

Updated breeding range of the Terek Sandpiper *Xenus cinereus* with additional data on nest densities

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This paper updates the known breeding range of the Terek Sandpiper *Xenus cinereus* in Russia, Belarus and Ukraine, based mainly on published sources. Most Terek Sandpiper breeding sites identified in this study are within the breeding range described by Gladkov (1951) and Cramp & Simmons (1983). Only a few new nesting sites were recorded well outside this range, but more were encountered slightly to the north between the valleys of the lower Ob River and the lower Pechora River, as well as on the banks of large Lena, Yana and Indigirka rivers in Siberia. The fact that nests have been found in the Smolensk and Bryansk regions of W Russia adjacent to Belarus indicates that Belarus and Ukraine are not inhabited by a discrete breeding population, as has been suggested. No breeding Terek Sandpipers have been found throughout the vast territory of the upper Yenisei, Angara and upper Lena rivers the Amur River area and the upper Kolyma River, or in SW Siberia, including the Tobol River valley, the upper Irtysh River, and the Altay steppes. In the north and north-eastern parts of the breeding range, Terek Sandpipers concentrate in river valleys in densities that are much higher than in the western parts.

INTRODUCTION

Knowledge about the breeding distribution of any wader species is fundamental to an understanding of its ecology as well as to its conservation. In western and in central Europe the distributions and densities of most nesting waders are rather well known, but in a huge area of the Russian taiga and tundra, which supports a major proportion of many wader populations, knowledge of their occurrence is far from adequate (e.g. Lappo & Tomkovich 1998, Morozov 1998).

The Terek Sandpiper *Xenus cinereus* breeds across a vast area between the eastern Baltic Sea and the Bering Sea, but an isolated population exists in Belarus and Ukraine (Cramp & Simons 1983, Glutz von Blotzheim *et al.* 1977). This species breeds in the valleys of lowland rivers in taiga and forest-tundra, mainly in river floodplains with meadows and marshes dotted with scrub. It avoids mountains, fast-flowing rocky streams, extensive open spaces and tall dense forests (Cramp & Simmons 1983). The limits of the Terek Sandpiper's breeding range are poorly known because the main part lies in the vast, relatively-unexplored taiga and forest-tundra. Distribution maps published in the 1950s and the 1960s showed that the borders of the breeding range were uncertain in many places (Gladkov 1951, Kozlova 1961). Cramp & Simmons (1983) updated the distribution, but only for the European part of the range; and in the *Handbook of the Birds of the World* (del Hoyo *et al.* 1996) much of the European breeding range was omitted from the map. More recently Brazil (2009) has published a map showing the

easternmost part of the Terek Sandpiper's range. In the Russian literature, many articles have appeared that provide new evidence of the breeding distribution; however most of these sources are not widely known.

Here we summarize published data on the breeding distribution of the Terek Sandpiper and provide an updated assessment of its breeding range.

MATERIAL AND METHODS

Published information from Russia, Ukraine and Belarus was used to determine the Terek Sandpiper's breeding range. Literature providing data on breeding densities was used to evaluate the relative abundance of the species across the range. A full list of sources is given in the Appendix. We also include data we collected ourselves in the vicinity of the lower Ob River during 1990–2009.

We distinguish three levels of Terek Sandpiper abundance:

- Low: mean estimated density of <1 pair/km² or <0.5 pair/10 km of riverbank;
- Medium: mean density of 1–4 pairs/km² or 0.5–2.5 pairs/10 km of riverbank;
- High: mean density of >5 pairs/km² or >2.5 pairs/10 km of riverbank.

The main locations mentioned in the text are shown in Fig. 1.

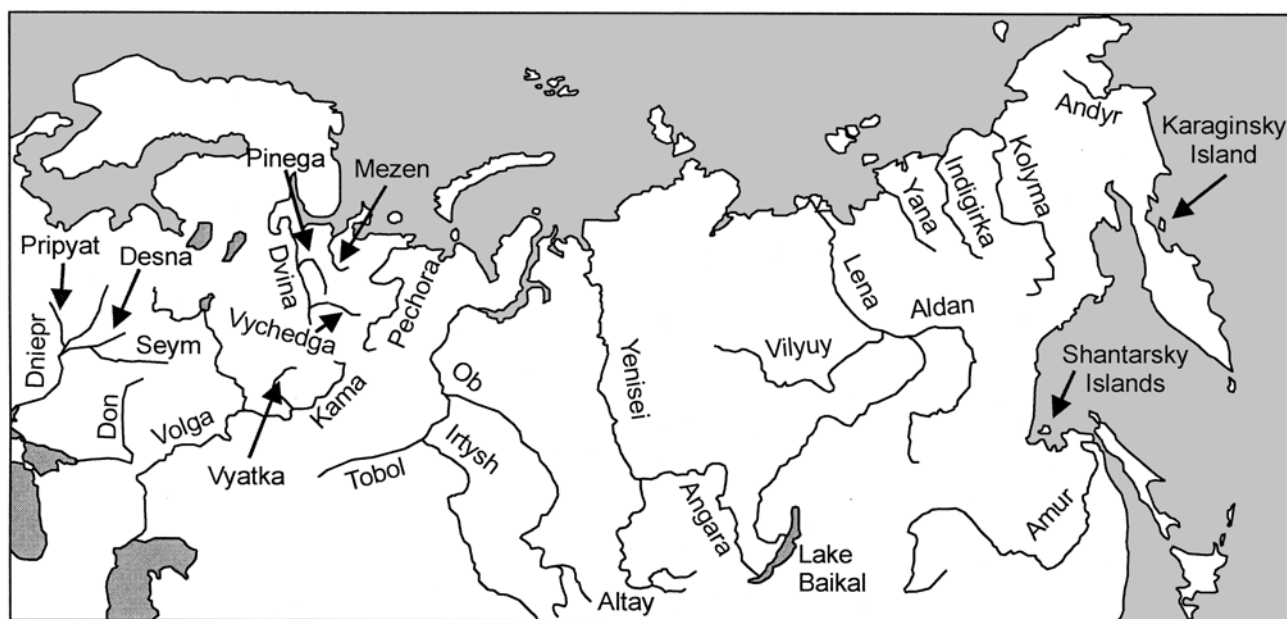


Fig. 1. Map of Eurasia showing the main locations mentioned in the text.

RESULTS

The breeding ranges of the Terek Sandpiper depicted by Gladkov (1951) and Cramp & Simmons (1983) largely overlap. They differ mainly in that Cramp & Simmons do not include parts of the Russian Far East, southern Karelia in Europe and NW Ukraine with the adjacent part of Russia and Gladkov does not include the western part of the Chukotka region. We have used both of these sources as the baseline for our summary of recent findings on the Terek Sandpiper's breeding distribution. Kozlova (1961) provided a map but this did not include any information on breeding distribution that is not contained in the combined maps of Gladkov and Cramp & Simmons.

The great majority of the Terek Sandpiper breeding sites reviewed in this study are within the ranges described by Gladkov (1951) and Cramp & Simmons (1983). Only a few are located elsewhere: on Karaginsky Island near Kamchatka (Gerasimov & Vyatkin 1973), the north of the lower Volga (Lebedeva 1973, Zavyalov *et al.* 2007) and in the upper Don area (Sarychev 1988). Nests have also been found slightly beyond the northern limit of the previously accepted breeding range, between the valleys of the lower Ob and lower Pechora rivers and along shores of the Lena, Yana and Indigirka rivers, all large Siberian rivers (Fig. 2) (e.g. Estafiev 1995, Krechmar *et al.* 1978, 1991, Labutin *et al.* 1988, Mineev & Mineev 2002, 2008, Morozov 1998, Pearce *et al.* 1998).

Broadly, Terek Sandpipers occur at much higher breeding densities in the eastern part of the range than in European Russia in the west (Fig. 2). Most breeding records are for riverbanks or in valleys close to the rivers. This is especially true for central and eastern Siberia (Fig. 2). In NE Europe this species also concentrates near such rivers as the Pechora, Mezen, Vychegda and Pinega (Estafiev 1995). The population that breeds in Belarus is restricted to the Pripyat River valley and plus one record of nesting in the West Dvina basin in Vitebsk region (Mongin *et al.* 1998). In the Ukraine breeding records are from the Pripyat, Dnieper, Desna and Sychov rivers (Gaschak 2002, Grishchenko 1998, 2002, Klestov 1988, Kozlova 1961, Melnichuk 1977).

DISCUSSION

Data presented in this study show that the limits of the Terek Sandpiper's breeding range should be updated. Though consolidation of the ranges presented in Gladkov (1951) and Cramp & Simmons (1983) is still the most accurate reflection of the species' distribution, in some areas the limits of the breeding range should be extended, particularly in the north and southwest. Nests have been found in the Smolensk, Bryansk and Kursk regions of European Russia (Gavris 2004, Sviridova & Zubakin 2000, Vlasov & Mironov 2008). The Bryansk region is adjacent to Belarus, so it seems that Belarus and Ukraine are not inhabited by a discrete breeding population as it has been suggested (Cramp & Simmons 1983, del Hoyo *et al.* 1996, Glutz von Blotzheim *et al.* 1977, Niko-forov 1998). Terek Sandpipers breed at low densities in the Dnieper River basin from the Kiev reservoir up to the upper Dnieper in the Smolensk and Novgorod regions, the Desna floodplain in Bryansk region, and the Sychov River in Kursk region (Fig. 2). It is unknown whether these new nesting areas have been overlooked in the past or the species has recently expanded its range. In the Bryansk region Terek Sandpipers were first recorded as breeding in 1997 and it would seem likely that this represents an incursion from the population breeding in the Smolensk region to the north. The absence of past records from the upper Desna River can probably be attributed to insufficient ornithological surveys and the species' rarity (Gavris 2004).

Despite the fact that a considerable number of ornithological surveys have recently been undertaken in the southeast part of the breeding range described by Gladkov (1951) and Cramp & Simmons (1983) cross-hatched in Fig. 2, no nesting Terek Sandpipers have been found there. This is a vast area, comparable in size to the whole of Europe. It includes the upper Yenisei, Angara and upper Lena rivers, the Amur River basin, the upper Kolyma River (Kolyma Highlands) and adjacent areas (Antonov *et al.* 2005, Degtyarev & Larionov 1980, Kistchinski 1968, Melnikov 2004, Olovyanikova 2004, Rogachyva 1988, Soloviev & Toropov 2004, Vorobiev 1954, Zhukov 2006). In the southern part of W Siberia, Terek

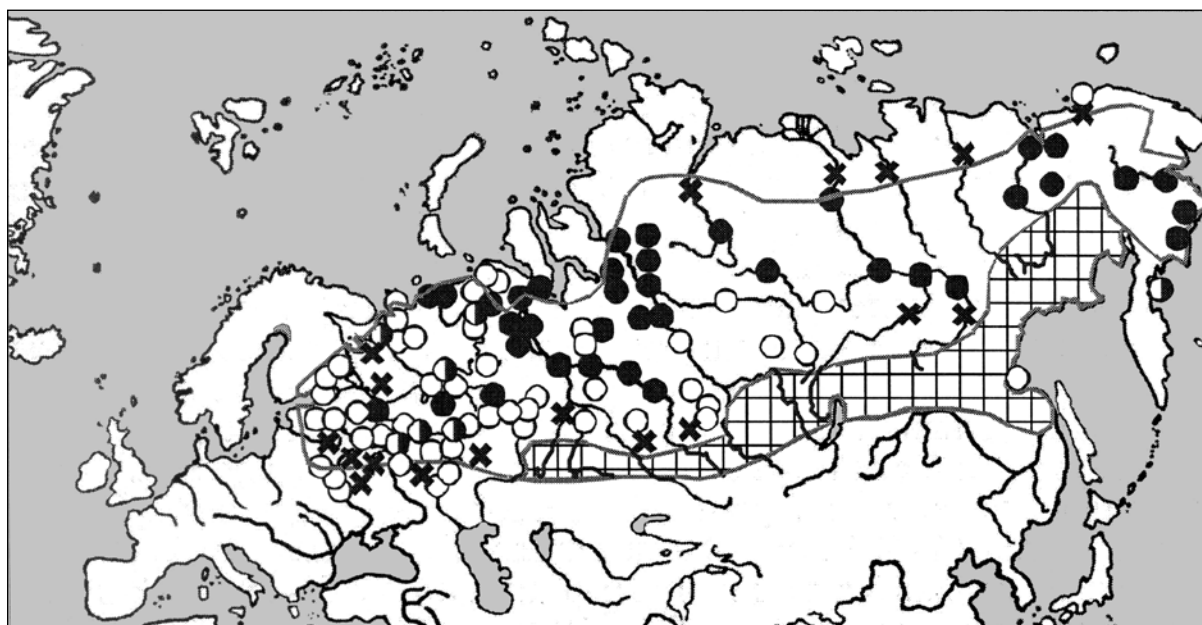


Fig. 2. Distribution of Terek Sandpiper nesting sites. Black dot – high breeding density; black-and-white dot – medium density; white dot – low nest density. Crosses indicate sites where nests were found but data on abundance are missing. Grey line shows the limit of the breeding range described by Gladkov (1951) and Cramp & Simmons (1983). Crosshatching indicates area where nesting of this species remains unconfirmed and should be excluded from the breeding range.

Sandpipers have not been found in the Tobol River valley, south of Tobolsk, on the upper Irtysh River and in the Altai steppes (Kozlova 1961, Blinova & Blinov 1997, Morozov & Kornev 2002, Korovin 2004, Zhukov 2006) (Fig. 2). The southeast limit of the Siberian breeding distribution described by Gladkov (1951) was based on only two sites where the species was presumed to breed: Ust-Barguzin on Lake Baikal (Stegmann's report (1836) in: Gladkov 1951) and the Shantarsky islands (confirmed by Dulkey 1973). But in recent years no Terek Sandpipers have been found in Ust-Barguzin (Ananin 2006).

In the vast area east of the Yenisei River mountain landscapes predominate. Terek Sandpipers avoid nesting on the banks of small mountain rivers (Cramp & Simmons 1983), probably because the floodplains are too narrow and water levels too unstable. Over 50% of this region is covered by woodland (Lavrenko 1947, Milkov 1977), and in taiga Terek Sandpipers only nest on riverbanks, avoiding sites overgrown with trees (Kozlova 1961, Semyonov 2004, our unpublished data). In Siberia, Terek Sandpipers occur abundantly at the northern periphery of the continuous boreal zone along large rivers such as the lower Yenisei and the lower Ob within the forest-tundra and northern taiga zones (Rogacheva 1988, Rogacheva *et al.* 1988, our unpublished data). Thus Terek Sandpipers concentrate in river valleys at much higher densities in the northern and north-eastern parts of its breeding range than in the western parts, which lack vast areas of continuous woodlands. In E Europe the species is abundant only at the Rybinsk reservoir and around the Vyatka and upper Kama rivers in the upper Volga basin (Baumung *et al.* 2000, Gusev 1981, Kartashev 1973, Sotnikov 2002). There are all areas where rivers and other water bodies are surrounded by forest. Thus in E Europe as well as in N Siberia Terek Sandpipers are only abundant where large rivers intersect large areas of woodland.

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APPENDIX: PUBLISHED SOURCES OF DATA ON TEREK SANDPIPER NEST LOCATIONS AND DENSITIES USED IN THIS STUDY

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