



# FRIENDS OF CITY GARDENS

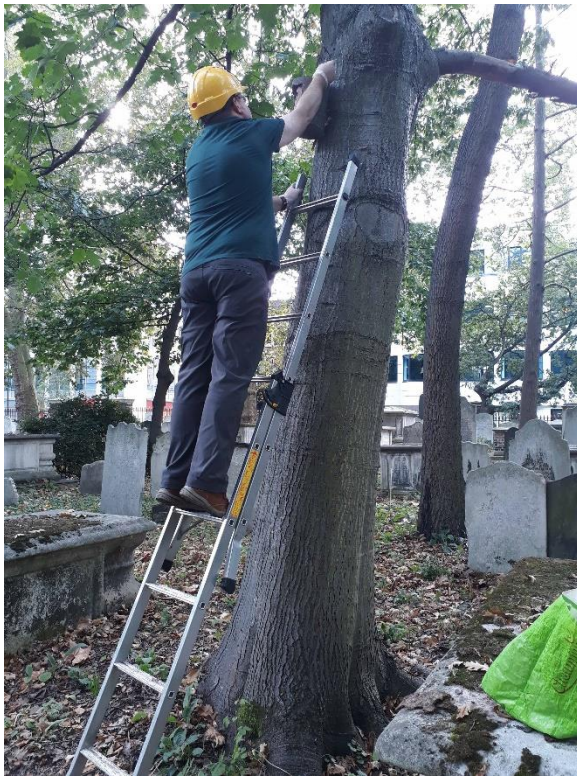
## Nest box cleaning report: 2023 breeding season

### 1. Results

FoCG volunteers clean all the nest boxes in City of London gardens every year. Occupancy data has been recorded for every nesting season since 2011.

In the 2023 nesting season:

- 83 nest boxes were available for occupation, spread across 27 locations. It was not possible to clean seven of these boxes.
- Of the 76 boxes that were cleaned, 45 had been occupied (59% compared to 51% in 2022).
- 69% of the nests were built by Great tits, the remainder by Blue tits.
- There were 26 nests (35%) with either unhatched eggs or dead chicks, (34% in 2022).



*Cleaning boxes in Bunhill 2023*

Annual nest box cleaning is carried out to maintain bird health by removing parasites and old decomposing nest material.

We record data on species, number of dead chicks and abandoned eggs and, together with the annual RSPB Big Garden Birdwatch in spring and the weekly BTO Birdtrack data from Bunhill Fields, cleaning provides evidence to evaluate the success of the City's biodiversity strategy and action plan.

Cleaning is also essential to maintain the number of potential nest sites as birds are less likely to nest again in a box with old nest material.

### 2. Observations

#### 2.1 Breeding success – number of nests and mortality rates

It is always difficult to speculate on differences in breeding success each year based on levels of occupancy without additional observations of the birds using the boxes. No nest boxes were opened to check on occupancy during the breeding season, so these results are based on counting the number of nests (completed and partial) in nest boxes during the annual cleaning at the end of the season. Occupancy was higher in 2023 with 59% of boxes containing a nest

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compared with 51% in 2022.

Often one or two fledglings die in the nest, or some eggs fail to hatch. This may be because a parent dies and the nest is abandoned; there may be insufficient food to sustain a full brood, or some eggs are unviable. In 2023, 35% of nests held either or both dead chicks and abandoned eggs. A similar level was observed in 2022.

**Fig 1: Species building nests 2023**

	2023 Total nests	Great tit	Blue Tit
Barbican – Ironmonger’s	1	1	0
Barbican - Speed	2	1	1
Barbican - St Giles	4	3	1
Barbican - Thomas More *	5	4	1
Barbican - Wildlife*	4	3	1
Bunhill Fields*	8	7	1
Church Entry*	1	1	0
Cleary Garden*	2	2	0
Petticoat Square	2	2	0
Postman's Park*	1	0	1
Seething Lane	1	0	1
Senator House	1	0	1
Smithfield Rotunda*	1	0	1
St Andrew Holborn	2	2	0
St Anne and St Agnes	1	0	1
St Bartholomew*	1	0	1
St Dunstan in the East*	2	2	0
St Mary Aldermanbury	1	0	1
St Mary Staining	1	0	1
St Paul's Cathedral*	4	3	1
	45	31	14
% of total nests		69%	31%

In 2023, the proportion of Great tit nests was 69% of the total with the remaining 31% attributed to Blue tits. In 2022 the proportion of Blue tit nests was greater at 53% compared with 45% for Great tits – and one nest was probably that of a Starling. The increase in the proportion of Great tits is confirmed by observations from the RSPB Big Garden Bird Count and BTO Birdtrack data from Bunhill Fields with Great tits outnumbering Blue tits by about 2:1.

In 2023, 26 out of the 45 nests (58%) had dead young or unhatched eggs (down from 67% of nests in 2022 (27 out of 40)). The overall mortality rates (chicks and eggs) in 2023 were the same for both Blue tits and Great tits but there were interesting differences in the proportion of dead chicks and abandoned eggs

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between the species. Blue tits accounted for only 8% of the total chick mortality but 60% of the abandoned eggs. Great tit nests had 92% of the dead chicks but only 37% of the abandoned eggs. This difference may reflect the relative size of the two species, with female Blue tits unable to brood the larger clutches of up to 14 eggs leading to eggs not hatching. The female body mass of Blue tits is only 80% of maximum clutch size, compared to Great tits which lay fewer eggs and the females are larger and can brood all the eggs in a nest (Deeming & Du Feu 2011). This may result in more unhatched Blue tit eggs. Mortality of a substantial number of tit chicks is normal. This pattern was also present in 2022 although Blue tits also accounted for a higher proportion of the dead chicks (52%).

**Fig 2: Nest boxes and number of nests for three years 2021 to 2023**

\* Gardens with regular feeding taking place throughout the year

	2023		2022		2021	
	No. boxes	No. nests	No. boxes	No. nests	No. boxes	No. nests
All Hallows by the Tower	1	0	1	0	1	1
Barbican - Wildlife*	7	4	6	3	7	3
Barbican - Speed	2	2	2	1	2	2
Barbican - St Giles	4	4	4	2	3	2
Barbican - Thomas More *	7	5	7	3	7	4
Barbican – Ironmonger’s	1	1	1	1	1	0
Bunhill Fields*	14	8	12	8	12	7
Church Entry*	1	1	1	0	1	0
Cleary Garden*	2	2	2	2	2	2
Finsbury Circus	3	NA	3	2	3	1
Petticoat Square	3	2	3	2	3	1
Portsoken	2	NA	2	0	2	1
Postman's Park*	4	1	3	2	3	2
St Andrew Holborn	2	2	2	2	2	2
St Anne and St Agnes	1	1	1	1	1	1
St Bartholomew*	1	1	1	0	1	0
St Botolph Bishopsgate*	2	0	2	1	2	2
St Dunstan in the East*	5	2	5	3	5	2
St Olave Silver Street	1	0	1	1	1	1
St Mary Aldermanbury	2	1	2	0	2	1
St Mary Staining	1	1	1	0	1	1
St Michael Cornhill	1	NA	1	1	NA	NA
St Paul's Cathedral*	8	4	8	2	8	2
St Peter Cornhill	1	NA	1	1	1	0
Seething Lane	3	1	3	1	3	0
Senator House	2	1	2	1	2	2
Smithfield Rotunda*	2	1	2	0	2	1
<b>Total</b>	<b>83</b>	<b>45</b>	<b>79</b>	<b>40</b>	<b>78</b>	<b>41</b>
<b>Occupancy of checked boxes</b>	<b>59%</b>		<b>51%</b>		<b>53%</b>	

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### 2.2 Species

Nest boxes can accommodate a number of different species and it is difficult to be certain which species has used a box, unless there are observations during the nesting season. However, it is likely that the City's nest boxes are used exclusively by Blue tits and Great tits. Distinguishing the nests can also be difficult, unless there is a dead chick or an abandoned egg. Both types of tit tend to build nests with a base of grasses, substantial amounts of moss, lined with felted hair (or very often teased out cigarette filters) and fabric threads. Blue tits often line the nest with feathers and so all nests with feather linings have been categorised as Blue tit nests and those without as Great tit nests. This analysis has been corroborated by observations of birds using the nests during the breeding season and has been applied consistently when analysing results since 2011.

### 3. Recommendations

#### 3.1 Improving breeding success - food availability during the breeding season

We can do little to mitigate the effect of the weather, other than ensuring that nest boxes are sited correctly (North or East facing, out of direct sunlight and prevailing winds and rain); and using deep, woodcrete boxes that provide better insulation (all our boxes are now of this type). However, we can improve food availability and quality, which should improve breeding success.



*Clutch of 12 abandoned Blue tit eggs, Seething Lane nest box*

Tits and other birds that are omnivorous feed their young exclusively on caterpillars and other insects. Seeds will be used as a last resort but there is evidence to suggest that the dry diet may cause dehydration of young and contribute to increased mortality rates. Ten City gardens now have well maintained feeding stations. Feeding mealworms during the breeding season might improve adult fitness. This is already done in the Barbican Wildlife Garden, Postman's Park and Bunhill Fields. Although dried mealworms may contribute to

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dehydration of chicks, feeding live mealworms would be difficult in most City gardens.

It is also possible to improve the natural diet of breeding birds by increasing the numbers of live caterpillars on their natural forage plants or increasing insect populations by installing more log piles. Both Great tits and Blue tits feed on caterpillars of the Winter Moth, *Operophtera brumata*. These insects require broad leaf trees, such as oak, birch and hawthorn. Planting more of these native species in City gardens would substantially enhance biodiversity and should be a priority in Sites of Importance for Nature Conservation (SINCs).

### **3.2 Improving food availability year round – log piles and feeding stations**

Log piles and dead hedges improve invertebrate populations throughout the year and in winter are bird larders! There are log piles in Postman's Park, Bunhill Fields, Church Entry and St Bartholomew the Great churchyard. Other gardens that would benefit from log piles and are large enough to accommodate them are Portsoken, Smithfield Rotunda, Cleary, St Mary Staining, Barbican Ironmonger's, Barbican Thomas More and St Paul's Cathedral churchyard. Log piles should also be included in the Finsbury Circus restoration.

The following SINCs under the management of the City currently without feeding stations include:

- Seething Lane/St Olave's Hart Street
- St Anne and St Agnes
- Aldermanbury Gardens
- Finsbury Circus
- Portsoken