

# Badger (Flagship) Species Action Plan



*“The badger grunting on his woodland track  
With shaggy hide and sharp nose scrowed with black  
Roots in the bushes and the woods, and makes  
A great high burrow in the ferns and brakes”*

*The Badger, John Clare*

## 1 Aims

- To protect badger populations across the borough and strive towards supporting self-sustaining, viable and thriving populations by utilising evidence based conservation actions.
- Promote badgers as a ‘Flagship Species’ to encourage a wealth of beneficial conservation practices that support an array of other less known and less charismatic species.
- To raise the awareness amongst Council Officers and the public of the importance of badgers to encourage greater levels of council & community driven conservation and appreciation across the borough.

## Acknowledgements

We thank Raymond Ings from the East Badger Protection Society for their time and expertise in reviewing this plan.

## 2 Introduction

The Eurasian badger (*Meles meles*) has lived in Britain for at least 250,000 years and has coexisted alongside a diverse guild of predators including wolf, brown bear and lynx. Today however, they are the UK's largest terrestrial predator remaining. These well recognised and generally popular mammals are in the mustelid family which include other species such as pine martens, otters and polecats.

Badgers are powerful creatures that are well adapted to digging. They create underground setts to live in, and are typically social creatures with group sizes between 4 and 8 individuals (collectively known as clans). Setts consist of a main sett surrounded by outlying setts, which provide a refuge across the foraging area. The main sett is where young are born and although badgers can mate at any time of year, their birthing period is between January and February due to delayed implantation. The young start to emerge from the sett approximately 12 weeks after birth.

These mustelids are mainly considered woodland mammals though urban populations are not uncommon. Badgers are known as 'opportunistic omnivores' due to their incredibly varied diet, though their core preference is for earthworms which make up as much as 80% of their diet. In fact, an adult badger can eat over 200 worms in a single night. If availability of preferred prey is limited, badgers are able to shift to other sources including snails, slugs and soft fruit like fallen blackberries, elderberries and even small mammals, reptiles and amphibians.

Badgers are highly social animals, living in family groups who forage within a defined territory. They don't hibernate but during cold weather they spend most of their time underground in their setts. Badgers are well known for their black and white stripes, but few are ever seen due to their nocturnal habits.

Due to the historic and horrific persecution of badgers, which is gruesomely portrayed in John Clare's classic poem 'The Badger', the species is now afforded full legal protection. Since the enactment of The Protect of Badgers Act 1992, parts of the country where persecution had suppressed populations are now seeing recovery, resulting in a significant increase in badger populations across the UK.

In terms of the current distribution in the borough, one must first acknowledge that it presents highly sensitive information that may enable further targeted persecution of the species. Therefore, this plan will not disclose the specific location of setts with the aim of keeping them safe from public disturbance. However, generally speaking badgers are well distributed across the borough with populations in North Kingston, Surbiton and South of the Borough.

Like all the SAPs within the Kingston Biodiversity Action Plan, targeted conservation actions that work to conserve badger populations will also deliver positive impacts to non-target species.

### 3 Current status

#### a. Legal / policy status

Under the Protection of Badgers Act 1992 and Schedule 6 of the Wildlife and Countryside Act 1981, it is an offence to damage, destroy or block access to a badger sett, or to disturb badgers in their setts. Additionally, it is illegal to take, injure or kill badgers, treat them cruelly, and to sell, possess, mark or ring badgers. While snares are not illegal the intentional snaring of a badger is illegal, as is the shooting of badgers (without the appropriate licence). The UK is also a signatory to the Berne Convention, in which the Eurasian badger is a protected species and despite these laws, thousands continue to be injured and killed illegally each year (see section 6).

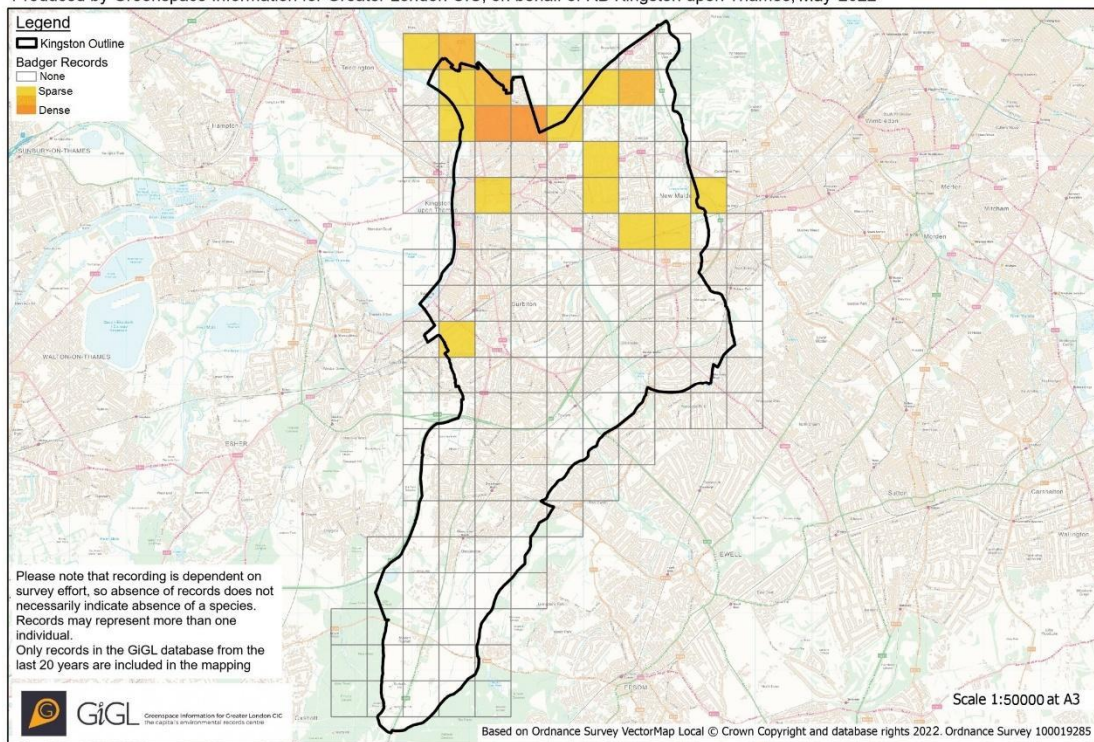
#### b. Conservation status

Eurasian badgers are not an endangered species. They are one of the most legally protected wild animals in the UK. Their numbers are highest in southern England and they are distributed across Greater London. In fact, it has been estimated that the UK holds around a quarter of the global population of badgers, making it an internationally important home for the species. However, the current extension of badger culling licences in the UK means that our populations could be reduced by more than half by 2026.

#### c. Distribution

#### Heatmap of Badger Records in Kingston upon Thames

Produced by Greenspace Information for Greater London CIC, on behalf of RB Kingston upon Thames, May 2022



**Figure 1** Heat map showing recorded badger distribution in RBK (within the last 20 years). Note that this map is subject to data deficiencies - this plan will encourage greater recording and sharing of badger data, especially in the south of the borough.

## 4 Key Habitats

Key habitats for badgers include grasslands for foraging, woodland for shelter (preferably deciduous), sloping land for digging setts as well as copses and hedgerows to connect landscapes and provide cover. Periodical grazing of grassland by cattle introduces dung to the equation which encourages earthworms – a staple food source of the badger. Each badger territory consists of a complex network of underground burrows. The main sett is where badgers spend the majority of their time and rear their young. Then there are several outlying setts which provide refuge when foraging. These tend to be located within the cover of woodland near to fields and meadows where most of their foraging is conducted. Badgers can also survive in more urbanised areas, providing there is suitable cover in which to dig their setts and nearby parks, gardens, hedgerows and cemeteries in which they can forage for food.

As omnivores and apex predators, badgers have a fairly broad diet and will travel more than 2 miles to find food if necessary. While their preference is for earthworms, badgers will consume anything from fleshy fruit, nuts, grasses, roots and bulbs, to invertebrates, amphibians, lizards, small mammals, young birds, eggs, carrion; they will even dig up wasp and bee nests for grubs. Some fruit-bearing shrubs and trees are even associated with badger setts, as their seeds are eaten and deposited as waste in nearby latrines.

Due to their burrow digging and seed spreading activities, badgers are known to be a keystone species who play a crucial role in landscape ecology and biodiversity. As a flagship species which is in significant decline due to persecution, targeted conservation action should be taken to safeguard badgers and their setts. Actions that work to promote conservation, namely improving ecological connectivity and creating, protecting or enhancing associated habitats, will deliver an ‘umbrella effect’ by supporting other non-target species.

## 5 Ecosystem Functionality and Services (Role in the Climate Emergency)

### 5.1 Trophic Position

By consuming invertebrates, badgers help to control populations of pest species. By consuming fruits, they become important seed dispersers within their territories. As predators, badgers also prevent populations of animals that are lower in the trophic cascade from becoming out of balance. Furthermore, by preying on slow, weak, and dying animals, badgers increase the health of prey populations and can even help to reduce the incidence of disease among them.

### 5.2 Ecosystem Engineers

An ecosystem engineer is any species that creates, significantly modifies, maintains, repairs or destroys a habitat, thereby modulating the availability of resources to other organisms.

#### 5.2.1 Soil Disturbance

By excavating material from deep soil horizons, badgers change the nutrient composition of the topsoil surrounding their setts. Subsequently, plant communities which are adapted to disturbed environments begin to take hold and species richness of both plants and invertebrates increases (Kurek, Kapusta & Holeksa, 2014; Kurek *et al.*, 2022). In this way, badger mounds differ in community composition compared to the wider woodland, thus contributing to

heterogeneity and diversity on the landscape scale.

#### 5.2.2 Refuge

Burrows are excavated year-round, but only a small proportion are occupied by badgers at one time and some become abandoned and succeed over time. This leaves many vacant burrows behind for use by other animals as breeding sites, hibernation sites or temporary shelters (Kurek *et al.*, 2022). Animals that utilise badger setts can include rodents such as rats, mice, shrews and voles, rabbits, amphibians, reptiles, and even foxes. Studies using camera traps to assess the species that use badger burrows in the UK may reveal interesting insights, as a study conducted on American badger setts showed unexpected use by 18 species of bird, as well as other mammals and reptiles (Andersen, Bennett & Holbrook, 2021).

### 5.3 Culture

Badgers are one of the UK's most iconic species. They have inspired countless pieces of art and literature and are a living symbol of the British countryside. They have been around for over a quarter of a million years and their enduring presence provides opportunities for people to engage with nature and teach us about our natural history.

## 6 Threats to Species

### 6.1 Illegal Persecution

Aside from legal culling, badgers have historically been targeted for a number of reasons in a variety of ways. Namely, poisoning, snaring, shooting, the blocking and destruction of setts, hunting, gassing, poaching and baiting. Additionally,

Badgers can cause temporary damage to gardens, usually associated with prolonged dry spells or a building development that has disturbed or displaced them. This usually involves

making scrape marks in the lawn as they explore for worms and larvae. The local badger group can give advice on some simple step on how this can be mitigated against. See [East Surrey Badger Protection Society](#) for guidance.

## 6.2 Urban Development

The construction of roads, electrification of the railway system, development particularly housing, along with the intensification of agricultural practices has severely reduced and fragmented badger habitats. Additionally, the Badger Trust estimates that around 50,000 badgers are killed on the road every year. Badgers that dwell in urban areas are under increasing pressure and it is likely that their numbers are declining as they are less adaptable than foxes.

## 6.3 Climate Change

Badgers do not hibernate, but tend to stay within their setts during winter. During colder periods, badgers enter a state of torpor by lowering their body temperature and metabolising fat stores, allowing for better fuel economy in the body. While milder winters as a result of climate change may benefit badger survival (Nouvellet *et al.*, 2013), there are certain drawbacks.

The chance of traffic accidents increases as milder winters cause badgers to wander further during the February-March breeding season. Summer droughts are especially problematic for young cubs, who subsequently suffer from malnutrition due to a lack of earthworms and endemic gut parasites to which they have not yet acquired immunity. Badgers are evolved to certain weather patterns and aberrant weather as a result of climate change is

likely to throw off the fine-tuning of their adaptive behaviours (Macdonald *et al.*, 2010). 'Fat' badgers are more resilient to periods of food scarcity, so a crucial part of increasing their resilience is ensuring access to healthy foraging grounds.

## 6.4 Badger Culling

Historical persecution of this species has led to badgers being fully protected by the law, helping the UK population to roughly double since the 1980's. However, due to concerns that badgers are responsible for the spread of bovine tuberculosis to cattle, licences granting the culling of badgers in certain areas were introduced.

Since 2013, over 160,000 badgers have been culled, approximately 40% of the UK's population. Research shows that badger to cattle spread does not have a significant impact on the rates of bTB in cattle, that culling is likely to be ineffective in fighting the disease and that cattle to cattle spread is the most important route of transmission (Jenkins, Woodroffe & Donnelly, 2010; McGill *et al.*, 2018). Additionally, the culling of badgers from Cornwall to Cumbria has cost an estimated £70 million in public funds so far.

The government has promised to end badger culling by 2026, however this puts a further 130,000 badgers at risk meaning the UK could lose 60% of its total population. The ecological consequences of removing such a large number of ecosystem engineers are not yet known, but research suggests that directing resources towards a cattle vaccine would be a much more effective means of controlling the disease. Fortunately, no such licenses have been issued in Kingston upon Thames.

## 7 Conservation actions (Tabulated)

Action	Timeframe	Lead	Partners	Evidence base
<b>BR01</b> - Identify key badger occupied sites in the borough.	2023 - 2028	RBK		<a href="#">Surveying for Badgers – Scottish Badgers</a>  <a href="#">Surveying Badgers – The Mammal Society</a>
<b>BR02</b> - Maintain, create or enhance badger habitat and maintain or increase habitat connectivity.	2023 – ongoing	RBK		<a href="#">Managing Resources for Badgers – highland.gov</a>
<b>BR03</b> - Ensure that habitats of importance are not fragmented, isolated or destroyed by development, such that badgers can move freely between them and their setts.	2023 – ongoing	RBK		<a href="#">Badgers: Advice for Planning Decisions - GOV.UK</a>  <a href="#">Badger Protection, Guidance for developers – Badger Trust</a>
<b>BR04</b> – In areas with active setts, consider the conversion of secondary habitat to primary badger foraging habitat e.g. introduce grazing to rough grassland.	2023 - 2028	RBK		See <b>BR03</b>

<b>BR05</b> - Encourage greater recording of badgers, especially in the south of the borough, and encourage sharing of information with local and national recording schemes.	2023 – ongoing	RBK		<a href="#">Reporting Badger Fatalities and Incidents - The Badger Trust</a>  <a href="#">Recording Spreadsheet - GIGL</a>
<b>Engagement &amp; Awareness</b>	<b>Timeframe</b>	<b>Lead</b>	<b>Partners</b>	<b>Evidence base</b>
<b>BR06</b> - Promote the species for National Badger Day.	2023 - 2028	RBK		N/A
<b>BR07</b> - Provide advice to dog walkers, landowners and the general public about badger conservation.	2023 - 2028	RBK		<a href="#">Guide to Badgers - The Badger Trust</a>
<b>BR08</b> – Engage with farm owners and land managers to encourage the reporting of badger sightings and badger setts.	2023 – ongoing	RBK		<a href="#">Recording Spreadsheet - GIGL</a>
<b>BR09</b> - Share planning guidance with developers to encourage best practice.	2023 - ongoing	RBK		<a href="#">Species Planning Advice for Developers</a>



## 8 Planning Context - Biodiversity Net Gain

As priority species for the borough, badgers should be protected through the planning system and, where possible, habitat creation and enhancement for badgers is encouraged. Planning conditions should be applied which enhance connectivity between relevant habitats and prevent or mitigate their deterioration.

## 9 Monitoring

Metric	Process of Monitoring	Timeframe	Lead	Partners
<b>BR01, BR02, BR03</b> – Number of monitoring projects supported / undertaken	Annual report	2023 - ongoing	RBK	
<b>BR04</b> – Number of habitat enhancement projects supported / undertaken	Annual Report	2023 - ongoing	RBK	
<b>BR05, BR08</b> – Spreadsheet of records & GiGL data	Annual Report	2023 – 2028	RBK	
<b>BR06, BR07, BR09</b> – Collation of materials used	Ad hoc	2023 – 2028	RBK	

## 10 Other relevant HAPs/ SAPs

- a. Grassland
- b. Hedgerow
- c. Pollinator Parks
- d. Rivers and Streams
- e. Standing Open Water
- f. Woodland
- g. Amphibians
- h. Bats
- i. Hedgehogs
- j. Reptiles
- k. Stag beetles

## 11 References

- Andersen, M. L., Bennett, D. E., & Holbrook, J. D. (2021). Burrow webs: Clawing the surface of interactions with burrows excavated by American badgers. *Ecology and Evolution*, 11(17), 11559–11568. <https://doi.org/10.1002/ece3.7962>
- Jenkins, H. E., Woodroffe, R., & Donnelly, C. A. (2010). The Duration of the Effects of Repeated Widespread Badger Culling on Cattle Tuberculosis Following the Cessation of Culling. *PLoS ONE*, 5(2), e9090. <https://doi.org/10.1371/journal.pone.0009090>
- Kurek, P., Kapusta, P., & Holeksa, J. (2014). Burrowing by badgers (*Meles meles*) and foxes (*Vulpes vulpes*) changes soil conditions and vegetation in a European temperate forest. *Ecological Research*, 29(1), 1–11. <https://doi.org/10.1007/s11284-013-1094-1>
- Kurek, P., Piechnik, Ł., Wiatrowska, B., Ważna, A., Nowakowski, K., Pardavila, X., Cichocki, J., & Seget, B. (2022). Badger *Meles meles* as Ecosystem Engineer and Its Legal Status in Europe. *Animals*, 12(7), 898. <https://doi.org/10.3390/ani12070898>
- Macdonald, D. W., Newman, C., Buesching, C. D., & Nouvellet, P. (2010). Are badgers 'Under The Weather'? Direct and indirect impacts of climate variation on European badger (*Meles meles*) population dynamics. *Global Change Biology*, no-no. <https://doi.org/10.1111/j.1365-2486.2010.02208.x>
- McGill, I., Menache, A., Saunders, R., Eastwood, B., Dalzell, F., Elliott, P., Irving, B., Knight, A., Jones, M., Mansbridge, P., Dyer, D., Shephard, T., Davies, G., Allen, E., & Grogan, A. (2018). Effectiveness of badger culls. *Veterinary Record*, 183(16), 510–511. <https://doi.org/10.1136/vr.k4483>
- Nouvellet, P., Newman, C., Buesching, C. D., & Macdonald, D. W. (2013). A Multi-Metric Approach to Investigate the Effects of Weather Conditions on the Demographic of a Terrestrial Mammal, the European Badger (*Meles meles*). *PLoS ONE*, 8(7), e68116. <https://doi.org/10.1371/journal.pone.0068116>

## 12 Abbreviations

RBK – Royal Borough of Kingston upon Thames

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