av Barents hav i området mellan Medvezhy Cape och Cape Voriy (figur 1). Dessa data tyder på att toppskarvens utbredning i ryska Arktis ökar, om än fortfarande på låga nivåer.

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