



CITIZEN SCIENCE * CONSERVATION • COMMUNITY

Technical *Report*

AUGUST 2026



INTRODUCING THE COEXIST PROJECT

The next generation of human-wildlife coexistence
research for policy and planning in the Anthropocene

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Executive Summary

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This technical report summarises the evolution of our original case study, the British Carnivore Project, into our more recent and broader wildlife-general initiative, the Coexist Project.

Our original case study, the British Carnivore Project, was established in 2021 and sought to understand how human-driven environmental changes in the UK are shaping wild carnivore behaviour and people's relationships with these animals. Through an interdisciplinary approach combining psychology, ecology, geography and citizen science, the Project delivered internationally recognised research, contributed to evidence-based policy and practice, pioneered new wildlife monitoring methodologies, trained a new generation of conservationists, and established extensive partnerships across academia, conservation organisations, and local communities.

The success of the British Carnivore Project provided the scientific, operational, and collaborative foundations for our new initiative, the Coexist Project, which we established in 2025. This new programme will be the UK's first national citizen science programme dedicated to understanding human-wildlife coexistence in near real-time.

While the British Carnivore Project will formally conclude in 2026, its impact and legacy will continue through the Coexist Project. Thus, rather than representing an end point, the Coexist Project marks the natural progression of our work by expanding our focus beyond British carnivores to encompass all wildlife species across Great Britain as we continue our long-term commitment to understanding, supporting, and improving human-wildlife coexistence from local to national levels.

We are deeply grateful to every organisation, landowner, researcher, and citizen scientist who has supported the British Carnivore Project over the past five years. Your contributions, collaboration, and commitment have been fundamental to the success of the Project and have made this next chapter possible.

We look forward to keeping in touch as we move into this next phase of our work.

Dr Blake Morton

University of Hull
Project Lead

The British Carnivore Project *2021 - 2026*

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Over five years, the British Carnivore Project discovered new insights on how UK urbanisation is altering carnivore behaviour, identifying specific human activities that may potentially affect opportunities for successful human coexistence with these animals.

Key findings include:

1. Public wildlife feeding

- **Finding:** Reports of public wildlife feeding, fox bin-raiding, and fox pest control are all linked (Adaway et al., 2026).
- **Action:** Targeted campaigns to reduce public feeding, particularly of foxes, may help avoid human-fox conflicts.

2. Human litter/waste management

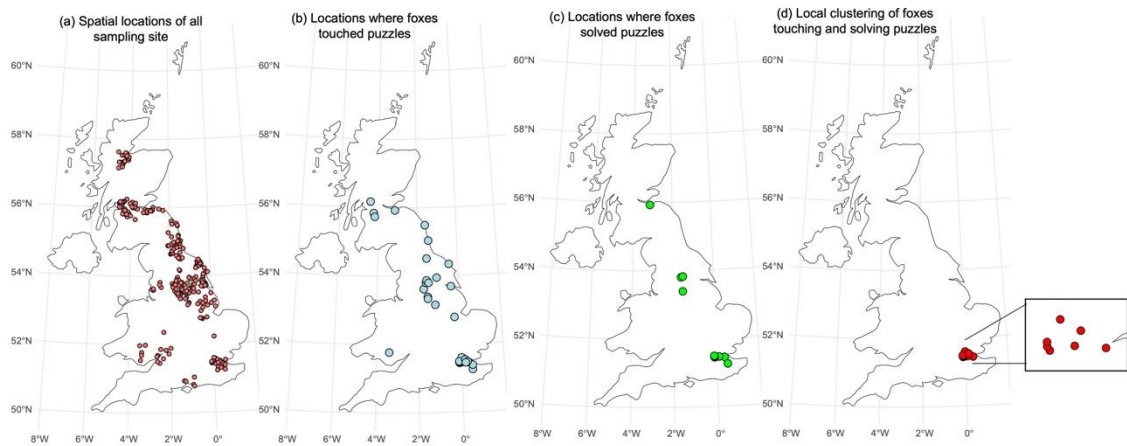
- **Finding:** Urban foxes are more likely than rural foxes to approach, explore, and access easy human food sources (Morton et al., 2023, 2026).
- **Action:** Keeping cities clean and using containers with secure “fox-proof” lids may help prevent human-fox conflicts from escalating.

3. Place-based management

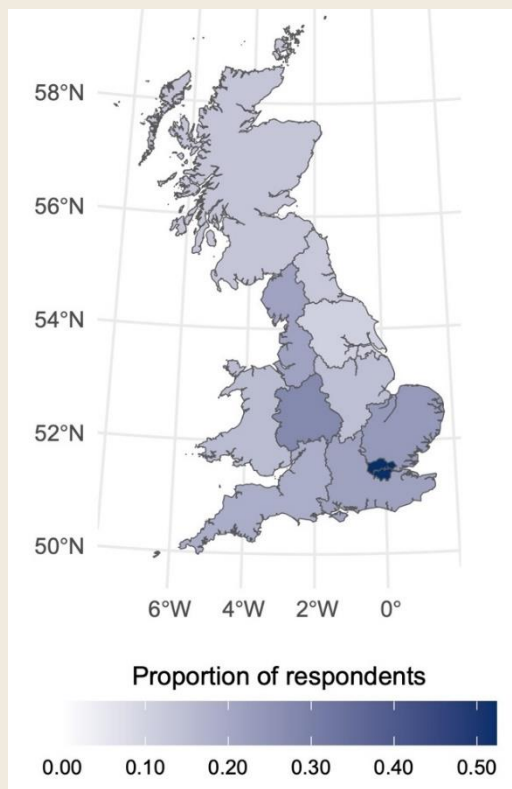
- **Finding:** Fox behaviour, public attitudes, and human-fox experiences show nuanced regional differences (Morton et al., 2023, 2026; Adaway et al., 2026).
- **Action:** Locally-tailored insights, not “one-size-fits-all” generalisations, are needed to better support human-wildlife coexistence.

Importantly, our third key finding (place-based management) highlights the value of integrating ecological, geographic, and psychological data within a single framework to understand and promote human-wildlife coexistence, which directly informed our new wildlife-general programme, the Coexist Project. For example, from the British Carnivore Project:

- Data on public attitudes and beliefs about wild red foxes (measured through subjective questionnaires) revealed that negative attitudes and reported use of fox pest control were both related to people's negative experiences with foxes, such as reports of bin-raiding (Morton and Soulsbury, 2026; Adaway et al., 2026).
- Spatial analyses of the human questionnaire data revealed that public beliefs about fox bin-raiding were widespread across Great Britain (59.3% of 1,275 respondents), and that London was a particular 'hotspot' for reports of fox bin-raiding (Adaway et al., 2026; Adaway et al., submitted).
- Cross-referencing public beliefs with people's lived experiences showed that most people (78.3%) reported having no personal experience with bin-raiding from their local foxes, bringing into question the validity of subjective human reports of fox bin-raiding due to possible bias from broader socio-cultural narratives (Adaway et al., 2026; Adaway et al., submitted).
- Data from trail cameras and puzzle feeders allowed us to objectively measure red fox activity and the prevalence of conflict-related behaviours, including boldness, exploration, and problem-solving to exploit human-made objects containing food. Across 284 study locations, most fox activity occurred within or around cities, and certain fox populations – particularly London – were most likely to engage in these conflict-related behaviours despite many ecological opportunities for bin-raiding at other sites based on our behavioural tests and the prevalence of accessible street bins (Morton et al., 2023; Morton et al., 2026; Adaway et al., submitted).
- Cross-referencing all of these independent data streams (animal, ecological, and human data) at the same times and locations suggested that real (not perceived) bin-raiding most likely clustered around London rather than being characteristic of all urban fox populations in the UK where public beliefs were widespread (Adaway et al., 2026; Morton et al., 2026).
- Management of human-wildlife conflicts is traditionally based either on subjective human reports or species' proximity to people. However, by demonstrating that widespread negative attitudes and beliefs towards foxes were not necessarily supported by objective evidence of conflict-related behaviour, our red fox case study illustrates why an integrated approach can be used to distinguish genuine ecological drivers of coexistence from potential socially-constructed perceptions.



Map showing (a) the spatial locations of all sampling sites (N= 284 locations) where puzzle feeders were deployed (dark red points), (b) the recorded locations where foxes touched the novel tasks (27.4%) (light blue points), (c) the recorded locations where foxes solved the tasks (12.4%) (light green points), and (d) significant local clustering of locations where foxes touched then solved the tasks (red points).



Map showing 'hotspots' for human subjective reports of fox bin-raiding in Great Britain (N= 1,275 respondents).



Crucially, the British Carnivore Project also illustrates how an integrated national picture – based on local insights – can inform the messaging of place-based coexistence strategies:

- Pro-environmental messages about wildlife are often communicated broadly, without accounting for nuanced differences between local communities and people's lived experiences.
- This matters because people are more likely to change their behaviour when messages align with what they already value, believe, or perceive to be true.
- Knowing and understanding your target audience can therefore help identify what type(s) of messages might resonate most within that community.

So, for example, in the case of red foxes:

- If research shows that urban foxes are not the widespread "bin raiders" often portrayed in popular culture, then taking a generic messaging approach to dispel this widespread belief risks being ineffective – and could even undermine trust – in areas where it does not align with a community's pre-existing beliefs.
- Instead, where behavioural 'hotspots' are verified, campaigns might frame urban foxes as an important part of urban wildlife and people's opportunities to connect with nature, while highlighting their adaptability and the importance of securing outdoor bins and reducing food waste to promote coexistence. By contrast, where attitudes and beliefs about bin-raiding are shaped by broader socio-cultural narratives rather than direct experience, campaigns might focus on community stewardship and neighbourhood cleanliness without directly challenging the bin-raiding myth.

These same principles can be applied to a wide range of other coexistence challenges in the UK, such as recovering predators (e.g., pine martens and chickens), reintroduced species (e.g., Eurasian beavers and habitat damage/flooding), and disease management (e.g., bovine tuberculosis and badger culling). In these and many other cases, public resistance to coexistence is often shaped by sensationalised narratives or misconceptions, highlighting the value of obtaining local insights on both wildlife and people to inform place-based conservation.



Summary of outputs and achievements from the *British Carnivore Project*



Within a relatively short timeframe, the British Carnivore Project produced a substantial body of knowledge and scientific evidence.

Key outputs include:

- Standardised protocols and stakeholder networks that now underpin the Coexist Project
- 9 scientific manuscripts, including publications in world-leading journals
- 8 presentations/posters at national and international conferences
- 3 UK and EU policy engagements
- 5 award nominations
- REF Impact Case Study submission (in prep.)
- 1 PhD thesis
- 5 popular science articles, with >22,185 reads since 2023
- A free nature booklet ("Urban Tails") for young readers, downloaded > 2,600 times since 2025
- Global media coverage reaching over 28 million people, including 3 press releases and >410 media interviews (radio, TV, news)

METHODOLOGICAL INNOVATION

One of the most significant achievements of the British Carnivore Project has been developing and validating practical methodologies that can now be implemented by trained citizen scientists at national scale while maintaining quality assurance.

These include multiple integrated techniques:

- Wildlife behavioural testing using psychometric tests (“puzzle feeders”)
- Trail camera monitoring for wildlife presence/activity
- Psychological surveys of public attitudes, beliefs, and experiences with wildlife
- Spatiotemporal analyses that integrate all of these ecological and psychological data into a single framework for understanding human-wildlife coexistence

BUILDING RESEARCH CAPACITY

Since 2021, the British Carnivore Project has provided research and training opportunities for:

- 4 PhD students
- 8 MSc students
- More than 70 BSc students (including final year dissertations)
- 3 research assistants

These opportunities not only supported the development of future conservation scientists, they helped to strengthen interdisciplinary research expertise across the UK.

BUILDING PARTNERSHIPS

The Project established extensive collaborative networks with:

- Conservation organisations
- Local authorities
- Wildlife charities
- Private landowners
- Citizen scientists

These partnerships provided the foundation for developing a network that would enable us to scale our new programme, the Coexist Project, nationally.

RECOGNITION

The success of the British Carnivore Project has been recognised through several achievements:

In 2023, the Project was nominated for three University of Hull Knowledge Exchange Awards and contributed to the university achieving “Platinum” status in the Ark Wildlife accreditation for most wildlife-friendly campus in the UK.

In 2024, PhD researcher Kristy Adaway became one of the first nominees for The Mammal Society’s prestigious Mammal Champion Award, recognising exceptional contributions to British mammal conservation.

In 2026, work produced by the British Carnivore Project was selected by the University of Hull for submission as an Impact Case Study for the 2029 Research Excellence Framework (a nationwide government assessment of university research quality), recognising its influence beyond academia.

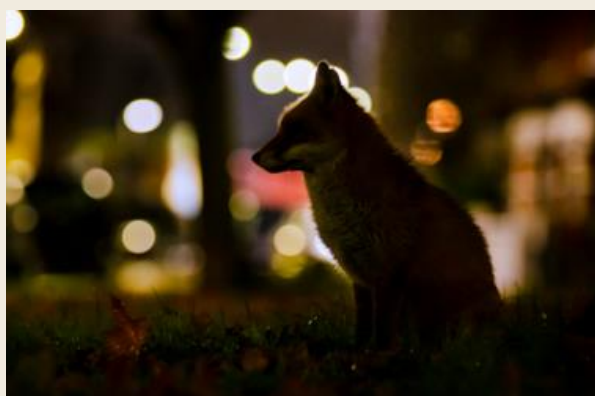
POLICY ENGAGEMENT & IMPACTS

European fur farming policy

In 2025, our 2023 paper on boldness and problem-solving in wild foxes was cited in a European Food Safety Authority (EFSA) report evaluating the welfare of animals farmed for fur, including foxes. EFSA selected the most recent and relevant studies to assess whether current fur farming practices allow animals to express key natural behaviours typical of the species.

Our study was among the research that contributed to EFSA's conclusion that fur-farming conditions fail to meet animals' behavioural needs, including natural exploratory and foraging behaviours. EFSA recommended discontinuing fur farming in the EU, a position that has since been endorsed by global NGOs and adopted by the European Commission as the scientific basis for its 2026 fur-farming policy review.

The Commission described EFSA's findings as a pillar of the European Green Deal and Farm to Fork strategy, illustrating how research from the British Carnivore Project is contributing to EU-level policy discussions.



Wildlife management and snares

In 2023, we submitted evidence to the Scottish government in support of the Wildlife Management and Muirburn Bill. The bill implemented a nationwide ban in Scotland on the use of snares to control wildlife populations.

Foxes are often the intended target of snares as a form of pest control. The British Carnivore Project submitted evidence as part of a public consultation from Scottish Parliament, providing some of the first objective data to evaluate the behavioural flexibility of British red foxes living in the wild, arguing that the government already affords better welfare standards and protection to other species with similar abilities.

We also provided the most up-to-date published data on public attitudes towards foxes within the country, showing that most British residents have more positive, rather than negative, feelings towards these animals, with fewer than 6% of Scottish residents (<9% across UK) saying that it was acceptable to harm or kill foxes. Given these latter findings, we argued that banning the use of inhumane snares in Scotland (to improve the well-being of foxes) would likely be largely supported by the general public at that point in time.



Badger welfare and conservation

In 2023, the Badger Trust invited the British Carnivore Project to join their scientific advisory committee to help them develop protocols for their 'State of the Badger' programme, which aimed to provide up-to-date data on the population status of badgers in England and Wales.

We also contributed expert knowledge on badger behavioural flexibility for the Badger Trust's 2024 stakeholder report on effective solutions to managing the spread of bovine tuberculosis. We argued that as sentient beings, badgers possess an inherent right to protection from needless harm. Because viable alternative management solutions exist, continuing the cull was both ethically indefensible and inconsistent with the principles of the UK's Animal Welfare (Sentience) Act 2022.

PUBLIC AWARENESS

The British Carnivore Project has contributed to various public engagement events over the years, such as talks at public schools, the ColliderFest in Hull, and the international Pint of Science festival.

In addition, we have contributed to raising public awareness of wild animal behaviour and conservation, particularly the impacts of urbanisation, which received significant global media coverage from more than 410 television, newspaper and radio outlets, such as:

- BBC
- National Geographic
- ITV
- Sky News
- The Guardian
- The Times

Collectively, this media coverage reached an estimated >28 million people and was also featured on the BAFTA award-winning BBC television programme Springwatch in 2023.



SCIENTIFIC OUTPUTS

The British Carnivore Project has produced nine major scientific manuscripts, including publications in leading international journals such as *Animal Behaviour*, *Biological Conservation*, *Human Dimensions of Wildlife*, and *Ecology*. These and other outputs (listed below) have advanced knowledge and understanding of wildlife behaviour, urban ecology, human-wildlife relationships, and interdisciplinary monitoring methods. For instance, Morton et al. (2023) is now the 3rd most cited article (~50 citations) in the journal *Animal Behaviour* from the last three years. Morton & Soulsbury (2025) is the most read article (>1,750 reads) in the journal *Human Dimensions of Wildlife* within the past year.

Peer-reviewed publications:

- Morton, F.B., Thompson-Jones, D., Adaway, K.A., Sutter, K.M., Matos, C., Freer, G.B., Fletcher, G., & Soulsbury, C.D. (2026). *Time in the city: Long-term urban exposure predicts greater exploration and problem-solving in wild red foxes*. *Animal Behaviour*. <https://doi.org/10.1016/j.anbehav.2026.123644>
- Adaway, K.A., Hopkins, C.R., Soulsbury, C.D., & Morton, F.B. (2026). *Spatial factors predict variation in reports of human-wildlife interactions but not public attitudes towards a widespread urban carnivore, the red fox*. *Biological Conservation*, 317, 111820. <https://doi.org/10.1016/j.biocon.2026.111820>
- Iannarilli, F., Keeves-von Wolff, B., Wikelski, M., ..., Morton, F.B., ..., Cagnacci, F. (2026). *Snapshot Europe 2021–2022: The first public dataset from a Europe-wide camera-trap survey of terrestrial vertebrates*. *Ecology* (accepted for publication).
- Morton, F.B., & Soulsbury, C.D. (2025). *Experiencing the wild: Red fox encounters are related to stronger nature connectedness, not anxiety, in people*. *Human Dimensions of Wildlife*. <https://doi.org/10.1080/10871209.2025.2561719>
- Morton, F.B., Henri, D., Adaway, K.A., Soulsbury, C.D., & Hopkins, C.R. (2024). *Communicating information about the psychology of a wild carnivore, the red fox, influences perceived attitudinal changes but not overall tolerance in people*. *Biological Conservation*, 296, 110653. <https://doi.org/10.1016/j.biocon.2024.110653>
- Morton, F.B., Gartner, M., Norrie, E.-M., Haddou, Y., Soulsbury, C.D., & Adaway, K.A. (2023). *Urban foxes are bolder but not more innovative than their rural conspecifics*. *Animal Behaviour*, 203, 101–113. <https://doi.org/10.1016/j.anbehav.2023.07.003>

Preprints:

- Adaway, K.A., Hopkins, C.R., Soulsbury, C.D., & Morton, F.B. (under review). *Beliefs about a widely popularised human–wildlife conflict are largely unreflective of local experiences and ecological data in wild red foxes (Vulpes vulpes)*. bioRxiv. <https://doi.org/10.64898/2025.12.06.692778>
- Thompson-Jones, D., Ahmed, W., Morton, F.B. (under review). *‘What does the fox say’: Novel methods to assess attitudes towards a wild carnivore on social media*. bioRxiv.
- Thompson-Jones, D., Adaway, K.A., Soulsbury, C.D., Morton, F.B. (under review). *Motivation to engage with novel objects across an urban-rural gradient is explained by object presence, not size, material or reward effort, in wild red foxes*. bioRxiv.

Doctoral thesis:

- Adaway, K.A. (2026). *From Flexibility to Friction: Behavioural Adaptability in Urban Red Foxes and its Impact on Attitudes and Interactions with People*. Doctoral thesis submitted to the University of Hull.

Popular science outputs:

- *Why not all urban foxes deserve their ‘bin raiding’ reputation*: <https://theconversation.com/why-not-all-urban-foxes-deserve-their-bin-raiding-reputation-211621>
- *Even as urban foxes get bolder, people appreciate rather than persecute them, say psychologists*: <https://theconversation.com/even-as-urban-foxes-get-bolder-people-appreciate-rather-than-persecute-them-say-psychologists-234110>
- *Media content analysis of wild red foxes in the UK*: <https://mammal.org.uk/blog/2023/08/media-content-analysis-of-wild-red-foxes>
- *Inspiring the next generation of scientists*: <https://mammal.org.uk/blog/2023/08/inspiring-the-next-generation>
- *‘Mr Fox’ in our cities – Fantastic or a nuisance?*: <https://magazines.hachettelearning.com/magazine/biological-sciences-review/38/1/mr-fox-in-our-cities/>
- *Urban Tales: The Adventures of Alice & Jack (A Free Nature-Based Educational Resource for Ages 9–14)*: <https://www.blakemorton.co.uk/wp-content/uploads/2026/03/Urban-Tails-The-Adventures-of-Alice-Jack.pdf>

Introducing the *Coexist Project*

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Established in 2025, the Coexist Project is the UK's first national citizen science programme dedicated to understanding human-wildlife coexistence in near real-time.

The Project oversees the collection of psychological, ecological, and geospatial data by trained citizen scientists using standardised methodologies across Great Britain to create a shared evidence base describing how people and wildlife interact within the same landscapes.

The Coexist Project was developed following our five-year pilot programme (the British Carnivore Project) and after consultations with representatives from organisations across the UK, including local and regional councils and national wildlife groups.

There are many valuable wildlife monitoring programmes in the UK, but most initiatives use different methods, focus on either animals or people (rarely both), and are not always designed to be directly comparable between teams. This limits opportunities for shared learning and evaluation of coexistence – a challenge the Coexist Project is designed to overcome.

Specifically, the Coexist Project overcomes the challenge of siloed approaches by training citizen scientists to collect standardised data on both wildlife and people, which are then integrated into a single online dashboard for stakeholders to use. By capturing the same data at the same times and locations, the Project generates a comparable national picture of coexistence in near real-time to guide planning and policy from local to national levels.

Funding to launch the Coexist Project was provided through the UK Research and Innovation Higher Education Innovation Fund (UKRI HEIF) and the Ferens Education Trust.



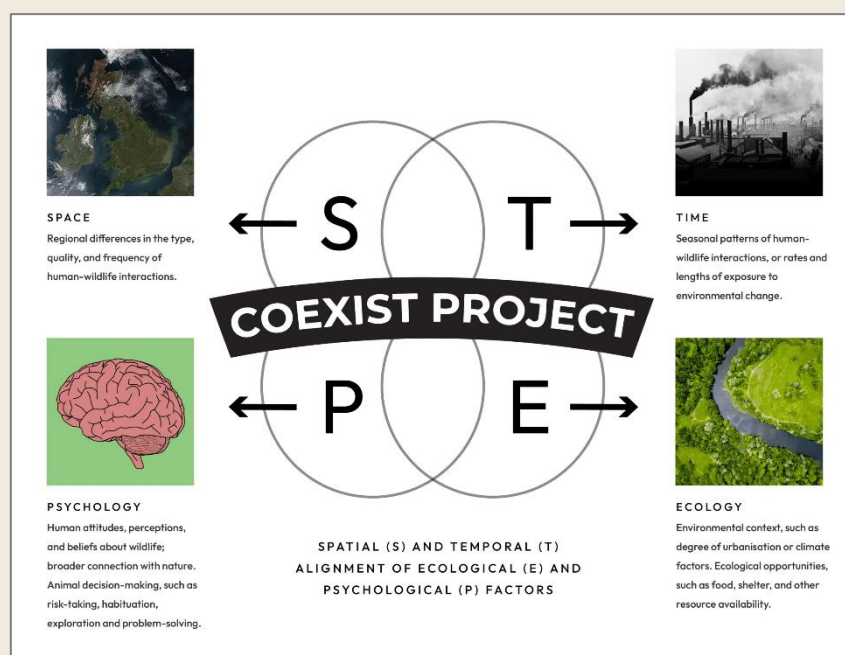
How the Coexist Project builds on the prior work of the *British Carnivore Project*

The British Carnivore Project demonstrated that interdisciplinary wildlife research can successfully integrate ecology, psychology, geography and citizen science, while producing meaningful impacts for research, policy, and conservation.

The Coexist Project builds directly upon these foundations by expanding our portfolio to encompass all wildlife species across Great Britain, enabling national-scale monitoring of human-wildlife coexistence using standardised methodologies.

The British Carnivore Project also directly informed the Coexist Project's unique STEP framework, which uses a memorable acronym to operationalise human-wildlife coexistence across four dimensions: Space (S), Time (T), Ecology (E), and Psychology (P).

Conventional coexistence monitoring often evaluates human and animal dimensions either separately or through misaligned spatiotemporal scales. By contrast, the Coexist Project's framework emphasises a synchronized approach to help capture near real-time feedback loops that misaligned or, single-discipline models overlook.



How the *Coexist Project* works

Citizen scientists receive structured training through our online workshops, tutorials, and instructional videos before collecting data using our standardised methods.

Monitoring includes:

- Trail cameras
- Behavioural tests (e.g., puzzle feeders)
- Passive acoustic monitoring (AudioMoths)
- Public questionnaires evaluating attitudes, beliefs, and experiences with wildlife
- Ecological surveys (e.g., transects and GIS)

Quality assurances include:

- Inter-observer reliability assessments
- Routine data and on-the-ground field audits
- Ongoing volunteer support (e.g., open-line communications and Q&A sessions)



Citizen scientists also have opportunities to participate in workshops to contribute their local knowledge regarding wildlife activity, landscape characteristics, and opportunities to improve coexistence.

Local authorities are invited to participate in small-group knowledge exchange workshops and one-on-one meetings to co-develop monitoring priorities, interpret findings, and identify evidence-based actions for locally-tailored management of coexistence.

*Check out our new website
for more information:*

www.coexistproject.co.uk

Planned outputs and deliverables from the *Coexist Project*

TANGIBLE OUTPUTS

Data collected by citizen scientists are automatically analysed and visualised through an online dashboard we created, providing stakeholders with practical evidence to:

- **Establish baselines and track change** - e.g. understand current conditions, identify challenges and opportunities, and monitor environmental changes over time to support timely, evidence-based decisions.
- **Learn from what works** - e.g. avoid decision-making vacuums by comparing standardised data across communities to share insights, identify effective approaches, and adapt solutions to local contexts.
- **Measure impacts and guide action** - e.g. evaluate whether interventions are achieving their intended outcomes through before-and-after comparisons, control-area comparisons, and long-term monitoring.

DELIVERABLES

Participating stakeholders receive a report summarising the findings to help their team:

- **Understand wildlife responses to environmental change** - e.g. identify patterns, trends, and emerging pressures affecting species and habitats.
- **Understand human-wildlife relationships** - e.g. explore how people interact with, perceive, and support local wildlife.
- **Identify successes and opportunities** - e.g. recognise what is working well and inform efforts to protect or scale effective approaches.
- **Anticipate emerging issues** - e.g. detect early warning signs and respond before challenges escalate.

Research ethics and *governance*

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The Coexist Project complies with:

- UK GDPR
- University ethical approval procedures
- British Psychological Society ethical standards
- Association for the Study of Animal Behaviour guidelines

The programme has received ethical approval from both the Universities of Hull and Lincoln. It has also undergone institutional risk assessments and operates under the University of Hull's comprehensive public liability insurance, which covers all activities, including citizen science.



Looking *ahead*

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The next phase of our work will continue to scale the Coexist Project across Great Britain to different species, situations, and geographic regions.

Our immediate priorities include:

- Expanding citizen science participation across Great Britain
- Increasing partnerships with local authorities interested in collaborating with the Coexist Project
- Broadening monitoring to more diverse groups of wildlife
- Refining citizen science training
- Consultations with partnered local authorities, including councils and conservation NGOs, to enhance our near real-time analytical dashboard to help meet their specific needs and priorities



Join the *Coexist Project*

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We invite local authorities, organisations, and other stakeholders to join our growing national network for the Coexist Project.

Members of our stakeholder database will receive:

- Regular project updates
- Dashboard access
- Data summary reports
- Opportunities to participate in stakeholder workshops
- Opportunities to collaborate on future monitoring and research activities



If you would like to receive updates or discuss opportunities for collaboration, please contact the Project Lead:

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Meet the other Members of the Coexist Project Team:



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University of Hull

Acknowledgements

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Work undertaken as part of the British Carnivore Project and our newly-established Coexist Project would not have been possible without the commitment and support of many stakeholders, including collaborating organisations, landowners, citizen scientists, students, and research partners. On behalf of our entire team, we extend our sincere thanks for your support.

Funding and support



Many volunteers and students, particularly...



+400 landowners and other stakeholders, particularly...

