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NEW INFORMATION ON THE BAR-TAILED GODWIT *LIMOSA LAPPONICA* (LINNAEUS, 1758) AND RED-THROATED DIVER *GAVIA STELLATA* (PONTOPPIDAN, 1763) ON THE CRIMEAN PENINSULA (THE BLACK SEA)

© 2021 **V. E. Giragosov[1], M. M. Beskaravayny[2], and I. E. Drapun[1]**

[1]A. O. Kovalevsky Institute of Biology of the Southern Seas of RAS, Sevastopol, Russian Federation
[2]T. I. Vyazemsky Karadag Scientific Station – Nature Reserve of RAS – Branch of IBSS, Feodosiya, Russian Federation
E-mail: *vitaly.giragosov@gmail.com*

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New data on the distribution of the bar-tailed godwit *Limosa lapponica* (Linnaeus, 1758) and red-throated diver *Gavia stellata* (Pontoppidan, 1763) on the Crimean Peninsula are presented. Against the backdrop of aquatic and coastal ecosystems' transformation under natural and anthropogenic impact, even single finds of hydrophilic avifauna representatives in atypical spatiotemporal conditions are of interest for the analysis of emerging trends in migration phenology and abundance of both separate species and taxonomic and ecological groups of birds. The aim of the study was to clarify the distribution boundaries and terms of stay on the Crimean Peninsula of two hydrophilic bird species: semiaquatic species, bar-tailed godwit, and true water bird, red-throated diver. Bird observations were carried out during scheduled accountings on the Isthmus of Ak-Monay (March 2012) and in the Kruglaya Bay (Sevastopol) (July 2019). The bar-tailed godwit is registered in Crimea during spring and autumn migration periods. For the first time, it was found in the north of the Crimean Peninsula in 1972; later, there were an increase in its abundance and expansion of a distribution area. Recent records of this species in southern Crimea significantly expanded the known boundaries of its distribution on the peninsula during the migration period. The observation of the bar-tailed godwit in eastern Crimea on 14 March, 2012, specified the date its spring migration begins; the observation in Sevastopol (western foothill) on 27 July, 2019, was the first one in Mountain Crimea. Off the Crimean coast, the red-throated diver is a rare overwintering and migratory bird. The find of the red-throated diver individual in the Kruglaya Bay on 19 January, 2020, was the third reliable record of this species overwintering in Crimea and the first one in Sevastopol area. The registration of the red-throated diver at a considerable distance from its usual overwintering areas (off the southwestern coast of the Black Sea), along with numerous facts of the expansion of nesting or winter ranges of different bird species northward, confirms the ongoing climatic and ecological changes. Particular attention should be focused on the problem, associated with low ecological culture of the use and disposal of fishing tackles, which have a detrimental effect on hydrophilic birds. Measures have to be developed to regulate fishing with nets, hooks, and line tackles in the areas of bird mass overwintering and seasonal migrations.

Keywords: bar-tailed godwit, red-throated diver, Crimea, distribution, migrations, terms of stay

Fundamental changes in the hydrological regime related to the functioning of the North Crimean Canal since the 1960s and its damming in 2014, as well as to changes in the natural resource management on a large territory of Crimea in recent decades (Sovga et al., 2018), significantly affected the habitat conditions of hydrophilic birds. In this regard, the study of the abundance dynamics, distribution boundaries, and ecology peculiarities of these species is of particular relevance. The finds of even single individuals in atypical areas are of interest for identifying trends in changes in the migration routes and wintering areas of hydrophilic birds on the Crimean Peninsula and in its coastal water area.

The study is aimed at clarifying the distribution boundaries and terms of stay on the Crimean Peninsula of two hydrophilic bird species: semiaquatic species, bar-tailed godwit *Limosa lapponica* (Linnaeus, 1758), and true water bird, red-throated diver *Gavia stellata* (Pontoppidan, 1763).

MATERIAL AND METHODS

Bird observations were carried out during accountings on the Isthmus of Ak-Monay (March 2012) and in the Kruglaya Bay (July 2019) – the areas of the year-round ornithological research, along with other bays of the Heracles Peninsula (Sevastopol). Observations were carried out using binoculars with a magnification 10×. Photos were taken using Canon PowerShot SX60 HS and Canon 400D cameras.

RESULTS AND DISCUSSION

Bar-tailed godwit *Limosa lapponica* (Linnaeus, 1758). The species is common for nesting in the Palearctic tundra zone; in Crimea, it was first found during a migration in the north of the peninsula, in the vicinity of the Portovoe village, in 1972 (Kostin, 1983). In subsequent years, a significant increase in its abundance and expansion of a distribution area during migration periods occurred (ROM Bulletin, 2005 ; Chernichko, 2010 ; Chernichko et al., 2011).

During spring migration, the bar-tailed godwit was first registered in Crimea on 21 May, 1974 (Kostin, 1983). The earliest spring observation date was 25 March, 1999 (Chernichko, 2010). The abundance increases in April and reaches its maximum (up to 1500 ind.) in May. The main area of migratory bird concentration is the Eastern Syvash (Chernichko, 2010). We recorded a single bird on 14 March, 2012, on the central Isthmus of Ak-Monay – near the southern outskirts of the Vladislavovka village (the Kirovsky district). The bird kept on a steppe area not far from a reservoir, in the flock of ruffs *Philomachus pugnax* (Linnaeus, 1758) (Fig. 1A). In the east of Crimea, this spot is the southernmost, but it should be noted that forage biotopes suitable for this species are available to the south as well – in the coastal zone of the Isthmus of Ak-Monay and Kerch Peninsula (Adzhigol, Kuchuk-Adzhigol, and Koyashskoe salt lakes).

The earliest record date of the bar-tailed godwit during autumn migration is 27 July, 1979 (Kostin, 1983), and the latest date is 06 November, 1998 (Chernichko, 2010). The abundance peaks in August; the main areas of bird concentration in autumn are Syvash, the Karkinitsky Bay coast, and salt lakes of the Kerch Peninsula (Chernichko, 2010). We registered an autumn-migrating individual on 27 July, 2019, at the Kruglaya Bay top (Sevastopol) (Fig. 1B). The bird fed on the coast and in shallow water, letting the observer at a distance of 10–15 m. This is the southernmost spot of the species registration on the Crimean Peninsula.

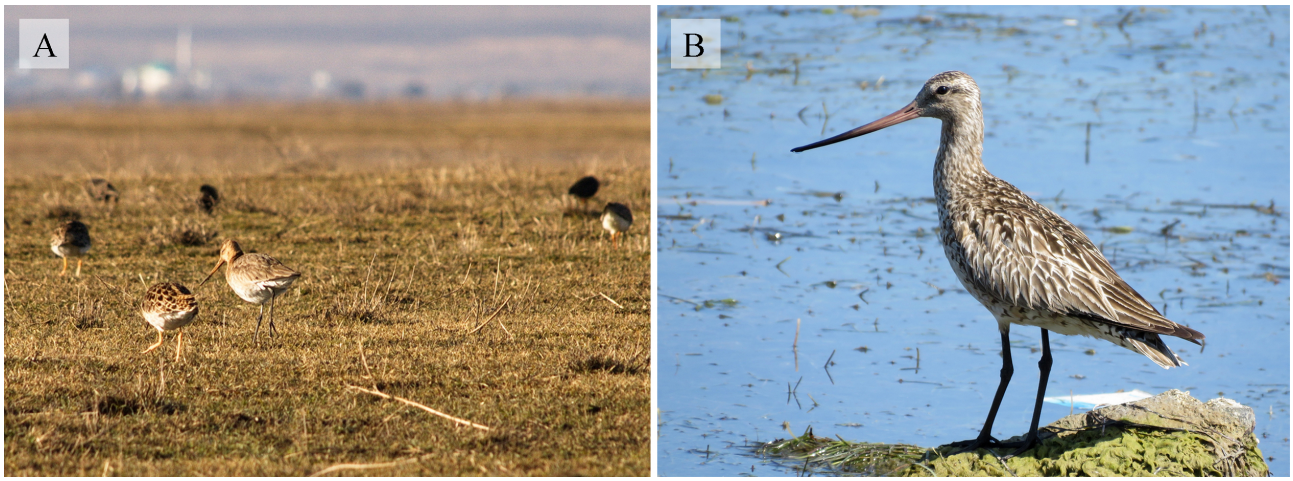

Fig. 1. Bar-tailed godwit *Limosa lapponica*: A – steppe near the Vladislavovka village, in the flock of ruffs, 14 March, 2012, photo by M. Beskaravayny; B – Sevastopol, the Kruglaya Bay, 27 July, 2019, photo by V. Giragosov

Red-throated diver *Gavia stellata* (Pontoppidan, 1763). Off the Crimean coast, it is a rare, occasionally wintering bird (Kostin, 1983). The earliest records of this species date back to the XIX century (Nikol'skii, 1891 ; Blakiston, 1857 ; Nordmann, 1840). There are references to the registration of the red-throated diver in Crimea [in winter, with no dates specified; the article was published in the first third of the XX century (Pusanow, 1933)] and to the record of one individual in the Steppe Crimea [on 03 January, 1907 (Kostin, 1983)]. In subsequent years, single red-throated divers were recorded: near Alushta – on 09 April, 1959, and 25 October, 1961 (Kostin, 1983); near the Lebyazhy Islands – on 04 October, 1964, and 16 November, 1966 (Kostin, 1983); in the interfluve of Kacha and Belbek rivers, Sevastopol area, in the period of 1987–1994 – in March, with no year specified (Klestov & Tsvelykh, 1999); in the Feodosiya Gulf – on 26 January, 2008 (Beskaravayny, 2008); and off the coast of Yalta – on 08 and 10 May, 2017 (Kuzikov, 2017).

Thus, most observations of the red-throated diver are in spring and autumn; winter finds are rare. In Sevastopol area, there were no reliable records of this species at wintering earlier; the cited data on registration "in large quantities" in the XIX century (Blakiston, 1857) most likely have to be attributed to the common wintering black-throated diver *Gavia arctica* (Linnaeus, 1758). We found a red-throated diver at the Kruglaya Bay top on 19 January, 2020 (Fig. 2).

The bird (total length – 59 cm, wing length – 28.7, wingspan – 105, tarsus length – 7.6, beak length – 5.8 cm; body weight – 1.1 kg) got entangled with its beak, wings, and legs in scraps of line fishing net. Therefore, it behaved unusually: it soon got ashore, without fear of the presence of people. It was not possible to free the bird from the net on the shore. The red-throated diver was obviously too weakened, and the attempt to shelter it at home (to treat the wounds on the wings inflicted by the fishing line) and then to release it into the natural environment, was unsuccessful; the bird died.

Moreover, a young spring-migrating red-throated diver was registered on 13 May, 2021, at the Kamyshovaya Bay top (Sevastopol).

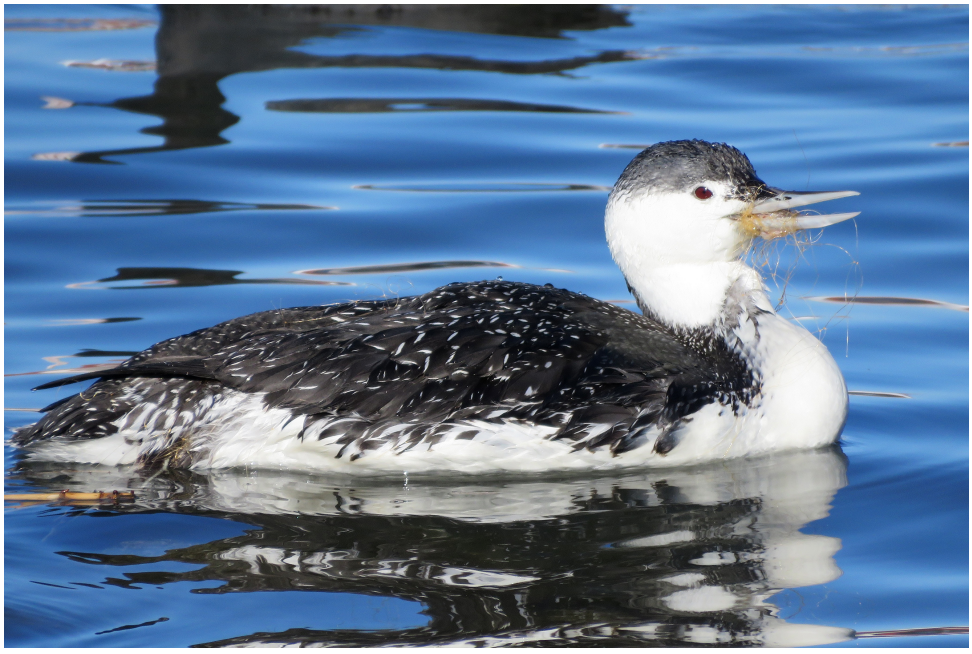

Fig. 2. Red-throated diver *Gavia stellata* in winter plumage, the Kruglaya Bay, 19 January, 2020, photo by V. Giragosov

Conclusion. Observations of the bar-tailed godwit in southern Crimea, where it has not been recorded before (on the Isthmus of Ak-Monay and in the Kruglaya Bay), indicate a significant expansion of the known boundaries of the species distribution area on the peninsula and specify the terms the spring migration begins. January find of the red-throated diver, previously known as an exceedingly rare species on the Crimean Peninsula, is the third reliable record of this species overwintering in Crimea and the first one in Sevastopol area.

Against the backdrop of aquatic and coastal ecosystems' transformation under natural and anthropogenic impact, even single finds of hydrophilic avifauna representatives in atypical spatiotemporal conditions are of interest for the analysis of emerging trends in migration phenology and abundance of both separate species and taxonomic and ecological groups of birds.

Particular attention should be focused on the problem, associated with low ecological culture of the use and disposal of fishing tackles, which have a detrimental effect on hydrophilic birds. Our observations show that fishing hooks have a significant traumatic (often fatal) effect on birds as well. Measures have to be developed to regulate fishing with nets, hooks, and line tackles in the areas of bird mass overwintering and seasonal migrations.

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НОВЫЕ СВЕДЕНИЯ О МАЛОМ ВЕРЕТЕННИКЕ *LIMOSA LAPPONICA* (LINNAEUS, 1758) И КРАСНОЗОБОЙ ГАГАРЕ *GAVIA STELLATA* (PONTOPPIDAN, 1763) НА КРЫМСКОМ ПОЛУОСТРОВЕ (ЧЁРНОЕ МОРЕ)

В. Е. Гирагосов[1], М. М. Бескаравайный[2], И. Е. Драпун[1]

[1]ФГБУН ФИЦ «Институт биологии южных морей имени А. О. Ковалевского РАН», Севастополь, Российская Федерация

[2]Карадагская научная станция имени Т. И. Вяземского — природный заповедник РАН — филиал ФИЦ ИнБЮМ, Феодосия, Российская Федерация

E-mail: *vitaly.giragosov@gmail.com*

Приведены новые данные о распространении малого веретенника *Limosa lapponica* (Linnaeus, 1758) и краснозобой гагары *Gavia stellata* (Pontoppidan, 1763) на Крымском полуострове. На фоне трансформации водных и береговых экосистем под воздействием природных и антропогенных факторов даже единичные находки представителей гидрофильной орнитофауны в нетипичных для них пространственно-временны́х условиях интересны для анализа формирующихся тенденций в фенологии миграций и численности как отдельных видов, так и таксономических и экологических групп птиц. Цель данного исследования — уточнить границы распространения и сроки пребывания на Крымском полуострове двух видов гидрофильных птиц: околоводного вида — малого веретенника — и типичного водоплавающего вида — краснозобой гагары. Наблюдения за птицами проводили в ходе плановых учётов на Акмонайском перешейке (март 2012 г.) и в бухте Круглой (г. Севастополь) (июль 2019 г.). Малый веретенник встречается в Крыму в периоды весенней и осенней миграций. Впервые он обнаружен в северной части Крымского полуострова в 1972 г.; в дальнейшем численность его возрастала и область распространения расширялась. Последние находки особей этого вида в южных районах Крыма значительно расширили известные границы его распространения на полуострове в период миграций. Наблюдение малого веретенника на востоке Крыма 14.03.2012 уточнило дату начала его весеннего пролёта; наблюдение в Севастополе (западное предгорье) 27.07.2019 явилось первым в Горном Крыму. Краснозобая гагара у берегов Крыма — редкая зимующая и пролётная птица. Обнаружение особи краснозобой гагары в бухте Круглой 19.01.2020 стало третьей достоверной регистрацией этого вида на зимовке в Крыму и первой — в Севастопольском регионе. Наблюдение краснозобой гагары на значительном удалении от обычных для этого вида районов зимовки (у юго-западного побережья Чёрного моря) в совокупности с многочисленными фактами расширения гнездовых или зимних ареалов разных видов птиц в северном направлении является подтверждением происходящих климатических и экологических изменений. Отдельно следует заострить внимание на проблеме, которая связана с низкой экологической культурой использования и утилизации рыболовных снастей, оказывающих губительное воздействие на гидрофильных птиц. Необходима разработка мер, регламентирующих рыбную ловлю сетями и крючковой снастью в районах массовой зимовки и сезонных миграций птиц.

Ключевые слова: малый веретенник, краснозобая гагара, Крым, распространение, миграции, сроки пребывания