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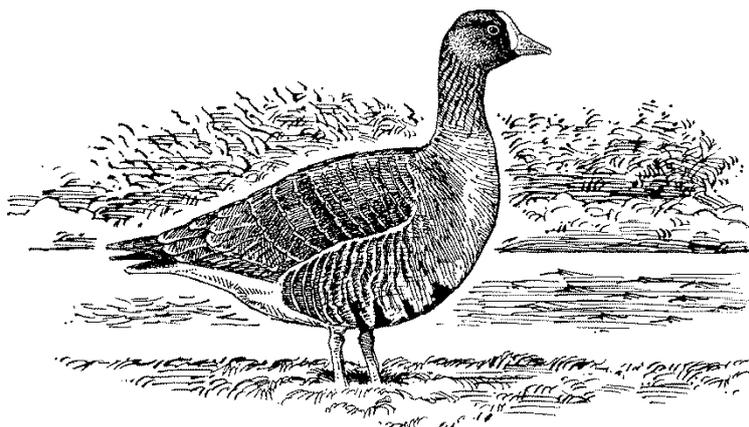
Vladimir V. Morozov, Ingar Jostein Øien & Tomas Aarvak



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SUMMARY

Fieldwork was carried out between 6th June and 10th August 2015 at the western macro-slope of the Polar Urals and the eastern Bolshezemelskaya Tundra, Russia.

In the Bolshaya Rogovaya River basin area, only one LWfG pair with five juveniles was located. However, the numbers of Bean Geese were high, with 92 adults and at least 58 juveniles in the same area.

In the Polar Urals, Lesser White-fronted Geese were found on the rivers or watershed lakes in June, but repeated observations carried out in July and early August did not confirm the presence of LWfG, but also here many broods of Bean Goose were observed. Altogether, three broods of LWfG were found in one flock. One adult male was caught by a hoop net during fieldwork and equipped with a solar powered GPS satellite transmitter. This male LWfG migrated southwards along the Ob river valley, through Kazakhstan, but instead of crossing over to the western side of the Caspian Sea as expected, he was tracked to Uzbekistan and Turkmenistan. This is the first time that a Lesser White-fronted Goose has been tracked to this probably very important wintering area which is situated in the border area between Uzbekistan and Turkmenistan. By 7th January 2016 the bird was still alive and with a functioning transmitter.

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BACKGROUND

The Lesser White-fronted Goose *Anser erythropus* (hereafter referred to as LWfG) is globally threatened, being recognised as Vulnerable by the International Union for Conservation of Nature (IUCN), and ranked by BirdLife International as 'SPEC 1' within Europe, denoting a European species of global conservation concern. It is listed in Annex 1 of the European Council Directive on the conservation of Wild Birds (79/409/EEC, 2 April 1979), in Column A of the Action Plan under the African-Eurasian Migratory Waterbird Agreement (AEWA), and in Annex II 'Strictly protected species' of the Bern Convention.

The LWfG is strictly protected both in Norway and Russia, the only countries harbouring wild breeding populations of the species. There are relatively few threats to the species on the breeding grounds. However, the population has not increased, because the mortality of LWfG along the migration routes and on the wintering grounds is too high due to heavy hunting pressure (Jones et al. 2008).

There are not enough data on staging areas and wintering grounds for the European breeding population. Tagging of LWfG with satellite transmitters carried out in the years 2011-2014 in different parts of Bolshezemelskaya Tundra, Russia have brought new and important data on stop-over sites and wintering grounds of LWfG. However, these data were obtained from only a few satellite transmitter-tagged LWfG. These data only explained part of the migration route for part of the European population of LWfG. Furthermore, a lack of detailed information on staging areas and especially wintering grounds of LWfG prevents effective conservation and protective measures for the species.

With this background, surveys and tagging efforts of LWfG were continued in the European Russian tundra within the framework of a long-term collaboration between NOF-BirdLife Norway and The Goose, Swan and Duck Study Group of Northern Eurasia (RGG). An expedition to the European Russian tundra was organised in summer 2015. The fieldwork has been carried out by the Russian team led by Vladimir V. Morozov (RGG). The project is also integrated as a key activity in the LWfG part of the new initiative from CAFF-Arctic Migratory Birds Initiative (AMBI), a programme designed to improve the status and secure the long-term sustainability of declining Arctic breeding migratory bird populations (<http://www.caff.is/arctic-migratory-birds-initiative-ambi>).

The main aim of the project is to gather new information on the status of the breeding population of LWfG in the eastern Bolshezemelskaya Tundra and the western macro-slope of the Polar Urals and on staging areas and wintering grounds of LWfG that breed in European Russia.

The following objectives were established:

- to organize and carry out field surveys within the breeding areas of LWfG in the eastern Bolshezemelskaya Tundra and the western macro-slope of the Polar Urals.
- to catch adult LWfG and attach satellite transmitters.

METHODS & MATERIAL

Itinerary

The fieldwork was carried out between 6th June and 10th August 2015 at the western macro-slope of the Polar Urals and eastern parts of the Bolshezemelskaya Tundra, Russia.

Participants

Vladimir V. Morozov (coordinator) from RGG (Moscow) and Kirill Klimov, student of the Moscow Pedagogical University.

Study areas

The study areas are located in the eastern part of Bolshezemelskaya Tundra and in the Polar Urals (Figure 1). The western study area is situated in the eastern part of Bolshezemelskaya Tundra in Nenets Autonomous District, Russia. It includes the valley of the Bolshaya Rogovaya River between its tributaries, the mouth of the Padymeyshop river (67°34'03"N, 62°06'11"E), and the mouth of Syatteityvis River (67°23'18"N, 62°15'37"E) and adjoining watersheds with bogs and thermocarst lakes (Figure 2).



Figure 1. Location of the study areas (outlined by yellow lines).

The medium-sized Bolshaya Rogovaya River is 40 to 100 meters wide, flowing southwards and has mainly pebble and sandy banks. There are a few muddy banks. The river valley has no forest but there are large sections covered by tall willow bushes. The riverbanks are mainly steep with sandy or peaty cliffs (Figure 3).

Thick and tall bushes cover the river valley terraces. The steep slopes of the riverbanks are usually eroded and consist of sand, clay or peat with sparse vegetation of flowering plants. Dwarf shrubs cover the turfed, steep slopes. Tall willow bushes with some willow trees and small tussocks or grass meadows cover the floodplains along the river.

Peat bogs with Marsh Labrador tea *Rhododendron tomentosum* and dwarf birch, mosses and lichens as well as dwarf shrub tundra dominate on the watersheds. The lakes of the watersheds are shallow with swampy shores and bordered with willow shrubs.

The second study area is located in the Polar Urals. It is a low mountain ridge and adjoining foothills delimited from the neighbouring areas by the valleys of rivers flowing from the Polar Urals (Figures 1 & 4).

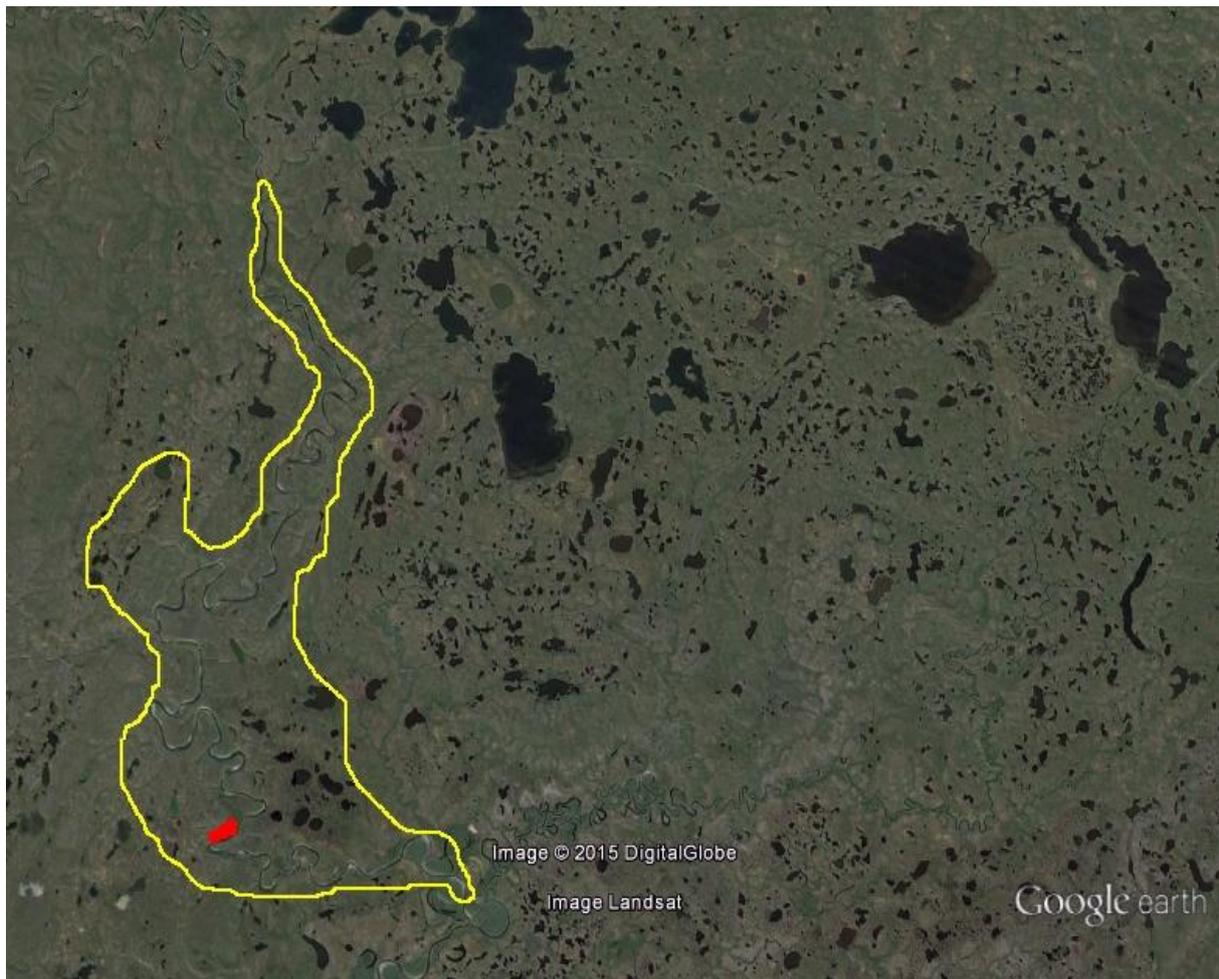


Figure 2. Satellite image of the study area in the Bolshaya Rogovaya River basin (red mark shows the place where a brood of LWfG was encountered).



Figure 3. Part of the Bolshaya Rogovaya River valley.

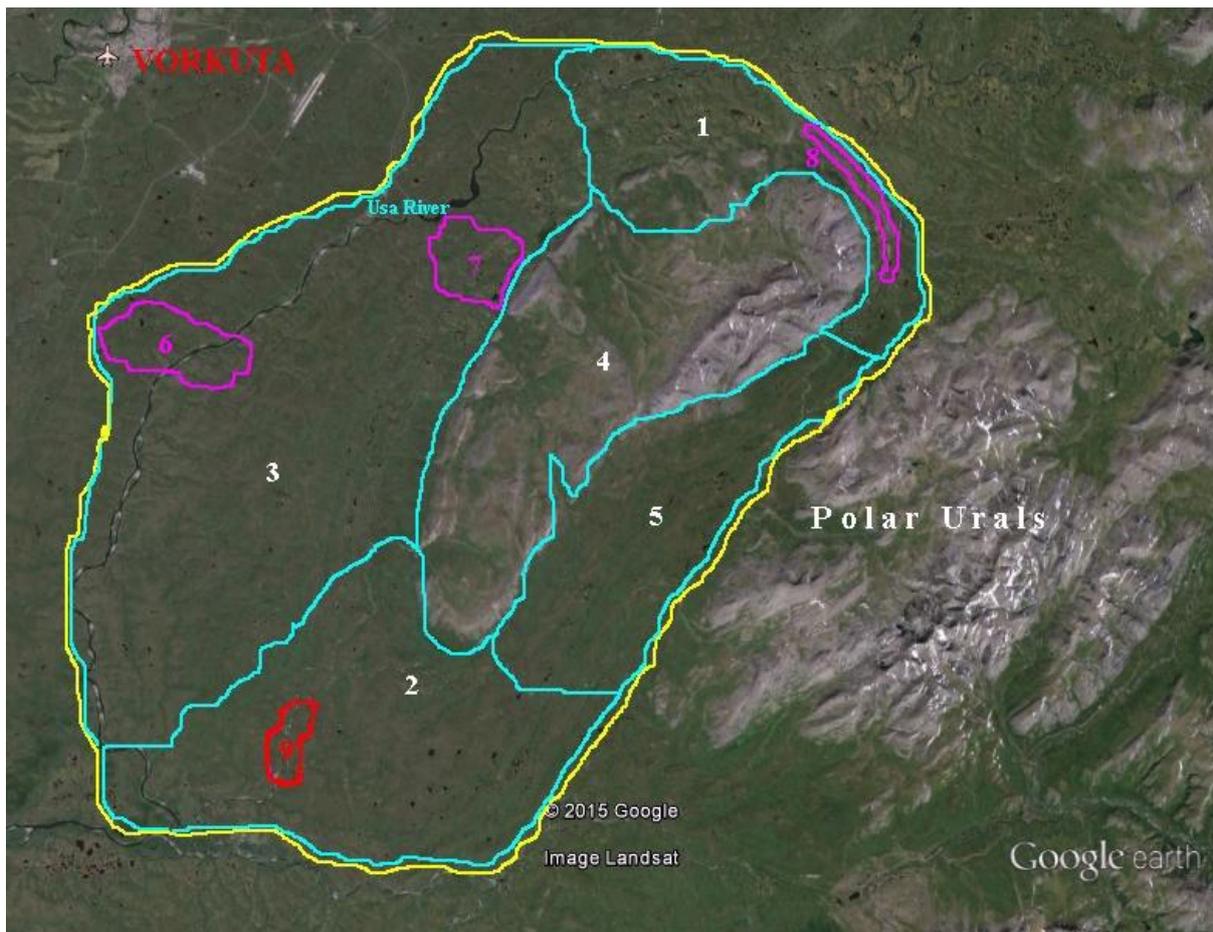


Figure 4. Satellite image of the study area in the Polar Urals.

Notes: The yellow line denotes the same boundary as in Figure 1; blue lines outline different sectors of the study area (1 – northern foothills; 2 – southern foothills; 3 – western foothills; 4 – mountain ridge; 5 – eastern foothills); purple lines outline local sites where LWfG were found in June only (areas 6, 7 & 8); 9 – the area where three broods of LWfG were encountered and one male was caught).

The foothills of the Polar Urals are occupied with different types of shrub tundra that cover the watersheds as well. This area is described in detail and illustrated by photos in our previous report (Morozov et al. 2015). Here we only show common view on the study area from the Usa River (figure 5).

Execution

To reach the destination we used a helicopter of type MI-8 (Figure 6) hired at the airport in Vorkuta. At first, we checked areas known to have held LWfG in recent years.

The steep slopes of the rivers suitable for breeding Lesser White-fronted geese and Peregrine Falcons *Falco peregrinus* have been thoroughly examined on foot in search of goose nests and concealed broods. Watershed areas with lakes and bogs situated nearby the river valley have also been surveyed to search for broods of LWfG.

At the beginning of the moulting period for LWfG we moved up the river along both banks and checked carefully for LWfG by examining feeding and roosting sites as well as the places where feathers and footprints were found. The watershed lakes suitable for feeding, roosting and moulting geese were also surveyed in detail if long-term LWfG presence was confirmed by numerous moulting feathers, a large amount of fresh excrement and/or grazing signs.

Our plan was to catch LWfG either with the aid of hoop nets when diving on water, or by hand if they tried to escape and hide in the bushes. We caught a single LWfG (Figure 7), which was fitted with a PTT-satellite transmitter and ringed with an aluminium ring with lock. The ring was supplied by the Moscow Ringing Centre of Academy of Sciences of Russia).



Figure 5. View of the Polar Ural study area from the Usa River.



Figure 6. Helicopter is the best transport in the tundra in summer.



Figure 7. Kirill Klimov with the Lesser White-fronted Goose male “Rocky”.

RESULTS

The weather conditions in early spring 2015 were quite favourable for breeding geese. The spring was early and short but due to a very snowy winter the flooding was comprehensive and relatively long-lasting. However, breeding numbers of LWfG were low. The reasons for this remain, however, unknown.

We could not reach the first study area in the Bolshaya Rogovaya River basin before the end of July, when the geese had already moulted. We found only one LWfG pair with five juveniles on 2nd August. However, the numbers of Bean Geese in the area were high. We recorded 92 adults and at least 58 juvenile Bean Geese in this area. Our attempts to catch adult LWfG on 2nd of August failed because both juveniles and adults could already fly.

We have visited the second study area in the Polar Urals several times previously. In June, LWfG were found on the rivers or watershed lakes of the northern, western and southern foothills of the second study area (entire sectors 1, 2 & 3 and sectors 6-8 in Figure. 4). Repeated observations carried out in the periods 10th-15th July and 5th-7th August did not confirm LWfG presence in sectors 1 & 3. However, many broods of Bean Goose, which are quite common in the area, were recorded.

We examined the southern foothills (sector 2 in Figure 4) between 25th June and 5th July and again between from 28th 31th July. Three broods of LWfG in one flock were found in area 9 (Figure 8).



Figure 8. Pair of LWfG with 9 goslings from two broods, 3rd July 2015

Table 1. Data on the LWfG caught in the Polar Urals in 2015.

Nº	Name	Date caught	Sex	Age	PTT-id	Ring number	Co-ordinates of site
1	Rocky	26.07	male	adult	126647	C-748131	67°06'35"N, 64°16'35"E

Threats

Human impact on the population of LWfG in the foothills of the Polar Urals is moderate. At the end of May and the beginning of June, reindeer herdsman drive their herds across the area to reach their seashore pastures. Later, reindeer from Siberia pass the area en route to their mountain pastures in July. Their impact is not considerable, as the reindeer graze on pastures located at the tops of mountains where LWfG do not inhabit in summer.

Unlike the foothills of the Polar Urals, the Usa River and its tributaries are commonly visited by fishermen in summer. They are likely to disturb goose broods considerably, so LWfG tend to occupy small creeks and thermokarst lakes without fish.

In spring, during the hunting period, LWfG are seriously in danger in the Usa River area. However, in the foothills of the Polar Urals they are relatively safe since the majority of hunters prefer to hunt in low tundra areas with numerous lakes and vast bogs with higher concentrations of Bean Geese.

Human impact in the Bolshaya Rogovaya river valley is moderate. There are three houses at the shores of the big lakes (Padymeiskiye Lakes and Varkaty Lake) that are situated to the northeast of the river valley. Hunters use these houses as lodging in the hunting season including spring, and they are used by fishermen throughout the whole year.

Satellite tracking results

The bird “Rocky” started migrating on 23rd August 2015, and had several stops before ending up in Uzbekistan/Turkmenistan for the winter (Table 2, Figure 9). This is the first satellite tagged Lesser White-fronted Goose that has not crossed over to the west side of the Caspian Sea. It is known from earlier records that the border areas between Uzbekistan and Turkmenistan are important for wintering Lesser White-fronted Geese, but lack of detailed surveys makes this area virtually unknown. It is however, probably a very important site for the species. Kreuzberg-Mukina (2003) wrote the following about the status of the species in Uzbekistan: “Vulnerable, naturally rare (VU:R D1), locally distributed, migratory northern palearctic species. Occurs within water reservoirs of the basins of Amu-Darya and Syr-Darya rivers, southern Aral region, Dengizkul, Aydarkul lakes, Chardara, Surkhandarya water reservoirs (migration, wintering). Inhabits the floodlands of rivers, big water reservoirs with well-developed submerged and bank vegetation, fields of cereals. In the past it was observed in extremely low numbers, at present from 200 to 2000 individuals annually during migration and wintering. Limiting factors: destruction of habitats as a results of the changes of water regime in the Aral basin. Included in IUCN Red List [VU]”.

As of 7th January 2016, the satellite transmitter on the bird “Rocky” is still active and functioning well.

Table 2. Migration distances and sites used during autumn and early winter 2015-2016 for the satellite tagged LWfG “Rocky”.

From	to	# days	Where	Comment	Distance km
26.07.2015	22.08.2015	27	Polar Urals, Russia	Breeding/moulting area	
			MIGRATING		429
23.08.2015	20.09.2015	28	Ob-river valley, Russia	Moving slowly south (upstream) for a distance of 240km	
			MIGRATING		707
21.09.2015	21.09.2015	1	Kurgan, Russia	One day stop, just north of NE Kazakhstan	
			MIGRATING		474
22.09.2015	21.10.2015	29	Kustanay, NE Kazakhstan		
			MIGRATING		1,251
22.10.2015	22.10.2015	1	Uzbekistan	One day stop	
			MIGRATING		476
23.10.2015	07.01.2016	76	Talimardzhan water reservoir, Kashkadarya Province, in Uzbekistan! *	PTT still working	
Total distance travelled					3,337

* Interestingly, this goose roosts in Uzbekistan, but feeds in the steppe and farmland areas in Turkmenistan.

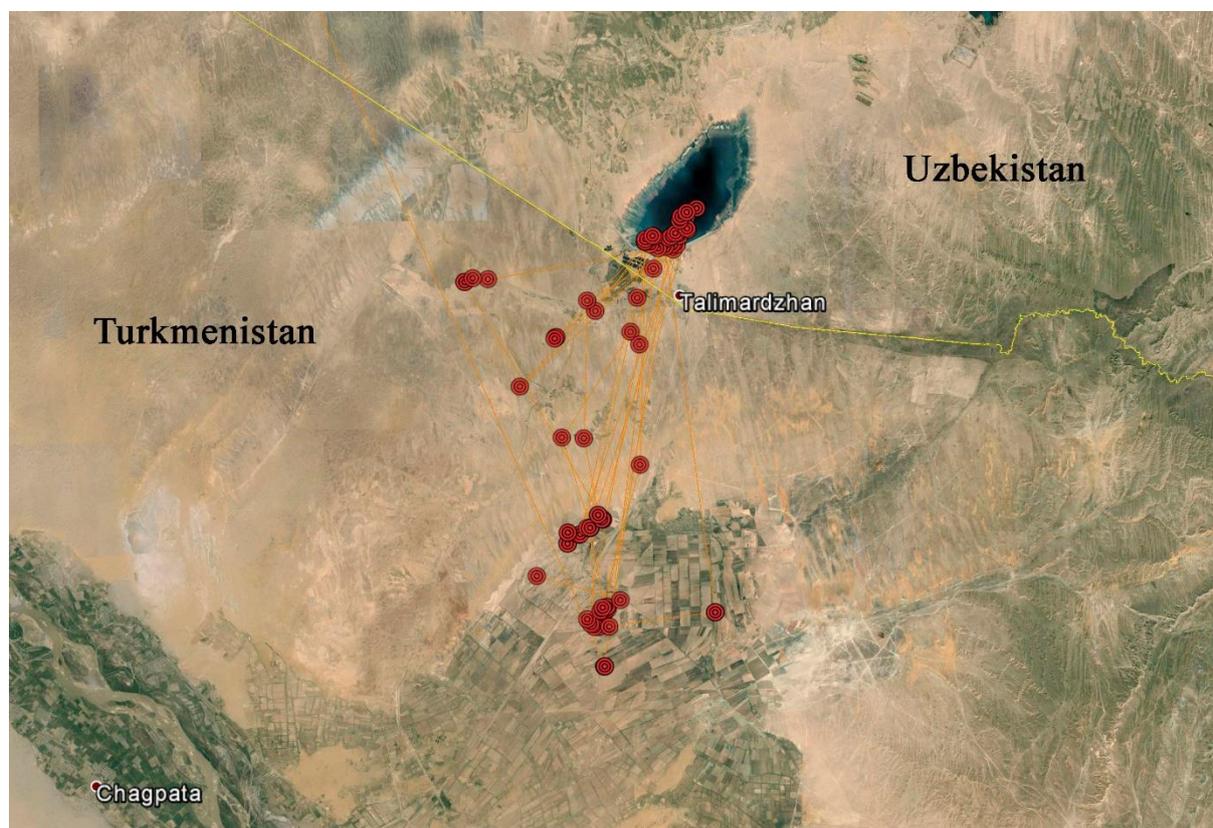


Figure 9. GPS-locations of the LWfG male “Rocky” during the period 23.10.2015-07.01.2016 in Uzbekistan and Turkmenistan.

DISCUSSION

Comparing data on numbers of LWfG obtained in 2015 with data from previous years shows that breeding numbers of LWfG have decreased in the Bolshaya Rogovaya river valley. For example, the numbers of LWfG in the Bolshaya Rogovaya river valley was 29 adult birds in July 2006, 14 in July 2007, 7 in July 2009, 4 in July 2011 and 9 in July 2012 (Morozov 2013) and only 1 pair in summer 2015 (Figure 10). At the Polar Urals the situation was less dramatic, but also here the trend is negative. The total number of LWfG was 28 adult birds in 2006, 53 in 2008, 18 in 2009, 36 in 2010, 24 in 2011, 20 in 2012 (Morozov 2012), and 23 in 2015 (Figure 10).

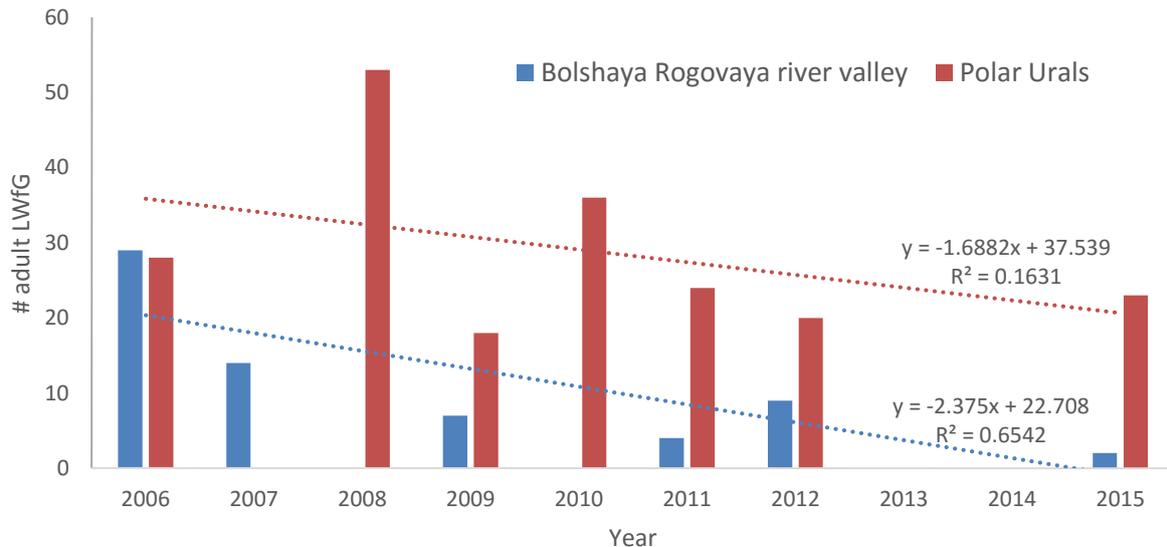


Figure 10. Number and trend in adult LWfG in the two survey areas

We assume that the reason for the low numbers of LWfG in 2015 is unfavourable environmental conditions. However, we cannot explain the negative population trend for LWfG in the Bolshaya Rogovaya river valley by bad weather conditions in this last season. The population decrease is prominent in the breeding grounds, but the reason for the decline may be due to negative factors in the wintering grounds and staging areas, especially where the hunting pressure is hard and the LWfG mortality is high.

ACKNOWLEDGEMENTS

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