

# Mapping the recovery of the Little Bustard *Tetrax tetrax* in Kyrgyzstan

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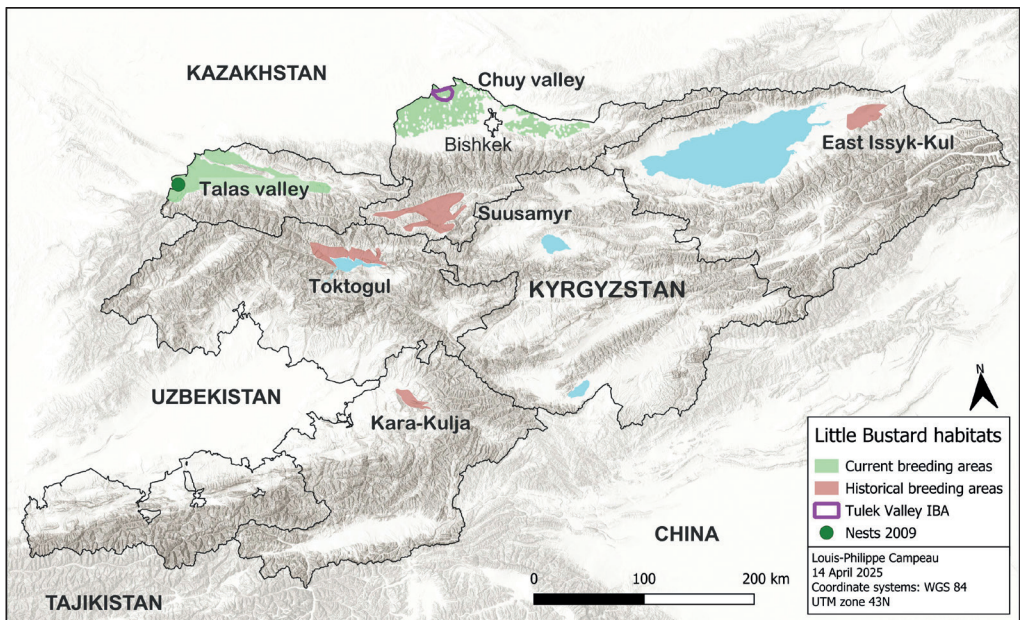
**Summary:** We present the findings of two seasons of breeding surveys based on listening points for displaying male Little Bustards *Tetrax tetrax* in 2021 and 2023 in the Chuy valley in northern Kyrgyzstan. We estimate that there are now between 1400 and 1900 breeding Little Bustards in the region, where they were considered extinct just five years ago. Displaying males' densities were as high as 1.73 birds per km<sup>2</sup> in the centre of a studied lek, although at a landscape level they were lower at 0.55 birds per km<sup>2</sup>. Outside our repeat survey sites, through one-off investigations and opportunistic observations, we found that Little Bustards occupy a large part of the Chuy valley. They have expanded into new areas since 2021 and larger migratory flocks are now encountered, reflecting a population that is still recovering, both within Kyrgyzstan and beyond. However, this recovery is constrained by the habitat preference of Little Bustards for steppe pasturelands when not overgrazed and especially alfalfa fields, where agricultural machinery is a significant cause of clutch destruction and female mortality. Illegal hunting also poses a significant risk that is likely to increase as people learn about the bird's renewed presence. Modifying agricultural practices and promoting the importance of agricultural habitats for wildlife conservation, while routing new infrastructure such as electrical powerlines away from Little Bustard areas, could ensure the sustainability of the species' return to Kyrgyzstan.

## INTRODUCTION

Over the last 30 years, a continuous decline in Little Bustard *Tetrax tetrax* populations around the Iberian peninsula has coincided with a partial recovery of the species in its eastern range following the collapse of the Soviet Union and its intensive agricultural practices (Kamp *et al* 2011). North-western Kazakhstan and southern Russia now host a majority of the world's breeding Little Bustards, most of which probably migrate south to winter in Azerbaijan, passing through the famous Beshbarmag observation point (Farajli 2025). In Central Asia, the Little Bustard's breeding densities are highest in the northern steppes, wet pastures and low-intensity agricultural zones, and gradually drop towards the south as aridity increases (Potapov & Flint 1987).

Nevertheless, breeding populations also exist much further south and east, in eastern as well as southern Kazakhstan and Kyrgyzstan along the foothills of mountain ranges, notably the Tian Shan. In these countries, Little Bustards seem to prefer a mosaic of irrigated agricultural lands, steppe pasturelands and rain-fed cereal fields (Koshkin *et al* 2025). The migration of these populations of Little Bustards is poorly understood, but they are likely to be the birds overwintering in Uzbekistan, eastern Turkmenistan, eastern Iran and potentially as far south as Pakistan. Even more so than birds breeding further north, these populations suffered during the time of the Soviet Union and all but disappeared; small groups may have survived unseen in remote areas, but the species was declared extinct as a breeder in southern Kazakhstan by the 1960s (Shakula *et al* 2017) and in Kyrgyzstan by the 1970s, with very few observations during migration (Kataevskiy 2006).

In Kyrgyzstan, Yanushevich *et al* (1959) reported that agricultural intensification in the 1950s led to a noticeable decline in numbers of breeding Little Bustards, leaving only small populations along the Talas valley and in the north of the Chuy valley, where 20 years earlier they were considered numerous (Figure 1). At both sites, Little Bustards survived in unplowed steppe areas near the border with Kazakhstan. Yanushevich *et al* (1959) assumed the species was still breeding in the Suusamyr valley, which for them included the Toktogul area. Indeed, the Toktogul Forestry Department (pers comm to LPC 2023) confirmed that illegal hunting caused Little Bustards to disappear from the cultivated foothills that surround the Toktogul reservoir only in the last few decades, so a small



**Figure 1.** Current and historical breeding areas of the Little Bustard in Kyrgyzstan.

breeding population may indeed have survived there through the Soviet period. Since that time, the only record from this vicinity of which we are aware is of a single bird near the reservoir on 30 September 2024 (M Koshkin, ebird). Finally, Yanushevich *et al* (1959) noted a spring record in the Kara-Kulja valley in the Osh region in 1958, which is the last known record from the south of Kyrgyzstan; they also mentioned an extirpated population in the Novo-Voznessenovski area (east Issyk-Kul region).

If the declining breeding populations of the 1950s managed to survive the late Soviet period, it was in small enough numbers to avoid detection. Shukurov (1981) suggested that none had been seen since the early 1970s, while the 2006 Red Book of Kyrgyzstan declared the species extinct, stating that it had probably not bred in the country over the previous 30–40 years (Kataevskiy 2006).

In southern Central Asia, Little Bustards seem to have recovered more slowly after the Soviet collapse than further north, although by 2000 they were being seen in most of their previous territories in southern Kazakhstan (Gubin 2007). The first signs of recovery in Kyrgyzstan came in 2009 when four nests were found within 300–700 m of each other, south-west of Kaynar village in the Talas region near the Kazakhstan border (Davletbakov & Ostashchenko 2009; Figure 1), across which Little Bustards were already known to breed (Shakula *et al* 2017). The Talas valley comprises mostly agricultural land and is surrounded by foothills of steppe pastureland, but although it could currently support a relatively large breeding population, no further research has been conducted there. In 2019, a nest was found by a farmer about 15 km east of Bishkek airport, representing the first indication of the re-establishment of a breeding population in the Chuy valley. We investigated this phenomenon and documented the return of breeding Little Bustards to the region (Campeau & Kulagin 2022). Moreover, another Little Bustard population came to light thanks to a chance encounter with ranger Evgeniy Kolganov of the Chumysh ChBOR (Chuy-Bishkek Society of Hunters and Fishermen) near Milyanfan, north-east of Bishkek. Local tractor drivers had reported this ‘new bird’ to him in early summer of 2021 and with their help he found four destroyed nests in intensive cultivation in the Chuy valley on the border with Kazakhstan.

Despite its seeming disappearance as a breeding species in the later twentieth century, the Little Bustard continued to be encountered on migration in the Chuy valley, albeit rarely. Flocks of up to 100–150 birds from Kazakhstan had historically gathered and fed in fields of alfalfa and liquorice *Glycyrrhiza* sp from early September until early November (Yanushevich *et al* 1959). Small migrating flocks continued to be seen in the valley: 40 birds in November 1975, seven in September 1985 and one in ‘north-west Kyrgyzstan near the Kazakh border’ in 1999 (Kataevskiy 2006). Ranger Kolganov, who sadly passed away in early 2022, also mentioned a 400-strong post-breeding flock in his area during the late summer of 2021. Our own discussions with local hunters in 2021 revealed that they were well aware of the species’ migratory habits and had been for many years. The species has never been recorded in the country in winter.

The limited literature available therefore shows that historically there were five main breeding populations of Little Bustards in Kyrgyzstan. Those of the Chuy and Talas valleys have now resumed breeding, while the smaller one stretching from the Suusamyr valley to Toktogul reservoir probably remains extirpated. The last observation from the south of Kyrgyzstan dates from 1958 and that for east Issyk-Kul was earlier (Figure 1). The Little Bustard is currently a protected Red Book species of Category VI, Near Threatened and officially considered to be a scarce migrant (Kataevskiy 2006), although recent research has found it to be recovering in the north and west of the country (Campeau & Kulagin 2022). Using new survey data, we investigate this recovery and aim to provide a population estimate for the species in Kyrgyzstan.

## METHODS

### *Field observations*

We undertook breeding surveys in May 2021 and May–June 2023, supported by funding from the Ornithological Society of the Middle East, the Caucasus and Central Asia (OSME) (Campeau & Kulagin 2022). This was supplemented with opportunistic visits in 2022, 2024 and 2025. The May 2021 survey was principally aimed at proving renewed breeding and focused on the Tulek Valley Important Bird and Biodiversity Area (IBA) in the north-west of the Chuy valley near the Kazakhstan border (Plate 1).

The May–June 2023 survey continued our systematic monitoring of the Tulek Valley IBA, but this time we used our experience to fix the position of our displaying male Little Bustard listening points in advance, ensuring that they covered a variety of local landscapes. In total, 53 points located 500–600 m apart were monitored over four weeks, three days a week. With the Milyanfan area less than an hour’s drive away from Bishkek, we also decided to conduct seven repeat surveys of eight listening points (Plate 2).

It can be misleading to extrapolate localised results to a larger area when dealing with a lekking species like the Little Bustard, as some places can show high concentrations of displaying males while other promising areas will not (Traba *et al* 2022). To allow for this and determine whether these breeding populations were part of a larger re-occupation of the landscape, we aimed to cover larger portions of the Chuy valley during four one-off surveys. These one- to two-day exploratory surveys were completed with opportunistic listening points in previously uninvestigated but potentially suitable habitats. Two such surveys sampled areas similar to that of the Tulek Valley IBA, with the other two focused on other types of potentially suitable land use, particularly pastures in dry foothills and riverine floodplains. We tried to keep a distance of 500–600 m between points and these listening stations were not repeated (Ligue pour la Protection des Oiseaux 2020). The results of both survey methods, as well as other occasional sightings, are presented in Figure 2.

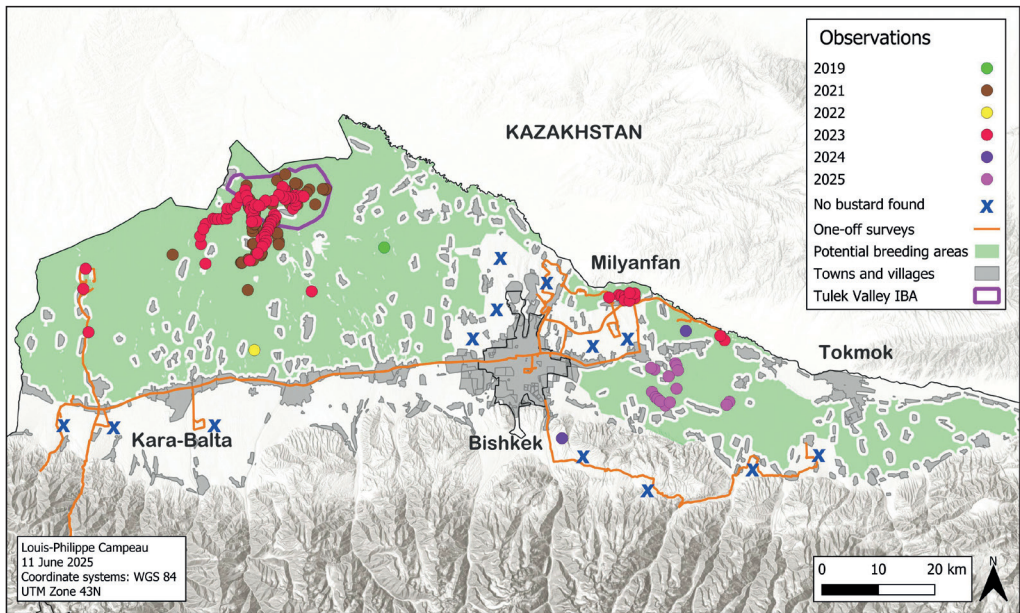
Finally, information on migrant numbers presented below is based on opportunistic encounters with flocks as well as discussions with local people and especially hunters.



**Plate 1.** Displaying male Little Bustard in the Tulek Valley IBA, 1 May 2021. © Karen Wykurz



**Plate 2.** Male Little Bustard displaying by Bishkek's ring road, 3 May 2023. Little Bustards can be quite tolerant of human presence during the breeding season. © Pavel Isayenko



**Figure 2.** Recent May–June observations of displaying male Little Bustards (circles), one-off survey routes (orange lines) and the mask of suitable breeding zones (green) used for population estimation in the Chuy valley, Kyrgyzstan, 2019–2025.

### *Population estimates*

First, we estimated male densities based on our survey results. To do so, we divided the average number of males detected per week by the area driven and buffered by 400 m, representing the distance that a displaying male could be heard from the car. The area covered was 36.0 km<sup>2</sup> for the Tulek Valley IBA and 4.47 km<sup>2</sup> for Milyanfan.

We then used this information to map male Little Bustard densities for the Chuy valley as a whole using QGIS. The second step involved plotting suitable breeding zones. All areas between the foothills of the Ala-Too range and the main east–west road running west of Bishkek, a very urbanised belt where no birds were found during our one-off surveys, were removed. Inhabited zones were buffered by 600 m (based on our observations of the distance from habitations at which Little Bustards begin to be encountered) and then excluded as unlikely habitats; so were bodies of water. We also removed other seemingly suitable areas where our one-off surveys did not reveal the presence of Little Bustards (Figure 2), as well as locations near Bishkek with no breeding period records that are frequently visited by birdwatchers. The result is the green mask in Figure 2.

Third, we buffered all encounters with Little Bustards from 2019 to 2025 by 1 km, a number aimed at accounting for parts of leks inaccessible by car. The result was then dissolved into a layer representing all real observations of lekking birds. The area covered by this layer was assigned the exact male density obtained in the first step; we only used the higher density of the Milyanfan area for sightings made between the Chuy river and the main highway going east from Bishkek.

Finally, we extrapolated our result to the rest of the Chuy valley. We lowered the male breeding densities obtained from the surveyed areas ( $\times$  males per km<sup>2</sup>) by 33% and 50% respectively to form the upper and lower limits of our Little Bustard population estimates for north Kyrgyzstan. These lower densities are based on the clustering habits of Little Bustards and the improbability that all available niches were occupied in the ongoing

population recovery, as well as our assumption that the mosaic of crops and low human population densities in the Tulek Valley IBA may be more suited to the species than other areas with higher human population densities.

Our survey methods were not designed to detect females. However, in a study of the Spanish and French populations, the sex ratio is revealed to be male-biased due to a higher mortality rate of nesting females from agricultural machinery (Serrano-Davies *et al* 2022), a threat we have also witnessed (Campeau & Kulagin 2022). We therefore tentatively use the results from Serrano-Davies *et al* (2022) for two regions of Spain, where the mix of pastures and dry agriculture is somewhat similar to Kyrgyzstan, to form our estimates. In the declining population of Extremadura, only 23.3% of all Little Bustards were thought to be female, while in La Mancha, where the species is still considered viable, the ratio rose to 43.7%. The lower and higher ratios were used to establish our minimum and maximum population number.

We also assessed the type of landscapes present within the displaying males' surroundings, applying the same methodology as in 2021 to our 2023 survey results. To do so, we buffered each displaying male's location by 500 m in GIS and correlated the area obtained with a land use layer we built and updated from 2023 satellite imagery.

## RESULTS

### *Field observations*

In 2023, over four weeks surveying our 53 listening points, the average number of displaying males detected was 20. Once divided by the area investigated (36 km<sup>2</sup>), we find a density of 0.55 male birds per km<sup>2</sup> within the Tulek Valley IBA. This is lower than the 1 bird per km<sup>2</sup> that we measured across the lek in 2021, but our latest survey encompasses a larger area that is more representative of the general landscape. Density may still have been increasing as our surveys ended, as an opportunistic visit by a member of our organisation in mid-June covering only 20 of our listening points, but focusing on those known to have had sightings, found 26 displaying males.

In 2023, we also covered an area near Milyanfan which showed a much higher displaying density. Between 5 and 11 males were recorded per week during the eight listening points over an area of 4.47 km<sup>2</sup>, with an average over seven weeks of 7.74 males. Male density in the area thus averages 1.73 bird per km<sup>2</sup>. However, we are less confident of this number, as it is based on a much lower sample of listening points than the one for the Tulek Valley IBA and may have covered only the very centre of a lek.

We also found Little Bustards outside of these two studies areas during our one-off surveys. When exploring habitats similar to either the Tulek Valley IBA or the Milyanfan irrigated plains, six sightings were obtained (Figure 2). However, we did not find birds in pastures in either dry foothills or riverine floodplains.

### *Population estimates*

The results of our mapping exercise can be found in Table 1. With male displaying densities of 0.55 bird per km<sup>2</sup> in the Chuy valley and 1.73 in Milyanfan, the lekking areas immediately around observed Little Bustards were extrapolated to hold 92 birds for the former and 33 for the latter. For the extrapolation to the whole Chuy valley, we lowered the male densities by 33% (high population estimate) and 50% (low population estimate). This meant 0.37/0.28 males per km<sup>2</sup> for the Chuy and 1.15/0.86 per km<sup>2</sup> for Milyanfan, for a total of 939 to 1211 displaying males.

After applying the sex ratios from Serrano-Davies *et al* (2022) to our 939–1211 male range, we suggest that there could be 1224–1579 (Extremadura ratio) or 1668–2151 (La

Mancha ratio) Little Bustards in the Chuy valley of Kyrgyzstan. Taking the average from both ranges gives a total estimated population of 1446–1865 birds (Table 2).

It is more difficult to provide an estimate for the Talas valley, as the only reported observation is that of the four nests found in 2009. Nevertheless, it is an area with a similar landscape to the Tulek Valley IBA and there is a known breeding population across the border in Kazakhstan (Shakula *et al* 2017). We tentatively suggest a population of 50–100 birds there.

**Table 1.** Number and density of displaying male Little Bustards in the Chuy valley.

Chuy valley (except Milyanfan area)				Milyanfan area			
	Males/km <sup>2</sup>	Area (km <sup>2</sup> )	# of males		Males/km <sup>2</sup>	Area (km <sup>2</sup> )	# of males
Observed presence	0.55	166	92	Observed presence	1.73	19	33
Extrapolation (high)	0.37	2657	984	Extrapolation (high)	1.15	88	102
Extrapolation (low)	0.28	2657	738	Extrapolation (low)	0.86	88	76
Total for the area: 830–1076				Total for the area: 109–134			
Total for the Chuy valley: 939–1211							

The number of migrating Little Bustards that use the Chuy valley is also harder to estimate. Our own observations reveal Little Bustards using similar habitats in the period August–November as they do during the breeding season, with maybe an even greater bias towards alfalfa. We have counted flocks of up to 200 birds, and 2–3 large flocks can be encountered in a single 50-km drive. As noted above, Ranger Kolganov counted over 400 Little Bustards in one observation near the border in September 2021, while hunters from Tulek village reported groups of more than 500. These records are opportunistic and difficult to synthesise, so we assign a low-quality estimate of 2000–5000 birds (Table 2).

**Table 2.** Population estimates and trends for the Little Bustard in key areas of Kyrgyzstan. N/A = not applicable. Arrows indicate growth, stability or decrease. 'Migration' covers pre-migratory gatherings and stopover flocks. Quality of estimate: 1 = low, 5 = high. † = extirpated.

Region	Season	Number of birds	Important sites	Quality of estimate	Population trend			
					1950–1990	1990–2020	2020–2023	1950–2023
Chuy valley	Breeding	1446–1865	2	4	↘	↗	↗?	↗
	Migration	2000–5000	2	2	↘	↗	→?	↗
Talas valley	Breeding	50–100	1	1	↘	↗?	?	↗?
	Migration	Unknown	Unknown	1	↘	↗?	?	↗?
Suusamyr valley	Breeding	Presumed extirpated	N/A	1	†	N/A	N/A	N/A
<b>Totals for Kyrgyzstan</b>	<b>Breeding</b>	<b>1496–1965</b>	<b>3</b>	<b>Average 3</b>	↘	↗	→?	↗

## DISCUSSION

### *Threats and conservation actions*

Agricultural practices are probably the main threat to Little Bustards in Kyrgyzstan. Our 2021 survey revealed a sharp shift from their usage of alfalfa to cereal fields by the end of May, when the former was harvested and the latter reached a suitable height for cover (Table 3). This trend was not repeated in 2023, which we argue was due to the weather. A severe drought in 2021 delayed the growth of cereal crops and severely reduced the carrying capacity of pastures, whereas 2023 had a much wetter summer and arguably allowed Little Bustards to use more habitats.

**Table 3.** Land use within 500 m of displaying male Little Bustards around the Tulek Valley IBA.

Land use around displaying males	Alfalfa/Fallow		Other crops		Dry cereal		Steppe/Pasture	
	2021	2023	2021	2023	2021	2023	2021	2023
Week 0 (01.05.2021)	29%	n/a	18%	n/a	38%	n/a	15%	n/a
Week 1 (07.05.21, 05.05.23)	20%	32%	20%	20%	41%	24%	19%	24%
Week 2 (14.05.21, 12.05.23)	10%	32%	11%	7%	56%	30%	24%	30%
Week 3 (21.05.21, 19.05.23)	11%	30%	12%	18%	61%	22%	15%	31%
Week 4 (28.05.21, 26.05.23)	12%	33%	9%	21%	60%	23%	19%	23%

Nevertheless, females are much more tied than males to denser vegetation where they nest and feed their young (Traba *et al* 2022). Alfalfa offers such cover and this dependency makes them vulnerable to mechanised agricultural practices. Indeed, our 2021 satellite imagery analysis showed that the alfalfa harvest peaked in mid-June, overlapping the main period when females lay or incubate their eggs. Although we did not witness it directly, our observations of destroyed nests from both 2021 and 2023, and the high temporal overlap we have noted between alfalfa harvest and the Little Bustard nesting period, indicate that it is likely to be common for both clutches and females to be lost to agricultural machinery (Campeau & Kulagin 2022). This is slightly mitigated by the fact that a few alfalfa fields are kept for seeds and thus cut later in the season, but our satellite analysis reveals these to constitute less than 10% of the total. Late-breeding birds and replacement clutches may have more success as they can use less disturbed dry agricultural areas which are harvested later. On the other hand, second clutches consist of fewer eggs (1–2 instead of 3–5) and food availability for chicks tends to be lower later in the season (Ryabitsev *et al* 2019).

If the threat of agricultural machinery in alfalfa and other crops is the main limiting factor for the Little Bustard population of the Chuy valley, pastures do not always provide safe habitats either. In 2021, during the drought, the majority of them were so overgrazed that the grass was barely a few centimetres high; even in less grazed areas, they were open enough for a sheepdog to find and destroy a nest (shepherd pers comm to LPC). Wetter weather during our second season of surveys meant pastures were more commonly used by displaying males, proving that the bird will use them when the habitat is suitable.

Illegal hunting has an impact, although we could not measure this. The presence of the Little Bustard in summer is recent and few people were aware of it, but hunters certainly knew about the large autumn flocks. Fines for killing a Little Bustard could reach 200 000 soms (just under US\$2300), but the law is rarely enforced. This threat is likely to grow in importance as poachers realise that Little Bustards are present in spring and summer as well.

Finally, deaths by collisions also affect this population. In the autumn of 2024, at least two Little Bustards were killed by aeroplanes at the Manas international airport near Bishkek (AT Davletbakov pers comm to LPC 2025). Furthermore, as seen across the bird's range, powerlines are likely to be a much greater threat (Silva *et al* 2022). No casualties were found in 2023 when we followed the main powerline crossing the Tulek Valley IBA, but we did not engage in the kind of regular monitoring required to assess powerline casualties robustly. On 13 October 2024 we found the carcasses of two Northern Lapwings *Vanellus vanellus* under a line in the same fields where 130 Little Bustards had been seen two weeks previously. With all bustard species being particularly vulnerable because of their low manoeuvrability in flight and reduced frontal vision fields, collisions are likely to have a population-level impact (Silva *et al* 2022).

The entire area used by the Little Bustard in Kyrgyzstan is devoted to agriculture, with no protected zones. The Tulek Valley IBA is located within this area and is home to the lek we have studied, but no protective measures are afforded the site.

### *Population estimates*

We have taken a conservative approach to population estimates in the surveyed breeding areas and are relatively confident in our results for the Chuy valley. Averages rather than maximum counts were used in calculating densities and, when extrapolating to non-surveyed areas, we precautionarily lowered these further. In 2023, as we widened the scope of our investigation from the Tulek Valley IBA to larger portions of the Chuy valley, we kept encountering Little Bustards, which hints strongly at their ongoing recovery in Kyrgyzstan. Indeed, in June 2024, a lone male was found displaying within 5 km of Bishkek in dry foothills nearer the mountains, an area that we had dismissed after our one-off surveys. This bird displayed alone for almost a month, but this nevertheless indicates that birds are entering new areas (Figure 2).

Outside the Chuy valley, we simply do not know how Little Bustards are faring. The Talas valley is very promising as a breeding location, with plenty of suitable agricultural lands, and could well host a sizeable population; it may also be that the Little Bustard is recolonising areas further south, with the Toktogul region a prime candidate for investigation. Conducting a handful of one-off surveys in these areas during the next breeding season could answer these questions. Trans-border surveys with colleagues from Kazakhstan, both for the Chuy and Talas valleys, could also augment our understanding of local movements. Perhaps more interestingly, we could use such collaboration to evaluate the role played by the border itself in protecting Little Bustards from illegal poaching, as observed in Iran (Yousefi *et al* 2017), as Kyrgyz border guards recently banned hunting near their bases (E Kolganov pers comm to LPC 2021). The higher breeding density reached near Milyanfan is due to a high proportion of alfalfa fields, but it is also likely to reflect this proximity to the border.

Furthermore, the question of the migratory pathway and winter quarters of these birds, and those of the eastern part of the species' Eurasian population in general, remains unanswered. Flocks numbering in the thousands were seen during the winter of 2024–25 in eastern Uzbekistan, indicating a possible destination for the individuals breeding in northern Kyrgyzstan or at the very least migrating through it (Ten *et al* 2025). The inaccessibility of Afghanistan to researchers may also hide the presence of such flocks. More work could be done to monitor post-breeding flocks, although our experience showed that they can be very difficult to locate when feeding. Using telemetry on birds known to have bred in our region would be the single most powerful approach to answering our questions regarding post-breeding and migration movements.

To conclude, on the one hand, the breeding density of around 1/0.55 males per km within/around leks revealed by our 2021 and 2023 studies is similar to that found in the early 2000s in the trans-Ural region of Russia during the early stages of the reoccupation of a steppe/cereal agricultural landscape (Korovin 2014). This hints at the Kyrgyz population still being in a recovery mode. The discovery of birds in 2023 and 2024 in previously unused areas also points in that direction. On the other hand, this recovery now faces two new threats on top of those discussed above. First, agricultural practices are changing quickly, with farmers having more access to pesticides and fertilisers. The mosaic of smallholdings beneficial to the Little Bustard is increasingly being consolidated in the hands of fewer stakeholders who favour larger expanses of commercial irrigated crops such as watermelon, corn, onions and other vegetables, all of which are considerably less suitable or entirely unsuitable for breeding. Second, as people become more aware of the bird's presence, illegal hunting is likely to increase. As in other parts of its range, the post-Soviet period of population recovery may thus begin to plateau. To compensate for this trend, working with local farmers to adapt their practices to conserve biodiversity, with a focus on preserving habitats for Little Bustards and minimising casualties from machinery, may be the way forward. Small measures, such as delaying harvesting in selected fields, reducing harvesting speeds/forcing birds to flush in advance of approaching machinery and controlling overgrazing, could make significant differences in survival rates. Agricultural landscapes in Kyrgyzstan are almost never thought of in terms of their importance for wildlife, with maybe the exception of managing pheasant populations for hunting. Changing this attitude could be attempted initially by promoting the existence and importance of steppe landscape for the survival of vulnerable and iconic species like the Little Bustard.

## ACKNOWLEDGEMENTS

This research was made possible by two grants from the Conservation Fund of the Ornithological Society of the Middle East, the Caucasus and Central Asia (OSME). We would also like to thank Karen Wykurz for providing the photograph of a displaying male.

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