Literature review on contemporary public views of climate change and biodiversity loss in the UK.

Prepared by Starling Research on behalf of the Royal Society, the Natural History Museum, the Natural Environmental Research Council and the British Science Association

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1. EXECUTIVE SUMMARY

1.1 RESEARCH OVERVIEW

The current report presents key findings from a literature review on contemporary public views on climate change and biodiversity loss in the UK. The purpose of this review is to better understand the current evidence base relating to trends in public knowledge and engagement with climate change and biodiversity loss. The findings from this research will inform future research, engagement and education projects led by the Royal Society, the Natural History Museum, the Natural Environmental Research Council and the British Science Association.

1.2 METHODOLOGY

Searches were conducted to identify both academic studies, high quality 'grey' literature, policy documents, and online resources/toolkits. The project partners were keen to make use of a wide range of resources, from national survey data to qualitative on-the-ground studies: as such, the search strategy focused on casting a wide net in order to identify sources that presented both national trends and localised experiences.

In total, 213 sources were identified for inclusion in the analysis phase of the project following the two phases of literature retrieval. The first phase comprised an extensive review of all available literature, with a second phase involving targeted literature searches in response to evidence gaps. Analysis was conducted thematically in order to build up a clear picture of the breadth and weight of evidence available against each research question. We have also sought to highlight gaps in existing literature as part of the key findings and recommendations.

1.3 KEY FINDINGS

A full summary of key findings is presented in Section 8 below. The following provides a high level summary of the most pertinent of these key findings.

Level of Concern

A large majority of people in the UK (>83%) are concerned about climate change, with a high proportion (>45%) 'very concerned'. Only a tiny minority of people (<5%) are 'not concerned at all' about climate change.[1/2] Overall, there has been a growing concern for the environment across the last decade: 40% of people report feeling 'very concerned' about the environment in 2022, almost double the proportion (22%) expressing high levels of concern in 2010.[3]

Concern about climate change is high across most demographic groups, with only minor variation recorded for most socioeconomic indicators. The two indicators with the greatest divergence between groups are political affiliation and educational attainment: left-wing

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[1] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[2] Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.

[3] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

voters[4/5/6] and those with degree-level qualifications[7/8] are more likely to report being concerned about climate change. There are also regional variations across the UK with people living in southern England most likely to report the highest levels of concern, while those living in northern England, Wales and Northern Ireland reporting the lowest levels of concern.[9] There are very few studies examining the relationship between ethnicity and climate change views in the UK, although most of the evidence that is available seems to suggest that there is no strong relationship between ethnolinguistic background and views.[10/11/12/13]

There is significantly less data on biodiversity loss compared with climate change. In general, people are surveyed less often on this issue and, when surveyed, report lower levels of awareness and concern about biodiversity loss compared with climate change. While almost half of the UK population show some level of awareness and engagement with biodiversity loss (49%), only a small minority are engaged in direct action to protect and support UK biodiversity (11%). Almost a third of the UK population remain unaware of the threat to biodiversity in the UK (31%).[14] The most consistent indicator of concern of the environment and uptake of pro-environmental behaviours is an individual's connection to nature.[15/]

Knowledge and Understanding

While most people recognise that climate change is occurring, only half of people (51%) recognise that human activity is the primary driver of climate change[16] and only a quarter correctly identify the rate at which global temperatures have changed within recent decades.[17] Likewise, there is a lack of widespread awareness that biodiversity loss is happening at an accelerated rate caused by human activity,[18] coupled with a tendency to assume that '*nature will find a way*' to restore the balance.[19/20]

[4] See cross-tabulations for this Tracker: YouGov. (2022). YouGov Survey Results: Climate Change Tracker.
[5] For similar findings, see Hinchliffe, S. (2022). British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.
[6] See also: Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.
[7] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.
[8] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.
[9] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[10] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.
[11] Phillips, D., Curtice, J., Phillips, M. and Perry, J. (eds.) (2018). British Social Attitudes: The 35th Report, London: The National Centre for Social Research.
[12] Office for National Statistics. (2022). Worries about climate change, Great Britain: September to October 2022.
[13] London Councils. (2021). What Do Londoners Think About Climate Change? Results from London Council's 2020 climate change polling.
[14] Joint Nature Conservation Committee. (2020). A1. Awareness, understanding and support for conservation.
[15] Natural England. (2020). A summary report on nature connectedness among adults and children in England: Analyses of relationships with wellbeing and pro-environmental behaviours.
[16] Department for Business, Energy & Industrial Strategy. (2021). BEIS Public Attitudes Tracker (March 2021, Wave 37, UK)
[17] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.
[18] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.
[19] The Natural History Consortium. (2014). Engaging People in Biodiversity Issues. NB: While this source was first published in 2014, it focuses on communication and engagement strategies that remain relevant to the current debate.
[20] National History Museum. (2020). Biodiversity: A public engagement literature review.

There are also strong trends towards minimising the perceived threat of climate change for ourselves as individuals, even while recognition the depth of the issue in its own right. As such, people tend to perceive the threat of climate change as a future problem and/or likely to have a greater impact on others (especially those living in the global South and global East) than themselves.[21] There are also widespread knowledge gaps in terms of how to combat climate change effectively. Recent studies reveal that most people are unaware of the actions that have the greatest impact on climate change mitigation (referred to as the believe-true gap), whilst overestimating the impact of common activities such as recycling.[22/23/24]

While there is an increasing shift towards a systems thinking approach to climate change and biodiversity loss amongst policymakers and scientists,[25/26] there is little research to indicate the extent to which the UK public understand and engage with these issues as interconnected parts of a wider system. However, initiatives such as climate assemblies are creating new spaces in which individuals from across society can learn about and engage with climate change and/or biodiversity from a whole systems perspective. [27/28/29]

Responsibility

A majority of people see climate change action as a shared responsibility between the UK Government; business and industry; and individuals.[30/31] The Government is seen as having a particular responsibility for leadership on climate change,[32/33] although recent analyses highlight the lack of sustained and coherent leadership from the Government to achieve net zero by 2050.[34/35]

In general, people are supportive of net zero policies with higher support for those policies that provide incentives for greener living, while policies to regulate lifestyle choices are far-less popular.[36/37] There is also high levels of support for environmental policies that correlate with nature restoration and protection, e.g. for planting more trees; restoring natural ecosystems; and protecting marine wildlife by banning harmful fishing practices.[38/39]

[21] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[22] Marshall, B. (2021). Climate change: the 'believe-true' gap. LinkedIn.

[23] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[24] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.

[25] IPBES-IPCC. (2021). Biodiversity and Climate Change: Scientific Outcome.

[26] Climate Change Committee. (2023). Progress in adapting to climate change: 2023 Report to Parliament.

[27] WWF, the RSPB and the National Trust (2023). The People's Plan for Nature.

[28] Government Office for Science. (2023). Net zero society: scenarios and pathways.

[29] Climate Assembly UK. (2020). The path to net zero.

[30] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[31] Ipsos. (2020). Solving the environment is everyone's problem.

[32] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.

[33] Climate Assembly UK. (2020). The path to net zero.

[34] Demski, C., & Capstick, S. (2022). To address climate change, lifestyles must change – but the government's reluctance to help is holding us back. The Conversation.

[35] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). House of Lords.

[36] Climate Engagement Partnership. (2021). Net Zero Policies.

[37] Ipsos. (2022). Net Zero Living.

[38] YouGov. (2021). What climate change measures would Britons support?

[39] YouGov. (2022). YouGov / Wildlife and Countryside Link Survey Results.

Personal Action

Research indicates that a majority of people in the UK believe that individual lifestyle changes are both important[40] and necessary[41] to combat climate change. However, while there is broad *willingness* to do more to combat climate change, many of these changes have yet to become a sustained and habitual part of people's everyday lives.[42/43] The gap between what people say they are willing or likely to do to promote pro-environment outcomes and what they actually do is often referred to as the 'say-do gap'.[44]

Potential barriers to action include: lack of engagement with climate change as an issue; lack of knowledge (the believe-true gap); perceived inaccessibility of the science behind climate change; over-saturation of information; perceived lack of action by others; absence of pro-environmental social identity; and the need for established social norms to encourage action.[45/46/47/48/49/50/51/52]

Engagement

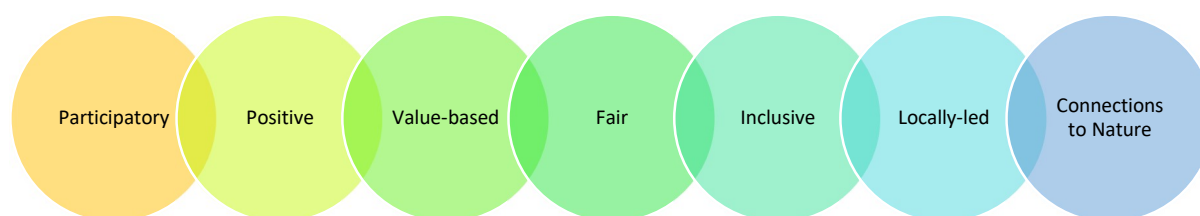| Participatory | Positive | Value-based | Fair | Inclusive | Locally-led | Connections to Nature |

Figure 1: Eight Principles for Engaging the Public on Climate Change and Biodiversity Loss

Drawing on evidence from across the literature, there are eight key principles that inform effective public engagement. These principles can be summarised as follows: using participatory approaches; drawing on positive messaging; developing action-focused solutions; drawing on value-based motivations; ensuring fairness in approach *and* distribution

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[40] In BEIS' Autumn 2022 Public Attitudes Tracker, 85% of all participants agreed that if everyone does their bit, the effects of climate change can be reduced, 76% agreed that 'I have the ability to make change in my life that could help'. Further, there was very little disagreement on both of these points: 5% and 7% respectively. Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[41] 'The majority of Britons (59%) feel that major changes in our lifestyles will be necessary to limit the impact of climate change.' Ipsos. (2020). Climate Change: Britons still want government to prioritise environment over economy.

[42] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.

[43] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[44] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos.*

[45] Office for National Statistics. (2021). Three-quarters of adults in Great Britain worry about climate change.

[46] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos.*

[47] Ipsos. (2021). The Perils of Perception - Data Archive.

[48] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.

[49] UN Environment Programme. (2020). The Little Book of Green Nudges.

[50] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos.*

[51] University College London. (2022). House of Lords: Evidence Session.

[52] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

of burdens; prioritising an inclusive approach that reaches all social groups; creating opportunities for locally-led action; and connections to nature.[53/54/55/56/57/58/59/60/61/62/63/64]

There is a growing body of evidence on how to learn from the Covid-19 pandemic in order to communicate effectively about climate change,[65] especially from a systems thinking perspective.[66] Skilling scientists to act as public communicators is another key area for developing new opportunities to engage a broader cross-section of society in climate change and biodiversity loss.[67]

More broadly, there are also a growing number of innovative models for public engagement. Citizens' assemblies, juries and dialogues are one of the most well-known and popular models to understand better public attitudes to climate change and embedded democratic principles into local and national climate change action.[68/69] Other models include those that harness technology via alternate reality 'games' that allow individuals to play out options for responding to the climate emergency in their local area;[70/71] projects that build on existing social networks in order to reach specific social groups;[72/73] and the use of storytelling to highlight the power of individual action.[74/75/76]

[53] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.

[54] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[55] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach.

[56] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.

[57] University College London. (2022). House of Lords: Evidence Session.

[58] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.

[59] Climate Assembly UK. (2020). The path to net zero.

[60] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 18.

[61] Centre for Climate Change and Social Transformations. (2022). Why is public engagement and participation with net zero so important?

[62] Climate Change Committee. (2022). Climate Conversation: Delivering a Net Zero, Climate Resilient UK.

[63] National History Museum. (2020). Biodiversity: A public engagement literature review.

[64] Richardson, M., Dobson, J., Abson, D.J., Lumber, R., Hunt, A., Young, R., & Moorhouse, B. (2020). Applying the pathways to nature connectedness at a societal scale: a leverage points perspective. Ecosystems and People, 15(1). 387-401.

[65] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). House of Lords. 107.

[66] Wang, S., Latter, B., Nicholls, J., Sawas, A. and Shaw, C. (2021). Britain Talks COP26: New insights on what the UK public want from the climate summit. Oxford: Climate Outreach.

[67] Lindfield, L. (2021). Scientists Need to be Better Communicators—and They Know It. The Pew Charitable Trusts.

[68] Climate Outreach. (2020). National Citizens' Assembly on climate change is key to building social mandate.

[69] Shared Future. (2020). Climate Assemblies and Juries: A people powered response to the climate emergency.

[70] Nesta. (2022). Collective simulation for a net-zero future.

[71] University College London. (2023). The Strategy Room: where the public debates how to go low carbon.

[72] Local Government Association. (2023). 'Energetic Lifestyles': Engaging young people in the development and implementation of carbon reduction initiatives.

[73] The Church of England. Church of England Environment Programme.

[74] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.

[75] University College London. (2022). House of Lords: Evidence Session.

[76] Reset Narratives. (2022). This is what the transition looks like: introducing the Local Storytelling Exchange.

1.4 RECOMMENDATIONS

Research and Learning

- More research is needed into the current status of public awareness of and attitudes to biodiversity loss, both as a phenomenon in its own right and its connections to climate change. This should be deep learning that explores the extent of people's knowledge of biodiversity loss as a concept; its impacts now and in the future; and how we respond to the current challenge, both individually and collectively.
- There is also scope to move the current debate forwards by understanding better how people envisage a 'green' future, for example, people's attitudes to the decisions and trade-offs needed (in terms of the enviromental impact of various 'green' solutions) to achieve net zero. This is closely related to, and builds upon, the need to expand the current national conversation by bringing a systems thinking perspective to the foreground of public engagement activities.

Public Engagement

- Ideally, public engagement interventions on climate change and biodiversity loss should be positive, participatory, values-motivated, fair and inclusive; and they should create opportunities for locally-led actions and connections to nature.
- The first and most important objective for public engagement is to close the gap between knowledge and perception around climate change and biodiversity loss. Raising awareness of the science behind these phenomena, especially the role of humans and the speed at which impact is occuring, is essential to creating a public with the knowledge-base needed to drive widespread climate change action.
- The challenge for public engagement is to move beyond small-scale fora to reach a wider audience. The use of technology to create immersive and/or particaptory 'games' or to share stories of individual or collection action are likely to be most successful to reach diverse social groups.

Advocacy and Support

- Promoting locally-led solutions is critical to successful climate change action given the potential to engage more people and respond to local context. Providing toolkits for programmes or models led by local authorities, scientific organisations, community-based projects or individuals will support these locally-led initiatives, as well as campaigning for locally-led solutions within wider public debates on the issue.
- Raising awareness of biodiversity loss so that it becomes a core part of the national conversation is needed in order to create momentum for more extensive policy and action in this area.
- Scientists need improved acccess to training and support in order to act as 'trusted messengers' within public fora, both as a means of sharing up-to-date scientific information with members of the public and increasing people's confidence to engage with and understand scientific materials for themselves (and thereby increase their 'science capital').

2. INTRODUCTION

The current report presents key findings from a literature review on contemporary public views on climate change and biodiversity loss in the UK. The purpose of this review is to understand better the current evidence base relating to trends in public knowledge and engagement with climate change and biodiversity loss. This findings from this research will inform future research, engagement and education projects led by the Royal Society, the Natural History Museum, the Natural Environmental Research Council and the British Science Association.

Research Questions

The core research questions that have framed this review focus on climate change and biodiversity loss. These research questions can be summarised as follows:

- How concerned are the UK public about (i) climate change and (ii) biodiversity loss?
- What is the public's current level of understanding and knowledge of the causes and impacts of (i) climate change and (ii) biodiversity loss?
- What does the evidence tell us about public perceptions of climate change and biodiversity loss as being both individual and interconnected issues?
- Who do the public feel is most responsible for addressing climate change and how do they think it should be addressed?
- What have been effective routes into engaging people with these issues and/or empowering people to take action? What are the barriers to action?

These research questions allow us to explore not only what people know and understand about climate change and biodiversity loss, but also levels of engagement with these issues in terms of personal action and public policy priorities. A full research framework including both core and sub-research questions is presented in the appendices below.

Search Strategy

Searches were conducted to identify both academic studies, high quality 'grey' literature, policy documents, and online resources/toolkits. The project partners to keen to make use of a wide range of resources, from national survey data to qualitative on-the-ground studies: as such, the search strategy focused on casting a wide net in order to identify sources that presented both national trends and localised experiences. Methods for source identification comprised the following:

- Tailored search strings on both Google and Google Scholar to identify relevant search strings (see the summary of most relevant search terms below).
- Deep dive website searches for Ipsos MORI; YouGov; Gov.uk; NatCen; the Centre for Climate Change and Social Transformation (CAST).
- Research reports and other key resources shared by the project partners.
- A snowballing process, whereby references in key resources were explored in order to identify further relevant resources.

The initial review of literature was conducted by the lead researcher in order to ensure a consistent and comprehensive approach was taken to identifying sources for inclusion.

Search Terms

The following search terms were used to identify relevant sources as part of the initial review of literature.

climate change * climate crisis * climate change action * environment * environmental * environmental degradation * biodiversity loss * biodiversity * climate change adaptation * climate change mitigation * net zero * COP15 * COP26 * COP27 * sustainable development

public opinion * public attitudes * public knowledge * UK public * UK attitudes * [UK region] * public perceptions * community awareness * community engagement

UK survey data * qualitative research * impact report * research report * UK government

The Screening Process

The screening process involved an initial review of sources to assess their relevance to the core research questions. In order to ensure the report reflects contemporary views in the UK, the inclusion criteria specified that sources should be primarily drawn from UK-focused literature published between 2017-2023. However, a number of sources that fall outside of this inclusion criteria have been referenced within this review, especially for research areas where there is limited evidence. These instances are clearly signposted within the main report.

A data collection matrix was established to record all sources identified for inclusion following the initial review and screening process. The data collection matrix comprised both basic bibliographic details and a scoring process for sources to be prioritised based on their relevance to the core research questions and the quality of the research presented.[77] In total, 188 sources were identified through the initial screening process; a second phase of literature retrieval focused on targeted literature searches in response to evidence gaps.

Analysis and Presentation

Analysis was conducted thematically in order to build up a clear picture of the breadth and weight of evidence available against each research question. In total, 213 sources were reviewed in greater depth as part of the analysis phase. Where multiple sources were available on the same topic, analysis has focused on signposting the breadth of the evidence base, as well as drawing out snapshots of what this evidence base tells us to help create a meaningful context for the emerging findings. We have also sought to highlight gaps in existing literature as part of the key findings and recommendations.

Limitations

The search strategy adopted offered the most effective method to draw together a broad range of sources that speak to localised and lived experiences as well as national data trends. As such, the following report should be read as providing a snapshot of contemporary UK attitudes. We recognise that despite our efforts, there is likely to be further small scale studies at local level, for example, that may not have been identified through this research study. That said, where possible, we have signposted website and organisations that provide hubs from localised studies and research.

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[77] 1=High relevance; 2=Medium relevance; 3=Low relevance.

3. LEVELS OF CONCERN

3.1 CLIMATE CHANGE

> *The majority of the UK population seems to fit into either the 'moderately engaged' or 'action-wary'… both of which are certain in their belief that climate change is occurring, but differ in their degree of support for government action on climate change.*[78]

There is a large body of literature on public knowledge and attitudes to climate change. In recent years, climate change and the environment has been a core topic included within most major longitudinal surveys in the UK, meaning that the British public is regularly surveyed on their perceptions of and concern about climate change. The available evidence suggests that a large majority of British people are concerned about climate change (see below for a more detailed breakdown) and that absolute denial of the phenomenon is comparatively rare.[79]

Recent studies have developed various typologies that explain different clusters of belief in relation to climate change. One such study groups people into 'sceptical', 'concerned' and 'paradoxical', noting that the latter cluster accepts the reality of climate change's impacts but does not support actions to mitigate them. Based on analysis of longitudinal data, the study authors argue that a majority of the British public fell within the 'paradoxical' cluster as of 2012-2014 but that there has been increasing movement from the 'paradoxical' to the 'concerned' cluster within recent years.[80] This trend is reflected across the literature: people are increasingly aware of and concerned about climate change, although knowledge of what actions to take to combat climate change at scale remains less clear for many.

Headline Trends

Evidence from recent surveys of the British public is consistent in suggesting that a substantial majority are concerned about climate change and its impacts. The most recently available data, from BEIS' Public Attitudes Tracker in Autumn 2022, suggests 83% of the British public is concerned[81] and BEIS measured similar levels of concern in surveys in both 2021 and the summer of 2022.[82] For Ipsos, using the same survey question as BEIS, the proportion of British adults concerned about climate change was 85% in 2022, matching the figure it found in 2019 and returning to levels of concern more typical of 2005, prior to the financial crisis and public sector austerity.[83]

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[78] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.

[79] See below for extensive survey data showing majority concern, and on the comparative rarity of absolute denial see: Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[80] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[81] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[82] Demski, C. (2021). Climate Change and Net Zero: Public Awareness and Perceptions. Department for Business, Energy & Industrial Strategy, (Research Paper No. 2021/034) and Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[83] Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.

LEVELS OF CLIMATE CHANGE CONCERN
(SOURCE: IPSOS, 2021)
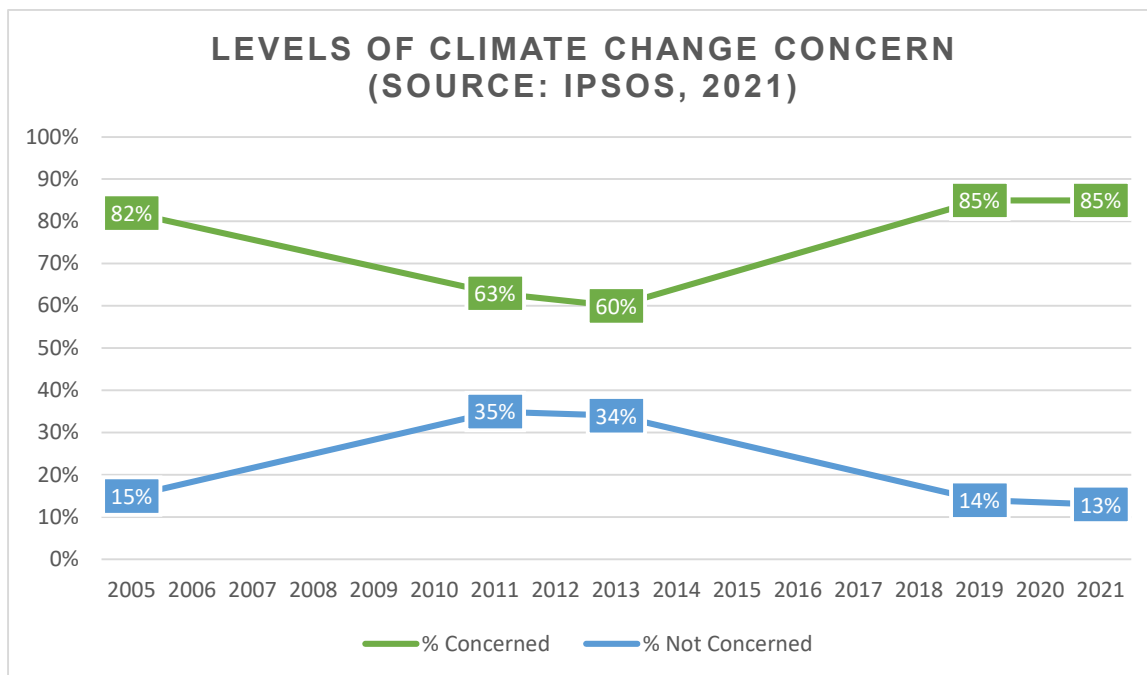
Both BEIS and Ipsos survey data from 2021 and 2022 consistently shows that just under half of people in the UK are 'very concerned' about climate change (>45%).[84/85] Only a tiny minority were 'not at all concerned' by climate change in both the BEIS (3%) and Ipsos (5%) surveys.[86] BSA data also indicates that the levels of concern about environmental issues as a whole have increased significantly over the last decade, with 40% reporting that they are 'very concerned' about the environment as of 2021 (roughly comparable to the proportion 'very concern' about climate change) compared with 22% in 2010.[87]

Other recent studies, including survey data from ONS and YouGov, have found lower levels of concern among the public, although considerable majorities were still found to be concerned in each case. For example, YouGov, using its own survey question, found more than two-thirds (67%) of participants were concerned in July 2022, up from 59% earlier that spring.[88] In October 2021, just before COP26 in Glasgow, ONS' Opinions and Lifestyle Survey, measured concern among the public at 75% of adults.[89]

Demographic Trends

Political Beliefs

Large-scale analyses of survey data suggest that political affiliation is a strong predicator of attitudes to climate change. In general, left-wing voters are significantly more likely to be very

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[84] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[85] Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.
[86] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[87] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.
[88] YouGov. (2022). YouGov Survey Results: Climate Change Tracker.
[89] Office for National Statistics (2021). Three-quarters of adults in Great Britain worry about climate change.

concerned about climate change than right-wing voters.[90][91][92] Looking at 2021 YouGov survey data, for example, more half of Labour (52%) and Liberal Democrat voters (55%) were very concerned about the climate change, compared to less than a quarter (18%) of Conservative voters.[93][94][95]

Interestingly, recent studies working with broader categories (such as 'the environment' or 'pollution *and* climate change') show much narrower, or no, gaps between Conservative voters and voters of other parties compared with the above studies that asked about 'climate change' specifically.[96] This may suggest some Conservative voters concerned about the environment do not link their concerns to climate change.

In terms of other dimensions of political belief, a 2022 YouGov survey found a very large (31 percentage point) gap in concern between people who voted Leave and Remain in the 2016 EU Membership Referendum, although majorities of both were concerned: 55% of Leave voters were concerned about climate change compared with 86% of Remain voters.[97]

Educational Attainment

Alongside political beliefs, educational attainment is the other clear marker of concern about and engagement with climate change as an issue.[98][99] Higher attainment is consistently associated with higher levels of concern about climate change. 2022 BEIS survey data, for example, reported a 17 percentage point gap in concern between those with a degree-level qualification (90%) and those with no qualifications (73%).[100]

Gender

The data on gender is more mixed. While some data points towards much higher levels of concern among women than men,[101] other data indicates that the difference between women

[90] Curtice, J. (2022). Climate change: Will the parties unite or divide?. IPPR Progressive Review, 28(4) 358-370.
[91] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.
[92] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.
[93] See cross-tabulations for this Tracker: YouGov. (2022). YouGov Survey Results: Climate Change Tracker.
[94] For similar findings, see Hinchliffe, S. (2022). British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.
[95] See also: Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.
[96] See for example: Hinchliffe, S. (2022). British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research and Ipsos (2021) Ipsos Issues Index: November 2021.
[97] YouGov. (2022). YouGov Survey Results: Climate Change Tracker.
[98] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.
[99] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.
[100] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[101] BEIS Public Attitude Tracker (Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.) measured a 7-point gender gap; ONS in 2021 similarly measured a 7-point gap (Office for National Statistics (2021). Three-quarters of adults in Great Britain worry about climate change.); Ipsos found an 18-point gap in 2022 (Ipsos (2022) Earth Day 2022). Please note these results are not necessarily directly comparable due to different research methodologies.

and men is negligible.[102] There are also contrasting analyses presented in studies that draw on longitudinal datasets. [103/104]

Age

While climate change is often thought of as a young persons' issue, recent evidence indicates a more complex picture. For example, the ONS' 2021 Opinions and Lifestyle Survey found no significant difference between age groups in their overall level of concern about the impact of climate change, although those aged 70+ were less likely to be 'very' concerned than other groups.[105] In contrast, 2021 data from both Ipsos and the British Social Attitudes Survey both found younger people actually expressed relatively lower levels of concern than older age groups.[106] Further studies have concluded that age has a moderate effect on a person's likelihood of being engaged with[107] or concerned about[108] climate change as an issue, with younger people marginally more likely to be both.[109] Concern about climate change is higher among young people aged 15-16 that classify themselves as 'doing well' (78%) compared with those 'not doing well' at school (54%).[110]

Income and Socioeconomic Status

While there has been less attention paid to these demographic factors than to others, there is evidence in the literature than those with higher incomes are more likely to believe that climate change is happening than those with lower incomes, but also that higher earners see the issue as less serious and prefer it to be a lower government priority than those earning less.[111] In terms of socioeconomic status, the most concerned members of the public, according to recent survey data, appear to be those in social grade ABC1, compared with C2DE. Ipsos has recently recorded both a 6 and 7 percentage point gap here,[112] while YouGov's Climate Change Tracker puts the gap as high as 12 points.[113]

UK Nations and Regions

Ipsos' Issues Index in 2021 found that between England, Scotland and Wales, people were likely to mention pollution, the environment or climate change as concerns at fairly similar

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[102] Ipsos. (2021). Ipsos Issues Index: November 2021.

[103] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[104] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.

[105] Office for National Statistics. (2021). Three-quarters of adults in Great Britain worry about climate change.

[106] Please note these studies are not comparable with each other and structure their age groups differently: Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours and Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[107] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.

[108] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[109] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[110] Ipsos. (2022). Climate Literacy Amongst School Leavers.

[111] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.

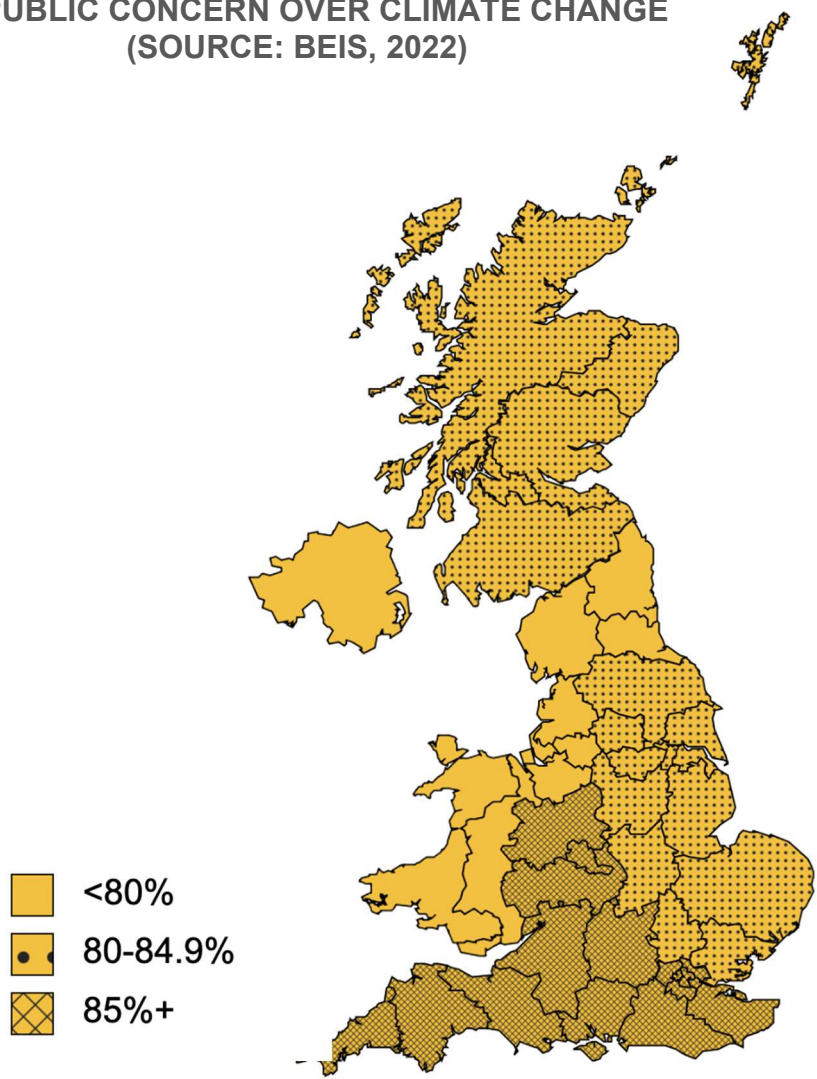[112] Ipsos. (2021). Ipsos Issues Index: November 2021. and Ipsos (2021) High levels of concern about climate change but scepticism whether Britons will change behaviours.

[113] YouGov. (2022). YouGov Survey Results: Climate Change Tracker.

rates (between 40% and 45%).[114] However, Mulholland et al. (2020), focusing on Scotland, found that Scottish people were more likely than people in England and Wales to believe human activity has been a factor in the causes of climate change, and were less likely to say that its impacts had been exaggerated.[115] A separate study focused on Northern Ireland points towards consistently lower levels of concern compared with the UK average.[116]

Within England, survey data shows variation between regions. Recent BEIS data, for example, noted that concern is lowest in the northeast of England (74% of people concerned) and highest in the south of England, the West Midlands and London (all >85%).[117]

UK PUBLIC CONCERN OVER CLIMATE CHANGE
(SOURCE: BEIS, 2022)

- <80%
- 80-84.9%
- 85%+

[114] London may be an outlier in this data, at 26%. Ipsos. (2021). Ipsos Issues Index: November 2021.
[115] Mulholland, C., Pollok, M., Townend, R., Black, C., & Gray, E. (2020). Understanding and engaging the public on climate change. Edinburgh: ClimateXChange.
[116] Steentjes, K., McCamley, M., Berman, J., & Pidgeon, N. (2022). RESIL RISK Northern Ireland: Public perceptions of climate risks and adaptation in Northern Ireland. Cardiff: Cardiff University.
[117] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

Ethnicity

Few large studies have examined the relationship between views on climate change and ethnicity in the UK[118] and, while studies often weight their samples to ensure broad representation of the UK's ethnicity profile, none of the large-scale surveys drawn on for analysis in this section separate their findings by ethnicity. Where studies do comment on ethnicity, it is generally to indicate that this variable did not have a strong relationship with views on climate change,[119/120/121/122/123] although where disaggregated data is presented, it points towards a greater level of concern about climate change amongst people identifying as White British compared to other ethnic groups.[124]

The broader context of ethnic minority data disaggregation in UK national surveys here is also key, specifically the tendency for ethnic minority populations to be under-represented. It is also important to note that the non-reporting of findings by ethnicity is the norm for UK national surveys across all themes (not just climate change).[125]

3.2 BIODIVERSITY LOSS

> *Public understanding and opinion on the value of biodiversity has [sic] strong implications for the acceptance and adoption of conservation measures. People value the natural world in different ways and for different reasons. They may simply value it for its own sake, because it makes our local environment more attractive, or because they enjoy experiencing nature-rich places for recreation. Regular opportunities to experience the natural world are known to have positive impacts on human health.*[126]

In comparison to climate change, there is significantly less evidence on UK public attitudes to, knowledge of and engagement with biodiversity loss. While climate change forms a core thematic area for most of the major national attitudinal surveys delivered in the UK,[127] data related to biodiversity loss tends to fall under sector-specific surveys, such as the UK People and Nature Survey. There is also far less focus on biodiversity loss across other national standalone polls: for example, both Ipsos and YouGov delivered UK-wide polls to assess

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[118] Our finding from this research, also previously reported in Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, *22*(1), 102–121.

[119] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, *22*(1), 102–121.

[120] Phillips, D., Curtice, J., Phillips, M. and Perry, J. (eds.) (2018). British Social Attitudes: The 35th Report, London: The National Centre for Social Research.

[121] Office for National Statistics. (2022). Worries about climate change, Great Britain: September to October 2022.

[122] London Councils. (2021). What Do Londoners Think About Climate Change? Results from London Council's 2020 climate change polling.

[123] See, e.g. Liu et al. (2022), in which boost samples were used aiming to provide at least 1,000 adults each for the following groups but did not disaggregate findings: Indian, Pakistani, Bangladeshi, Caribbean and African. Disaggregation of *this* data would provide much stronger evidence than any of the studies cited in this paragraph due to sample size: Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, *9*(1), 279.

[124] For example, in 2021 IPSOS found 16 percentage point gap between white and ethnic minority survey participants mentioning pollution, climate change or the environment as among the most important issues facing the UK (43% of white participants mentioned these areas compared to 27% of ethnic minority participants). Ipsos (2021) Ipsos Issues Index: November 2021.

[125] Wang, S. (2021). BAME groups are under-represented in polls of public opinions – here's why it matters. Oxford: Climate Outreach.

[126] Joint Nature Conservation Committee. (2020). A1. Awareness, understanding and support for conservation.

[127] See Section 3.1 above.

awareness of and engagement with COP26 and COP27, but there were no UK-wide polls to gauge public awareness and engagement with COP15.[128] These trends feed into broader social trends, in which biodiversity loss does not occupy a place in public consciousness comparable to climate change, despite the mutual interdependency of these environmental phenomena.[129] However, recent publications, such as the People's Plan for Nature represent significant interventions within the national conversation, as well as offering new insights into public attitudes towards biodiversity loss and other key themes related to nature renewal.[130]

Headline Trends

The Joint Nature Conservation Committee (JNCC) advises the UK Government and devolved administrations on nature conservation. As part of its remit, it tracks data related to biodiversity loss, including 'awareness, understanding and support for conservation'. The most recently available data, based on combined survey data from all four UK nations, suggests that while almost half of the UK population show some level of awareness and engagement with biodiversity loss (49% in 2018, up from 42% in 2014), only a small minority are engaged in direct action to project and support UK biodiversity (11% in 2018, up from 5% in 2014). At the other end of the spectrum, while awareness of biodiversity loss in the UK is increasing, almost a third of the UK population remain unaware of the threat to biodiversity in the UK (31% in 2018, down from 40% in 2014).[131]

UK PUBLIC ENGAGEMENT WITH BIODIVERISTY LOSS (SOURCE: JNCC, 2020)
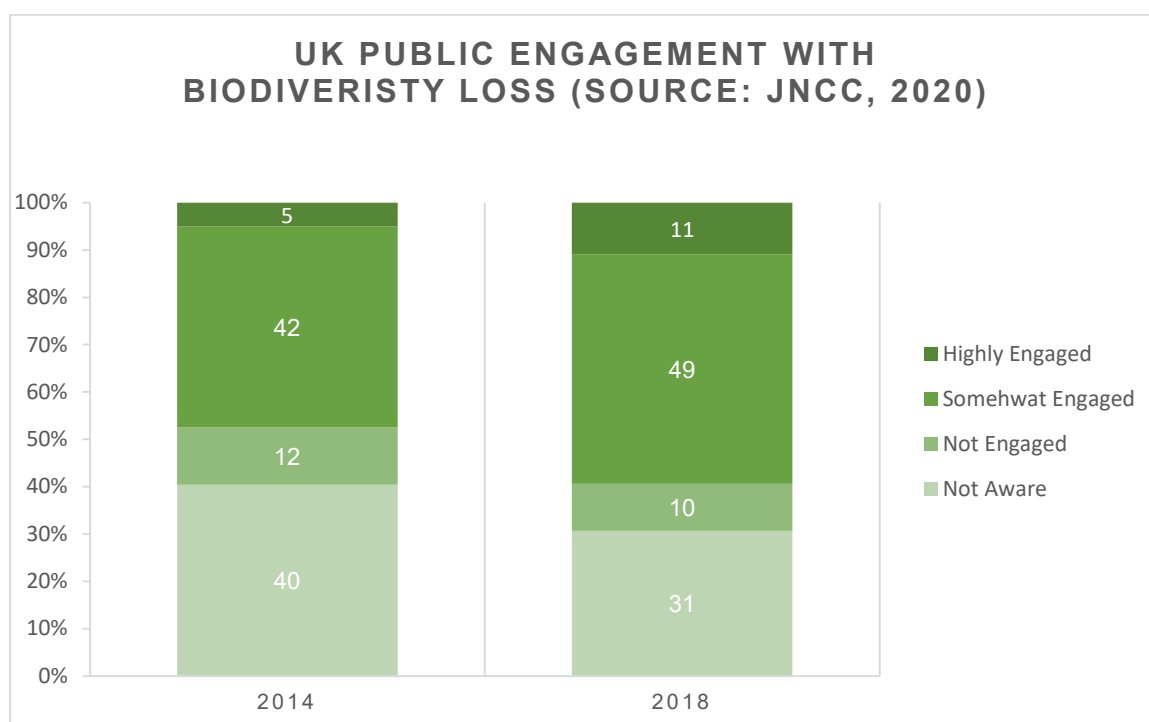
When asked about the reasons why we should protect the environment, adults in England placed the greatest emphasis on children and future generations (62%) and animals and plants (61%), followed by local landscapes (46%) and people around the world (41%). More

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[128] Based on a search on both Ipsos.com and yougov.co.uk for the terms "COP26", "COP27" and "COP15".
[129] On the interconnected of climate change and biodiversity loss in the UK context, see: Joint Nature Conservation Committee (2021) Nature Positive 2030.
[130] WWF, the RSPB and the National Trust (2023) The People's Plan for Nature.
[131] Joint Nature Conservation Committee. (2020). A1. Awareness, understanding and support for conservation.

individualistic reasons were significantly less important with personal health (32%) and personal lifestyle (12%) ranking lowest overall.[132]

Demographic Trends[133]

England

Natural England's People and Nature Survey 2020/21 indicates that 74% of adults in England are both aware of and concerned about the loss of biodiversity in the UK. Biodiversity loss was also in the top three environmental issues that adults in England are most concerned about, alongside climate change and plastic pollution.[134]

In terms of demographic trends, people aged over 55 and those who identify as female are most likely to express high levels of concern about biodiversity loss. People from ethnic minorities and people who are unemployed or earn below the national average express lower overall levels of concern.[135] However, none of these demographic trends are statistically significant. A much more consistent marker for levels of environmental concern is a high level of contact with and connection to nature (e.g. spending time in green spaces), which is discussed in more detail below.

Scotland

The 2019 Scottish Nature Omnibus reports that awareness of and concern about biodiversity loss is relatively high across its population (71% across both indicators). Demographic trends show higher levels of concern for biodiversity loss among AB socioeconomic groups; those not from ethnic monitories; and those living in rural areas. People who are unemployed and young people showed the lowest levels of concern. Survey respondents reported engaging in a range of actions to combat biodiversity loss: namely, being a green consumer (70%), being a green traveller (65%), gardening for wildlife (55%), and volunteering for the environment (23%).[136]

Wales

Levels of awareness and concern are much lower across the Welsh population, according to the 2016-2017 National Survey for Wales. Less than half of the Welsh population (43%) expressed either a high or very high level of concern about biodiversity loss and only 39% of people believed there has already been a decrease in biodiversity in Wales, rising to 46% that expect to see a decline in biodiversity in the future. In contrast, nearly a third of respondents (31%) thought that biodiversity was likely to increase in the future.[137]

There were only small demographic differences reported, with older people and those attaining level 4 qualifications or above marginally more likely to express high or very high levels of concern. While behaviours such as recycling were widely reported, people expressing the

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[132] Natural England. (2022). The People and Nature Survey data explorer.

[133] These datasets correlate with the data used by JNCC to develop its combined UK averages for 2018; however, where more recent datasets are available, these have been used for the analysis below.

[134] Percentages included in this analysis are based on 'whole survey' data for each of the indicators referenced: Natural England. (2022). The People and Nature Survey data explorer.

[135] Percentages included in this analysis are based on 'whole survey' data for each of the indicators referenced: Natural England. (2022). The People and Nature Survey data explorer.

[136] Granville, S. (2020). The Scottish Nature Omnibus 2019. Scottish Natural Heritage Research (Report No. 1198).

[137] Natural Resources Wales. (2017). National Survey for Wales: Key Facts for Policy and Practice. Perceptions of Biodiversity.

highest level of concern about biodiversity loss were also more likely to engage with certain pro-environmental behaviours, such as volunteering for the environment, contacting elected representatives, signing petitions, and joining environmental groups.[138]

Northern Ireland

Less detailed data is available for Northern Ireland. Data published by the Northern Ireland Continuous Household Survey 2020/21 indicates that concern for the environment is relatively high (28% very concerned and 54% fairly concerned). However, a more detailed breakdown of awareness of and engagement with issues around biodiversity loss is not available. While relatively few survey respondents (13%) ranked biodiversity loss as the most important environmental issue, this is unlikely to reflect overall levels of awareness or concern given that the survey question only allowed for individuals to select a single environmental issue as the most important (with waste management, climate change and pollution all ranking higher than biodiversity loss).[139] To compare this data with another proxy for levels of concern, 84% of people polled by RSPB NI supported greater protection for Northern Ireland's natural environment and habitats.[140]

Nature Connection

The most consistent indicator of concern for the environment and uptake of pro-environmental behaviours is an individual's connection to nature.[141/142] There are two components at play here: firstly, the amount of time that an individual spends in green (or blue) spaces and, secondly, the psychological connection that an individual experiences with nature (often referred to as nature connectedness). Both of these intersect with other demographic trends, with those experiencing socio-economic disadvantage least likely to report high levels of nature connectedness: in other words, people's access to nature and its resulting benefits are not always equal.

Contact with Nature

The most recently available data for England indicates that 62% of adults had spent time in green spaces in the last 14 days, with those from a higher income household (73% of people from households earning >£50,000) significantly more likely to report time spent in green spaces than those in from a lower income household (46% from household earning <£15,000). Older adults; people living with a long-term illness; and Black people were also amongst the least likely to have spent time outdoors in green spaces.[143]

However, regular contact with nature is dependent, to some extent, on access to green spaces. Most people have access to either a garden, allotment or other shared outdoors space (>76%): however, people without access to a garden or other outdoors space are also more likely to have spent no time in nature recently. In terms of demographic trends, lack of access to gardens and other outdoors spaces is higher for young people; those from an ethnic

[138] Natural Resources Wales. (2017). National Survey for Wales: Key Facts for Policy and Practice. Perceptions of Biodiversity.

[139] Department of Agriculture, Environment and Rural Affairs. (2021). Environment Statistics from the Continuous Household Survey.

[140] Royal Society for the Protection of Birds. (2022). New poll shows that people in Northern Ireland want stronger protections for nature.

[141] Natural England. (2020). A summary report on nature connectedness among adults and children in England: Analyses of relationships with wellbeing and pro-environmental behaviours.

[142] Natural England (2022). Connection to Nature: Natural England Evidence Information Note.

[143] Natural England (2023). People and Nature Survey for England: April 2020-March 2021. Infographic.

minority; those living in the most deprived areas; and those on a low household income.[144] These demographic trends are also largely repeated with respect to the accessibility of public green spaces within walking distance and the perceived quality of the public green spaces within an individual's local community. [145/146]

Nature Connectedness

The majority of people in England experience a sense of nature connectedness, according to data based on the Nature Connectedness Index. More than 80% of adults report high level of nature connectedness across five out of six indicators (with the exception being that only 58% reporting that they 'feel at one with nature'). Lower levels of nature connectedness were reported by younger people; people from ethnic minority backgrounds; those living in the most deprived areas; those with lower household incomes; and those living with long-term health conditions.[147] This represents a significant overlap with the social groups found to have a lack of access to gardens and other outdoor space above.

The benefits of cultivating nature connectedness include not only the positive physical and emotional impact for individuals, but also the increased likelihood of higher levels of concern for the environment and pro-environmental behaviours. Achieving this is more complex than simply increasing access to nature for everyone. Much of the existing research points towards the fact that it is not only a question of having access to green spaces that matters, but also how they spend time in these spaces.[148/149/150] In other words, regular access to nature is a necessary condition but *not* a sufficient condition to produce a greater sense of nature connectedness unless there is also a desire or a prompt (whether that is psychological, emotional or physical) to connect with nature whilst in green spaces.

[144] Natural England (2023). People and Nature Survey for England: April 2020-Match 2021. Main findings.
[145] Natural England. (2020). A summary report on nature connectedness among adults and children in England: Analyses of relationships with wellbeing and pro-environmental behaviours.
[146] Natural England (2023). People and Nature Survey for England: April 2020-Match 2021. Main findings.
[147] Natural England (2023). People and Nature Survey for England: April 2020-Match 2021. Main findings.
[148] Natural England. (2020). A summary report on nature connectedness among adults and children in England: Analyses of relationships with wellbeing and pro-environmental behaviours.
[149] Natural England (2022). Connection to Nature: Natural England Evidence Information Note.
[150] National Trust and the University of Derby (2020). Noticing Nature: The First Report in the Everyone Needs Nature Series.

4. KNOWLEDGE AND UNDERSTANDING

It is often said that there is a 'say-do' gap in respect of the environment and climate change; for example, people are concerned about packaging, want to see interventions and initiatives but relatively few say they will actually go out of their way and change what they do. Something else is now evident - a 'believe-true' gap - a difference between perception and reality.[151]

4.1 KNOWLEDGE AND PERCEPTIONS

Climate Change

While there is broad acceptance across the UK public that climate change is happening, there remain significant gaps in people's knowledge and understanding on (i) the causes of climate change; (ii) the impact of climate change; (iii) the actions needed to combat climate change; and (iv) terminology related to climate change.

Knowledge of the Causes of Climate Change

The most recently available BEIS data indicates that only half of people in the UK (51%) think that climate change is either entirely or mainly caused by human activity, with one in ten (10%) believing that it is caused by natural processes and a third (33%) believing that climate change is caused by both human activity and natural processes.[152] As noted in an IPPR study, understanding the causal link between human activity and climate change is particularly important because it is a precursor to accepting the need for lifestyle change, including individual behaviour, as a means to combat climate change.[153]

Knowledge of the Impact of Climate Change

Recent studies also reveal other significant gaps between people's perceptions about climate change compared with current scientific data. For example, the greatest proportion of people are unsure about the rate at which global temperatures have increased, with different studies seeing people both underestimate the rate at which global temperatures have increased in the last two decades[154] and overestimate the overall rise in global temperatures since 1850.[155] It is notable that the knowledge gap exists for young people as well, with over half of young people (aged 15 to 16) reporting that they had not learnt anything about climate change in school or could not recall having learnt anything.[156]

A number of studies point towards the tendency for people to conflate the impact of climate change with other environmental phenomena with which they are more familiar, for example, people in Southern England associating rising sea levels with 'more familiar hazards' such

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[151] Marshall, B. (2021). Climate change: the 'believe-true' gap. LinkedIn.

[152] Department for Business, Energy & Industrial Strategy. (2021). BEIS Public Attitudes Tracker (March 2021, Wave 37, UK)

[153] Curtice, J. (2022). Climate change: Will the parties unite or divide?. IPPR Progressive Review, 28(4) 358-370.

[154] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.

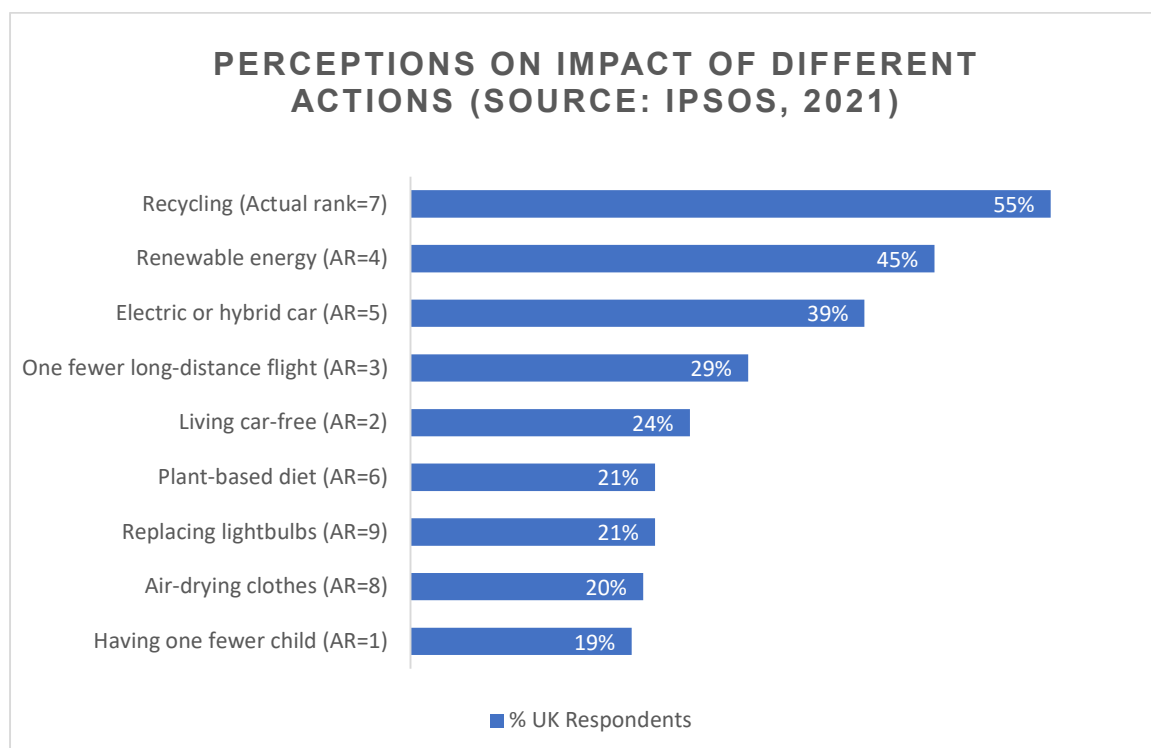[155] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[156] Ipsos. (2022). Despite around half of school leavers (54%) saying they have had education on climate change in the past year, confusion and misunderstanding prevail.

flooding and coastal erosion.[157/158] This trend connects into the knowledge gap because it highlights how there is a natural elision whereby people supplement a lack of knowledge around complex, long-term processes such as climate change with other, more familiar environmental processes. More importantly, this kind of conflation reduces the perceived risk: in the example of rising sea levels, the perceived risk is associated with phenomenon that can be managed comparatively easily.

Knowledge of How to Combat Climate Change

There is also a significant gap in terms of the actions that people regard as having the biggest impact on climate change mitigation compared with independent studies of the actions that actually do have the greatest impact. Research studies consistently show that people in the UK are more likely to overestimate the positive impact of low-demand activities such as recycling and changing energy supplier, while underestimating the impact of activities such as living car-free and having fewer children. While there is some variation in the rankings developed by each individual study, in general, the gap between perceived vs. actual impact maps fairly closely to the activities that people are most likely to engage with in their daily lives (i.e. people overestimate activities that they already do, such as recycling). [159/160/161/162] Ipsos refers to this phenomenon as the 'believe-true gap'.[163]

PERCEPTIONS ON IMPACT OF DIFFERENT ACTIONS (SOURCE: IPSOS, 2021)

Action	% UK Respondents
Recycling (Actual rank=7)	55%
Renewable energy (AR=4)	45%
Electric or hybrid car (AR=5)	39%
One fewer long-distance flight (AR=3)	29%
Living car-free (AR=2)	24%
Plant-based diet (AR=6)	21%
Replacing lightbulbs (AR=9)	21%
Air-drying clothes (AR=8)	20%
Having one fewer child (AR=1)	19%

■ % UK Respondents

[157] Taylor, A., Dessai, S., & Bruine de Bruin, W. (2014). Public perception of climate risk and adaptation in the UK: A review of the literature. *Climate Risk Management. Climate Risk Management*, *4–5*, 1–16.
[158] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review.
[159] Ipsos. (2021). 7 in 10 Britons say they understand what they must do to fight against climate change, but few can identify the best ways to make an impact.
[160] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.
[161] YouGov. (2021). Britons are clueless on the relative effectiveness of actions they could take to cut carbon.
[162] Ipsos. (2021). Earth Day 2021: Public opinion and action on climate change.
[163] Marshall, B. (2021). Climate change: the 'believe-true' gap. LinkedIn.

Other areas in which there is a significant knowledge gap include the tendency to overestimate the extent to which air travel contributes to greenhouse gas emissions, while underestimating the impact of electricity and heat production on greenhouse gas emissions.[164] Likewise, in terms of food consumption, nearly two thirds of people in the UK (62%) believe that eating a local diet that includes meat and dairy reduces greenhouse gas emissions more than adopting a vegetarian diet that includes imported fruit and veg, with only 18% of people correctly identifying a vegetarian diet as most likely to reduce greenhouse gas emissions.[165] There is also a clear trend towards believing that more plastic waste is recycled than is actually the case.[166]

Despite this knowledge gap, a recent poll by YouGov suggests that nearly two thirds of the UK population (65%) consider themselves to be clear on what 'ordinary people' can do to help reduce climate change with only a quarter (26%) stating that they are unclear what to do.[167]

Knowledge of Specific Terms

Snap polls often ask people whether they understand specific terminology related to climate change. While these polls give an indication of broad trends, there are a number of caveats: firstly, the polls reflect self-reported levels of knowledge without any further exploration of the accuracy or depth of individuals' knowledge of these terms. Secondly, in cases where there is more detailed research into specific terminology (for example, levels of public awareness and knowledge of the term net zero[168]), the data presented in these snap polls is inconsistent with the data presented in other, more authoritative sources.[169]

That said, there are certain trends that can be drawn out of these snap polls by looking at people's relative confidence in using terms related to climate change. In general, people in the UK report much higher levels of confidence in using what might be thought of as 'broad' terms such as global warming, climate change and renewable energy. Confidence levels tend to decrease for more specialised terms, such as zero carbon, carbon offsetting, and net zero, as well as sector-specific terms such as green jobs and green skills. [170/171/172]

Spotlight: The Psychological Distance of Climate Change

The term 'psychological distance of climate change' was coined to refer to the tendency of people to understand climate change as something that is temporally distant (occurring in the future) and geographically distant (occurring in other places) and that is too complex to easily comprehend.

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[164] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.

[165] Ipsos. (2021). Perils of Perception: Environmental Perils.

[166] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.

[167] YouGov. (2021). How clear or unclear are you about what ordinary people can do to help reduce climate change?

[168] See Section 5.2.

[169] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review.

[170] YouGov. (2020). YouGov/OVO Energy Survey Results.

[171] YouGov. (2021). YouGov/Sky Survey Results.

[172] YouGov. (2022). YouGov/IEMA Survey Results.

This hypothesis is broadly supported by recent survey data: while most people have accepted that climate change is a present-day problem (71% in 2020 compared to 41% in 2010),[173/174] most people still see climate change as something that affects other people in other places. Two thirds of the British public (67%) believe that climate change poses a serious threat to people in developing countries, compared with half (47%) who feel that climate change poses a series threat to the UK and only a quarter (27%) who feel it poses a threat to themselves and their family.[175/176] These UK trends are consistent with other higher- and middle-income countries.[177]

Immediate Impacts

The main impact most people expect to see in the UK as a result of climate change is new weather patterns: in particular, increased flooding, storms and heatwaves.[178/179] There is also a correlation between the extent to which people report having personally experienced the impact of environmental change in their own lives (as a result of pollution or adverse/extreme weather) and their level of concern about harm to the environment.[180] In other words, people become more concerned about climate change once they perceive it to have a direct and adverse impact in their own lives.

Secondary and Tertiary Impacts

There are many secondary and tertiary impacts of climate change, including but not limited to: food and water security; health; disaster resilience; and migration patterns.[181] However, only a small minority of people (<10%) identify social and economic issues, including food production and health, to be among the likely impacts of climate change in the UK[182] with those impacts typically associated with the consequences of extreme or adverse weather.[183] Yet there is evidence that awareness of these issues is growing: while most people remain unaware of the extent of climate and weather on current levels of internal displacement,[184]

[173] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[174] Steentjes, K., McCamley, M., Berman, J., & Pidgeon, N. (2022). RESIL RISK Northern Ireland: Public perceptions of climate risks and adaptation in Northern Ireland. Cardiff: Cardiff University.

[175] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[176] For further data to support this trend, see also: Demski, C. (2021). Climate Change and Net Zero: Public Awareness and Perceptions. Department for Business, Energy & Industrial Strategy, (Research Paper No. 2021/034)

[177] YouGov. (2019). International poll: most expect to feel impact of climate change, many think it will make us extinct.

[178] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[179] McCluskie, A., & Williams, C. (2020). Public perceptions survey 2020: topline findings prepared for the Met Office. Met Office.

[180] Ipsos. (2020). Public Perception of Environmental Impact: Ipsos MORI Weekly Omnibus Polls.

[181] See, for example, the summary presented here: Joint Nature Conservation Committee. (2022). Nature Recovery for Our Survival, Prosperity and Wellbeing.

[182] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[183] Ipsos. (2021) The public recognise the link between climate change and health, and generally do not have strong views on the role of the NHS and social care in responding to climate change.

[184] Ipsos. (2021). Perils of Perception: Environmental Perils.

longitudinal data does suggest that people are becoming increasingly aware that climate change will lead to changing migration patterns to the UK in the future.[185]

Biodiversity Loss

The UK's latest strategy paper, *Biodiversity 2020*, recognises the need for better engagement with the UK public around biodiversity loss so that 'they personally value biodiversity and know what they can do to help'.[186] Yet levels of public awareness and understanding remain low, with far less research dedicated to exploring people's attitudes to and engagement with biodiversity loss compared to climate change.

Previous research conducted by the Natural History Museum, for example, provides one of the few explorations of the depth of knowledge and understanding that people possess around biodiversity. A study conducted with Museum visitors found that up to half of respondents were unclear on what biodiversity means. In addition, individuals are more likely to refer to biodiversity in terms of the variety of life on earth rather than the interconnectedness of natural ecosystems. Even for those who were familiar with the term, there is a lack of awareness that biodiversity loss is happening at an accelerated rate and that this process of rapid biodiversity loss is happening in the UK as well as globally.[187] This is consistent with data from a recent study of public perceptions, which found that only a third of people correctly identify that animal populations have declined by 60% since 1970.[188]

Recent case studies suggest, however, that while levels of knowledge may be relatively low, people often place a high value on biodiversity once engaged and informed about the issue. Two recent studies around public knowledge of the ecological value of UK tree populations, for example, found that people generally had a strong connection with local tree populations, with frequent visits to green spaces (including urban parks) correlating with higher levels of knowledge and concern about trees. While most people recognise the ecological value of trees for biodiversity and clean air, there is much lower levels of awareness of threats to the stability and health of tree populations, specifically climate change and new diseases linked to changing weather patterns.[189/190] Moreover, evidence presented in one of the studies suggests that the gap is not only in people's knowledge of specific threats to biodiversity, but also in what actions to take in order to respond effectively to such threats, even where levels of concern or general willingness to adopt biosecure behaviours is present.[191]

The lack of large-scale public education projects means that most people remain either unaware or unconcerned about biodiversity loss: 'According to [National History Museum] research, this is because the public are either passive (ie just don't give the issue much

[185] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. Cardiff: Cardiff University.

[186] Department for Environment, Food and Rural Affairs. (2020). Biodiversity 2020: A strategy for England's wildlife and ecosystem services.

[187] National History Museum. (2020). Biodiversity: A public engagement literature review.

[188] The Policy Institute. (2019). Misperceptions about climate change and the natural environment. King's College London.

[189] Collins, C. M. T., Cook-Monie, I., & Raum., S. (2019). What do people know? Ecosystem services, public perception and sustainable management of urban park trees in London, U.K. Urban Forestry & Urban Greening. 43, 126362.

[190] Urquhart, J., Potter, C., Barnett, J. *et al.* (2017). Awareness, concern and willingness to adopt biosecure behaviours: public perceptions of invasive tree pests and pathogens in the UK. *Biological Invasions,* 19, 2567–2582.

[191] Urquhart, J., Potter, C., Barnett, J. *et al.* (2017). Awareness, concern and willingness to adopt biosecure behaviours: public perceptions of invasive tree pests and pathogens in the UK. *Biological Invasions,* 19, 2567–2582.

thought) or optimistic (ie believe it will be all right in the end).'[192] Further to this, research by both the Natural History Museum and the Natural History Consortium points towards the tendency of many people to make up for the gap in their current knowledge by assuming that '*nature will find a way*' to restore the balance based on a belief that today's climate emergency is comparable to natural processes that have happened in the past.[193/194]

4.2 INTERCONNECTIVITY AND SYSTEMS THINKING

The Research Landscape

To what extent do people in the UK understand and engage with climate change and biodiversity loss as part of an interconnected system? The scientific consensus is clear that climate change and biodiversity loss are interconnected processes, driven at an accelerated pace by human activity.[195] Publicly available information published by the UK Government highlights the likely impact of climate change for people living in the UK, both direct and indirect, across multiple systems such as the environment, health, food production and poverty.[196/197] Accordingly, policy makers are increasingly focusing on a systematic approach to climate change policy.[198]

How much of this information trickles down into the general public discourse is poorly understood, however. There is scarcely any literature that specifically explores whether people think about climate change as a discrete issue or whether they are aware of the complexities of the ways in which climate change interacts with (and depends upon) the social, economic and other environmental phenomena that make up our global ecosystem. At some level, this is a limitation of the dominant research methods deployed in the area. Surveys, for example, typically ask a series of discrete questions. While surveys may explore interconnected issues (for example, surveys that ask about issues related to both climate change and biodiversity under the banner of environmental issues more generally), most do not explore the extent to which people understand these issues to be interconnected phenomena. From a systems thinking perspective, the most comprehensive attempt to explore public attitudes across multiple interconnected issues is the 2019 *RESiL RISK* survey, which explores not only people's knowledge and understanding of climate change itself but also levels of awareness of secondary impacts such as changing migration patterns caused by climate-change related displacement.[199]

An interesting but less commonly used approach involves mapping the different fora through which individuals engage with climate change in order to understand both institution-led and citizen-led spaces for public engagement and action. A key insight captured through this approach is that individuals do not engage with issues such as climate change in a one-dimensional way but rather in multiple different ways both as individuals and through different public groups and spaces.[200/201] While this approach allows for the exploration of both formal

[192] National History Museum. (2020). Biodiversity: A public engagement literature review.

[193] The Natural History Consortium. (2014). Engaging People in Biodiversity Issues. NB: While this source was first published in 2014, it focuses on communication and engagement strategies that remain relevant to the current debate.

[194] National History Museum. (2020). Biodiversity: A public engagement literature review.

[195] IPBES-IPCC. (2021). Biodiversity and Climate Change: Scientific Outcome.

[196] Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy. (2019). Guidance: Climate change explained.

[197] UK Health Security Agency. (2021). Understanding the health effects of climate change.

[198] Climate Change Committee. (2023). Progress in adapting to climate change: 2023 Report to Parliament.

[199] See Section 4.1 under the 'Psychological Distance of Climate Change' analysis.

[200] UK Energy Research Centre. (2021). A new direction for public engagement with energy and climate change.

[201] Chilvers, J., Bellamy, R., Pallett, H. & Hargreaves, T. (2021). A systemic approach to mapping participation with low-carbon energy transitions. *Nature Energy*, 6, 250-259.

and non-formal modes of public engagement across the wider social system, as with survey data, it tends to stay focused on specific sectors (for example, the energy sector) rather than mapping public awareness of the complex interdependencies between climate change and other social, economic and environmental phenomena.

Public assemblies – another common tool in climate change research and engagement – lend themselves better to a systems thinking approach because the individuals involved in these processes have the time to engage more deeply with a series of social, economic and environmental issues related to climate change and/or biodiversity loss, with expert guidance allowing these individuals to reflect on how different levers for climate change mitigation or adaption will produce a whole series of direct and indirect impacts across the wider system. Even this approach has its limitations in terms of understanding wider social trends, however, because of its focus on engaging with relatively small groups of people within a specific forum (the assembly) rather than looking at how patterns of systematic engagement happen across society at large. As such, while assemblies provide the most substantial body of evidence of likely social trends, these insights come with the caveat that individuals involved in the assemblies have already been fully informed about the issues at stake by experts on climate change and/or biodiversity loss as part of the deliberation process.

Systems Thinking and Public Understanding

So what can we learn from the current research evidence about public attitudes to climate change and biodiversity loss from a systems perspective? The most recent publications on public attitudes to climate change and biodiversity loss, based on representative UK-wide citizens' assemblies, offer useful insights (with the limitations outlined above duly noted). *The People's Plan for Nature* focuses on a whole systems approach to nature renewal (which includes biodiversity as a core theme),[202] while the *Net Zero Society: Scenarios and Pathways* report explores a series of possible net zero futures together with the socioeconomic dynamics that underpin them,[203] building on findings presented in the earlier *Path to Net Zero* report (also known as the UK Climate Assembly).[204] Insights from these processes are presented below; further discussion of how to most effectively engage the UK public in climate change from a systems thinking perspective is explored in Section 7.2 below.

The first and most striking outcome of these reports, as with other deliberative engagement processes, is the ability of diverse members of the UK public to engage with complex scientific data and social scenarios in order to reach conclusions about how to achieve nature renewal and net zero targets from a whole systems perspective. In other words, every person in the UK is able to become part of a knowledgeable and well-informed public when it comes to the issues of climate change and biodiversity loss with access to expertise and resources, as well as the space to engage thoughtfully with this information. The big challenge for engagement and communication strategies is how to develop a scalable approach that achieves the same quality of input as the deliberative processes used in these assemblies.

Secondly, there is a general willingness across the UK public to support considerable societal change in pursuit of both net zero targets and nature renewal. Members of both the *Path to Net Zero* and the *People's Plan for Nature*, for example, favoured a transition to farming and land-use that prioritises sustainable, nature-friendly farming practices with support for farmers to enable this to happen.[205/206] However, while people engaged in assemblies recognise the

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[202] WWF, the RSPB and the National Trust (2023). The People's Plan for Nature.
[203] Government Office for Science. (2023). Net zero society: scenarios and pathways.
[204] Climate Assembly UK. (2020). The path to net zero.
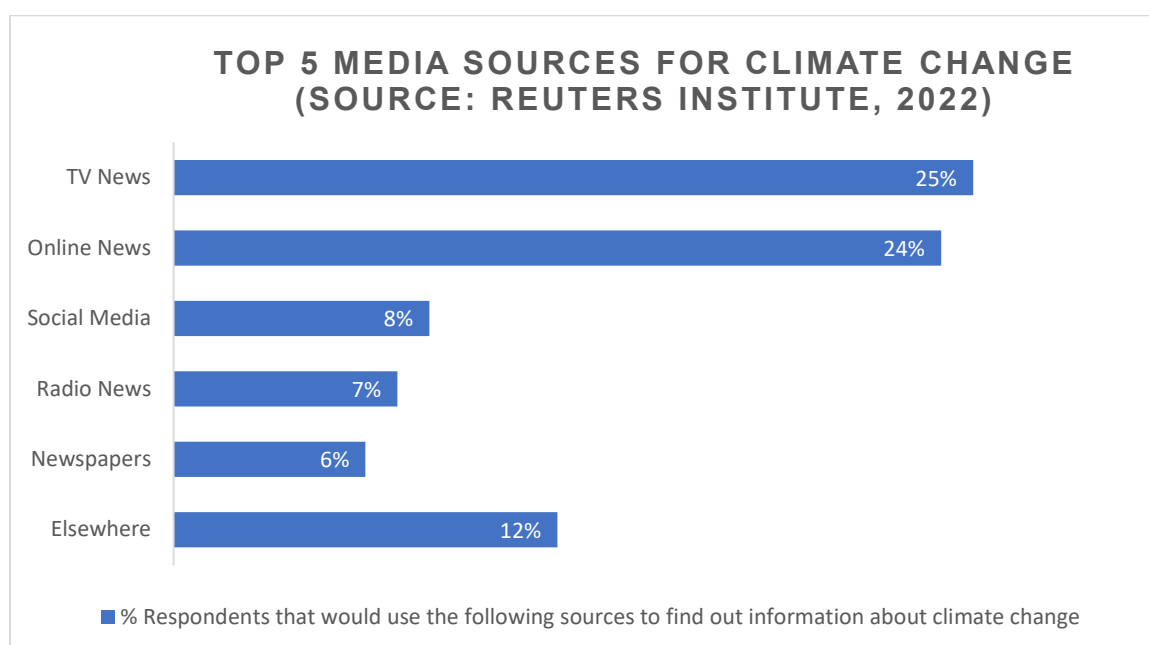[205] WWF, the RSPB and the National Trust (2023). The People's Plan for Nature.
[206] Climate Assembly UK. (2020). The path to net zero.

need for rapid change in the social and economic systems that govern how we live, the *Net Zero Society* report indicates that when faced with multiple possible scenarios for a future net zero society, scenarios based on '*lower social cohesion and less dramatic societal changes*' were considered more plausible rather than more '*aspirational*' scenarios. To achieve these more aspirational outcomes, participants believed that significant investment in infrastructure and reskilling would be needed, alongside public education and government-led incentives to encourage behavioural change for individuals and businesses.[207] This is mirrored across all three assemblies, with proactive leadership and enhanced mechanisms for accountability seen as the necessary foundation to creating far-reaching systems-wide change.

4.3 SOURCES OF INFORMATION

An international study conducted by the Reuters Institute for the Study of Journalism on how people access climate change news found that the most popular media sources for climate change in the UK were TV news (25%) and online news (24%). Social media (8%), radio (7%) and newspapers (6%) were all significantly less popular as sources of climate change news.[208] Research by the Met Office found that environmental groups, scientific experts, government and international agencies and close acquaintances were also important sources of climate change information, although less so than the media.[209]

TOP 5 MEDIA SOURCES FOR CLIMATE CHANGE (SOURCE: REUTERS INSTITUTE, 2022)

Source	%
TV News	25%
Online News	24%
Social Media	8%
Radio News	7%
Newspapers	6%
Elsewhere	12%

■ % Respondents that would use the following sources to find out information about climate change

This broadly corresponds to other studies that track the types of media accessed by people in the UK for science news in general (rather than climate change news specifically) with the most common sources of information identified as television programmes (46%) and newspapers (40%), including here both traditional and online formats. The most popular news sites are reported to be the BBC and Sky News, with the most popular newspapers comprising the Guardian, the Daily Mail and the Times.[210]

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[207] Government Office for Science. (2023). Net zero society: scenarios and pathways.

[208] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

[209] McCluskie, A., & Williams, C. (2020). Public perceptions survey 2020: topline findings prepared for the Met Office. Met Office.

[210] Department for Business, Energy & Industrial Strategy. (2020). Public attitudes to science 2019. (BEIS Research Paper Number 2020/012)

Levels of engagement were also high with nearly two thirds of people in the UK having accessed climate change news within the last two weeks (62%),[211] although a significant minority of people state that they never search for climate change information (34%)[212] and/or activity avoid news related to climate change (28%).[213]

Trustworthiness

> *The relative prominence of different sources is one factor, and another is which sources people trust. This is important in part because trust, especially in scientists, experts, and environmental groups, is found to be associated with uptake of climate-friendly behaviour.*[214]

BEIS survey data suggests that people in the UK consider scientists working for universities (86%) and scientific organisations (85%) as the most trustworthy sources of information about climate change.[215] This is supported by Reuters Institute data that places scientists as the most trustworthy source of information on climate change, followed by international institutions such as the UN and personal acquaintances. Those with high 'science capital' (a measure of scientific literacy and engagement) were more likely than those with lower 'science capital' to trust scientists and other authoritative sources.[216]

The least trustworthy sources are generally identified as politicians, celebrities and social media platforms.[217/218] The exception to this rule is celebrities held in high esteem for their environmental credentials, with both David Attenborough and Greta Thunberg identified as trustworthy communicators (see also: Section 7.2 on scientists as trusted messengers).[219/220] However, the knowledge-action gap occurs here too, with a recent study on the impact of the documentary *Blue Planet II* showing a positive impact on levels of knowledge about issues such as plastic pollution, but no corresponding increase in associated pro-environmental behaviours.[221]

Across both the BEIS and Reuters datasets, the media (including TV news, documentaries, newspapers and radio) tend to occupy a mid-ranking position in terms of trustworthiness for information on climate change.[222/223] This may reflect broader attitudes to scientific reporting

[211] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

[212] McCluskie, A., & Williams, C. (2020). Public perceptions survey 2020: topline findings prepared for the Met Office. Met Office.

[213] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

[214] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

[215] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[216] Department for Business, Energy & Industrial Strategy. (2020). Public attitudes to science 2019. (BEIS Research Paper Number 2020/012)

[217] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[218] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

[219] McCluskie, A., & Williams, C. (2020). Public perceptions survey 2020: topline findings prepared for the Met Office. Met Office.

[220] YouGov. (2020). YouGov/Hanover Survey Results.

[221] Dunn, M. E., Mills, M., & Veríssimo, D. (2020). Evaluating the impact of the documentary series Blue Planet II on viewers' plastic consumption behaviors. *Conservation Science and Practice*, *2*(10).

[222] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[223] Ejaz, W., Mukherjee, M., Fletcher, R., & Nielsen, R. K., (2022). How We Follow Climate Change: Climate News Use and Attitudes in Eight Countries. Reuters Institute for the Study of Journalism.

in the media: according to the British Attitudes to Science survey, 61% agree that the media has a tendency to sensationalise scientific findings in its reporting.[224] This perception is borne out by a recent study that concluded the UK media gives greater presence to climate scepticism compared with other countries, despite widespread acceptance of climate change among the UK public in general.[225]

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[224] Department for Business, Energy & Industrial Strategy. (2020). Public attitudes to science 2019. (BEIS Research Paper Number 2020/012)

[225] Steentjes, K., Pidgeon, N., Poortinga, W., Corner, A., Arnold, A., Böhm, G., Mays, C., Poumadère, M., Ruddat, M., Scheer, D., Sonnberger, M., & Tvinnereim, E. (2017). European Perceptions of Climate Change: Topline findings of a survey conducted in four European countries in 2016. Cardiff: Cardiff University.

5. RESPONSIBILITY

[UK Climate Assembly] participants articulated the need for strong and united political leadership, with politicians putting party politics to one side and delivering a clear and consistent message on the actions that will get us to net zero.[226]

A majority of the UK public (59%) believe that it is still possible to tackle climate change effectively, but only if we make a 'drastic change' in our approach to reducing emissions.[227] But who do the UK public see as bearing the greatest responsibility for acting on climate change? The following section explores this question, as well as how much they know about and support current net zero policies.

5.1 TAKING RESPONSIBILITY

A majority of people see climate change action as a shared responsibility between the UK Government (79%), business and industry (79%) and individuals (74%),[228/229] although the Government is accorded particular responsibility for leadership.[230/231] Within business and industry, energy companies are seen as bearing the greatest responsibility for reducing their emissions followed closely by transport manufacturers and providers.[232]

The Government and businesses are seen to have significantly more responsibility for taking action to reduce carbon emissions within the economy, while individuals are accorded greatest responsibility for activity related to lifestyle, dietary choices and material consumption. All actors are considered to have a high level of responsibility to combat emissions related to travel and energy use.[233] There is also a clear sense of urgency, with two thirds of people stating that the UK Government, business and individuals will all be failing future generations if they do not act now to combat climate change.[234]

Perspectives on Key Actors

Despite the UK's net zero commitments (see below), two thirds of people (66%) do not think that the UK government is doing enough to reduce carbon emissions, with big companies (68%) and the UK public (72%) seen as even bigger culprits in terms of failing to do enough.[235]

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[226] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.

[227] YouGov. (2021). Which of the following comes closest to your view?

[228] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[229] Ipsos. (2020). Solving the environment is everyone's problem.

[230] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.

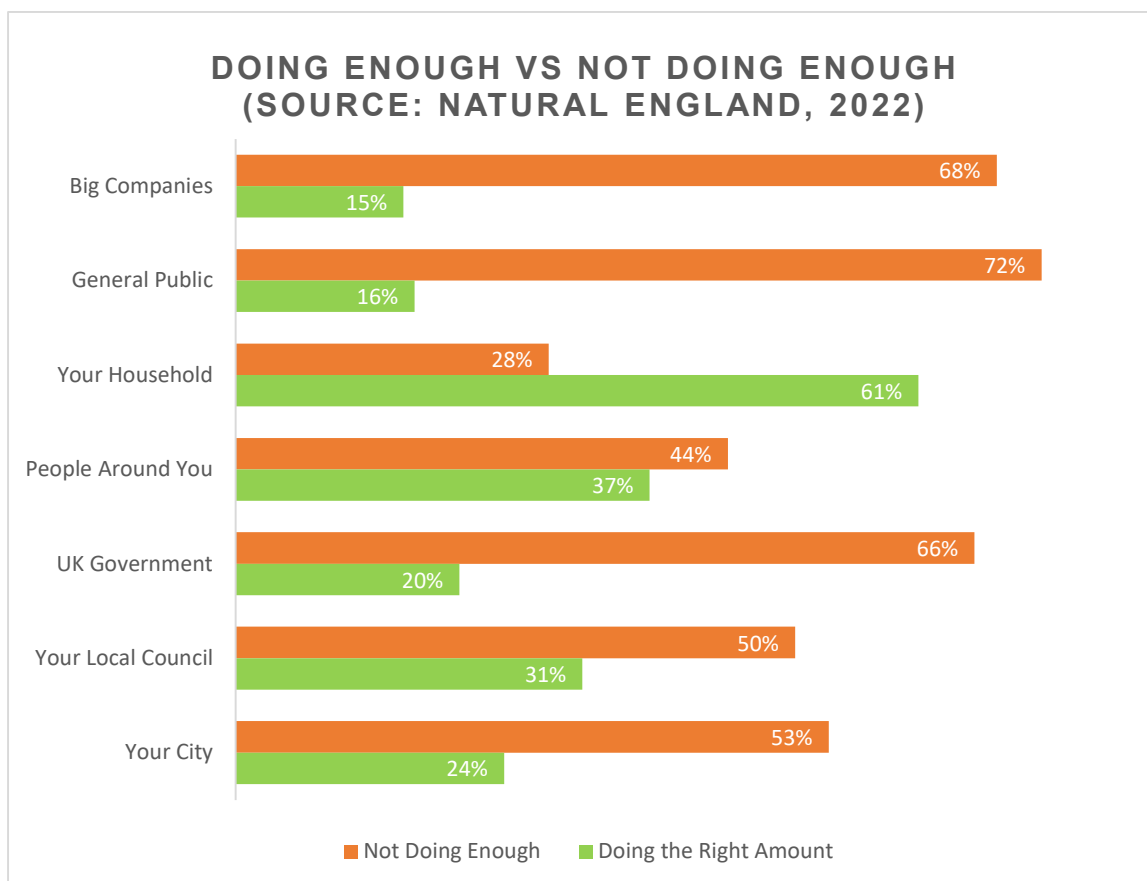[231] Climate Assembly UK. (2020). The path to net zero.

[232] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[233] Climate Engagement Partnership. (2021). Net Zero Policies.

[234] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.

[235] Natural England. (2022). The People and Nature Survey data explorer.

**DOING ENOUGH VS NOT DOING ENOUGH
(SOURCE: NATURAL ENGLAND, 2022)**

Category	Not Doing Enough	Doing the Right Amount
Big Companies	68%	15%
General Public	72%	16%
Your Household	28%	61%
People Around You	44%	37%
UK Government	66%	20%
Your Local Council	50%	31%
Your City	53%	24%

- Not Doing Enough
- Doing the Right Amount

While most people think that the UK public in general are not doing enough to tackle climate change, this figure falls dramatically when considered from a personal perspective: the majority (61%) think that their own household *is* doing enough, with only 28% believing that they are not doing enough.[236] According to other recent research, people also perceive scientists, environmental groups and charities/NGOs as already doing a lot to combat climate change, according to recent research reports.[237/238]

The tendency for people to think that they are already doing enough to combat climate change is highlighted in other research outputs. A recent study by the Centre for Climate Change and Social Transformation (CAST), for example, concludes that while most people support net zero policies, they are unaware of the extent of behavioural change needed to achieve this target. In particular, people overestimate the impact of occasional changes to lifestyle habits, while being reluctant to adopt these as sustained or habitual changes (e.g. reducing meat and dairy consumption, buying second hand products, using public transport etc).[239]

Perspectives on the UK Government

As noted above, leadership and investment by Government is seen as a necessary precondition for people to accept significant changes to their current lifestyles.[240] This includes

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[236] Natural England. (2022). The People and Nature Survey data explorer.
[237] Hall, P. (2021). Nature positive? Public attitudes towards the natural environment.
[238] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.
[239] Centre for Climate Change and Social Transformations. (2022). The road to net zero: UK public preferences for low-carbon lifestyles.
[240] Centre for Climate Change and Social Transformations. (2022). The road to net zero: UK public preferences for low-carbon lifestyles.

both subsidies and investments that support people to make environmentally friendly lifestyle choices, as well as taking a leading role in public education. Yet, a recent House of Lords identified key government failings in this area, including claims that the Government places too much faith in unproven technology to address climate issues; that the current system to support public behaviour change across different government departments is 'inadequate to meet the scale of the challenge'; that certain actions (such as tax cuts for domestic flights)[241] have deterred people from low carbon choices; and that the Government is 'reluctant to communicate to the public the scale of social change needed to create a low-carbon society.'[242/243]

Recommendations from across the literature articulate the need for a clearer vision to drive forwards the Government's strategy, as well as better coordination internally between Government departments and externally with other key stakeholders.[244/245/246/247] Coherent messaging from the Government that fits within an overarching vision and strategy would contribute to facilitating an engaged public, generating a mandate for action.[248/249] The research also emphasises the potential to learn from best practice at local and devolved levels in order to deliver coherent messaging around climate change action[250/251] alongside empowering local authorities and community actors to build upon existing successes in delivering locally-led solutions. [252/253]

5.2 POLICY

Policy Priorities

Climate change is growing as a priority policy issue for the British public, who, according to the authors of the most recent British Social Attitudes Survey, have undergone 'a significant change in… thinking' on the environment since 2010. In this survey, the proportion of the British public identifying the environment as one of their two top priorities for the country more than doubled from 8% in 2010 to more than 21% in 2021.[254] Perhaps most notably of all, towards the end of 2021, 'pollution and climate change' jumped to become the highest concern registered on Ipsos' Issues Index. This was the first time it had registered as the most important issue facing Britain in the Index and was the highest figure for mentions of this issue (40% of participants) since July 1989 (35%).[255]

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[241] Politico. (2021). UK's Rishi Sunak cuts tax for domestic flights ahead of climate summit.

[242] Demski, C., & Capstick, S. (2022). To address climate change, lifestyles must change – but the government's reluctance to help is holding us back. *The Conversation.*

[243] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). *House of Lords.*

[244] Sasse, T., Allan, S., & Rutter, J. (2021). Public engagement and net zero: How government should involve citizens in climate policy making. *Institute for Government.*

[245] House of Commons Committees. (2021). Climate Assembly UK: Where are we now?

[246] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[247] Climate Change Committee. (2022). Climate Conversation: Delivering a Net Zero, Climate Resilient UK.

[248] Centre for Climate Change and Social Transformations. (2022). Why is public engagement and participation with net zero so important?

[249] Climate Assembly UK. (2020). The path to net zero.

[250] Climate Change Committee. (2022). Climate Conversation: Delivering a Net Zero, Climate Resilient UK.

[251] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). *House of Lords.* 108.

[252] Climate Change Committee. (2022). Climate Conversation: Delivering a Net Zero, Climate Resilient UK.

[253] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). *House of Lords.* 107.

[254] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[255] Ipsos. (2021). Ipsos Issues Index: November 2021.

While healthcare is consistently identified as the highest policy priority by a significant margin (59% across two different datasets), there is a more complex relationship between the competing demands of the environment and the economy. Both the British Social Attitudes Survey and the People and Nature Survey places the economy (28% and 31%, respectively) slightly ahead of the environment (21% and 26%, respectively) as a policy priority.[256/257] However, when asked to choose directly between these potentially competing priorities, recent Ipsos survey data suggests that more people want to see environmental policies prioritised over economic growth (51% compared to 34%), although most people expect that, in practice, the Government will prioritise economic growth even if it has harmful environmental consequences.[258]

The Path to Net Zero

As noted above, there is a strong sense among the UK public that the Government is not doing enough to combat climate change; a sentiment echoed in a recent House of Lords report. However, from a policy perspective, the legislation to drive forwards effective action is already in place. In 2019, the UK Government established a legally binding target to achieve net zero by 2050. To achieve this, the Government has launched a Net Zero Strategy designed to 'reduce emissions to as close to zero as possible, with the small amount of remaining emissions absorbed through natural carbon sinks like forests, and new technologies like carbon capture'.[259] In Scotland, the target to achieve net zero is 2045.

The weight of evidence suggests that most people in the UK have heard of the term 'net zero' (>87% across most major surveys)[260/261/262/263] and that support for the policy is high (78%).[264] However, most people do not yet possess a deep understanding of what net zero means or the behaviour and policy changes that achieving this target entail.[265/266/267]

Domestic Policy

Basic Principles

There are a number of fundamental principles that tend to guide people's attitudes to net zero policies. In short, people want policies to be fair (including protection the most vulnerable); to

[256] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.
[257] Natural England. (2022). The People and Nature Survey data explorer.
[258] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.
[259] Department for Business, Energy & Industrial Strategy. (2021). Net Zero Strategy: Build Back Greener.
[260] Only the YouGov survey, cited above in Section 4.1, places public awareness lower (at 36%).
[261] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[262] Demski, C. (2021). Climate Change and Net Zero: Public Awareness and Perceptions. Department for Business, Energy & Industrial Strategy, (Research Paper No. 2021/034)
[263] Ipsos. (2021). Reaching net zero - awareness and attitudes.
[264] Demski, C. (2021). Climate Change and Net Zero: Public Awareness and Perceptions. Department for Business, Energy & Industrial Strategy, (Research Paper No. 2021/034)
[265] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.
[266] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.
[267] Ipsos. (2021). Reaching net zero - awareness and attitudes.

leave space for individual choice and freedom; and to come with other co-benefits.[268/269/270/271] Emphasising co-benefits is identified across the literature as a particularly effective engagement strategy, especially co-benefits attached to health; wellbeing; poverty reduction; and the economy.[272/273/274]

There is, however, strong resistance to policies that push people towards living car-free, giving up foreign holidays or losing the opportunity to live in big houses, which were all seen as 'important for a good quality of life and a fair return for working hard' according to research conducted by the Centre for Climate Change and Social Transformation (CAST).[275] While coercive policies are not popular generally, people do feel that more coercive approaches are needed for business and industry with fines and taxes seen as the best way of motivating business and industry to adopt pro-environmental behaviours.[276]

Lifestyle Policies

Policy support tends to be higher for policies related to transportation and energy/material consumption than those related to dietary and lifestyle choices. The most popular net zero policies are: frequent flyer levies (68%); changing product pricing to reflect how environmentally friendly products are (62%); phasing out gas and coal boilers (62%); and subsidies for electric vehicles (62%). Support for taxes on meat and dairy (47%) and increasing vegetarian and vegan options in public food provision (56%) receive lower levels of support, with opposition to taxes on meat and dairy the highest across all net zero policy areas, as well as those related to reducing car travel.[277/278]

In general, support for policies drops significantly once people are made aware of the financial and lifestyle impact associated with net zero policies. One exception to this rule is changing product pricing to reflect how environmentally friendly they are,[279/280] with further studies showing that public support is also high for policies that would require businesses to reduce, reuse and recycle product packaging.[281] These findings are consistent with other recent datasets, all of which point towards high levels of support for policies that aim to reduce waste,

[268] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.
[269] Ipsos. (2022). Net Zero Living.
[270] Jennings, N., Fecht, D., & De Matteis, S. (2020). Mapping the co-benefits of climate change action to issues of public concern in the UK: A narrative review. *The Lancet Planetary Health*, *4*(9), e424–e433.
[271] Demski, C. (2021). Climate Change and Net Zero: Public Awareness and Perceptions. Department for Business, Energy & Industrial Strategy, (Research Paper No. 2021/034)
[272] Climate Assembly UK. (2020). The path to net zero.
[273] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 16.
[274] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 16.
[275] Centre for Climate Change and Social Transformations. (2022). The road to net zero: UK public preferences for low-carbon lifestyles.
[276] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.
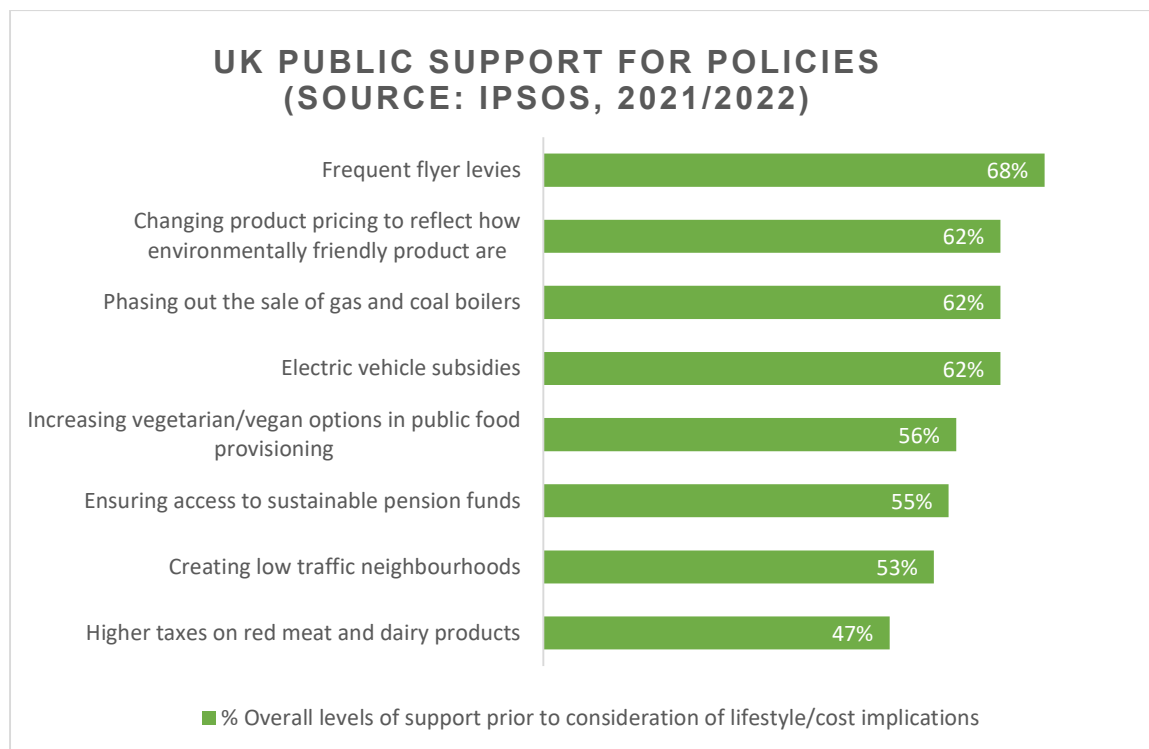[277] Climate Engagement Partnership. (2021). Net Zero Policies.
[278] Ipsos. (2022). Net Zero Living.
[279] Climate Engagement Partnership. (2021). Net Zero Policies.
[280] Ipsos. (2022). Net Zero Living.
[281] Ipsos. (2019). A Throwaway World: the challenge of plastic packaging and waste.

improve energy efficiency and disincentivise air travel with much lower levels of support for policies that disincentivise car travel and the consumption of meat and dairy.[282/283/284/285/286]

UK PUBLIC SUPPORT FOR POLICIES
(SOURCE: IPSOS, 2021/2022)

Policy	% Support
Frequent flyer levies	68%
Changing product pricing to reflect how environmentally friendly product are	62%
Phasing out the sale of gas and coal boilers	62%
Electric vehicle subsidies	62%
Increasing vegetarian/vegan options in public food provisioning	56%
Ensuring access to sustainable pension funds	55%
Creating low traffic neighbourhoods	53%
Higher taxes on red meat and dairy products	47%

■ % Overall levels of support prior to consideration of lifestyle/cost implications

In terms of demographic trends, the survey data presented here correlates with higher support for net zero policies among people who are already highly engaged with environmental issues; people who identify as left-wing; and people who have a certain degree of financial security (eg, higher income, home-owning).[287/288/289] This picture is broadly in keeping with the conclusions from an IPPR review of how political affiliation correlates with support for net zero policies. While increased regulation for companies and the use of subsidies for individuals have broad-base support, Conservative voters are more likely than Labour voters to oppose policies involving higher taxation and bans on high carbon-generating products. As a result, the IPPR review argues that we may expect to see different approaches to addressing carbon emissions from the two main political parties in the coming years.[290/291]

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[282] YouGov. (2021). What climate change measures would Britons support?

[283] Ipsos. (2021). Environment and climate change polling. August 2021.

[284] Centre for Climate Change and Social Transformations. (2022). The road to net zero: UK public preferences for low-carbon lifestyles.

[285] Ipsos. (2021). Reaching net zero - awareness and attitudes.

[286] Newgate Research & Cambridge Zero (2021). Net Zero Public Dialogue. (Research Paper Number: 006/2021). HM Government.

[287] Climate Engagement Partnership. (2021). Net Zero Policies.

[288] Ipsos. (2022). Net Zero Living.

[289] On the link between support for climate change mitigation policies and financial security, see also: Johnston, D., Knott, R., & Mandolin, S. (2022). Climate Change Salience, Economic Insecurity, and Support for Mitigation Policies. (IZA DP No. 15562). Bonn: IZA Institute of Labor Economics.

[290] Curtice, J. (2022). Climate change: Will the parties unite or divide? IPPR Progressive Review. 28(4), 358-370.

[291] On the left-right divide, see also: Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. The British Journal of Politics and International Relations, 22(1), 102–121.

While a lot of the current research explores support for discrete policies that have a direct bearing on people's lifestyles, some studies explore attitudes to broader social and economic ecosystems (see Sections 4.2 and 7.2 for further analysis of public attitudes to and engagement with a systems thinking approach). For example, in terms of policies related to the long-term structure of the energy sector, current evidence points towards strong support for investment in renewable energy among the UK public (>60%), with greater ambivalence towards nuclear options and a lack of knowledge about hydrogen or biomass alternatives.[292/293/294] In Scotland, there is widespread public support for the shift towards renewable or low-emitting energy sources, even around cities such as Aberdeen where oil and gas extraction has been a major source of jobs and economic activity.[295/296/297/298]

Another key policy area from a systems thinking perspective is transport. Members of the UK Climate Assembly, for example, were strongly supportive of public investment in low carbon buses and trains; an expansion of the existing public transport network; and ensuring that public transport is affordable to all by making it cheaper.[299] Policies such as low emission or congestion zones in cities receive much more mixed support, with two Ipsos datasets showing contrary levels of support and opposition across the UK public.[300/301] In terms of air travel, alongside support for frequent flyer levies, there was also a belief that airline companies should be investing in greenhouse gas removal and the Government should be investing in research and development that could make air travel greener in the future.[302]

Environmental Policies

There is less evidence related to public attitudes to policies that promote biodiversity compared with those that combat climate change: however, the recent People's Plan for Nature represents a significant contribution to understanding public support for policy priorities that relate to both promoting biodiversity and nature renewal more generally.[303] Alongside support for specific policies around promoting biodiversity and moving towards sustainable farming practices, the report points towards clear public support for greater accountability and transparency of the environmental impact across all spheres of life. For example, five of the top ten priorities established by members of this public consultation focused on the broader principles underpinning our social and economic systems as a whole, namely:

- Inclusion, in all commercial and policy decisions, of a way to assess the impacts on nature (rank=1)
- Greater government accountability through a permanent Assembly for Nature made up of NGOs, industry, public expertise (rank=3)

[292] Sarygulov, A. (2020). Going greener? Public attitudes to net zero. *Bright Blue.*
[293] Ipsos. (2020). Climate Change: Britons still want government to prioritise environment over economy.
[294] Climate Assembly UK. (2020). The path to net zero.
[295] Ostfeld, R., & Reiner, D. M. (2019). Exploring public support for climate action and renewables in resource-rich economies: The case of Scotland. *University of Cambridge, Energy Policy Research Group.*
[296] Scottish Government. (2020). The Big Climate Conversation: Findings from a programme of public engagement on climate change.
[297] Mulholland, C., Pollok, M., Townend, R., Black, C., & Gray, E. (2020). Understanding and engaging the public on climate change.
[298] Ipsos. (2020). 84 percent of Scots are concerned about climate change.
[299] Climate Assembly UK. (2020). The path to net zero.
[300] Ipsos. (2020). Public support charging motorists to use roads, but want it to be done for the right reasons.
[301] See also: YouGov. (2021). In London, the Ultra-Low Emission Zone (ULEZ) is an area in which a fee is charged to the most polluting vehicles driving into the centre of the city. Would you support or oppose a similar ULEZ-like surcharge in your local area?
[302] Climate Assembly UK. (2020). The path to net zero.
[303] WWF, the RSPB and the National Trust (2023) The People's Plan for Nature.

- Information about the state of nature in the UK to be more readily available and positively promoted to the public (rank=5)
- Leadership to assess the trade-offs between social and economic interests and nature protection, so that negative impacts of transition to nature protection can be mitigated (rank=6)
- Stronger regulatory protections and enforcement (rank=10)

In terms of support for specific policies, recent survey data indicates that public support for pro-environmental policies is very high. Policies that receive particularly high levels of support include planting more trees; restoring natural ecosystems; and protecting marine wildlife by banning harmful fishing practices.[304/305] Evidence from a survey delivered in Scotland suggests that public support for pro-environmental policies, such as linking agricultural funding to nature restoration, remain high even when people are aware of the economic costs associated with implementing these policies.[306] Members of the UK Climate Assembly also identified better management of forests, peatlands and wetlands as key strategies to achieve net zero, with technological solutions related to carbon capture significantly less popular.[307]

One of the underlying themes that emerges from the research is that individuals often possess fairly limited knowledge of the use and management of the natural environment in the UK but that, once equipped with greater understanding in an accessible format, there is a high level of engagement and a willingness to work through multiple social, economic and environmental demands and to recognise that not all needs or priorities can be fulfilled. In a recent study conducted by the Royal Society, for example, when people were asked to weigh up a series of competing demands on land use, there was a broad consensus that while current policy and practice supports maximising the economic potential of rural land, future policy and practice must move rapidly towards prioritising climate change action and protecting biodiversity.[308] Local climate assemblies and other regional dialogues also tend to see a much higher engagement with and, subsequently, desire to promote, biodiversity measures, both as a good in themselves and as a core strategy to achieve net zero.[309]

There are also very high levels of support for farmers to take an active role in restoring natural environments, with 92% of people supporting farming initiatives such as creating bee-friendly spaces, connecting farmland with trees and hedgerows for animals like dormice and hares, stopping chemicals from spreading into streams and rivers and planting trees and looking after their soil so it locks in carbon.[310/311] ONS survey data indicates that more than half of farmers (58%) are already taking action to reduce emissions associated with their farming practices, typically through effective resource management.[312] Recent policy announcements indicate that the Government is planning to provide financial incentives for farmers to go further in adopting sustainable farming practice, including those that promote UK biodiversity.[313]

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[304] YouGov. (2021). What climate change measures would Britons support?

[305] YouGov. (2022). YouGov / Wildlife and Countryside Link Survey Results.

[306] Scottish Environment Link. (2022). Survation Scottish Environment Link Survey.

[307] Climate Assembly UK. (2020). The path to net zero.

[308] Castell, S., Clemence, M., Kamvar, R., & Reynolds, M. (2021). Living Landscapes. Public dialogue on the future of land use. The Royal Society.

[309] See, for example: Ipsos. (2019). Oxford Citizens Assembly on Climate Change.

[310] YouGov. (2019). Results for Wildlife and Countryside Link (Farming and Climate Change).

[311] See also: Climate Assembly UK. (2020). The path to net zero.

[312] Office for National Statistics. (2022). Climate change insights, natural and rural environments, UK: November 2022.

[313] Department for Environment, Food & Rural Affairs. (2022). Government unveils plans to restore 300,000 hectares of habitat across England.

Spotlight: Covid-19 and the Cost-of-Living Crisis

In recent years, the global Covid-19 pandemic and the cost-of-living crisis have had a direct impact on people's attitudes and behaviours, including those related to climate change. A majority of people in the UK believe that climate change is as serious a crisis as Covid-19 (66%) and that it is important to prioritise climate change as part of the economic recovery from Covid (58%). While this indicates strong public support for a 'green' recovery, the UK lags behind other countries globally where levels of support are even higher.[314] On a personal level, initial intentions to keep up actions adopted during lockdown that have environmental co-benefits (e.g. less waste, recycling more and fewer flights) have tailed off with more recent data indicating people starting to return to previous behaviour patterns.[315/316]

People also tend to view levels of responsibility differently, with the Government accorded high levels of responsibility to address both Covid and climate change, but individuals seen as having lower levels of personal responsibility to combat climate change than with Covid. This is closely linked to the perceived efficacy of personal action in both cases: individuals feel that they can do a lot to stop Covid spreading but that personal action is less effective at combating climate change. There are also higher levels of support for policies that restrict individual freedoms and/or lead to slower economic growth in order to contain the spread of Covid, compared with activities that would prevent climate change from worsening.[317]

More recently, the cost-of-living crisis has emerged as a bigger cause of worry for people than Covid. The cost-of-living crisis bears a direct relationship with attitudes to climate change policies, given the knock-on effect on energy affordability and consumption. As a result, there are increasingly high levels of support for policies that aim to reduce carbon emissions generated through domestic energy consumption (eg heating), in particular, through improved energy efficiency and subsidies to improve insultation within people's homes.[318]

On a personal level, people also report being more likely to implement energy saving measures (81%), avoid food waste (71%), and use their heating only to a comfortable level (70%). The leading motivation for these anticipated changes was cost reduction, though three quarters (75%) said being good for the environment and/or combatting climate change was an important reason to them and more than half (54%) that this was the second most important reason.[319] Existing community-led projects have also helped to improve energy efficiency, both as a response to the cost of living crisis and a means to combat climate change.[320/321/322]

[314] Ipsos. (2020). Earth Day 2020. How do Great Britain and the world view climate change and Covid-19?

[315] For example: Centre for Climate Change and Social Transformation. (2020). How has Covid-19 impacted low-carbon lifestyles and attitudes towards climate action? and Ipsos. (2021). Earth Day 2021: Public opinion and action on climate change.

[316] Centre for Climate Change and Social Transformation. (2020). Tracking the effect of Covid-19 on low-carbon behaviours and attitudes to climate change.

[317] Centre for Climate Change and Social Transformation. (2022). Coronavirus and Climate Change in the United Kingdom: Perceptions, Policies and Trade-Offs.

[318] Centre for Climate Change and Social Transformation. (2022). Public worry about climate change and energy security in the cost-of-living crisis.

[319] Ipsos. (2022). From the cost of living to sustainable living.

[320] Cretu, C., & Marsden, A. (2023). Everybody needs green neighbours.

[321] Community Energy England, Wales and Scotland.(2022). Community Energy State of the Sector Summary Report.

[322] Community Energy England, Wales and Scotland.(2022). Community Energy State of the Sector Summary Report.

International Policy

UK public support is highest for international policies that target trade restrictions and promote diplomatic influence rather than policies that require direct funding and investment. Most people favour banning the import of good linked to deforestation (60%) and using diplomatic influence to encourage other countries to adopt emissions targets (58%) or setting a good example to others by reducing our own emissions more quickly (56%). At the other end of the spectrum, less than half of people are in favour of giving more financial aid to developing countries to support climate change adaptation (44%) and help reduce emissions (44%),[323] despite widespread recognition that countries that have produced the greatest volume of emissions should contribute the most financially.[324/325]

The COPs

The two most recent COP summits, COP26 and COP27, have garnered high levels of media attention, which has raised the profile of these international summits among the wider UK public. Earth Day 2022 survey data indicates that more than two thirds of people in the UK (68%) were aware that the summit was taking place; however, less than half of people in the UK knew about the specific commitments under discussion at the summit (49%)[326/327] and even fewer were aware that the public could register to attend COP as observers.[328] Likewise, just under half of people (46%) actively followed news related to COP26, with younger people less likely to be actively engaged in news about COP26 compared with older people.[329]

In terms of specific policy commitments, policies related to the protection and restoration of biodiversity (>90%) and transitioning to renewable energy (88%) received the highest levels of public support.[330/331] However, there is a high level of scepticism across the UK population about whether the COPs will produce tangible results. More than two thirds of the UK public (>67%) do not believe that the recent COPs will result in significant action to tackle climate change.[332/333/334] In general, people felt that the development of new technologies, adopting national emissions targets and public pressure all had a greater role to play than international summits, such as the COPs, in tackling climate change.[335]

As noted above in Section 3.2, there is significantly less public dialogue and/or media focus (and as a result less survey or poll data) related to COP15, the most recent intentional summit with a core focus on biodiversity loss rather than climate change. COP15 does appear in one Scottish dataset, however. Data from this survey shows that while less than half of people in

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[323] Ipsos. (2021). Environment and climate change polling. August 2021.
[324] Ipsos. (2021). UK public highly supportive of COP26 goals but few expect the government to take the steps needed.
[325] Ipsos. (2021). Richer countries should pay more to tackle climate change, say most Scots.
[326] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.
[327] Cf. YouGov places public awareness of COP26 at 49% of the population: YouGov. (2021). Countdown to COP26: with days to go, only half of Brits have heard much about the conference.
[328] Centre for Climate Change and Social Transformations. (2022). What did COP27 do for public engagement.
[329] Ipsos. (2021). Less than half of Britons are paying attention to news about COP26, while younger generations are least likely to know where it is taking place.
[330] Ipsos. (2021). UK public highly supportive of COP26 goals but few expect the government to take the steps needed.
[331] See also: YouGov. (2020). YouGov/University of Cambridge Survey Results.
[332] YouGov. (2021). Countdown to COP26: with days to go, only half of Brits have heard much about the conference.
[333] See also: YouGov. (2021). Countdown to COP26: with days to go, only half of Brits have heard much about the conference.
[334] YouGov. (2022). Only 11% of Britons believe COP27 will prompt significant action on climate change.
[335] YouGov. (2021). YouGov Survey Results.

Scotland were aware of the UN Biodiversity Conference (COP15), once made aware of the policies and targets under debate, two thirds of Scots agreed that Scotland should adopt the COP15 target of protecting 30% of land and sea by 2030.[336]

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[336] Scottish Environment Link. (2022). Survation Scottish Environment Link Survey.

6. PERSONAL ACTION

Half of the public say they are willing to pay much higher prices in order to protect the environment... These figures are similar to those recorded in 1993, although they are markedly higher than in 2010, when people were feeling the after-effects of the financial crash of 2008.[337]

In a time in which climate change is generally accepted, research indicates that a majority of people in the UK believe that individual lifestyle changes are both important[338] and necessary[339] to combat climate change. Since 1993, the British Attitudes Survey has tracked public willingness to take three different pathways to protect the environment: paying higher prices for goods and services; paying higher taxes; and accepting a cut in living standards. As of 2021, almost half (49%) of the public said they would be willing to pay higher prices, compared to just over one third who said they would be willing to pay more tax or accept a cut in living standards (both 36%). Those who express higher concern for the environment are more willing to accept one or more of these pathways.[340] The following section explores in more detail the specific actions that people are already taking and that they are willing to take in the future, as well as barriers to individual action.

6.1 LIFESTYLE CHANGES

Three tranches of recent survey data from YouGov, investigating British people's willingness to take different actions to mitigate their climate impacts, are considered together here to triangulate evidence of the lifestyle changes Britons are most willing to take for the planet. Across three time points in 2021-2, the actions British people were on average most willing to take were: only eating fruit and vegetables that are in season (60%); never buying single-use plastic (59%); and only eating food produced in the UK (53%). At the other end of the spectrum, the actions that people were least willing to take were: never flying for leisure (15%); having fewer children than they otherwise would have (14%); and cutting out meat and dairy entirely (13%).[341/342/343]

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[337] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[338] In BEIS' Autumn 2022 Public Attitudes Tracker, 85% of all participants agreed that if everyone does their bit, the effects of climate change can be reduced, 76% agreed that 'I have the ability to make change in my life that could help'. Further, there was very little disagreement on both of these points: 5% and 7% respectively. Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[339] 'The majority of Britons (59%) feel that major changes in our lifestyles will be necessary to limit the impact of climate change.' Ipsos. (2020). Climate Change: Britons still want government to prioritise environment over economy.
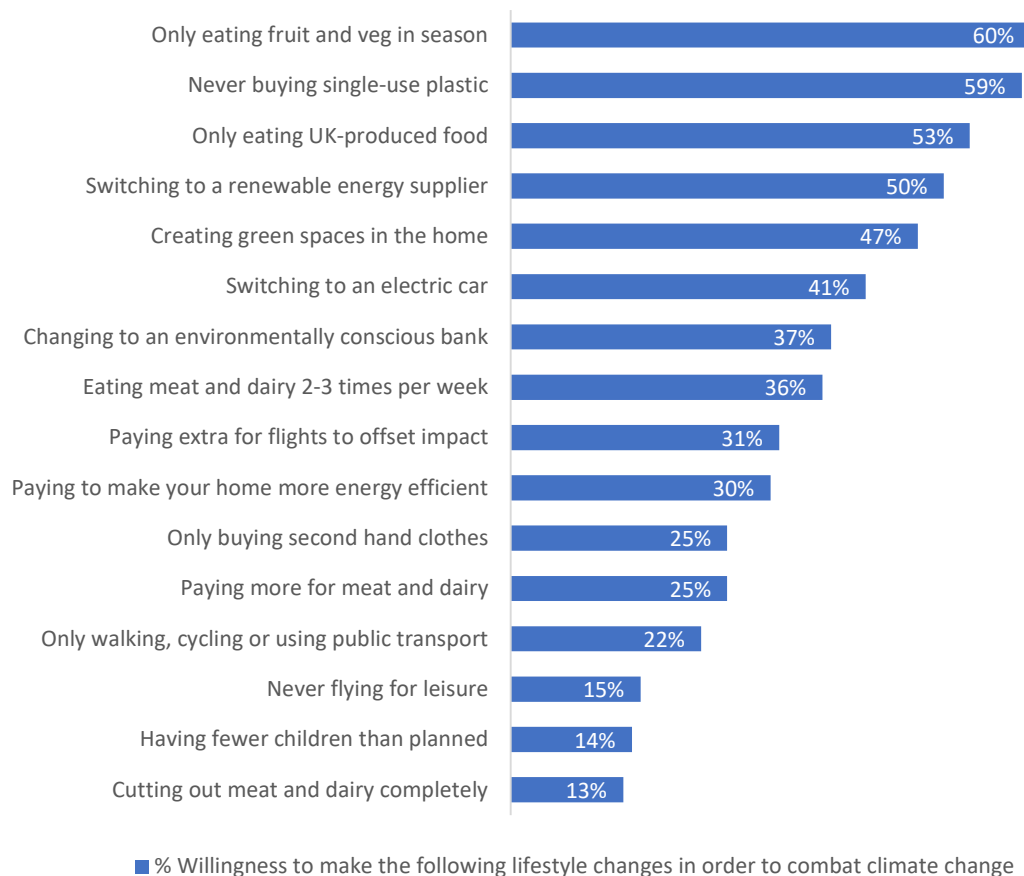
[340] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[341] YouGov. (2022). Most people are worried about climate change – but what are they willing to do about it?

[342] YouGov. (2021). YouGov - COP26 main release.

[343] YouGov. (2022). YouGov Survey Results.

WILLINGNESS TO ADOPT LIFESTYLE CHANGES
(SOURCE: YOUGOV, 2021/2022)

Lifestyle change	%
Only eating fruit and veg in season	60%
Never buying single-use plastic	59%
Only eating UK-produced food	53%
Switching to a renewable energy supplier	50%
Creating green spaces in the home	47%
Switching to an electric car	41%
Changing to an environmentally conscious bank	37%
Eating meat and dairy 2-3 times per week	36%
Paying extra for flights to offset impact	31%
Paying to make your home more energy efficient	30%
Only buying second hand clothes	25%
Paying more for meat and dairy	25%
Only walking, cycling or using public transport	22%
Never flying for leisure	15%
Having fewer children than planned	14%
Cutting out meat and dairy completely	13%

■ % Willingness to make the following lifestyle changes in order to combat climate change

Other studies provide evidence of British people's more immediate intentions for taking action. For example, IPSOS' Earth Day 2022 study found that within the next year British people think they are most likely to take actions to related to buying less (especially products with lots of packaging) and saving water and energy at home. In contrast, British people were on balance less likely to think they will eat less meat, eat less dairy or to change to a lower carbon heating system over the next year.[344] However, while people think that others are equally unlikely to eat less meat and dairy, they are significantly more likely to think that others will purchase green technology in the next few years, compared with their own intentions to do so.[345]

Demographic Trends

In terms of demographic trends, much of the data is consistent with other analyses related to climate change: women; those in higher social classes; and Labour and Liberal Democrat-voting people are the groups most likely to take action.[346] Further data also suggests that people in owner-occupied households were more likely than in rental properties to report already doing most climate-mitigating actions. The exception was use of public transport

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[344] Ipsos. (2022). Earth Day 2022. Public opinion on climate change: GB and the world.
[345] Ipsos (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.
[346] YouGov. (2022). YouGov Survey Results.

(which renters were more likely to already be doing) and choosing to walk and cycle (for which homeownership made no significant difference).[347]

In terms of regional trends, Londoners were more likely than average to adopt climate mitigating behaviours, while those living in the north of England least willing to do so.[348] There were only marginally differences in trends across UK nations: in general, actions related to energy efficiency and environmentally-friendly purchases are most popular, with mixed responses to travel-related actions and low support for dietary changes.[349/350/351/352]

Meat and Dairy

Meat and dairy consumption provide an interesting spotlight onto public attitudes to climate change action. Reducing meat and dairy consumption is one of the least popular changes in personal activity (although people do tend to be more willing to eat *less* meat and dairy rather than *no* meat and dairy), as well as one of the least popular areas for policy interventions (see Section 5.1). Where people are willing to eat less meat, personal health and animal welfare motivate a greater proportion of people (50% and 45% respectively) than carbon impact (38%) and other environmental issues (37%).[353] However, relatively few people (21%) are aware of the impact that moving to a plant-based diet could have for climate change mitigation (see Section 4.1), suggesting that there may be a knowledge deficit rather than a motivation deficit at play here.

Political Action

Another key area identified in the literature is political action. Around half of people are currently politically active or are likely to be politically active in response to climate change: 54% have signed or would sign a petition; 47% have boycotted or would boycott brands for climate related reasons; and 46% plan to vote for a political party based on climate commitments.[354] While more people support climate-related protests than not,[355] relatively few have taken part (7%) or would take part (14%) in a protest themselves.[356] It is also important to note that, in comparative terms, political action still lags behind other types of actions that people take or are willing/likely to take in order to combat climate change.[357]

[347] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[348] See also: YouGov. (2021). YouGov/Sky Survey Results.

[349] YouGov. (2022). YouGov Survey Results.

[350] Steentjes, K., McCamley, M., Berman, J., & Pidgeon, N. (2022). RESIL RISK Northern Ireland: Public perceptions of climate risks and adaptation in Northern Ireland. Cardiff: Cardiff University.

[351] Mulholland, C., Pollok, M., Townend, R., Black, C., & Gray, E. (2020). Understanding and engaging the public on climate change.

[352] Campbell, Lucy (2021). Climate Change and Reaching Net Zero: Perceptions and Awareness in Wales. (GSR report number 49/2021). Cardiff: Welsh Government.

[353] Eating Better. (2020). Growing public support for less and better meat.

[354] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.

[355] See for example: Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. *Cardiff University.*

[356] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.

[357] See for example: Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. *Cardiff University.*

Mitigation vs. Adaptation

Less attention has been paid to the British public's willingness to make lifestyle changes aimed at adapting to the new climate context, rather than at mitigating it impacts. The 2019 *RESiL RISK* study found relatively large proportions of participants chose 'about as likely as unlikely' when confronted with a list of possible adaptation actions. This may be indicative of a level of uncertainty or undecidedness. Alongside this, the study found that British people were most likely to read about avoiding heat stress during a heatwave (65% likely) and to fit a water-saving device (60%). Participants were much less likely to install air-conditioning (23%), donate money to preserve at-risk species (38%) and persuade friends and relatives to move away from flood plains (38%).[358]

6.2 BARRIERS TO ACTIONS

The Say-Do Gap

While there is broad willingness to do more to combat climate change, for most people, climate-mitigating actions have not yet become a habitual part of life. Pro-environmental behaviours, other than sorting household waste, are typically done 'from time to time' rather than being an integral part of people's lifestyles.[359/360] The gap between what people say they are willing or likely to do to promote pro-environment outcomes and what they actually do is often referred to as the 'say-do gap'.

Recent work on the 'say-do gap' draws on a number of psychological models that may explain this phenomenon;[361] however, these models have also been subject to challenges for reducing our behaviours to a single theory (e.g. loss aversion) when behaviour change actually depends upon a more complex interactions of factors:

> *behaviour change is often narrowly conceived as individual-level consumer action (e.g., buying a low-carbon product, recycling, reducing meat-eating), but is more appropriately understood as extending across the many roles and contexts humans occupy: as member of communities, participants in organisations, and as citizens who can influence policies.*[362]

Furthermore, structural factors such as income and location have been shown to be far more predictive than psychological factors when it comes to carbon-emitting behaviours and yet these factors are not accounted for in the psychological models.[363]

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[358] Steentjes, K., Demski, C., Seabrook, A., Corner., A. & Pidgeon., N. (2020). British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK): Topline findings of a GB survey conducted in October 2019. *Cardiff University.*

[359] Ipsos. (2021). Climate change and public opinion international observatory: Presentation of results in the United Kingdom.

[360] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[361] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos.*

[362] Whitmarsh, L., Poortinga, W., & Capstick, S. (2021). Behaviour change to address climate change. *Current Opinion in Psychology*, *42*, 76–81.

[363] Whitmarsh, L., Poortinga, W., & Capstick, S. (2021). Behaviour change to address climate change. *Current Opinion in Psychology*, *42*, 76–81.

Specific Barriers to Action

There are a number of barriers to engaging with climate change action that emerge from the literature, both in relation to the 'say-do' gap highlighted above and more broadly. The following bullet points provide a short summary of some of these key barriers:

- **Lack of Engagement.** A substantial minority of the British public (25%) report that they are relatively unworried[364] about the impact of climate change. The most common reasons given were not knowing much about the issue (35%) or thinking there are other more urgent priorities to be worried about (34%). Young people were more likely to cite lack of knowledge, while those in older age groups were more likely to cite more urgent priorities.[365]

- **The Believe-True Gap.** British people retain a somewhat inaccurate picture of how to effectively mitigate the impacts of climate change.[366] For example, while a large majority (76%) of Britons reported in 2020 that they were aware of what they could do at a personal level to fight climate change, most of these people felt they were only 'somewhat' aware. In total, just 15% felt they knew what to do 'absolutely'.[367] As noted in Section 4.1 above, there is also a 'believe-true gap' with people tending to believe that the most effective actions were those that they already did, for example recycling, rather than those that actually have the greatest impact, for example living car-free.

- **Inaccessibility.** The inaccessibility of the reporting on climate change and biodiversity issues for non-specialist audiences affects the extent to which the public feels able to meaningfully engage. Evidence suggests that while there are positives to using scientific information for engagement, these forms of information can be considered distant and unrelatable.[368] While simplification of information isn't always possible (the BSA notes, on biodiversity, that '[n]ot having a simple metric to go off makes it all the more difficult to get more people to take action'[369]), failing to foreground accessibility sits as a critical barrier to supporting the public to drive a mandate for action.

- **Saturation.** Both experts working in the field[370/371] and participants in public engagement dialogues[372] report that there is an overwhelming amount of conflicting information about climate change, leaving many people willing to take action but not understanding how best to do so: '[people] feel overwhelmed and bombarded with information. As a result, they switch off from these issues all together.'[373]

- **Lack of Action by Others.** While individuals feel at least partly responsible for combating climate change, at the same time, they also feel that they are doing more

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[364] Based on people who report that they are not at all worried; somewhat unworried; neither worried nor unworried.

[365] Office for National Statistics. (2021). Three-quarters of adults in Great Britain worry about climate change.

[366] Ipsos' Perils of Perception research provides evidence that the public consistently overestimates low-impact lifestyle changes and underestimated high impact ones when it comes to the climate: Ipsos. (2021). The Perils of Perception - Data Archive.

[367] Ipsos. (2020). Climate Change: Britons still want government to prioritise environment over economy.

[368] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.

[369] British Science Association. (2022). Why is communicating about biodiversity so hard?

[370] University College London. (2022). House of Lords: Evidence Session.

[371] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[372] Scottish Government. (2020). The Big Climate Conversation: Findings from a programme of public engagement on climate change. 23.

[373] National History Museum. (2020). Biodiversity: A public engagement literature review.

than their fair share compared with industry and government.[374] The belief that large polluters should change before individuals was one of the two most prominent reasons for British people not wanting to make lifestyle changes, according to recent ONS data.[375] This goes hand in hand with another widespread belief with a high proportion of people feeling that they already do as much as they can to combat climate change (see also Section 5.1)[376] and that a perceived lack of action by others makes them less likely to adopt further pro-environmental behaviours.[377]

- **Social Identity.** There is a large literature highlighting the importance of social identity in decision-making: 'If we don't see ourselves as someone who particularly takes environmentally friendly actions, we would be less likely to do them.'[378] This is likely to be key when considered in light of the very substantial differences in concern and willingness to act between, for example, individuals of different political affiliations noted elsewhere in this report, and the ongoing 'culture wars', which often conceive of environmentalism as a left-wing, young people's and/or performative concern. However, there is evidence that shifting social norms are leading more people to identify themselves as environmentally conscious: for example, there has been a remarkable increase (240% in two years) in the frequency of people stating they care for the environment in online dating profiles.[379]

- **Social Norms and Green Nudges.** The activation of social norms and 'green nudges' have been shown to be effective in changing external behaviour: [380/381] for example, there is evidence that the activation of social norms, as well feelings of hypocrisy, encourage the uptake of some pro-environmental behaviours, including recycling, water conservation and decreased plastic bag use.[382] However, further exploration of these approaches suggests that the resulting changes tend to occur at a surface-level and that a deeper commitment to adopting pro-environmental behaviours for their own sake remains absent unless people already possess a high level of environmental concern.[383/384/ 385]

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[374] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos*.

[375] The other most prominent reason was thinking that actions would have no effect, both responses were selected by 33% of people not making lifestyle changes. By age group, the full data for believing polluters should change before individuals was as follows: 16-24, 41%; 25-34, 19%; 35-49, 21%; 50-69, 40%; 70+, 41%. Office for National Statistics. (2021). Three-quarters of adults in Great Britain worry about climate change.

[376] In addition, 36% said they liked their lifestyles and did not want to change and 22% said change would be too difficult. Natural England. (2022). The People and Nature Survey data explorer.

[377] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[378] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos*.

[379] Making such statements is known as 'Thunberging'. Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos*.

[380] UN Environment Programme. (2020). The Little Book of Green Nudges.

[381] Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos*.

[382] For meta-analyses see here: Farrow, K., Grolleau, G., & Ibanez, L. (2017). Social Norms and Pro-environmental Behavior: A Review of the Evidence. *Ecological Economics*, *140*, 1–13. and: Poškus, M. S. (2016). Using social norms to encourage sustainable behaviour: A meta-analysis. Psichologija, 53. 44-58. cited in: Thorman, D., Whitmarsh, L., & Demski, C. (2020). Policy Acceptance of Low-Consumption Governance Approaches: The Effect of Social Norms and Hypocrisy. *Sustainability*, *12*(3), 1247.

[383] Thorman, D., Whitmarsh, L., & Demski, C. (2020). Policy Acceptance of Low-Consumption Governance Approaches: The Effect of Social Norms and Hypocrisy. *Sustainability*, *12*(3), 1247.

[384] Powdthavee, N. (2020). The Causal Effect of Education on Climate Literacy and Pro-Environmental Behaviours: Evidence from a Nationwide Natural Experiment. (IZA DP No. 13210). Bonn: IZA Institute of Labor Economics.

[385] Mols, F., Haslam, S. A., Jetten, J., & Steffens, N. K. (2015). Why a nudge is not enough: A social identity critique of governance by stealth: Why a nudge is not enough. *European Journal of Political Research*, *54*(1), 81–98. Cited in Strong, C., Ansons, T., & Long, J. (2021). Addressing the sustainability say-do gap. *Ipsos*.

7. ENGAGEMENT

Built into human neurophysiology is a seeming bias towards seeing the future as a continuation of the present and the past. To tackle this bias and consider the future differently, there is a case that new 'memories' of alternative futures need to be formed… Experiences involving art, food and games can harness all of our senses and draw upon embodied intelligence to forge new 'memories' of the future.[386]

The UK Climate Change Committee notes that for the UK to reach its net zero targets, 62% of emissions reductions will require some sort of societal and behaviour change.[387/388] This means that public engagement, precipitating both individual and community action, is key to achieving sustainable progress towards net zero. The priority status given to effective engagement is recognised globally — for instance, Article 12 of Paris Agreement covers five key elements for public engagement (education, training, public awareness, public participation and public access to information)[389] — and yet putting this into practice means navigating challenges.

Engagement includes 'both the decision-making and delivery of net zero,'[390] with research arguing that meeting climate change objectives will only be successful if 'Government works with people, rather than imposing solutions from on high.'[391] This concept of public buy-in — as both support for policy change and personal action — is the core of what public engagement strategies, programmes and projects are trying to achieve.

7.1 PRINCIPLES OF EFFECTIVE ENGAGEMENT

This section brings together eight key principles that underline effective methods and modes of public engagement based on a wide-ranging analysis of recent research and literature. Taken together, these principles inform effective routes to a) driving engagement and b) empowering people to act.
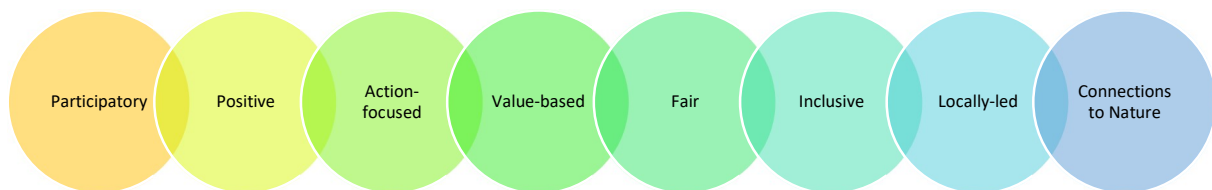
Figure 1: Eight Principles for Engaging the Public on Climate Change and Biodiversity Loss

Principle 1. Participatory

Participation is perhaps *the* central component of effective engagement. Research consistently shows that participatory methods, such as deliberative fora that encourage co-

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[386] Ramos, J., Sweeney, J.A., Peach, K., & Smith, L. (2019). Our futures: by the people, for the people. Nesta. 23.

[387] Demski, C. (2021). Net zero public engagement and participation: A research note.

[388] Climate Change Committee. (2020). Reducing UK emissions: 2020 Progress Report to Parliament.

[389] United Nations. (2015). Paris Agreement.

[390] Demski, C. (2021). Net zero public engagement and participation: A research note.

[391] Sasse, T., Allan, S., & Rutter, J. (2021). Public engagement and net zero: How government should involve citizens in climate policy making. *Institute for Government.*1.

production, have a positive impact on understanding of and attitudes to climate change action.[392/393/394] There is also significant scope here for innovative methods that reach wider audiences. For example, NESTA's participatory futures model (detailed above) allows people to develop a collective image of the future they want, providing a counterweight to either fatalism or 'elite futurism', driven by large business interests and political elites.[395]

Principle 2. Positive

Existing research emphasises the need for positive messaging.[396/397/398] Recent analysis of YouTube videos, for example, found that depicting positive visions of a low-carbon future and/or the beauty of nature were fifty times more effective at driving views and engagement than videos with negative messaging.[399] While some sources express a note of caution that focusing only on messages of hope can remove the necessary stimulus for action,[400/401] it is widely accepted that negative messaging that makes people feel overwhelmed or anxious disincentivises action and creates the unintended belief that they are unable to make a difference.[402/403/404]

Principle 3. Action-focused

Good climate communication involves providing concrete examples of actions that people can take to meet the challenges raised by the climate emergency.[405/406/407/408/409] Examples of strategies that may increase people's sense of agency include food waste diaries (which are shown to drive behaviour change);[410] story-telling and social learning (see below under 'models');[411] and celebrating examples of successful community-based initiatives.[412]

[392] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.

[393] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[394] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach.

[395] Ramos, J., Sweeney, J.A., Peach, K., & Smith, L. (2019). Our futures: by the people, for the people. Nesta.

[396] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach.

[397] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.

[398] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[399] QuickFrame. (2020). Communicating Your Climate Commitment: Three Data-Backed Principles for Effectively Sharing Your Corporate Sustainability Strategy.

[400] University College London. (2022). House of Lords: Evidence Session.

[401] Centre for Climate Change and Social Transformations. (2022). Climate anxiety an important driver for climate action.

[402] University College London. (2022). House of Lords: Evidence Session.

[403] British Science Association. (2022). Why is communicating about biodiversity so hard?

[404] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.

[405] University College London. (2022). House of Lords: Evidence Session.

[406] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.

[407] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach.

[408] Wang, S., Latter, B., Nicholls, J., Sawas, A. and Shaw, C. (2021). Britain Talks COP26: New insights on what the UK public want from the climate summit. Oxford: Climate Outreach.

[409] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.

[410] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 43.

[411] University College London. (2022). House of Lords: Evidence Session.

[412] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 12.

Principle 4. Value-based

Research indicates that values have a more fundamental role to play in shaping opinions and engagement than what or how much we know.[413] While we know that people already respond to climate change both intellectually and emotionally, the issue of climate action is yet to resonate with people's core (moral) values.[414] Effective value-based engagement strategies should appeal to existing shared values, such as protecting future generations; creating a healthier society; and preserving the countryside. Research also points towards the benefits of linking this messaging up with people's own experiences of familiar risks, such as heatwaves and flooding.[415/416/417]

Principle 5. Fair

A key principle that emerges across discussions on public engagement is fairness. As noted in Section 5.2, fairness is a significant driver of whether citizens support climate policies.[418] For most people, fairness involves both shared responsibility of any burdens and ensuring that the most vulnerable are protected.[419/420] At the same time, the enduring sense that others are not yet doing enough to combat climate change,[421] is a consistent barrier to effective engagement.[422] Recent research argues that while radical policies are possible and even desirable, people need a feeling of fairness and financial support to engage positively.[423/424]

Principle 6. Inclusive

Inclusion is critical for public engagement to ensure that diverse groups can see their place in personal and public efforts to combat climate change.[425/426/427] Research has found 'white, middle-class western environmentalists' are often the target of (and most receptive audience to) climate change narratives[428] However, current evidence also suggests that a much broader engagement strategy is needed to engage those most vulnerable to the impact of climate

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[413] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.

[414] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 19.

[415] Wang, S., Corner, A., and Nicholls, J. (2020). Britain Talks Climate: A toolkit for engaging the British public on climate change. Oxford: Climate Outreach.

[416] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.

[417] Wang, S., Latter, B., Nicholls, J., Sawas, A. and Shaw, C. (2021). Britain Talks COP26: New insights on what the UK public want from the climate summit. Oxford: Climate Outreach.

[418] Webster, R., Powell, D., and Corner, A. (2022) 'Fairness' in UK climate advocacy: a user's guide. Oxford: Climate Outreach.

[419] Climate Assembly UK. (2020). The path to net zero.

[420] Corner, A., Demski, C., Steentjes, K. and Pidgeon, N. (2020). Engaging the public on climate risks and adaptation: A briefing for UK communicators. Oxford: Climate Outreach. 18.

[421] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[422] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[423] Centre for Climate Change and Social Transformations. (2022). The road to net zero: UK public preferences for low-carbon lifestyles.

[424] Centre for Climate Change and Social Transformations. (2022). Why is public engagement and participation with net zero so important?

[425] Centre for Climate Change and Social Transformations. (2022). Why is public engagement and participation with net zero so important?

[426] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[427] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.

[428] Climate Outreach. Communities.

change, both in the UK and internationally,[429/430] as well as those more resistant to climate change action, such as those with centre-right political affiliations and climate sceptical beliefs.[431/432/433/434] Representation is important here, with diverse communicators, who speak with authenticity and integrity, and who appeal to different worldviews and lived experiences, needed for effective engagement.[435/436]

Principle 7. Locally-led

The benefits of localised and community-focused action and engagement interventions are plenty, with public perception positive towards the idea of 'local solutions', which are thought to result in plans tailored to local need, positive impact for local economy, and improved engagement with local communities.[437/438/439/440] Research commissioned by Defra found that people tend to prioritise environmental issues that are local to them, rather than at larger spatial scales, with attitudes to the environment influenced by the information they have access to, their own personal experiences and the severity and proximity of an issue.[441] This, together with other evidence also finds that that framing environmental issues in a local context helps topics seem less abstract and facilitates engagement,[442/443] supports place-based approaches.

Principle 8. Connections to Nature

Public engagement strategies that either build on or help to develop people's connection to nature have a direct impact on how individuals think and feel about nature and their place within it.[444/445] The benefits are both personal (nature connectedness is a factor in improved mental wellbeing) and societal, with nature connectedness linked to increased pro-environmental behaviour. Recognised pathways to connection include experiences that engage the senses and/or emotions, as well as experiences of beauty, meaning and compassion in nature. Examples of good practice include the National Trust's '50 Things To Do Before You're 11' and the Wildlife Trust's '30 Days Wild' campaign.[446]

[429] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.
[430] Climate Assembly UK. (2020). The path to net zero. 61.
[431] Climate Outreach. Communities.
[432] Corner, A., Marshall, G. and Clarke, J. (2016). Communicating effectively with the centre-right about household energy-efficiency and renewable energy technologies. Oxford: Climate Outreach. 4.
[433] Shaw, C., Corner, A. and Clarke, J. (2018). Are the public ready for Net Zero? Recommendations for building a positive public discourse. Oxford: Climate Outreach
[434] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. Humanities and Social Sciences Communications, 9(1), 279.
[435] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.
[436] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.
[437] Climate Assembly UK. (2020). The path to net zero. 200.
[438] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.
[439] The Natural History Consortium. (2022). Communicate beyond COP26: the conversations.
[440] Climate Change Committee. (2022). Climate Conversation: Delivering a Net Zero, Climate Resilient UK.
[441] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 2.
[442] British Science Association. (2022). Why is communicating about biodiversity so hard?
[443] NatCen Social Research. (2019). Citizen Engagement on the Environment: Scoping Review. 42.
[444] National History Museum. (2020). Biodiversity: A public engagement literature review.
[445] Richardson, M., Dobson, J., Abson, D.J., Lumber, R., Hunt, A., Young, R., & Moorhouse, B. (2020). Applying the pathways to nature connectedness at a societal scale: a leverage points perspective. Ecosystems and People, 15(1). 387-401.
[446] Richardson, M., Dobson, J., Abson, D.J., Lumber, R., Hunt, A., Young, R., & Moorhouse, B. (2020). Applying the pathways to nature connectedness at a societal scale: a leverage points perspective. Ecosystems and People, 15(1). 387-401.

7.2 OPPORTUNITIES AND CHALLENGES

Public Health: Covid-19

The Environment and Climate Change Committee has noted that enabling behaviour change relies on more than just awareness-raising measures, which have generally failed to deliver sustained change (a recent study found no effect of awareness days on environmental and climate change attitudes and concern, or behavioural change[447]). Instead, it notes that a coherent packages of policy measures is needed to facilitate the most impactful behaviour change. The Covid-19 pandemic offers an example of such a package of policy measures, with narratives of public safety and personal protection precipitating widespread societal behaviour change.[448] While these changes were positioned as short-term rather than permanent, insights from the pandemic still offer valuable evidence to evaluate the efficacy of various interventions.

Of these insights, first are lessons on public engagement. The key principles driving behaviour change during the pandemic, as noted by the inquiry, include: open communication, clear messaging about personal action, delivery of messages by both politicians and scientists, clarity about the role of government in relation to the role of individual action, and the use of an independent advisory structure. Clear information and messaging about risk, related to key societal values (health, safety, protecting the vulnerable) were accompanied by clear instructions for action, allowing for the public to both understand *and* act. It is worth noting, however, that a significant factor contributing to the effectiveness of these methods is that individual choice environments were significantly limited, with the public needing to alter their behaviour to fit around and within these limitations.[449]

The second area of insight is the direct impact of lockdown on the pursuit of environmental objectives. This is not only the drop in emissions resulting from lockdown behaviours, but the opportunity this presented to envision a net zero future. The public reported not wanting to return to 'normal' once the pandemic was over, recognising that 'a window of opportunity for fundamental change has opened up.' Public perceptions of positive impacts generated by lockdown include fewer cars leading to cleaner air; increased time in nature; adopting more sustainable practices and reducing waste. Research also indicates that the pandemic raised awareness of the need to create strong systems capable of responding to future catastrophes (both health and environmental), as well as opening up new opportunities for a green recovery that involves creating new green jobs, regenerating British manufacturing and holding organisations to higher standards of sustainability.[450/451]

It is, however, important to be mindful of the differences between changes expected to last temporarily and sustainable, ongoing change. CAST notes 'the policy and behavioural response to the threat of Covid-19 was sudden, stark and intended to be temporary. Our response to climate change has been frustratingly slow, but must be grounded in a deep rooted social mandate if it is to last decades rather than months.'[452]

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[447] Kountouris, Y. (2022). Awareness days and environmental attitudes: The case of the "Earth Hour". *Ecological Economics*, *195*, 107367.

[448] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). *House of Lords.* 4.

[449] Environment and Climate Change Committee. (2022). In our hands: behaviour change for climate and environmental goals. (HL Paper 64). *House of Lords.* 107.

[450] Wang, S., Corner, A., and Nicholls, J. (2020). Britain Talks Climate: A toolkit for engaging the British public on climate change. Oxford: Climate Outreach.

[451] Scottish Government. (2021). Climate change - Net Zero Nation: public engagement strategy.

[452] Climate Outreach. (2020). Concern about climate change has gone up, not down, during Covid-19 pandemic.

Interconnectivity and Public Engagement

Climate Outreach's Britain Talks COP26 Report argues that Covid-19 has improved public understanding of the interdependence of global systems, conceptually, and that this provides an opportunity to commence discussions about the interconnectedness of climate change and biodiversity loss within these systems.[453] The benefits of this would not be insignificant. Evidence suggests that a stronger understanding of interconnectivity would allow the public to better understand how their actions, at a personal level, contribute to overarching goals; allow them to make connections between local and national policies; and build understanding of how various policies and actions contribute to overarching environmental objectives.[454]

A review of the literature identifies little to suggest that public engagement initiatives on climate change have focused on the concept of interconnectivity or been built to generate an understanding of systems thinking, however, with campaigns of both education and awareness focused primarily on single issue engagement. This illustrates a gap in provision of public engagement programmes and strategies that focus on environmental degradation as a '"wicked", complex, systemic problem',[455] as well as demonstrating how the public might adapt to the change in behaviour that these issues mandate, rather than just mitigating impact (for more on this, see section 6.1, Mitigation vs. Adaptation). A 2022 paper finds that in order to facilitate greater adaptation, the public needs to learn about the broad, interrelated consequences of climate collapse, and that generating communities of practice around low carbon citizenship might generate 'discrete engagement strategies that rouse public attention towards changing attitudes and behaviours.'[456] Similarly, and with reference to the benefits of co-benefits of engagement (see section 5.2 for more on this), other studies have sought to highlight the benefits of systems thinking for climate engagement. For instance, a study from 2018 makes an argument for establishing for systems thinking in relation to climate change and mental health,[457] while a 2023 report by the Health Foundation is structured around the interlinked nature of health and climate change systems.[458]

Engaging 'Harder to Reach' Communities

There are a number of small-scale studies that look at how best to engage specific 'harder to reach' groups in climate change action and environmental issues. These studies encapsulate best practice for engaging hard to reach groups with science communication more generally. A recent review and validation of these practices made seven recommendations:[459]

- **Start with listening:** Critically reflecting on one's activities and goals is necessary to ensure communication activities are not based on assumptions and stereotypes.

- **Reduce distance and be accessible:** Academic or upper-class language, idioms and references; condescending or instructive attitudes; and the display and leverage of academic prestige create distance and reinforce the perception that 'this activity is not for me'.

[453] Wang, S., Latter, B., Nicholls, J., Sawas, A. and Shaw, C. (2021). Britain Talks COP26: New insights on what the UK public want from the climate summit. Oxford: Climate Outreach.

[454] Centre for Climate Change and Social Transformations. (2022). Why is public engagement and participation with net zero so important?

[455] The Health Foundation. (2023). Health and climate change: complex problems with co-benefits.

[456] Donkers, L. (2022). Revitalising embodied community knowledges as leverage for climate change engagement. Climatic Change, 171(2).

[457] Berry, H. L., Waite, T. D., Dear, K. B. G., Capon, A. G. & Murray, V. (2018). The case for systems thinking about climate change and mental health. Nature Climate Change, 8, 282-290.

[458] The Health Foundation. (2023). Health and climate change: complex problems with co-benefits.

[459] Humm, C. and Schrögel, P. (2020). Science for all? Practical recommendations on Reaching Underserved Audiences. Frontiers in Communication, 5.

- **Be relevant for everyday life:** Use concrete topics or hooks to link homes, communities and science.

- **Go where people are:** In a literal spatial sense, use familiar settings that are reachable and accessible.

- **Cooperation is key:** Draw on and partner with local stakeholders where possible. These might include neighbourhood management groups, social work organisations, libraries, schools and educational initiatives.

- **Mind the 'openness paradox':** Starting with an open and participatory approach can make delivery harder for both organisers and participants due to knowledge gaps on both sides and differences in cultural and scientific capital. Therefore, having a concrete institution as a basis and a topic and goal defined by this institution is advisable. Though this should still be subject to the other recommendations.

- **Implement long-term activities:** One-off or short-term interventions are liable to be less effective and sustainable and to be perceived as less authentic.

Spotlight: Engaging People Across the Political Spectrum

Climate Outreach seeks to work with communities both in the UK and abroad who have historically been excluded from conversations around climate change. It has developed insights and recommendations to improve diversity in climate engagement, with key considerations including the finding that people find campaigns off-putting and fail to engage if they don't see their values, worldview or concerns reflected.[460] They also find that a significant amount of climate change communication speaks to left-wing political values to the exclusion of other groups, though by understanding a communities' values it is possible to create narratives that tap into what people care about.[461] Methods of tackling these issues include ensuring communications, including imagery, reflect diverse portions of the population,[462] and conducting segment-specific research on how to communicate with the values of specific groups.

An example of this is documented in its research on how to communicate effectively with the centre-right. Recommendations from one report, focused on communications around household energy efficiency and renewable energy technologies include speaking from values up; framing efficiency in terms of 'avoiding waste'; using trusted communicators; rebuilding trust in renewables; focus on community-level schemes; being moderate about describing the efficacy of new technologies; and making distinctions between age demographics.[463] These findings intersect with and are supported by another report focused on climate communications more broadly, and which recommends highlighting the shared agreement on the need to act; ensuring that net zero messaging reflects that climate scepticism is less socially acceptable; use inclusive, collective pronouns; present net zero as a domestic challenge about taking steps to safeguard our future rather than fulfilling international obligations; speak to the present day, with transparency and immediacy communicating momentum; focus messaging on small number of tangible actions; connect the dots between net zero, climate change and centre right values; build trust with familiar faces as trusted

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[460] Climate Outreach Communities.
[461] Climate Outreach Communities: Key Insights.
[462] Smith, T. et al. (2021). Nature Visuals: Diversity in images of England's green and natural spaces. Natural England Commissioned Reports, Number NECR375
[463] Climate Outreach (2016). Communicating Effectively with the Centre-Right about Household Energy-Efficiency and Renewable Energy Technology, 4

messengers; fairness and balance; and communicating net zero using realistic and feasible examples.[464]

Spotlight: Engaging People from Ethnic Minority Communities

While the literature on how to engage people from ethnic minority communities remains relatively sparse, there is an emerging network of organisations and individuals in the UK dedicated to confronting the climate crisis with ethnic minority interests and experiences in mind. Three key examples are:

- The Black Environment Network, which offers consultancy and advice services, as well as training specifically on the principles and context of engaging with ethnic minority groups.[465]

- Climate Reframe, which has developed an index of 100 ethnic minority voices working in the UK as climate experts and advocates.[466]

- In engaging ethnic minority communities with natural spaces in the UK, broadening the scope of what is considered interesting and relevant leads to more diverse visitor profiles.[467] Another key tool is a considered use of images, which Natural England's *Nature Visuals* has developed guidance on, including six key principles.[468]

There is also a small but growing number of studies related to science communication with ethnic minority communities more generally.[469] The literature that is available suggests that perceptions of how one's own racial or ethnic 'in-group' generally engages with environmental issues may influence how members of these groups themselves engage.[470] Therefore, representation, as well as a substantive consideration of, and confrontation with, how one's institutional culture is likely to be received among minority communities is likely to be important. Motivational barriers for people from ethnic minorities to collectively engage with climate change as an issue include the racial, ethnic and class stereotypes associated with environmentalism, particularly that it is a white, middle-class and 'hippy' interest.[471/472] Inviting people from minority communities to participate in science communication practices that reflect only the values of more privileged individuals is insufficient to engage these communities. Instead, fundamentally reimagining these practices is likely to be required, and

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[464] Climate Outreach (20180. Are the Public Ready for Net Zero? Recommendations for Building Positive Public Discourse.

[465] Black Environment Network.

[466] Climate Reframe (2020). Amplifying Voices in the UK Environmental Movement.

[467] Natural England. (2022). Included outside: Engaging people from ethnic minority backgrounds in nature: Evidence Briefing.

[468] Use images to tell positive, identifiable stories; create authentic representation, not tokenism; depicts diverse activities in diverse landscapes; connect people to the wonderful diversity of natural places; include more real people in images; diversify who is behind the camera and the message. Smith, T. et al. (2021). Nature Visuals: Diversity in images of England's green and natural spaces. Natural England Commissioned Reports, Number NECR375.

[469] What general science communication literature does exist on diversity and inclusion is generally focused on women and girls and is dominated by the North American context. Judd, K., & McKinnon, M., (2021). A Systematic Map of Inclusion, Equity and Diversity in Science Communication Research: Do We Practice what We Preach? Frontiers in Communication.

[470] Pearson, A. R., Ballew, M. T., Naiman, S. and Schuldt, J. P. (2017). Race, Class, Gender and Climate Change Communication. Oxford: OUP.

[471] Pearson, A. R., Ballew, M. T., Naiman, S. and Schuldt, J. P. (2017). Race, Class, Gender and Climate Change Communication. Oxford: OUP.

[472] Bell, K. and Bevan, G. (2021). Beyond inclusion? Perception of the extent to which Extinction Rebellion speaks to, and for, Black, Asian and Minority Ethnic (BAME) and working-class communities. *The International Journal of Justice and Sustainability*, 6(10).

truly inclusive engagement models are likely to involve multiple spaces featuring multiple voices speaking to multiple audiences.[473]

7.3 MODELS OF ENGAGEMENT

In considering how to apply these principles, there are a wide range of public engagement models from which to draw key learning. These models are delivered in various fora, with various demographics, and with a range of specific and general objectives. In order to capture as broad a range of approaches as possible, the following section considers public engagement initiatives from well-established approaches such as citizens' assemblies, juries and dialogues to innovative models and approaches.

Citizens' Assemblies, Juries and Dialogues

Climate assemblies are a well-known method of public engagement and decision-making, with the model ever more frequently used for deliberations around how to achieve net zero.[474/475] The approach has grown rapidly with more than half of the Citizen Assemblies delivered across the UK in 2020 and 2021 focused on climate change and/or net zero, compared with no climate-focused Citizens Assemblies in 2017.[476] Their popularity is grounded in evidence of positive impact: research indicates that deliberation through processes such as these can lead to greater public support, a mandate for change (and thus, legitimacy), and momentum towards objectives across society. Bringing together people of diverse backgrounds and with different viewpoints also improves the chance that climate policies will be perceived as fair, with two-way communication strategies tending to be more effective at fostering sustained behavioural engagement.[477]

The most high-profile of these events is probably Climate Assembly UK (CAUK), a national forum which involved 110 purposively sampled members of the public who, informed by expert testimony, were given space for discussion around the choices involved in meeting net zero.[478] The objective of CAUK was to 'strengthen and support the UK's parliamentary democracy by ensuring policymakers have the best possible evidence available about public preferences on reaching the net zero target,'[479] and after several weekends of deliberation, resulted in 50 democratically-shaped and prioritised recommendations, presented to Parliament in the Path to Net Zero report.[480] The impact of this event was significant, both in terms of output and on participants themselves; in the post-assembly evaluation, 90% of participants 'strongly agreed' or 'agreed' that 'assemblies like this should be used more often to inform government and parliament decision-making', while 88% of members 'strongly agreed' or 'agreed' that 'taking part in this citizens' assembly has made me want to be more involved in other aspects of decision-making.'[481]

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[473] Dawson, E. (2018). Re-imagining public and (non) participation: Exploring exclusion from science communication through the experiences of low-income, minority ethnic groups. *Public Understanding of Science*, 27(7).

[474] Climate Outreach. (2020). National Citizens' Assembly on climate change is key to building social mandate.

[475] Shared Future. (2020). Climate Assemblies and Juries: A people powered response to the climate emergency.

[476] Involve. Citizens' Assembly Tracker.

[477] Shared Future. (2020). Climate Assemblies and Juries: A people powered response to the climate emergency. 7.

[478] Sasse, T., Allan, S., & Rutter, J. (2021). Public engagement and net zero: How government should involve citizens in climate policy making. *Institute for Government.*

[479] European Climate Foundation. (2021). The growing traction of climate citizens assemblies.

[480] Climate Assembly UK. (2020). The path to net zero.

[481] Climate Assembly UK. (2020). The path to net zero. 52.

While CAUK might have been the most high-profile, there have been a growing number of local citizens' assemblies year on year since 2019,[482] with a range of local assemblies, including the Oxford Citizens' Assembly on Climate Change,[483] the Brighton and Hove Climate Assembly[484] and the Herefordshire Citizens' Assembly on Climate Change,[485] joined by a series of other similar fora, including Richmond's Council's Climate Change Summit,[486] Newham's Climate Now! Open Forum[487] and the Newham Youth Climate Assembly.[488]

This form of engagement provides a means of forming consensus as well as generating intelligence on how to shape policies most likely to garner support, with analysis of CAUK by CAST finding that participation in assemblies tends to increase concern about and engagement on climate change, with most participants concluding in favour of significant social and behavioural changes. However, analysis of the model also highlights key considerations for delivery: scope, structure and design of assemblies have major consequences for recommendations; assembly processes lead to certain values (such as personal freedom, convenience and affordability) being emphasised over the values that generally appear in other social science research (such as fairness, trust and accountability); and across national and local assemblies, the policies that have the greatest support are the most tangible and visible on an individual level, yet these tend to have the least public engagement outside assembly processes.[489]

Scientists as Trusted Voices

As noted in Section 4.3, current evidence points towards scientists being considered as the most trusted voices when it comes to communicating information about climate change; BEIS survey data, for instance, finds that the UK public considers scientists working for universities and scientific organisations as *the* most trustworthy sources of information on climate change,[490] presenting a meaningful opportunity for how to design engagement initiatives.

The Natural History Museum's report on the impact of meeting scientists, based on evaluation of its *Nature Live* and *Science Uncovered* events, recommends several things focused on breaking down walls between scientists and the general public. These include ensuring that engagements with scientists are not just focused on the science, but on the scientists as people; showing diversity in science and of scientists; presenting scientists as expert 'learners' rather than expert 'knowers'; and ensuring explanations are pitched at appropriate levels.[491]

These recommendations overlap with findings from elsewhere; for instance, Climate Outreach's *Climate communication in practice* report also puts forward recommendations built around presenting climate scientists as 'regular people'. Suggestions for how to do this include building space within engagement initiatives for scientists to share their opinions, including through the use of creative and storytelling approaches, and — where appropriate — by

[482] Shared Future. (2020). Climate Assemblies and Juries: A people powered response to the climate emergency.

[483] Ipsos. (2019). Oxford Citizens Assembly on Climate Change.

[484] Ipsos. (2021). Brighton and Hove Climate Assembly.

[485] Herefordshire Council. (2022). Herefordshire Citizens' Climate Assembly.

[486] London Borough of Richmond Upon Thames. (2019). Richmond Climate Change Strategy and Air Quality Action Plan Consultation Feedback Report.

[487] Newham London. (2019). Residents come together for the first Newham Climate Now! Open Forum.

[488] Newham London. (2019). Young people of Newham give the Council their ideas to tackle climate emergency.

[489] Cherry, C.E., Capstick, S., Demski, C., Mellier, C., Stone, L. & Verfuerth, C. (2021). Citizens' climate assemblies: Understanding public deliberation for climate policy. Cardiff: The Centre for Climate Change and Social Transformations. 4.

[490] Department for Business, Energy & Industrial Strategy. (2020). Public attitudes to science 2019. (BEIS Research Paper Number 2020/012)

[491] Natural History Museum. (2018). The impact of meeting scientists: A public engagement literature review.

advocating for particular policy objectives. Allowing space for meaningful conversation is another method; one study participant highlighted the value of the public having a 'real human experience with the scientists'.[492] Presenting scientists as expert learners also finds traction here, with one scientist suggesting '[i]t is important to show the general public who climate scientists are and why we do what we do, i.e. that we are regular people and our interest is driven by curiosity primarily.'[493]

This is supported by other research, which notes that the 'deficit model of communication' — simply sharing facts and information in the hope an audience will understand — is not effective. Instead, scientists are seen to 'communicate successfully when they work to foster genuine connections and build trust with others.'[494] Programmes that focus on this, presenting key insights for tailoring science communication, include the Alan Alda Center for Communicating Science, which aims to foster empathy and connection through communication training through conversational approaches,[495] and the EU-funded TRESCA project which was focused on generating trust in the digital ecosystem, and which recommended adding personal stories to science communication, ensuring high-quality production and visual aesthetics, and avoiding oversimplification.[496] Similarly, many programmes are built around using scientists as ambassadors and communicators at the interface between the public and critical science issues — for instance STEM Learning,[497] the Brilliant Club[498] and the BSA's Highlands and Islands Climate Community Grant[499] — designed around the idea of making both science and scientists accessible and approachable as means of amplifying the impact of the programmes.

While communicators need to meet public expectations of expertise and trustworthiness,[500] perceptions of scientists are not only driven by their relatability. There are significant challenges when it comes to the complexity of presenting scientific information which is incomplete, or entwined with unknowns, for, as a rule, 'people dislike uncertainty and try to avoid ambiguity.'[501] One method of countering this —which links back to the recommendation to avoid oversimplification — might be to focus on equipping the public to navigate the complexities of science as an incremental form of knowledge.

> *'It's difficult to do, because it challenges the position of science as a singular guide to decision making, and because it involves owning up to not having all of the answers all the time while still maintaining a sense of authority. But done carefully, transparency will help more than harm. It will aid the restoration of trust, and clarify the role of science as a guide.'[502]*

[492] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach. 15.

[493] McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach. 10.

[494] Lindfield, L. (2021). Scientists Need to be Better Communicators—and They Know It. The Pew Charitable Trusts.

[495] Alda Center for Communicating Science, Stony Brook University.

[496] CORDIS. (2022). Building public trust in science communication. European Commission.

[497] STEM Learning.

[498] The Brilliant Club.

[499] British Science Association. (2023). New grants available for community-led research projects around climate change in the Highlands and Islands of Scotland.

[500] Fiske, S. & Dupree, C. (2014). Gaining trust as well as respect in communicating to motivated audiences about science topics. *Psychological and Cognitive Sciences,* 111(4), 13593–13597.

[501] National Academies of Sciences, Engineering, and Medicine. (2017). Communicating science effectively: A research agenda. The National Academies Press.

[502] Makri, A. (2017). Give the public the tools to trust scientists. *Nature* 541, 261.

Additionally, there is some evidence to suggest that structuring science communication around scientific *processes* as well as scientific facts offers potential; communicating how scientific processes generate epistemically reliable knowledge and highlighting the role that science plays in providing solutions at a social level allows for greater understanding of science more broadly.[503] This argument for transparency is articulated clearly in *Communicating Science Effectively: A Research Agenda*, which argues that public engagement should seek to generate excitement, share the information needed for decision-making, and seek common ground across stakeholders. It also notes the value that public engagement presents as a means of learning about the concerns, questions and needs of its audience and thus understand better 'the societal implications of a decision.'[504]

Further Models and Examples of Good Practice

Research and Learning

- The Centre for Climate Change and Social Transformations (CAST).[505] CAST is an organisation which 'recognises that people are at the heart of the society-wide changes that are needed to address climate change'. CAST's research programme is structured around four key themes: Visioning, Learning, Trialling and Engaging. Key to public engagement are 'Learning' (how and why transformations have occurred)[506] and 'Engaging' (how transformation can be embedded within society). Research is ongoing, with insights for Engaging likely to be a key resource for future practice.[507]

- The UCL Policy Commission on Communicating Climate Science II.[508] This project is formed of a cross-disciplinary group of researchers with a core focus on exploring the challenges of communicating climate change science to both policymakers and the general public. Research outputs aim to 'increase the effectiveness, scale, and pace of actions addressing the climate crisis.'[509] Serving also as an incubator, the Commission supports projects that identify impactful and scalable solutions that overcome existing barriers and foster 'communities of practice'.

Immersive Participation

- Collective simulation for a net-zero future.[510] A partnership between Nesta's Centre for Collective Intelligence Design, Fast Familiar and the UCL Climate Action Unit. This project has developed an alternate reality game that mixes storytelling, role-playing and local customisation to support communities to imagine possible futures with net zero carbon emissions. It is being piloted with three local authorities in 2023, with a view to scaling-up from mid-2023 onwards. The technology involved generates an experience of how action taken by 'people like me' can have an impact, while producing anonymised, aggregated data on community priorities, as well as generating new findings on the role of collective identity.

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[503] Wintterlin, F. *et al.* (2022). Predicting Public Trust in Science: The Role of Basic Orientations Toward Science, Perceived Trustworthiness of Scientists, and Experiences With Science. *Frontiers in Communication,* 6.
[504] National Academies of Sciences, Engineering, and Medicine. (2017). Communicating science effectively: A research agenda. The National Academies Press.
[505] Centre for Climate Change and Social Transformations. People at the heart of transformations.
[506] Centre for Climate Change and Social Transformations. Theme 2: Learning. How and why have transformations occurred.
[507] Centre for Climate Change and Social Transformations. Theme 4: Engaging. How can transformation be embedded within society?
[508] University College London. (2018). UCL Policy Commission on Communicating Climate Science II.
[509] University College London. (2018). UCL Policy Commission on Communicating Climate Science II.
[510] Nesta. (2022). Collective simulation for a net-zero future.

- The Strategy Room.[511] A project from UCL's CAU and digital studio Fast Familiar,[512] funded by NESTA and co-created with the London Borough of Lambeth, Sandwell Council and Southend-on-Sea City Council and their residents, the Strategy Room is an immersive experience for local communities, in which residents are invited to imagine the benefits of a net zero future, contributing their perception, insight and thoughts on how this might be achieved. As above, the technology is being developed for use by local authorities with anonymised, aggregate data drawn from user inputs. A funded pilot roll-out, including around 700 participants, is taking place between January and March 2023. Results will be published in a report by Nesta's Centre for Collective Intelligence Design (CCID).[513]

- Participatory Futures. A method positioned as bridging public engagement and future studies, participatory futures encompasses a range of approaches that 'build collective intelligence about the future, helping people diagnose change over the long term, draw out knowledge and ideas about how the future could be, and develop collective mental images of the futures people want.' The approach has five key roles (mapping horizons, creating purpose, charting pathways, acting together and testing ideas) across five categories (play, sense, immerse, create, deliberate), which together create experiential processes which 'have a much greater influence on citizens, their sense of meaning, motivation and subsequent actions.'[514]

Building Networks

- Energetic Lifestyles. In response to challenges engaging young people, Luton Borough Council designed the *Energetic Lifestyles* project in order to explore young people's perceptions of and barriers to energy efficient behaviours. The project was built around a 'World Café' approach, a model of egalitarian community action that brings people together to discuss important matters. Using existing networks, such as schools, colleges and youth networks, the team recruited local youth aged 16-25 to participate. The project generated key insights, including that cost reduction is a key driver of behavioural change for young people; and that while local young people had a good understanding of climate change, they had poor awareness of actions for change.[515]

- The InSpire project. The project is delivered in collaboration with the Church of England, as part of its wider Environment Programme.[516] Aiming initially to engage congregations in the Oxford Diocese, this project plans to expand its scope across the UK to reach international and interfaith communities to generate collective action against climate change.[517]

Creating Relatable Narratives

- Storytelling. There are a number of projects utilising storytelling as part of the approach to public engagement. The approach is premised on the idea that human stories shift

[511] University College London. (2023). The Strategy Room: where the public debates how to go low carbon.
[512] Fast Familiar.
[513] Nesta. Centre for Collective Intelligence Design.
[514] Ramos, J., Sweeney, J.A., Peach, K., & Smith, L. (2019). Our futures: by the people, for the people. Nesta.
[515] Local Government Association. (2023). 'Energetic Lifestyles': Engaging young people in the development and implementation of carbon reduction initiatives.
[516] The Church of England. Church of England Environment Programme.
[517] University College London. (2021). UCL Policy Commission on Communicating Climate Science.

the concept and risks of climate change from a scientific to a social reality.[518/519] The theory behind this approach is that storytelling works by facilitating engagement on a personal, values-based level, and enables the public to envision a route to meaningful action.[520] In recent work led by the Climate Action Unit (CAU), this has taken two main forms: the first are stories of experts' day-to-day work on tackling climate change; second is the action taken in the personal and professional lives of people.[521] Storytelling also helps to overcome barriers to action by showing how 'normal' people can successfully contribute to climate change action.[522]

- The Local Storytelling Exchange. Offering a clear case study based on the storytelling approach, the Exchange seeks to connect local stories to the issues that drive the national climate debate: '[t]he stories feature people, communities and businesses who in different ways embody the green transition: households benefiting from better insulation; tradespeople retraining to meet the demand for low-carbon technologies; neighbours finding common cause in community energy projects.' Working in the Tees Valley, Cornwall and West Midlands, the project has three local storytellers amplifying stories of the transition in diverse communities. The project claims that the power of these stories is that they provide evidence of positive action that is already underway, providing a means of building a sense of agency in audiences who as yet do not see themselves reflected in the transition to net zero: 'there must be space to acknowledge the challenges, trade-offs, inequalities and risks that are yet to be resolved as the transition gathers pace. But they also need to be action-based, signposting solutions and demonstrating ways forward, not dwelling on the pitfalls ahead'.[523]

The models and approaches highlighted here are not exhaustive: in particular, this summary cannot capture the myriad of local programmes and initiatives that are driving both place-based action to tackle climate change and biodiversity loss. Many of these local programmes and initiatives do not collect and publish data on their impact on people's attitudes to and knowledge of climate change and biodiversity loss: they are simply too busy doing the work, often on small budget, led by volunteers from within their communities. However, many of these programmes and initiatives embody the eight key principles outlined above, in that they are often highly participatory; open to all; developing local solutions to local challenges; and rooted in connections to nature.[524]

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[518] Clarke, J., Corner, A. and Webster, R. (2018). Public engagement for a 1.5 °C world: Shifting gear and scaling up. Oxford: Climate Outreach.

[519] University College London. (2022). House of Lords: Evidence Session.

[520] De Meyer, K., Coren, E., McCaffrey, M., & Slean, C. (2021). Transforming the stories we tell about climate change: From 'issue' to 'action'. Environmental Research Letters, 16(1), 015002.

[521] University College London. Climate Action Unit.

[522] University College London. (2022). House of Lords: Evidence Session.

[523] Reset Narratives. (2022). This is what the transition looks like: introducing the Local Storytelling Exchange.

[524] See for example: Carbon Copy: A Thousand Climate Action Stories.

8. KEY FINDINGS

8.1 LEVEL OF CONCERN

⇒ A large majority of people in the UK (>83%) are concerned about climate change, with a high proportion (>45%) 'very concerned'. Only a tiny minority of people (<5%) are 'not concerned at all' about climate change.[525/526] Overall, there has been a growing concern for the environment across the last decade: 40% of people report feeling 'very concerned' about the environment in 2022, almost double the proportion (22%) expressing high levels of concern in 2010.[527]

⇒ Concern about climate change is high across most demographic groups, with only minor variations recorded for most socioeconomic indicators. The two indicators with the greatest divergence between groups are political affiliation and educational attainment: left-wing voters[528/529/530] and those with degree-level qualifications[531/532] are more likely to report being concerned about climate change.

⇒ There are also regional variations across the UK with people living in southern England most likely to report the highest levels of concern, while those living in northern England, Wales and Northern Ireland reporting the lowest levels of concern.[533]

⇒ There is significantly less data on biodiversity loss compared with climate change. In general, people are surveyed less often on this issue and, when surveyed, report lower levels of awareness and concern about biodiversity loss compared with climate change.

⇒ While almost half (49%) of the UK population show some level of awareness and engagement with biodiversity loss, only a small minority are engaged in direct action to project and support UK biodiversity. Almost a third of the UK population remain unaware of the threat to biodiversity in the UK.[534]

⇒ Survey data for England[535] and Scotland[536] places levels of awareness and concern for biodiversity loss relatively high (>70%) compared with much lower levels in Wales[537] (43%). However, these regional differences should be treated cautiously

[525] Department for Business, Energy & Industrial Strategy. (2022). BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[526] Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.

[527] Hinchliffe, S. (2022) British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[528] See cross-tabulations for this Tracker: YouGov. (2022). YouGov Survey Results: Climate Change Tracker.

[529] For similar findings, see Hinchliffe, S. (2022). British Social Attitudes: Environment in: Butt, S., Clery, E. and Curtice, J.(eds.) (2022), British Social Attitudes: The 39th Report. National Centre for Social Research.

[530] See also: Ipsos. (2021). High levels of concern about climate change but scepticism whether Britons will change behaviours.

[531] Liu, T., Shryane, N., & Elliot, M. (2022). Attitudes to climate change risk: Classification of and transitions in the UK population between 2012 and 2020. *Humanities and Social Sciences Communications*, 9(1), 279.

[532] Crawley, S., Coffé, H., & Chapman, R. (2020). Public opinion on climate change: Belief and concern, issue salience and support for government action. *The British Journal of Politics and International Relations*, 22(1), 102–121.

[533] Department for Business, Energy & Industrial Strategy. (2022), BEIS Public Attitudes Tracker: Net Zero and Climate Change Autumn 2022, UK.

[534] Joint Nature Conservation Committee. (2020). A1. Awareness, understanding and support for conservation.

[535] Percentages included in this analysis are based on 'whole survey' data for each of the indicators referenced: Natural England. (2022). The People and Nature Survey data explorer.

[536] Granville, S. (2020). The Scottish Nature Omnibus 2019. Scottish Natural Heritage Research (Report No. 1198).

[537] Natural Resources Wales. (2017). National Survey for Wales: Key Facts for Policy and Practice. Perceptions of Biodiversity.

since they draw on different datasets with variations in survey design and delivery; no comparable data is available for Northern Ireland.[538]

⇒ The most consistent indicator of concern of the environment and uptake of pro-environmental behaviours is an individual's connection to nature.[539/540] There are two components at play here: firstly, the amount of time that an individual spends in nature and, secondly, the psychological connection that an individual experiences with nature (often referred to as nature connectedness). Both of these intersect with other demographic trends with those experiencing socio-economic disadvantage least likely to report high levels of nature connectedness.

8.2 KNOWLEDGE AND UNDERSTANDING

⇒ Only half of people in the UK think that climate change is either entirely or mainly caused by human activity, with one in ten believing that it is caused by natural processes and a third believing that climate change is caused by both human activity and natural processes.[541]

⇒ Most people do not know how much or how quickly global temperatures are changing, with different studies showing British people both underestimate the rate at which global temperatures have increased in the last two decades[542] and overestimate the overall rise in global temperatures since 1850.[543] In general, climate change is seen as a greater threat to those living in other countries (in particular developing countries) with the most serious impacts still seen as a future problem (e.g. increased climate-related migration).[544]

⇒ Recent studies also reveal that most people cannot accurately identify the actions that have the greatest impact on climate change mitigation; this is referred to as the believe-true gap.[545] Accordingly, people overestimate the impact of low-demand activities (such as recycling) and underestimate the impact of more significant lifestyle changes (such as living car-free or having one fewer child).[546/547]

⇒ Up to half of people are unsure what the term biodiversity means.[548] Even for those that are familiar with the term, there is a lack of awareness that biodiversity loss is happening at an accelerated rate caused by human activity,[549] coupled with a tendency to assume that '*nature will find a way*' to restore the balance.[550/ 551]

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⇒ While there is an increasing shift towards a systems thinking approach to climate change and biodiversity loss amongst policymakers and scientists,[552/553] there is little research to indicate the extent to which the UK public understand and engage with these issues as interconnected parts of a wider system. However, initiatives such as climate assemblies are creating new spaces in which individuals from across society can learn about and engage with climate change and/or biodiversity from a whole systems perspective. [554/555/556]

⇒ Most people depend upon online news for information about climate change: however, levels of trust in the media are not as high for other potential sources of climate change information. The most widely trusted sources are scientists, even though people rarely engage directly with scientific outputs, with certain public figures also seen as trusted communicators: specifically, David Attenborough and Greta Thunberg. [557/558/559]

8.3 RESPONSIBILITY

⇒ A majority of British people see climate change action as a shared responsibility between the UK Government; business and industry; and individuals.[560/561]

⇒ The Government is seen as having a particular responsibility for leadership, both in terms of policy and public engagement,[562/563] but recent analyses highlight a lack of sustained and coherent leadership from the Government to achieve its Net Zero target,[564/565] with two thirds of people (66%) stating that the UK government is not doing enough to reduce carbon emissions.[566]

⇒ More than two thirds of people feel that big companies (68%) and the UK public (72%) are also failing to do enough to combat climate change. However, most people (61%) think that their own household *is* doing enough.[567] This may be explained, in part, by the gap in people's knowledge of the extent of behavioural change needed.[568]

⇒ In general, British people are supportive of net zero policies, with higher support for those policies that provide incentives for greener living across areas such as energy,

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transport and material consumption. [569/570] Support for policies to regulate lifestyle choices are far less popular.[571/572]

⇒ There are also high levels of support for environmental policies that correlate with nature restoration and protection, e.g. for planting more trees; restoring natural ecosystems; and protecting marine wildlife by banning harmful fishing practices.[573/574] Support remains high even when people are aware of the economic costs and other trade-offs associated with implementing these policies.[575/576]

⇒ UK public support is highest for international policies that target trade restrictions and promote diplomatic influence rather than policies that require direct funding and investment.[577]

8.4 PERSONAL ACTION

⇒ Research indicates that a majority of people in the UK believe that individual lifestyle changes are both important[578] and necessary[579] to combat climate change. People are typically much more willing to adopt low-demand lifestyle changes (such as eating food in season and reducing plastic waste) than high-demand changes (adopting a plant-based diet and having fewer children).[580/581/582]

⇒ In terms of political action, around half of people report taking climate change policy into consideration when voting. People are also much more willing to sign a petition or boycott a brand than to take part in protest in response to the climate emergency.[583]

⇒ While there is broad *willingness* to do more to combat climate change, most changes have yet to become a sustained and habitual part of people's everyday lives.[584/585] The gap between what people say they are willing or likely to do to promote pro-environment outcomes and what they actually do is often referred to as the 'say-do gap'. As noted elsewhere, climate change action remains the primary focus of current public debates with far less attention paid to what actions people are willing to take (and do take) in order to combat biodiversity loss.

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⇒ There is a complex nexus of barriers that feed into the say-do gap. These include: lack of engagement in climate change as an issue;[586] lack of knowledge (the believe-true gap);[587] perceived inaccessibility of the science behind climate change;[588] over-saturation of information;[589/590] perceived lack of action by others;[591/592] absence of pro-environmental social identity;[593] and the need for established social norms to encourage action.[594/595]
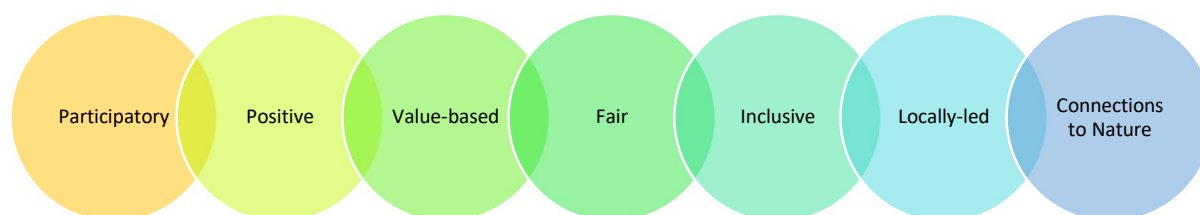
8.5 ENGAGEMENT

Figure 1: Eight Principles for Engaging the Public on Climate Change and Biodiversity Loss

⇒ Drawing on evidence from across the literature, eight principles inform effective public engagement. These principles can be summarised as follows: using participatory approaches;[596/597/598] drawing on positive messaging;[599/600/601] developing action-focused solutions;[602/603/604] drawing on value-based motivations;[605] ensuring fairness in approach *and* distribution of burdens;[606/607] prioritising an inclusive approach that

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[586] Based on people who report that they are not at all worried; somewhat unworried; neither worried nor unworried.

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reaches all social groups;[608/609/610] creating opportunities for locally-led action;[611/612/613/614] and reinforcing connections to nature.[615/616]

⇒ There is a growing body of evidence on how to learn from the Covid-19 pandemic in order to communicate effectively about climate change,[617] especially from a systems thinking perspective.[618] Skilling scientists to act as public communicators is another key area for developing new opportunities to engage a broader cross-section of society in climate change and biodiversity loss.[619]

⇒ There are a number of models for effective public engagement. Citizens' assemblies, juries and dialogues are one of the most well-known and popular models currently being deployed to engage people and understand better attitudes to climate change action.[620/621] These fora bring together people from diverse backgrounds and with diverse viewpoints to develop action plans for both locally-led and national climate change action, often with a key focus on achieving the 2050 net zero target.

⇒ There is also a growing number of innovative models designed to engage individuals from diverse backgrounds and lived experiences to engage with climate change action. These models include alternate reality 'games' that allow individuals to play out options for responding to the climate emergency in their local area;[622/ 623] projects that build on existing social networks in order to reach specific social groups;[624/625] and the use of storytelling to highlight the power of individual action.[626/627/628]

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9. RECOMMENDATIONS

Research and Learning

- More research is needed into the current status of public awareness of and attitudes to biodiversity loss, both as a phenomenon in its own right and its connections to climate change. This should be deep learning that explores the extent of people's knowledge of biodiversity loss as a concept; its impacts now and in the future; and how we respond to the current challenge, both individually and collectively.
- There is also scope to move the current debate forwards by understanding better how people envisage a 'green' future, for example, people's attitudes to the decisions and trade-offs needed (in terms of the enviromental impact of various 'green' solutions) to achieve net zero. This is closely related to, and builds upon, the need to expand the current national conversation by bringing a systems thinking perspective to the foreground of public engagement activities.

Public Engagement

- Ideally, public engagement interventions on climate change and biodiversity loss should be positive, participatory, values-motivated, fair and inclusive; and they should create opportunities for locally-led actions and connections to nature.
- The first and most important objective for public engagement is to close the gap between knowledge and perception around climate change and biodiversity loss. Raising awareness of the science behind these phenomena, especially the role of humans and the speed at which impact is occuring, is essential to creating a public with the knowledge-base needed to drive widespread climate change action.
- The challenge for public engagement is to move beyond small-scale fora to reach a wider audience. The use of technology to create immersive and/or particaptory 'games' or to share stories of individual or collection action are likely to be most successful to reach diverse social groups.

Advocacy and Support

- Promoting locally-led solutions is critical to successful climate change action given the potential to engage more people and respond to local context. Providing toolkits for programmes or models led by local authorities, scientific organisations, community-based projects or individuals will support these locally-led initiatives, as well as campaigning for locally-led solutions within wider public debates on the issue.
- Raising awareness of biodiversity loss so that it becomes a core part of the national conversation is needed in order to create momentum for more extensive policy and action in this area.
- Scientists need improved acccess to training and support in order to act as 'trusted messengers' within public fora, both as a means of sharing up-to-date scientific information with members of the public and increasing people's confidence to engage with and understand scientific materials for themselves (and thereby increase their 'science capital').

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