Biodiversity Monitoring of Churchyards and Burial Grounds in the UK

Wild Systems Lab · April 2026

1. Introduction and scope

The United Kingdom has an estimated 20,000 or more burial grounds in England and Wales alone, ranging from small rural medieval churchyards to large Victorian municipal cemeteries. The Church of England alone estimates that around 10,000 of its 16,000 churches have a churchyard, a combined green area comparable to a small national park. Because consecrated ground was historically fenced or walled off from surrounding farmland, much of this land escaped the ploughing, fertiliser and pesticide inputs that transformed the wider countryside during twentieth-century agricultural intensification. As a result, churchyards frequently preserve semi-natural habitats, particularly unimproved species-rich grassland, that have become vanishingly rare elsewhere.

This review surveys what is known about the biodiversity value of UK churchyards and burial grounds and, more specifically, what monitoring and recording work has been carried out. It covers three overlapping strands: (i) the academic and peer-reviewed literature; (ii) NGO, charity and diocesan programmes; and (iii) citizen-science and biological-recording initiatives, including the data infrastructure that underpins them. A final section identifies ongoing and planned work and outstanding research gaps. The emphasis throughout is on the UK, but the international literature is included where it frames the UK picture.

2. The ecological case for churchyards

Several recurring ecological arguments motivate churchyard monitoring, and they are worth stating because they define what the monitoring programmes have tended to record.

Grassland continuity. Unimproved neutral and calcareous grassland has declined in the UK by roughly 97% since the 1930s. Where it survives, it is often within churchyard walls, making these sites relict "islands" of grassland flora, including ancient-grassland indicators such as pignut, betony, burnet and, in the best sites, green-winged and spotted orchids.

Stone, wood and lichens. In lowland Britain, where natural rock outcrops are scarce, churches and their memorials provide the main hard-substrate lichen habitat. The British Lichen Society reports that a large fraction of the roughly 2,000 British lichen species have been recorded in churchyards, on the order of 700 species, with a subset effectively restricted to this habitat. Lichens on stone are slow-growing and long-lived, making churchyard populations sensitive indicators of air quality and management change.

Veteran trees, especially yew. The UK holds a globally significant population of ancient and veteran yews, and roughly three-quarters of these are found in the churchyards of England and Wales, some pre-dating the

churches beside them.

Buildings as habitat. The church fabric itself (towers, eaves, roof voids) supports roosting bats and nesting birds such as swifts. This blurs the usual distinction between "building" and "habitat" and has driven a distinct body of survey work (Section 5).

Refugia in a depleted landscape. With around one in seven UK species assessed as at risk of extinction, churchyards are repeatedly framed as refuges for taxa struggling in the wider countryside, including hedgehogs, bumblebees, slow-worms and waxcap fungi.

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3. The academic and peer-reviewed literature

3.1 International reviews and comparative studies

The single most useful entry point is the review by Löki, Deák, Lukács and Molnár (2019), *Biodiversity potential of burial places, a review on the flora and fauna of cemeteries and churchyards* (Global Ecology and Conservation 18: e00614). Synthesising 97 studies from five continents, it establishes that cemeteries and churchyards have a genuine and repeatable conservation role, frequently harbouring rare and endangered species even in highly modified landscapes. It is the standard citation for the "burial grounds as refugia" thesis and a good source of onward references.

A more recent quantitative synthesis, *Assessing the conservation value of cemeteries to urban biota worldwide* (2024, Conservation Biology), reviewed 70 papers across 50 cities in 27 countries using mixed-effects models. Its headline finding is that cemeteries' conservation value is broadly comparable to that of urban parks, though parks held a higher proportion of unique species. This matters for UK work because it tempers the sometimes-uncritical enthusiasm for burial grounds by benchmarking them against other green space.

The urban-ecology literature from continental Europe is also relevant methodologically. Kowarik, Buchholz, von der Lippe and Seitz (2016), *Biodiversity functions of urban cemeteries* (Urban Forestry & Urban Greening 19: 68-78), used one of Europe's largest Jewish cemeteries (Berlin) as a case study and is widely cited on how cemetery size, age and structural heterogeneity drive biodiversity. Kowarik and colleagues' later review, *Gardens of life* (Frontiers in Environmental Science, 2022), extends this to the full range of ecosystem services and argues for multifunctional, multi-stakeholder evaluation, a framing directly applicable to UK sites. A number of Central and Eastern European case studies provide transferable survey designs, though their species pools differ from the UK's.

3.2 UK-specific academic work

Peer-reviewed, UK-specific churchyard ecology is thinner than the grey literature and is dominated by two themes.

The first is bats, discussed in Section 5, where the People and Nature paper by Boothby et al. (2025) is the flagship recent output.

The second is fungi and lichens. Richard Fortey's (2000) work on the waxcap grasslands and rare fungi of Oxfordshire churchyards (noting 14 rare species) is frequently cited as early evidence that burial grounds are refuges for more than plants. Lichenological survey work, much of it organised through the British Lichen Society (Section 4.4), sits at the boundary between academic and grey literature: it has produced very large datasets but is published mainly as society reports, county floras and identification guides rather than in journals.

A fair summary is that the UK has abundant recording but comparatively little hypothesis-driven, published churchyard ecology. This is a gap the current University of York work (Section 6) is explicitly trying to fill, and it is a defensible niche for new research.

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4. National charity and NGO programmes

4.1 The Living Churchyard Project / Arthur Rank Centre (1986-)

The modern movement effectively begins with the Living Churchyard Project, established in 1986 by the Arthur Rank Centre to promote churchyards as community environmental resources and to raise environmental awareness. It later operated as the Living Churchyard and Cemetery Project (LCCP) and, at its height, was associated with more than 6,000 churchyards managed for wildlife. Its legacy persists in the many diocesan "Living Churchyard" schemes still running today (e.g. St Albans, Warwickshire). The standard practitioner reference from this tradition is Nigel Cooper's *Wildlife in Church and Churchyard: Plants, Animals and their Management* (2nd edn, Church House Publishing, 2001).

4.2 Caring for God's Acre (1997/2000-)

Caring for God's Acre (CfGA) is now the only UK charity focused solely on the conservation of churchyards and burial grounds. It began as a Shropshire Hills pilot in 1997, inspired by the National Living Churchyard and Cemetery Project, and became an independent charity around 2000. Despite its name it is explicitly non-religious, working with groups of all denominations and none. CfGA's outputs most relevant to monitoring are:

- The Action Pack: practical five-step management and survey guidance covering grassland, trees and yews, hedgerows, stonework, and a "Havens for Wildlife" series (reptiles and amphibians, mammals, bats, swifts and birds, bees and other Hymenoptera, butterflies and moths, lichens, waxcap fungi, and mosses/liverworts/ferns).
- The Beautiful Burial Ground project: a Heritage Lottery-funded programme (from 2017) that built the recording and data infrastructure discussed in Section 5.1.
- Churches Count on Nature: the flagship annual citizen-science event, co-delivered with partners (Section 5.2).

4.3 A Rocha UK, Eco Church (2016-)

A Rocha UK, a Christian conservation charity, launched Eco Church in 2016: an award scheme with a self-assessment survey through which participating churches report on how they manage their land and buildings for nature. Eco Church is a co-organiser of Churches Count on Nature. Its accumulated survey data, covering management practices and challenges across many hundreds of churches, is itself a research dataset, now being analysed for the first time (Section 6).

4.4 The British Lichen Society, Lowland Churchyard Project (1990s-)

The BLS recognised churchyards as a distinct lichen habitat in the 1970s. The Lowland Churchyard Project, instigated in the early 1990s by the late Tom Chester, aimed to survey at least one churchyard in every 10-km Ordnance Survey square (hectad) across lowland Britain, an objective achieved as a Millennium Project and since extended into the South-West, Wales, the Borders and Northern England. The Society reports more than 550,000 churchyard lichen records. Crucially for monitoring, the project has revisited sites over decades, documenting both recovery (as sulphur-dioxide air pollution fell) and new losses (from tree shading, unmanaged "wildlife" areas, and rising nitrogen deposition from ammonia and NOx). The BLS also maintains a network of diocesan contacts and, with the Field Studies Council, produced the widely used Churchyard Lichens identification guides (Dobson).

4.5 Bats in Churches (2019-2023)

Bats in Churches was a major partnership project, initially a £3.8 million Heritage Lottery development grant (2017), growing into a roughly £4.6 million partnership running from 2019 to 2023. Partners were Natural England, the Church of England, Historic England, the Bat Conservation Trust and the Churches Conservation Trust. Its purpose was to resolve the long-standing conflict between bat roosts and church communities, combining building interventions at heavily affected churches with a large volunteer survey effort. Its recording arm is described in Section 5.3, and its flagship publication in Section 5.4. Its legacy includes the Living Alongside Bats in Churches small-grants scheme (funded by Natural England and the National Lottery Heritage Fund), which continues to support churches after the main project's close.

4.6 Diocesan, Wildlife Trust and devolved-nation programmes

Beneath the national bodies is a dense layer of regional partnerships that carry out much of the on-the-ground survey work:

- Wilder Churches: a partnership of Somerset Wildlife Trust and the Diocese of Bath and Wells, encouraging communities to record and then manage churchyard wildlife.
- Dorset Wildlife Trust's Living Churchyards project: over 22 years, its volunteers have surveyed more than 150 churches across Dorset, pairing simple species surveys with tailored management advice.
- Diocesan Living Churchyard schemes: e.g. St Albans (with an associated volunteer-run "Lichen Library"), and long-running county schemes such as Warwickshire's.
- Wales: the Revitalising Churchyard Biodiversity initiative delivered over 50 grassland surveys and 15 training workshops, while Welsh Burial Grounds for Wildlife produced bilingual guidance on veteran trees, meadows, lichens, and amphibians and reptiles. The Church in Wales is a partner in Churches Count on Nature.

• Scotland and Northern Ireland: coordinated churchyard-specific programmes are less developed than in England and Wales. Recording in Scotland tends to run through general biological-recording and citizen-science routes rather than a dedicated kirkyard scheme, which is itself a notable geographic gap.

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5. Data infrastructure and citizen science

5.1 The Beautiful Burial Ground portal on the NBN Atlas

Perhaps the most significant infrastructural development is the Beautiful Burial Grounds portal (burialgrounds.nbnatlas.org), built by CfGA in partnership with the National Biodiversity Network as an extension of the NBN Atlas devoted entirely to burial grounds. Users can search for a specific burial ground, view it on a map, and browse the occurrence records held there. Records flow in through iRecord, which gave the project a standardised, open-data recording pathway to replace the ad-hoc spreadsheets and paper records used previously.

5.2 Churches Count on Nature / Love Your Burial Ground Week

Churches Count on Nature is the principal recurring citizen-science event: an annual week-long bioblitz of churchyards and cemeteries held each June, run jointly by Caring for God's Acre and A Rocha UK with the Church of England and Church in Wales, and coinciding with Love Your Burial Ground Week and National Cemeteries Week. Reported participation gives a sense of scale: over 27,000 records in its first two years (to 2022); more than 43,700 records across four years; and, in 2024, 6,354 records from nearly 6,000 participants across 300-plus events. Recording increasingly uses iNaturalist (for identification support) alongside iRecord (for the data pathway). The scheme is as much about engagement and prompting management change as about data density, and its records are inevitably biased toward conspicuous, easily identified taxa.

5.3 The National Bats in Churches Study and Church Bat Detectives

Within the Bats in Churches project, two complementary citizen-science surveys ran from 2019 to 2022: the National Bats in Churches Study (structured internal surveys of church buildings) and Church Bat Detectives. Around 387 volunteers surveyed 753 churches, recording 12 bat species using passive, non-disturbance methods (so no licence was required). Surveys generated per-church reports for participants and produced notable discoveries, including confirmation of the rare grey long-eared bat in churches in Devon (2020) and Somerset (2022).

5.4 The flagship publication: Boothby et al. (2025)

The study's principal peer-reviewed output is Boothby, C., Boughey, K. L., Gilmour, L. R. V., Langton, S. & Worledge, L. (2025), *Understanding bats in English churches: a citizen science approach*, People and Nature (British Ecological Society; DOI 10.1002/pan3.70156). Its headline findings — that roughly half of Church of England churches host bats, rising to about 78% of medieval churches, implying more than 8,000 churches nationwide with roosts — are now the standard UK figures. The paper is also a strong methodological

reference for large-scale, volunteer-led survey design and for handling sampling bias against a known national population (the Church Heritage Record). (The lead author, Claire Boothby, sadly died before publication; the work is widely credited to her.)

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6. Ongoing and planned work

- University of York, Leverhulme Centre for Anthropocene Biodiversity. A current PhD project (Jess Botha, publicised early 2026) is analysing A Rocha UK's Eco Church survey data for the first time, combined with new ecological surveys and interviews, to understand what participating churches actually do for nature, what they contain, and how local efforts might scale to wider nature recovery. This is among the clearest examples of the field moving from recording toward published, hypothesis-driven analysis.
- Churches Count on Nature continues as an annual fixture (the 2025 count ran 7-15 June), so the NBN burial-grounds dataset grows year on year.
- Living Alongside Bats in Churches continues the Bats in Churches legacy through small grants and community engagement beyond 2023.
- Wilder Churches (Somerset) and the various diocesan/Wildlife Trust Living Churchyard schemes remain active, as do the Welsh burial-ground programmes.
- British Lichen Society churchyard surveying is explicitly ongoing, with re-survey of long-established sites a stated priority for detecting environmental change.

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7. Synthesis and research gaps

Several patterns emerge that are useful for positioning new work:

1. Recording outstrips analysis. The UK has enormous churchyard datasets (NBN burial-grounds portal, 550,000+ BLS lichen records, Churches Count on Nature, Bats in Churches) but relatively few published analyses. Turning existing occurrence data into rigorous, site- or region-scale ecological inference is an open and valuable niche.

2. Taxonomic and geographic bias. Records skew toward charismatic and easily identified groups (birds, mammals, wildflowers, lichens, bats) and toward England and Wales. Under-recorded taxa (invertebrates, bryophytes, fungi beyond waxcaps) and under-covered geographies (Scotland, Northern Ireland) are obvious gaps.

3. Limited longitudinal monitoring. Much recording is one-off (a single bioblitz week). The BLS re-survey model and the Bats in Churches per-church reports are exceptions that demonstrate the value of repeat visits for detecting change — an argument for standardised, repeatable protocols and, potentially, for automated or passive methods (e.g. acoustic monitoring for bats and birds, which is largely absent from the churchyard-specific literature to date).

4. Management-biodiversity links are under-quantified. A great deal of guidance exists on how to manage churchyards for wildlife, but the evidence base linking specific management (mowing regimes, tree/shade

management, leaving "wild" areas) to measured biodiversity outcomes is thin, precisely the gap the York work targets.

5. Buildings and grounds are usually studied separately. Bats and swifts (buildings) and grassland/lichens (grounds) tend to be surveyed by different communities. Few studies treat the church-and-churchyard as a single integrated system, despite the building/curtilage relationship being ecologically important.

Taken together, the most defensible contributions for new work in this space are: standardising and re-surveying to build a longitudinal signal; integrating building and ground taxa; incorporating under-recorded groups and passive-sensing methods; and explicitly relating management to measured outcomes.

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8. Key references and resources

Peer-reviewed literature

• Löki, V., Deák, B., Lukács, A. B. & Molnár, A. (2019). Biodiversity potential of burial places, a review on the flora and fauna of cemeteries and churchyards. *Global Ecology and Conservation*, 18, e00614.

• Kowarik, I., Buchholz, S., von der Lippe, M. & Seitz, B. (2016). Biodiversity functions of urban cemeteries: evidence from one of the largest Jewish cemeteries in Europe. *Urban Forestry & Urban Greening*, 19, 68-78.

• Kowarik, I. et al. (2022). Gardens of life: multifunctional and ecosystem services of urban cemeteries in Central Europe and beyond. *Frontiers in Environmental Science*, 10, 1077565.

• (2024). Assessing the conservation value of cemeteries to urban biota worldwide. *Conservation Biology* (70 papers; 50 cities; 27 countries).

• Boothby, C., Boughey, K. L., Gilmour, L. R. V., Langton, S. & Worledge, L. (2025). Understanding bats in English churches: a citizen science approach. *People and Nature*. DOI: 10.1002/pan3.70156.

• Fortey, R. (2000). On the rare fungi (including waxcaps) of Oxfordshire churchyards, as cited in Löki et al. (2019).

Practitioner / grey literature

• Cooper, N. (2001). *Wildlife in Church and Churchyard: Plants, Animals and their Management* (2nd edn). Church House Publishing.

• Caring for God's Acre, Action Pack and management guidance (caringforgodsacre.org.uk).

• Dobson, F. S., *Guide to Common Churchyard Lichens / Field Key to Common Churchyard Lichens* (Field Studies Council / British Lichen Society).

• British Lichen Society, Churchyards Fact Sheet and Lowland Churchyard Project outputs.

Programmes, portals and data

• Beautiful Burial Grounds portal, NBN Atlas: burialgrounds.nbnatlas.org

- iRecord (Biological Records Centre): record submission pathway.
- Churches Count on Nature / Love Your Burial Ground Week: Caring for God's Acre & A Rocha UK.
- Eco Church: A Rocha UK (ecochurch.arocha.org.uk).
- Bats in Churches: batsinchurches.org.uk; Bat Conservation Trust (bats.org.uk).
- The Living Churchyard Project: Arthur Rank Centre (arthurrankcentre.org.uk).
- Church Heritage Record: Church of England.
- Leverhulme Centre for Anthropocene Biodiversity, University of York: current churchyard/Eco Church research.

Note: figures and dates are drawn from the organisations' own published materials and from the peer-reviewed sources listed. Where a source gave a range, both the pilot and formal dates are given. This draft is intended as a foundation to be expanded with primary-source reading of the starred references.