

# Public perceptions of climate change in Britain following the winter 2013/2014 flooding



A report by the Understanding Risk Research Group, Cardiff University

**PUBLIC PERCEPTIONS OF CLIMATE CHANGE IN BRITAIN  
FOLLOWING THE WINTER 2013/2014 FLOODING**

# Public perceptions of climate change in Britain following the winter 2013/2014 flooding

Understanding Risk Research Group Working Paper 15-01

**Stuart B Capstick** (Cardiff University)  
**Christina C Demski** (Cardiff University)  
**Robert G Sposato** (Cardiff University)  
**Nick F Pidgeon** (Cardiff University)  
**Alexa Spence** (University of Nottingham)  
**Adam Corner** (COIN and Cardiff University)



Sustainable Places  
Research Institute  
*Sefydliad Ymchwil  
Mannau Cynaliadwy*



The University of  
**Nottingham**

**Tyndall**°Centre  
for Climate Change Research



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### General contact details:

Understanding Risk Research Group  
School of Psychology  
Cardiff, Wales, UK, CF10 3AT  
Phone: +44 (0)29 208 74567  
Fax: +44 (0)29 208 74858  
Web: <http://www.understanding-risk.org>

Email: [CapstickSB@cardiff.ac.uk](mailto:CapstickSB@cardiff.ac.uk)  
[DemskiCC@cardiff.ac.uk](mailto:DemskiCC@cardiff.ac.uk)  
[SposatoR@cardiff.ac.uk](mailto:SposatoR@cardiff.ac.uk)  
[PidgeonN@cardiff.ac.uk](mailto:PidgeonN@cardiff.ac.uk)

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## Introduction

This report considers the role of extreme weather as an influence on public perceptions of climate change, through a focus on people's responses to the series of exceptional flooding events that affected the UK in late 2013 and early 2014. Key indicators are also compared to data obtained over recent years, to draw conclusions about current trends in public perceptions of climate change.

Climate change now presents a formidable challenge for societies across the globe. The most recent assessments from the Intergovernmental Panel on Climate Change conclude that the warming of the global climate system is now considered unequivocal, and will lead to climatic changes unprecedented for millennia (IPCC, 2014). Climate change is predicted to result in more frequent and severe extreme weather events around the world, including increased incidence of storms and flooding in the UK.

In December 2013 and January 2014 an exceptional run of severe winter storms occurred in the UK carrying with them large amounts of rain. Analysis by the UK Met Office (2014) describes how Scotland saw the wettest December since records began; likewise for southern England January 2014 was the wettest since 1910. The cumulative effect of these storms was the widespread flooding seen across the UK between December 2013 and February 2014. The response to this flooding involved all levels of UK government from the Cabinet Office to local authorities, the environmental and public health agencies, utilities and emergency services, and the voluntary and private sectors. These exceptional events also received significant national and international media exposure. Although it is very difficult to attribute any single set of weather events to climate change, according to the World Meteorological Organisation, when combining evidence from around the globe the UK floods were one in a series of extreme events during 2014 consistent with the models and predictions of climate science (WMO, 2014).

Research into public engagement with climate change is an area of significant scientific research in the UK. We know that climate change is seen by most people as an issue which is important for society to address, but at the same time is often viewed as temporally, geographically or socially distant from ordinary people's everyday lives (Pidgeon, 2012). This has contributed to a 'psychological distancing' of people from the climate change issue, and is seen as one of the reasons for a consequent lack of public engagement (Spence et al., 2012). Finding ways of reducing psychological distance is a key research and policy objective, with the influence of extreme weather events on public perceptions a subject of active current international academic debate (Egan & Mullin, 2014; Reser et al., 2014). Here it is argued that direct personal experience of climate-related weather impacts is a way in which the otherwise distant and abstract nature of climate change can become more salient for people, with the potential for raising public engagement with both personal and policy responses. For example, such weather events may act as a strong 'signal' or 'focusing event' (Renn, 2011; November et al., 2009) whereby future climatic events are made more imaginable. Also, extreme weather events are often associated with changed socio-political attention which themselves constitute important influences on people's perceptions. In the UK, the 2013/2014 floods instigated a high-profile political response and prominent media coverage, including contentious reporting on the attribution of the floods to climate change (Lewis, 2014). These factors, as well as changed contexts at a local level,

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such as the loss of power to homes in affected areas, are likely to have contributed to the local salience of climate change both during, and in the immediate aftermath of, the flooding events.

Past research that has examined potential linkages between extreme weather experience and people's beliefs about climate change offers mixed conclusions; in addition, it has been difficult to establish the direction of causation between 'experience' of weather events and climate change perceptions (cf. Howe et al, 2014; Spence et al., 2011; Whitmarsh, 2008; Reser et al., 2014; Taylor et al., 2014; Capstick et al., 2013; Myers et al., 2012). Accordingly, the events in the winter of 2013/14, while deeply traumatic for many of those directly involved, provide a unique scientific opportunity to test various hypotheses about the relationship between severe weather impacts and public beliefs about climate change. In particular, these events enable a careful examination to be made as to whether climate change perceptions are directly affected by flooding experience.

In May 2014, a research team from Cardiff University and the University of Nottingham were awarded a grant from the Economic and Social Research Council (ESRC) to study this issue under its 'Urgent' grants scheme. The research that resulted involved a major survey administered across Britain during August-October 2014. The broad objective of the research was to contribute to international scientific debates about the formation of climate beliefs in the context of extreme weather events.

Within this overarching objective, the current report has the following four aims:

1. To report any long-term changes in perceptions of climate change amongst the British public, comparing responses in 2014 to those obtained from previous nationally representative surveys (see Section 1).
2. To investigate in detail how a nationally representative sample of the British public interpret the 2013/2014 winter flooding and whether they attribute this to climate change (see Section 2).
3. To document experiences of the flooding events amongst a sub-sample of respondents who have been most directly affected (see Section 3).
4. To compare the responses of the most directly affected sub-sample with those of the nationally representative sample, with a focus upon whether direct experience of the flooding leads to different views about climate change (see Section 4).

Using a survey instrument designed by the research team, data was collected by Ipsos Mori using face-to-face interviews during August, September and October 2014. A core representative British sample (hereafter the national sample: n=1,002) was collected, and in order to gain a further sample of individuals who had been directly affected by these events, targeted over-sampling was conducted in five flood-affected parts of the country; Dawlish, Gloucester to Tewkesbury, Sunbury to Windsor, Aberystwyth, and Hull (hereafter the flood affected areas: n=995).

## Methodology

### *Survey design considerations*

Investigating the relationship between extreme weather events and climate change beliefs is methodologically complex. There is a risk that if people are first asked about climate change, this may prompt them to provide different types of responses to subsequent questions about their experience of weather events than if they have not been prompted in this way. Conversely, if people are asked first about their experience of weather events, they may be prone to subsequently give opinions about climate change that are influenced by the views they have expressed on weather phenomena.

As a result we utilised a carefully constructed questionnaire design, which enables a distinction to be made between the effect that extreme weather events might have on climate beliefs, from the opposite situation where prior beliefs about climate change might influence the interpretation of the 'experience' of what people believe to be extreme weather (for discussion of this point see Spence et al., 2011). Three design features are particularly important in this respect:

- First, the key questions measuring climate change beliefs and perceptions were placed at the very beginning of the survey, before any mention of flooding was made. We were careful to ensure also that the participant recruitment protocol and introduction to the survey did not mention flooding or related issues. As a result of these considerations, we are confident that any association between climate change beliefs and flooding experience was not made salient until after respondents had provided their own climate change perceptions.
- Second, as part of measuring 'flooding experience' the survey included questions that measured the occurrence of more 'objective' direct physical impacts (e.g. property damage from the flooding), in addition to self-reported perceptions of experience. These more material measures of flooding experience might be expected to be less prone to any reasoning biases whereby respondents could recall or refer to flooding if they are more concerned about climate change. Taken together with the point above, this aspect of the research design significantly enhances our ability to ascertain direct experience of the flooding and its influence on climate change perceptions.
- Third, by including the sample from the five flood affected areas, the study design allows us to focus our attention on households and parts of the country that were most affected by the 2013/2014 flooding. This in turn enables a comparison to be made between the perceptions of those materially affected by the 2013/2014 flooding and the majority in the national sample who were not directly impacted in their homes or localities. For the purpose of this report we have chosen to examine differences in perceptions between those most directly affected by the 2013/2014 flooding (i.e. those who report impacts on property and who were living in heavily affected localities), compared to the national sample. The exact definition of direct experience is detailed further in section 3. A profile of the respondents within each sample can be found in Appendix 1.

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### *Questionnaire overview*

The questionnaire was designed in conjunction with a project Advisory Panel which consisted of representatives from government departments and agencies, academics, NGOs, and other relevant organisations. Several of the items used in the survey have been applied previously in work by members of the research team. We have also drawn in several cases on items used in other research projects (e.g. the PREPARE work by Ipsos MORI, 2013).

The questionnaire is organised into three parts using mostly closed-ended questions, together with several open-ended questions. The complete questionnaire is presented in Appendix 2.

The first part of the questionnaire (Appendix 2, Q1-22) measures climate change perceptions including several key 'tracker' items which have been asked in identical ways in several previous research projects since 2005. These enable us to examine perceptions of the reality, causes and consequences of climate change, and to compare these to data obtained previously. Further items in the first part probe issue importance and personal engagement with climate change, psychological distance, attitude strength, support for national policies, private and public sphere actions, and perceived changes to weather and seasons.

Subsequent survey items (Appendix 2, Q25-42) measure respondents' flooding experience in a number of ways including impacts on property, travel, and services. For the purpose of our comparative analysis we focus in particular on impacts on a person's property, as we regard this as one of the more 'objective' measures of flooding experience, as well as one of the most impactful ways that a person can be affected by it.

Respondents' perceptions of their flooding experience were also measured using a number of follow-up items: for example they were questioned as to the effects of the floods on their well-being. Those self-reporting at least some impact were then asked further follow-up questions that gauged the nature of these experiences (e.g. their views on their ability to cope, perceptions of social support, impacts on financial circumstances and health).

Further items (Appendix 2, Q43-49) focused on respondents' own perceptions of the 2013/2014 flooding, including appraisal of flood impacts, and attribution of causation and responsibility. This section also gauged respondents' views on the interpretations of the flooding in the media and by other social actors. The survey finished with questions on perceived personal risk of future flooding, ability to cope, and willingness to undertake adaption measures to counter climate change impacts.

We also obtained further data on respondents' attitudes towards society and the environment, as well as newspaper readership, education, and socio-demographic variables. These are not reported in detail here but will be utilised within further in-depth academic analysis of the data.

### *Data collection and sampling*

Sampling and data collection was conducted by the social research company Ipsos Mori. A pilot of 26 interviews allowed for testing of all fieldwork materials and procedures, via an experienced pool of household interviewers.

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The fieldwork was conducted as close to the flooding event as possible while allowing for practical and ethical considerations. Computer Assisted Personal Interviews (CAPI) were conducted from 28 August to 31 October 2014 by fully supervised Ipsos MORI interviewers and took 35 minutes on average to complete. It was ensured that all respondents had been living in the area prior to February 2014 as the survey was focused on their experiences of the winter floods.

The study design incorporated a nationally representative sample with 1,002 interviews.

To obtain an additional over-sample of respondents with more direct experience of the flooding events, we selected five areas that had been more extensively affected. Approximately 200 respondents were sampled in each of these areas; see Table 1.

**Table 1** Number of respondents in the national and flood-affected area samples.

	<b>Number of respondents</b>
<b>National Sample</b>	1,002
<b>Flood Affected Areas</b>	
<i>Aberystwyth</i>	200
<i>Dawlish</i>	198
<i>Gloucester to Tewkesbury</i>	198
<i>Hull</i>	200
<i>Sunbury to Windsor</i>	199

a) The National Sample (n=1,002)

The Primary Sampling Unit (PSU) for the national survey was the Double Output Area (OAs). An OA represents the lowest level at which census information is published, and on which demographic quotas (or targets) can be set. A Double OA consists of paired OAs within the same local authority that are the closest geographically, conditional on them being within the same electoral ward and connected directly by road.<sup>1</sup>

The national sample data was weighted to match the population of Great Britain based on Office of National Statistics data. Weights were applied on age, gender, social grade, working status and tenure by region to reflect the population of Great Britain as a whole.

b) The Flood-affected areas (n=995)

Five flood-affected areas were chosen to obtain a sample with both a diverse geographical and physical (e.g. riverine, coastal) experience during the 2013/2014 flooding. These were the City of Hull adjacent to the river Humber,

<sup>1</sup> The Double OAs were stratified by social grade and rurality within region. This stratification ensured all types of area were fully represented. For each of the selected sample points, quotas were set on age, gender and working status based on the local population of the Double OA to ensure the sample was representative, as published in the 2011 Census. Half of all interviews were completed on weekday evenings (after 5pm) or at weekends.

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an area along the River Thames west of London between Sunbury and Windsor, a region along the River Severn between Tewkesbury and Gloucester, in the town and region of Aberystwyth in Ceredigion, Wales, and along the coast at Dawlish in Devon. Collectively these areas represent diverse parts of the country that were heavily affected by flooding in 2013 and 2014 and with diverse experiences, including riverine flooding linked to sustained and heavy rainfall leading to evacuation of homes, loss of power and other forms of disruption. Coastal and estuary flooding from tidal surges leading to major disruptions were experienced in two of these areas.

The exact sampling points within each of the five flood-affected areas were chosen using media reports and the combined knowledge of the flooding by the Cardiff University research team and Ipsos Mori, in conjunction with input from the project Advisory Panel. Postcodes with known flooding experience were used as epicentres and expanded out to ensure that there were sufficient addresses to support the number of sample points needed to achieve 200 interviews in each area.

The sampling process was similar to that used on the national sample. Double OAs selected for the national sample were excluded. Selected OAs were stratified by social grade and rurality. Once the stratification was complete Double OAs were selected on a random basis, with probability in proportion to their size. Following the selection of the Double OAs quota targets were again set using the 2011 Census based on the locality.

### *Presentation of data*

Topline results for the national sample are presented in full in Appendix 2. Reported results for the national sample (at a sample size of 1,002) are accurate to within +/- 2 to 3% (95% confidence intervals). Reported results for the sub-sample of *most directly affected* respondents (at a sample size of 135) are accurate within the order of +/- 5 to 8% (95% confidence intervals). A detailed characterisation of this latter sample is provided in section 3.

Occasionally results as presented do not sum to 100, and this may be due to use of multiple response categories, the exclusion of 'don't know' answers, or rounding.

## Box 1: Previous British surveys on public perceptions of climate change

**In parts of Section 1 we compare findings obtained in the present study to previous surveys. These are described in summary here.**

**2005** (October and November)

A nationally representative quota sample of 1,491 people aged 15 years and older. Face-to-face interviews in respondents' own homes. See Poortinga et al. (2006).

**2010** (January to March)

A nationally representative quota sample of 1,822 people aged 15 years and older. Face-to-face interviews in respondents' own homes. See Spence et al. (2010).

**2011** (March)

A nationally representative sample of 1,007 people aged 16 years and older. Face-to-face interviews in respondents' own homes. See Shuckburgh et al. (2012).

**2012** (August)

A nationally representative quota sample of 2,441 adults. Online survey. See Demski et al. (2013).

**2013** (March)

A nationally representative quota sample of 961 people aged 15 years and older. Face-to-face interviews in respondents' own homes. See Poortinga et al. (2014).

**The current survey**

**2014** (August to October)

A nationally representative quota sample of 1,002 people aged 16 years and older. Face-to-face interviews in respondents' own homes. Findings described in this report.

## Section 1

# National Sample: Climate Change Perceptions

(Base n = 1,002)



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We begin the report with an overview of key findings concerning climate change beliefs and attitudes among the British public as a whole. The findings presented within this section are based on the national sample (n=1,002).

Several of the items we report here have been measured in a consistent manner over a number of years with other nationally representative samples (see Box 1). This enables us to draw conclusions with some confidence about the ways in which these have changed or remained steady over time.

### Importance of climate change as a national issue

In order to compare the extent to which climate change is seen as an issue of importance relative to other major national issues, respondents were asked to state unprompted, and in their own words, what they felt were the three most important issues facing the UK *today*<sup>2</sup>. This question was asked of people at the very beginning of the survey, without any prior reference being made to the topic of climate change.

Having provided answers to this question, they were then asked to state what they considered to be the three most important issues that will face the UK *in the next 20 years*<sup>3</sup>.

Around 1 in 9 people (11%) saw climate change as one of the three most important issues facing the UK *today*. This is comparable to the proportions who referred to crime (14%), education (12%), or who made more generic reference to environmental problems aside from climate change (9%). Around one third referred to the economy (33%) or race relations/immigration (35%) with 1 in 5 mentioning the NHS or health care (20%).

Expanding the time horizon to *the next 20 years*, a higher proportion of people (15%) referred to climate change as being one of the three most important issues facing the UK. This represents a higher proportion than opted for crime (10%) or education (9%) – though is still lower than those selecting race relations/immigration (31%), the economy (28%), or the NHS or health care (19%).

Figure 1 illustrates the importance of climate change relative to other national issues, based on these two questions<sup>4</sup>.

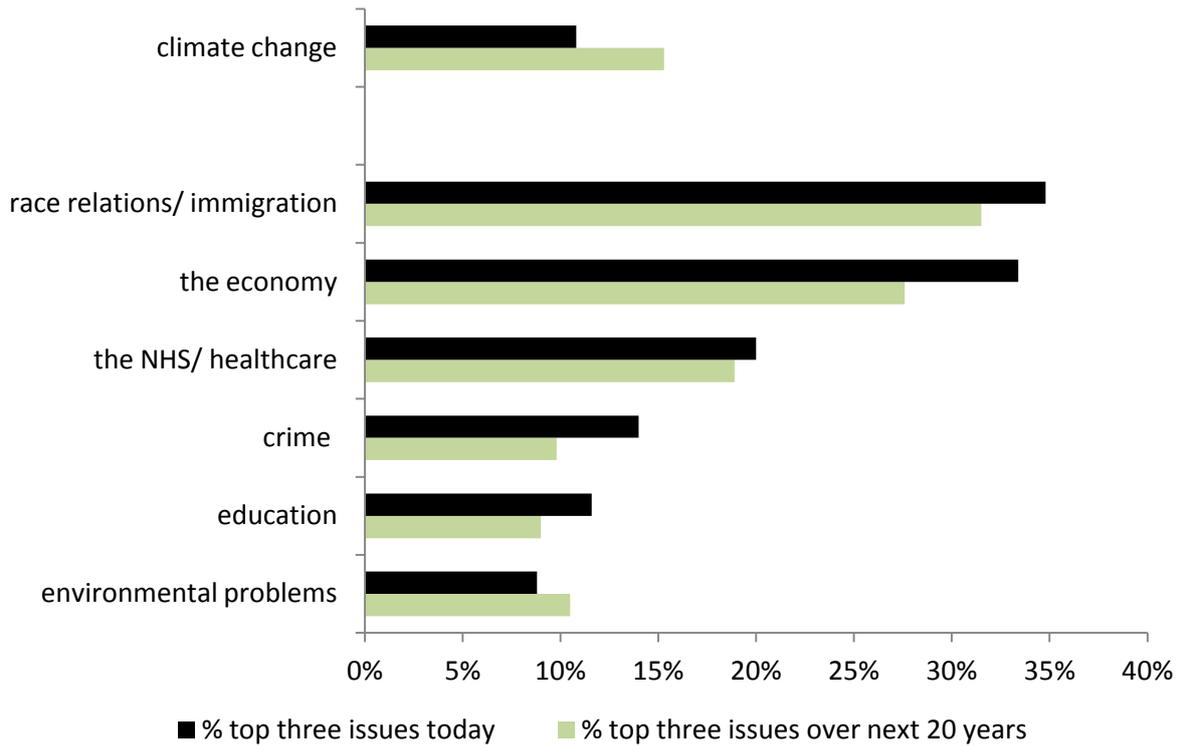
**15%**  
consider  
climate  
change one of  
the top three  
issues facing  
the UK over  
the next 20  
years

<sup>2</sup> Appendix 2 Topline Q1

<sup>3</sup> Appendix 2 Topline Q2

<sup>4</sup> We show an illustrative selection of responses here. A more detailed breakdown of the issues referred to by respondents is provided in Appendix 2.

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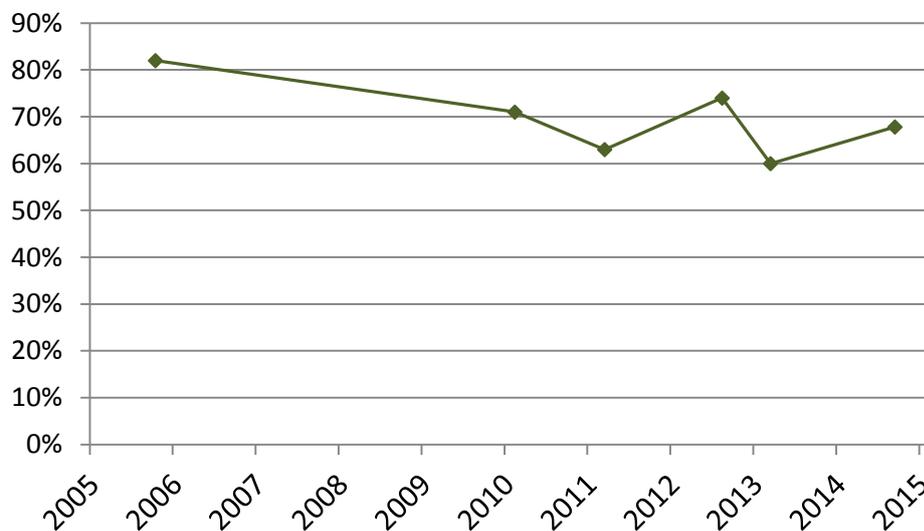


**Figure 1 Importance of climate change relative to other national issues**  
Proportions are of survey respondents referring to issues as being among the 'top three' facing the UK today and in 20 years time.

### Levels of public concern about climate change

Survey respondents were asked how concerned (if at all) they were about climate change<sup>5</sup>. This is one of the most frequently used methods of gauging the extent to which climate change is seen as an issue of relevance to people on a more personal level.

Around two thirds (68%)<sup>6</sup> of the national sample stated they were *fairly* or *very* concerned about climate change. As shown by Figure 2 this represents an increase in overall levels of concern compared to the most recent figures from 2013 obtained by Poortinga et al. (2014). Overall however, this most recent indicator of personal concern rests in the midrange of values obtained since 2005. In addition, the highest category of concern (*very concerned*) appears to have declined somewhat in recent years<sup>7</sup>.



**Figure 2 Concern about climate change**

Proportions are of survey respondents stating they are *very* or *fairly* concerned about climate change. Note that data points are assigned on the x-axis according to the time point during the year that surveys were carried out. For this reason, they are located at different positions between year markers.

<sup>5</sup> Appendix 2 Topline Q4

<sup>6</sup> Note that the rounded figures given for *fairly* and *very* concerned in Appendix 2 do not sum to 68%. Summing raw data however results in this proportion. This applies in other instances in the report also for combined category findings.

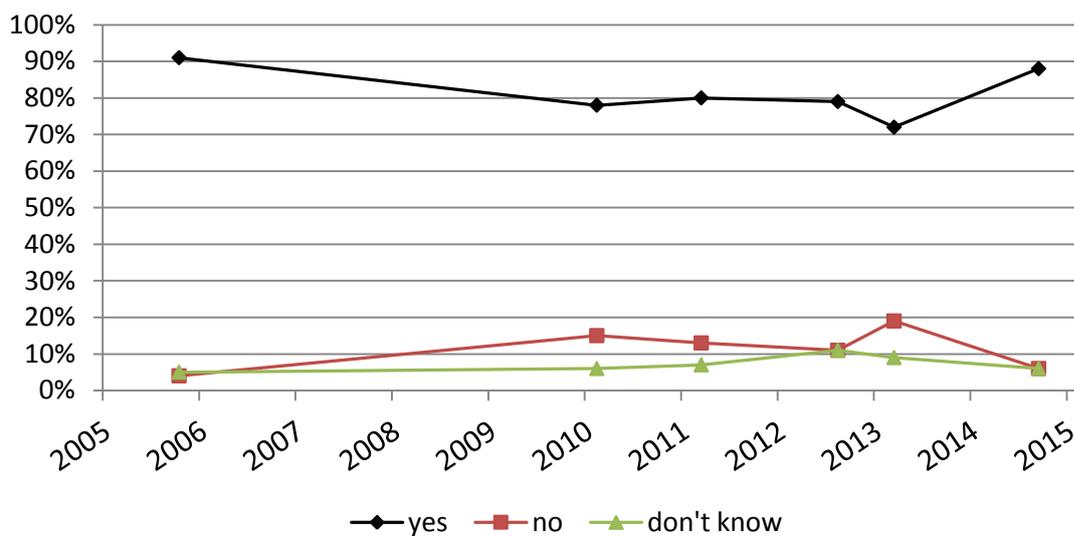
<sup>7</sup> In 2005, 44% of people stated they were *very* concerned about climate change. This declined to 28% in 2010. In the present survey, only 18% of people stated they were *very* concerned about climate change.

### Beliefs about the reality and human causation of climate change

There has been substantial attention paid in recent years regarding the extent to which the public accepts the basic reality of climate change, and the extent to which people acknowledge that climate change is (in part) anthropogenic. During the last 5-10 years, in particular, there has been evidence that public recognition of these aspects has declined (Poortinga et al., 2014; Shuckburgh et al., 2012) though it should be noted that the changes observed occurred from previously high levels obtained in the mid-2000's.

The present survey examined whether respondents acknowledge the existence of climate change by asking them to state whether or not they think the world's climate is changing<sup>8</sup>. Close to 9 in 10 people (88%) responded in the affirmative to this question, while only 6% answered that they did not think the climate is changing. The proportion of people acknowledging the basic reality of climate change is higher than that observed for some years, and close to the previously observed maximum figure of 91% from 2005 (Figure 3).

**88%**  
are of the  
opinion that  
the world's  
climate is  
changing

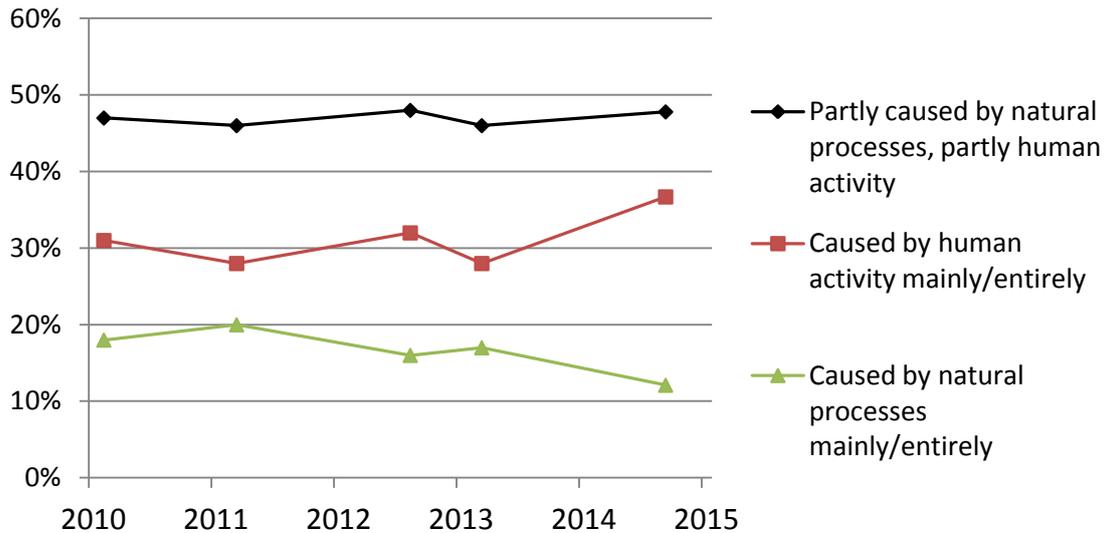


**Figure 3 Belief in the existence of climate change**

Responses to the question "As far as you know, do you think the world's climate is changing, or not?". Note that data points are assigned on the x-axis according to the time point during the year that surveys were carried out. For this reason, they are located at different positions between year markers.

<sup>8</sup> Appendix 2 Topline Q5

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**Figure 4 Belief about causation of climate change**

Responses to survey item addressing attitudes towards 'natural' and 'human' causation of climate change. Note that data points are assigned on the x-axis according to the time point during the year that surveys were carried out. For this reason, they are located at different positions between year markers. This tracker item was not included in the 2005 survey.

Survey respondents were also asked the extent to which they believed climate was caused by natural processes or human activity<sup>9</sup>. Close to half of survey respondents (48%) were of the view that climate change is *partly caused by natural processes and partly caused by human activity*. Just over a third (37%) of the sample were of the opinion that climate change is *mainly or entirely caused by human activity*. A considerably smaller percentage of 12% thought that climate change is *mainly or entirely caused by natural processes*<sup>10</sup>. Outright disbelief in climate change (*there is no such thing as climate change*) appears to be very limited, with only 1% of respondents being of this view<sup>11</sup>.

<sup>9</sup> Appendix 2 Topline Q6

<sup>10</sup> 29% opted for the category 'mainly caused by human activity' and 7% 'entirely caused by human activity'. 9% stated that climate change is 'mainly caused by natural processes' and 4% that it is 'entirely caused by natural processes'.

<sup>11</sup> Where respondents are asked "As far as you know, do you think the world's climate is changing, or not" the proportion of respondents answering no is 6%. Where we ask separately about respondents' perceptions of the natural or human causation of climate change, and provide the response option to state *there is no such thing as climate change*, the proportion of respondents selecting this latter category is 1%. We attribute these two apparently divergent findings to differences in wording of these two items, and/or that the majority of the 6% who state that the climate is not changing are more willing to acknowledge it as a reality when provided the option to ascribe it to natural processes.

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As shown in Figure 4, the present survey – out of five comparable studies that have employed this measure since 2010 – has found the highest percentage of individuals who attribute climate change to human causes, and the lowest percentage of people attributing climate change to natural causes.

### Perceived risks and proximity of climate change

Several further survey items were used to ascertain respondents' perspectives on the perceived risks from climate change.

Respondents were asked to judge how serious a threat they think climate change is to themselves and their families, the UK as a whole and developing countries<sup>12</sup>. Climate change was perceived by a majority (61%) of survey respondents to be a *very* or *extremely* serious threat for developing countries. Just over a third (35%) felt it to represent this level of threat for the UK as a whole, but fewer than 1 in 5 survey respondents (18%) considered climate change to be a *very* or *extremely* serious threat to themselves or their family.

This finding is in line with previous psychological research which has suggested that people perceive a range of environmental problems to be more serious the further away they are geographically (García-Mira et al., 2005).

A majority of survey respondents (55%) were of the view that the UK is already feeling the effects of climate change<sup>13</sup>. A further 23% considered that the UK would start feeling the effects of climate change within the next 10-25 years. Only 2% of people felt the UK would *never* experience the effects of climate change.

Furthermore, over three-quarters (78%) of survey respondents agreed with the separate statement "It is clear to me that climate change is really happening"<sup>14</sup>.

Where asked to provide a viewpoint on whether one's own local area is more likely to be affected by climate change than most other parts of Britain, a majority (60%) disagreed, with only 15% considering this to be the case<sup>15</sup>.

However, a substantial number of respondents (76%) stated that they had personally noticed signs of climate change during their lifetime<sup>16</sup>. When asked to expand on what these were, frequently mentioned responses included reference to changing weather patterns or extreme weather (39%); heavy rainfall, floods, or rising river levels (27%); changes to seasons (20%); and hot/dry weather, droughts, or rising temperatures (14%)<sup>17</sup>.

**76%**  
state they  
have  
noticed  
signs of  
climate  
change in  
their  
lifetime

<sup>12</sup> Appendix 2 Topline Q7

<sup>13</sup> Appendix 2 Topline Q8

<sup>14</sup> Appendix 2 Topline Q11

<sup>15</sup> Appendix 2 Topline Q14

<sup>16</sup> Appendix 2 Topline Q17

<sup>17</sup> Appendix 2 Topline Q18

### Relevance of climate change to everyday life

Further survey items were used to assess the relative importance of climate change in people's everyday lives.

Around 2 in 5 survey respondents (39%) stated that they discuss climate change with family and friends at least sometimes<sup>18</sup>, though for most people climate change was not something that arose in discussion particularly often<sup>19</sup>. Less than a fifth of survey respondents (17%) never discussed the subject with family and friends.

A higher proportion of respondents reported that they read and think about climate change<sup>20</sup>. Nearly half the respondents (46%) stated that they read and think about climate change at least sometimes. Only around 1 in 10 people (12%) stated that they never read or think about climate change. These results are perhaps surprising, in light of arguments which have been advanced that climate change is something that people very rarely discuss or think about (Marshall, 2014a,b; Corner, 2013). Although our results do not suggest that climate change is a topic which is very widely discussed, it does nevertheless appear to be raised by some people in conversation, and to be an issue to which people are attentive to some extent.

Most survey respondents, nevertheless, do not report climate change to be something they personally worry about on a regular basis. Approaching two-thirds of the sample (61%) *disagreed* with the survey item "I worry about climate change on a day-to-day basis", with only 18% being in agreement<sup>21</sup>.



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<sup>18</sup> Appendix 2 Topline Q10

<sup>19</sup> Across the sample, 6% stated that climate change was something that they *very often* discussed with family and friends; 33% that it was a topic they *sometimes* discussed; 17% responded *not very often*, 13% *rarely*, 14% *hardly ever*, and 17% *never*.

<sup>20</sup> Appendix 2 Topline Q10

<sup>21</sup> Appendix 2 Topline Q11

### Acting on climate change

The survey assessed people's willingness to undertake a range of personal action on climate change<sup>22</sup>. Overall there was wide variability in the types of action people state they were willing to undertake in the future. As an example, around half the respondents stated they would be willing to make significant changes to their lifestyle (52%) and to pay more for some goods and services (49%) in order to help address climate change<sup>23</sup>.

Survey respondents were also asked about their support for three broad policy areas<sup>24</sup>. Perhaps not surprisingly, the two policy options that implied direct monetary costs to the individual were relatively unpopular compared to personal action on climate change – these were nevertheless supported by as many people as opposed them. Tax increases to pay for more renewable energy were supported by 40% of respondents (39% opposed, with 18% neither support nor oppose). Just under a half (46%) indicated they would support road pricing schemes – this was framed as “Road pricing schemes to reduce traffic in town and city centres” – with 34% opposing and 18% neither support nor oppose.

Perhaps most notably, in terms of support for wider scale political action, around three-quarters (74%) of people supported the UK signing up to international agreements to limit carbon emissions, with only 7% opposing this measure.

**74%**  
support  
**7%** oppose  
the UK signing  
up to  
international  
agreements  
on climate  
change

<sup>22</sup> Appendix 2 Topline Q13-14

<sup>23</sup> By contrast, 20% stated they would be *unwilling* to make significant changes to their lifestyles; 29% said they would be *unwilling* to pay more for some goods and services.

<sup>24</sup> Appendix 2 Topline Q12

### Self-reported change in level of concern about climate change

Respondents were questioned as to whether their own attitudes about climate change have changed over time<sup>25</sup>. We asked survey respondents to indicate whether they felt they had become more or less concerned about climate change over the previous 12 months. The majority of survey respondents (69%) stated that their level of concern had remained *about the same*. Among those who reported changed attitudes, a higher proportion stated that they had become *more concerned* (26%) than had become *less concerned* (4%).

To provide further context, we asked those whose views had changed (n=264) to comment on the reasons for this<sup>26</sup>. By far the most common responses among those who had become more concerned referred to directly observable weather phenomena, these being changes to weather patterns or extreme weather events (25%), and reference to flooding and/or heavy rain (26%). This result hints at the importance of flooding and other extreme events in shaping climate change perceptions.

Only around 1 in 20 people (6%) referred to rising temperatures or hot/dry weather as a reason for increasing concern. Although 13% referred to media reports (including television, newspapers, and internet) as a reason for increasing concern, less than 1% referred to scientific evidence or reports. Figure 5 provides an overview of the more commonly cited reasons for growing concern, as well as a selection of less common reasons (for a more detailed breakdown see Appendix 2 Q16).

**26%**

**attribute  
increased  
personal  
concern to  
flooding or  
heavy rain**

**<1%**

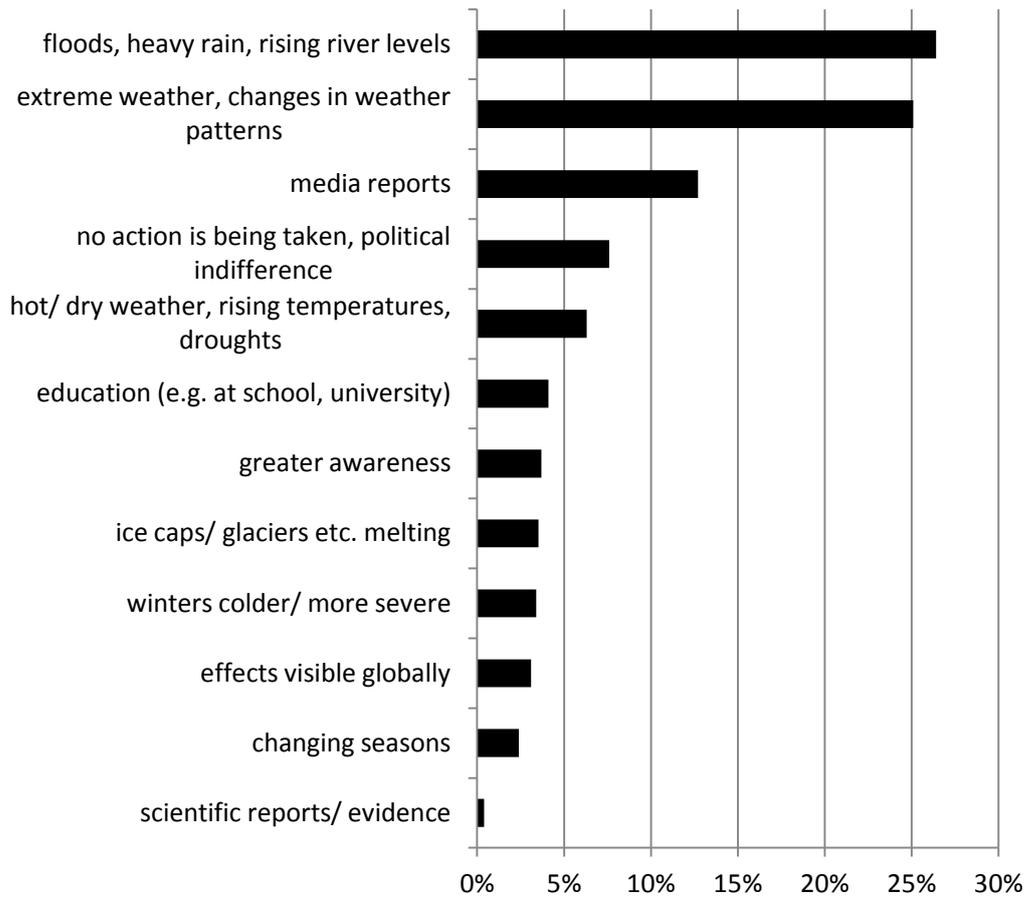
**attribute  
increased  
concern to  
scientific  
evidence**



<sup>25</sup> Appendix 2 Topline Q15

<sup>26</sup> Appendix 2 Topline Q16

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**Figure 5 Explanations for changing personal concern**  
Reasons most commonly cited in response to why respondents had become more concerned about climate change in the last 12 months (n=264).

### Attitudes towards impacts of climate change and climate adaptation

Research and policy regarding climate change adaptation is growing increasingly relevant as it becomes clear that some impacts of climate change are occurring now, and are inevitable in the future (IPCC, 2014). There is however little research examining the British public's attitudes in this area (though see Ipsos MORI, 2013 for recent work in this area).

As such, the survey included several items designed to explore people's attitudes towards present and future climate change impacts, as well as ways of responding to these. Respondents were asked for their perspective on whether certain weather phenomena have become more or less frequent (or stayed the same) during their lifetime<sup>27</sup>.

The weather phenomenon that was thought to have become more frequent by the largest proportion of respondents was flooding: 85% felt this had become either *a lot* more frequent, or *a little* more frequent. Close to two-thirds of respondents (64%) felt that severe storms had become more frequent. Just under a half (47%) of respondents felt the frequency of heatwaves had increased. A slightly lower proportion (43%) was of the view that dry periods without rain have become more frequent.

Respondents were also asked to indicate how likely they felt it was that these same weather phenomena would become more frequent *over the next 20 years*<sup>28</sup>. In large part, the responses to this item mirrored people's perceptions of changed frequency of weather phenomena in the past. For example, around a fifth of respondents (22%) considered it *virtually certain* that flooding would become more frequent over the next 20 years, with a further 61% viewing this as either *very likely* or *fairly likely*<sup>29</sup>.

The survey also elicited people's perceptions of the likelihood of various knock-on climate change impacts that may affect the UK over the next 20 years<sup>30</sup>. Of these impacts, four were framed as risks, with one potentially beneficial outcome also proposed. For the most part, respondents were of the view that potentially harmful consequences of climate change were likely to occur in the UK over the next 20 years. For example, a large majority of respondents (83%) were of the view that the UK would likely experience "major increases in food prices, as a result of extreme weather affecting harvests" over the next 20 years. A similar proportion (83%) also saw it as likely that the UK would see more homes than usual being flooded as a result of heavy rainfall.

These findings are summarised in Figure 6, showing proportions of people judging the likelihood of future climate-related events with different degrees of certainty.

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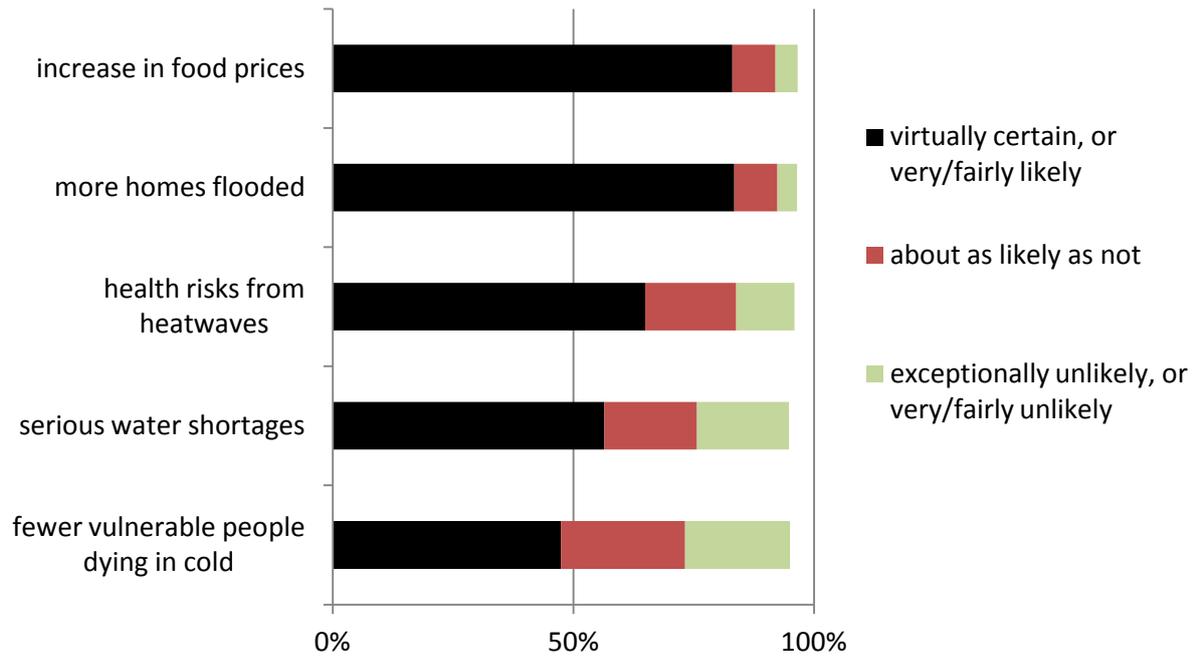
<sup>27</sup> Appendix 2 Topline Q19. For these items, a direct link was not made with climate change, although this may have been implied as these items followed the earlier sections on climate change perceptions described above.

<sup>28</sup> Appendix 2 Topline Q20

<sup>29</sup> Only 3% of respondents felt it unlikely that flooding would become more frequent. Around 10% felt that it is about as likely as not.

<sup>30</sup> Appendix 2 Topline Q21

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**Figure 6 Perceived likelihood of future climate-related events**  
Numbers do not add up to 100 because of additional 'don't know' responses.

Finally, this section also included questions on views concerning people's attitudes towards climate change adaptation at the personal level<sup>31</sup>. Overall, only a minority of respondents reported having already done or definitely intending to engage in these actions.

Of three options presented for personal adaptation, the action that had most frequently been undertaken was the installation of a water re-use system (16% reported having done this, with a further 24% stating they would definitely consider doing so, or were intending to do so). Only a small proportion of people (4%) indicated that they had already sought advice on how to cope with heatwaves and water shortages, although a further 19% stated they would definitely consider doing this, or were intending to do so. Likewise, only 6% of respondents indicated they had already found out about how to avoid health problems during heat waves, although a further 23% stated that they were either intending to do so, or would definitely consider doing so.

<sup>31</sup> Appendix 2 Topline Q49

### Section 1 conclusions: Climate change perceptions of the British public

- When asked to name the top three issues facing the UK over the next 20 years, the British public spontaneously referred to climate change more frequently than they did crime and education.
- Public acceptance of the reality and human component to climate change have returned to some of the highest levels observed. Very few people do not accept that climate change is happening.
- Overall levels of concern about climate change have remained largely constant over the past five years, although the proportion who report being *very* concerned has reduced markedly since 2005.
- Around a third of survey respondents see climate change as a serious threat to the UK, though fewer than 1 in 5 consider it to be a particularly serious threat to themselves or their family.
- A large majority say they have personally noticed signs of climate change, including extreme weather and flooding.
- Among those who say their own level of concern has changed over the past year, the primary reasons given relate to perceptions of observable weather phenomena, including floods and heavy rain.
- Ten times as many people support the UK signing up to international agreements on climate change as oppose this.

## Summary and implications of findings

**There has been a clear trend towards growing acceptance of the reality and human causation of climate change. This recognition of the physical realities of climate change is also reflected in people's attitudes towards political responses: a large majority support the UK's involvement in international action on climate change. On a more personal level, most people believe that they have encountered signs of a changing climate, mostly referring to the experience of particular weather phenomena. This is also the most salient factor underlying people's accounts of their own changing concern about climate change in the past 12 months.**

**These findings strongly suggest that levels of climate change scepticism in the UK are very limited overall and, furthermore, appear to be in decline. Although less prominent in the public mind than issues such as the economy and immigration, climate change has established itself on the agenda of the general public.**

## Section 2

# National Sample: Perceptions of the 2013/2014 flooding

(Base n = 1,002)



Here we report findings on the British public's perceptions of the 2013/2014 winter floods, and whether they perceived links between the floods and climate change.

### Beliefs about the severity of the flooding

Around three-quarters of respondents (75%) agreed that the floods which occurred in 2013/2014 were some of the worst events to have happened to the UK in recent years<sup>32</sup>. An equivalent proportion (75%) disagreed with a separate item proposing that the seriousness of the floods was exaggerated<sup>33</sup>.

Responses to further survey items also appear to characterise the floods as events which caused surprise, and for which the country was unprepared<sup>34</sup>. Just over half the respondents (55%) agreed that the extent of the flooding was completely unexpected (26% disagreed), while a substantial majority (82%) thought that the UK was not prepared for the magnitude of the floods.

A less clear picture presented itself when respondents were asked whether they agreed that affected regions around the UK coped well with the impacts of the flooding (36% agreed, while 38% disagreed)<sup>35</sup>.

### Perceived links between the flooding and climate change

A series of five questions investigated respondents' views on which factors had contributed to the flooding and its consequences (Figure 7)<sup>36</sup>.

Insufficient investment in flood defences was considered by three-quarters (77%) of respondents to have contributed a *fair amount* or a *great deal* to the flooding. A similar proportion felt that poor river and coastal management was to blame (75%). Just under three-quarters (73%) were of the view that development including house building in flood-prone areas played a part.

A small majority (61%) of respondents indicated that they felt that climate change had contributed to the flooding by a *fair amount* or a *great deal*.

Lack of preparation by households and businesses was judged to have contributed at least a *fair amount* to the floods and their impacts, by just under half of the respondents (46%).

75%

agree the  
floods were  
some of the  
worst events  
to have  
happened to  
the UK in  
recent years

<sup>32</sup> Appendix 2 Topline Q43

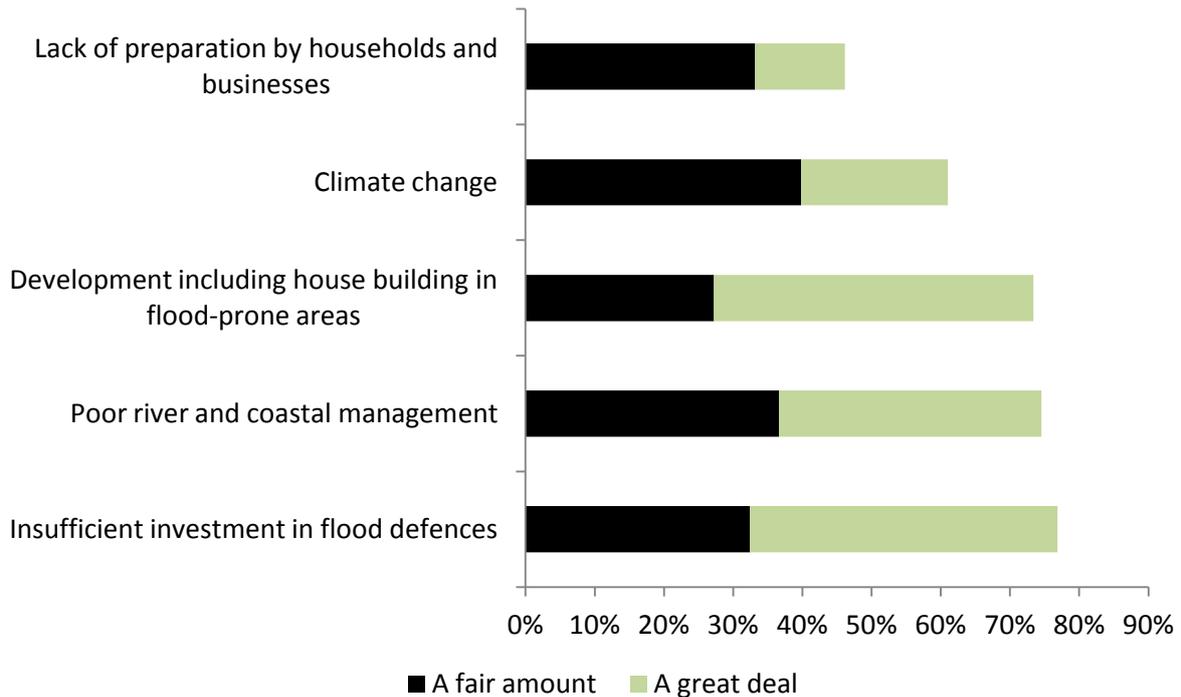
<sup>33</sup> Appendix 2 Topline Q43

<sup>34</sup> Appendix 2 Topline Q43

<sup>35</sup> Appendix 2 Topline Q43

<sup>36</sup> Appendix 2 Topline Q44

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**Figure 7 Perceptions of factors affecting the floods and their impact**  
Proportions show the extent to which people thought various factors had contributed to the 2013/2014 floods.

Respondents were asked to indicate their level of agreement with a further series of statements connecting the floods to climate change<sup>37</sup>. Close to two-thirds (64%) of respondents agreed that the floods were caused in part by climate change (12% disagreed). Accordingly, almost half the respondents (47%) disagreed with the statement “There was no clear cause of the floods, they were just freak weather events” (30% agreed).

A majority of respondents likewise indicated that they thought of the floods as current instances of climate change: two thirds of respondents were of the view that the floods were a sign that the impacts of climate change are happening now (66% agree vs. 12% disagree). An even clearer majority (72%) agreed with the statement “The floods showed us what we can expect in the future from climate change”, with only 10% expressing disagreement.

Despite a personal willingness among many respondents to make linkages between climate change and the flooding, a greater degree of caution was expressed regarding the technical or scientific attribution of the floods to climate change. A greater proportion of respondents agreed that it is impossible to link a single event like a flood to climate change (45%) than disagreed with this premise (33%). Likewise, more respondents were of the opinion that scientists don’t know enough to be able to link the floods to climate change (36% agreed) than disagreed with this premise (28%).

**72%**  
agree that the floods showed us what we can expect in the future from climate change

<sup>37</sup> Appendix 2 Topline Q45

### Portrayals of the links between climate change and flooding

Further survey items examined whether respondents felt that others had made linkages between flooding and climate change<sup>38</sup>. A greater proportion of respondents felt that most media reports at the time linked the floods to climate change than did not (52% agreed vs. 14% disagreed). Likewise, a majority of respondents (56% agreed vs. 7% disagreed) were of the view that some politicians at the time linked the floods to climate change.

Just over half the respondents (54%) felt that people they know thought the floods were caused in part by climate change; only 13% disagreed with this proposition. A majority of respondents disagreed with the proposition “most of the things I heard about the flooding had nothing to do with climate change” (41% disagreed vs. 25% agreed).

Data from the survey indicate that the floods were a subject that respondents were attentive to at the time these were occurring. Over two-thirds (70%) *disagreed* with a survey item suggesting that they did not pay much attention to news reports on the floods, with only 17% in agreement.

There is little opposition to the notion of discussing climate change at the time flooding is occurring. Around 1 in 5 people (18%) agreed that it was inappropriate to discuss climate change at a time when people are being affected by flooding, but a majority (60%) disagreed with this proposition.

### Perceived responsibility for protecting against flooding

Respondents clearly emphasised the responsibility of government to protect properties against flooding<sup>39</sup>: 71% agreed that government has the main responsibility, versus only 12% who disagreed.

Despite this, just under a half (46%) agreed that individuals “should be the ones to take responsibility to protect their homes from flooding”, although a further 31% disagreed with this proposition. Likewise, a small majority (54%) were of the view that communities are best placed to take responsibility to protect people from flooding, with 21% disagreeing.

Further questions were also included that asked respondents how likely they are to perform certain flood adaptation actions, or if they had actually already done so<sup>40</sup>.

The most frequently mentioned measure was obtaining insurance cover for flooding, with 26% indicating they had already done so. All other measures presented (e.g. signing up for flood warnings, buying flood protection products) were considerably less popular. For all the other proposed measures the national sample tended to think that they were either not relevant or that they were unlikely to perform these (for a further breakdown of these findings, see Appendix 2 Q49).

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<sup>38</sup> Appendix 2 Topline Q45

<sup>39</sup> Appendix 2 Topline Q48

<sup>40</sup> Appendix 2 Topline Q49

**Section 2 conclusions: Perceptions of the flooding among the British public**

- The 2013/2014 floods were felt to be major, unexpected events, for which the UK was unprepared.
- A majority of the public view the floods as having been caused in part by climate change, though this is in concert with a range of other contributing factors.
- The floods are seen by most people as a sign of what can be expected in the future from climate change.
- Although most people are prepared to link the floods and climate change in their own judgements, many express caution as to whether there is adequate scientific knowledge to make this connection.
- Most people paid attention to media reports of the flooding. Many were of the opinion that the media, politicians, and people they knew had made linkages between the flooding and climate change.



## Summary and implications of findings

**Unsurprisingly, the floods are recalled as a major event which affected the UK. Most attribute the floods themselves and the damage they caused to a range of factors, including development on flood plains, insufficient investment in flood defences, and the management of waterways. Nevertheless, a connection between the floods and climate change is made by most people.**

**Notwithstanding the genuine complexity involved in the attribution of discrete weather events to climate change, these findings suggest that climate change was associated by members of the public with the extreme weather and floods of 2013/2014.**

## Section 3

# Characterising the most directly affected sample

(Base n = 135)



One of the main aims of this project is to examine variability in perceptions depending on the extent to which people were affected by the 2013/2014 flooding.

Although we sampled additional respondents from five flood affected areas, not all respondents in these areas will have experienced the flooding in the same way. Some for example may have been relatively unaffected, whereas others may have experienced major disruption, damage, and inconvenience.

There are a number of different ways in which experience of the flooding may be conceptualised and defined. For the purposes of this report, we have chosen to focus on those respondents who report direct impacts on their property *and* who were living in heavily flood affected parts of the country during the 2013/2014 floods. This, we believe, represents a rigorous approach to identifying those respondents who were *most directly affected* in both material and geographical terms<sup>41</sup>.

In total, 135 respondents from the flood affected areas answered in the affirmative to question 25<sup>42</sup> (Appendix 2), indicating that their property had been affected by the floods between November 2013 and February 2014<sup>43</sup>. Compared to a nationally representative sample, this group of respondents includes slightly more males than females, is somewhat younger in age, and includes a somewhat higher percentage of respondents in social grades AB and C1 (more affluent social grades). Appendix 1 provides an overview comparing those respondents who were *most directly affected* by the floods to the national sample in terms of key socio-demographic variables. Overall however, these 135 respondents are diverse in terms of socio-economic background<sup>44</sup>.

**In this report, we refer to the *most directly affected* respondents as being those who (a) reside in the oversampled areas and (b) report their property was directly affected by the flooding events.**

Beyond impacts on property, flooding experience was measured in a number of additional ways to ensure both direct and indirect experiences of the flooding were captured, and in order to characterise the *most directly affected* sample in more detail. The following section provides an overview of these experiences as measured in the survey.

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<sup>41</sup> Other ways of conceptualising experience might involve considering those that report other types of disruptions as the result of the flooding – for example, disruption to travel or essential services. These different ways of examining experience are recorded using our survey methodology and will be considered in more detail in subsequent analyses, but are not used in the current report for comparative analysis of climate change perceptions.

<sup>42</sup> Respondents were asked: “Was your current or previous property affected by the floods between November 2013 and February 2014? This could include any land surrounding your home such as a garden or drive. If you live in a flat it might include communal areas such as a car park or hallway. Please also answer yes if you stopped the water from flooding your property by using some form of flood defence such as sand bags or a flood gate.”

<sup>43</sup> Of the 135 respondents in the *most directly affected* sample, 42% were resident in the oversampled area of Sunbury to Windsor, 20% in Aberystwyth, 16% in Hull, 12% in Gloucester to Tewkesbury, and 11% in Dawlish.

<sup>44</sup> Descriptive statistics reported for the 135 *most directly affected* respondents are weighted to the population of the over-sampled localities.

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- **Travel/work disruption:** 72% of the *most directly affected* sample also reported travel/work disruptions as a result of the floods. Of those who reported such disruptions, half of these reported having done so often or very frequently (52%). In contrast, only 20% of the national sample indicated that they had experienced travel disruption or disruption in their ability to work, and of those only a fifth did so often or very frequently (i.e. approximately 4% of the national sample).
- **Disruption to essential services (e.g. gas, electricity, water, telephone or internet):**  
Just over half of the *most directly affected* sample report such disruptions (55%). Of those that report disruption, just under half (48%) considered this to be a *fairly* or *very large* disruption. In contrast, only 7% of the national sample report any disruption at all to essential services.
- **Impacts on other people in the area:** 91% of respondents in the *most directly affected* sample report that other people in their area also experienced damage to their property from the floods. In contrast, only 14% of the national sample knew of people in their area that had experienced damage to their property.
- **Self-reported overall impact:** Respondents were also asked to summarize their experience of the floods in terms of how much they felt they had been personally affected. Given that the *most directly affected* sample encompasses those respondents who have experienced property damage, it is unsurprising that a majority consider the overall personal impact of the floods upon them to be a *fair amount* or a *great deal* (62%). In contrast, in the national sample only 6% stated that they had been affected a *fair amount* or a *great deal*.
- **Emotional experience:** To further gauge respondents' personal experience of the flooding, the survey included a question which asks respondents to rate (on a scale of 1 to 10) a series of emotions according to how strongly respondents felt them when asked to think about the floods. Although both the national and *most directly affected* sample reported relatively high levels of sympathy (average ratings of 7.65 and 6.88 out of 10 respectively), the *most directly affected* sample reported higher levels of emotions such as anxiety, anger, and distress. Not surprisingly then, the *most directly affected* sample can be said to have had a different emotional experience than the national sample with respect to more immediate emotions.

**Section 3 conclusions: Characterising the *most directly affected* sample**

In summary, it can be stated with confidence that those respondents grouped into our *most directly affected* sample had a more direct and salient experience of the flood events compared to the national sample, as would be expected. This is evident across a diverse set of measures gauging experience, from direct physical disruptions (e.g. to travel plans) to more personal and emotional experiences.



## Section 4

# The experience of flooding and its influence on climate change perceptions

# 4

This section of the report sets out to compare the responses of the *most directly affected* sample as defined in Section 3 (n=135) with those of the nationally representative sample (n=1,002), with a focus upon whether direct experience of the flooding influences perceptions of climate change. To achieve this we compare responses on a number of key climate change perception questions.

As detailed in our methodology it is important to note that questions on climate change came before any reference to the winter floods was made within the survey. This was done to avoid any links between flooding and climate change becoming salient before respondents had provided their perceptions on climate change. We consider this to be the most rigorous and appropriate means of testing whether differences in climate change perceptions are influenced by flooding experience, as opposed to these arising as an artefact of the survey design.

Table 2 provides an overview of the constructs and corresponding items we chose to test for differences (exact question wording is abridged in some cases, see Appendix 2 for precise wordings). A summary is given of the responses obtained<sup>45</sup> for both the national and the *most directly affected* samples; and whether statistical analysis found a significant difference between the two samples. The selection of survey items to examine for differences (outcome variables) was made on theoretical grounds before any descriptive data summaries were obtained. Our research goal was to cover three key constructs central to research into public perceptions of climate change, namely: climate change concern, psychological distance of climate change, and personal salience (importance) of climate change.

In the analyses reported below, we use multivariate analysis of variance (MANOVA) for items with more than two answer categories. Items with only two possible outcomes were analysed using binary logistic regression. In both cases, analyses controlled for gender and social grade by including them as covariates<sup>46</sup>; MANOVAs also account for inflated error rates arising from comparison of multiple outcome variables<sup>47</sup>.

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<sup>45</sup> In Table 2 we summarise data derived from multiple response categories. For example, respondents indicated their level of agreement to some questions on a 5-point scale, but here we show only summary percentages for those responding *tend to agree* or *strongly agree*.

Multivariate analyses were however conducted on the full data ranges in each case.

<sup>46</sup> We did not include age as a covariate in analyses as previous research has indicated this has a non-linear relationship with climate change perceptions.

<sup>47</sup> Inferential statistics were run using unweighted sample data.

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**Table 2** Statistical comparisons of climate change perceptions between the national and *most directly affected* samples<sup>48</sup>. Significant differences are reported using the convention \*\*\* ( $p < .001$ ), \*\* ( $p < .01$ ), and \* ( $p < .05$ ).

Construct	Question/Item	National sample (n=1,002)	<i>Most directly affected</i> sample (n=135)	Significance level
<b>Climate change concern</b>	How concerned are you about climate change?	68% fairly/very concerned	78% fairly/very concerned	** , $p = .002$
	Have you become more or less concerned about climate change over the past 12 months?	26% more concerned	46% more concerned	*** , $p < .000$
<b>Psychological distance of climate change</b>	My local area is more likely to be affected by climate change than most other places in Britain	15% agree	61% agree	*** , $p < .000$
	When will the UK start feeling the effects of climate change?	55% already feeling the effects	65% already feeling the effects	Non-significant ( $p = .105$ )
	How serious a threat is climate change to you and your family?	18% very to extremely serious	28% very to extremely serious	* , $p = .045$
<b>Salience</b>	I worry about climate change on a day-to-day basis	18% agree	21% agree	Non-significant ( $p = .242$ )
	What are the three most important issues facing the UK today?	11% mentioned climate change	18% mentioned climate change	Non-significant ( $p = .380$ )
	What are the three most important issues facing the UK in the next 20 years?	15% mentioned climate change	29% mentioned climate change	** , $p = .004$

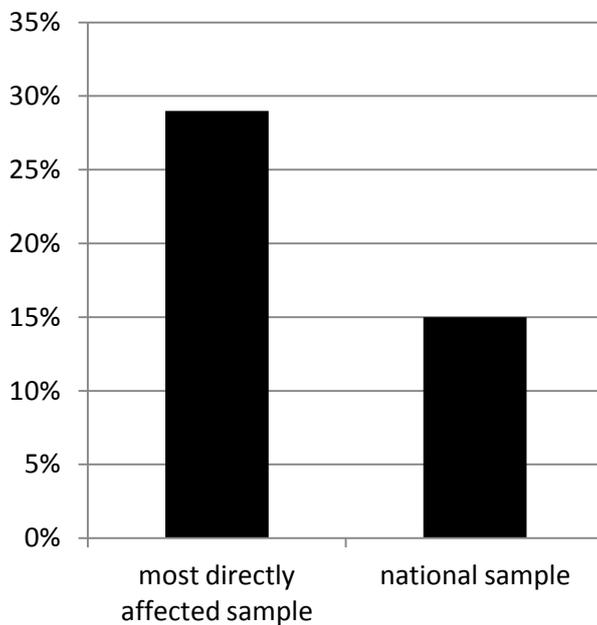
<sup>48</sup> Inferential statistics were run using unweighted data. Descriptive statistics reported in Table 2 for both national and *most directly affected* samples are derived from weighted data. For the *most directly affected* sample, descriptive statistics for the items as reported in Table 2, based on unweighted data, are respectively 79%, 45%, 59%, 67%, 31%, 20%, 16% and 30%.

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The results reveal a clear pattern, in that climate change is more salient and immediate on multiple measures among individuals in the *most directly affected* sample.

One particularly striking instance of this relates to the question that asked respondents to spontaneously name the three most important issues facing the UK in the *next 20 years*. Individuals among the *most directly affected* sample were twice as likely to mention climate change, than were people in the nationally representative sample, as illustrated in Figure 8 below.

The same trend manifests for the top three issues facing the UK *today* although this difference was found to be statistically non-significant.



**Figure 8** Spontaneous mention of climate change as among the top three issues facing the UK over the next 20 years  
Percentages show proportions of the national and *most directly affected* samples referring to climate change.

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As can be seen from Table 2, level of concern about climate change is significantly higher among the *most directly affected* respondents (78% state they are very or fairly concerned), compared to those respondents from the nationally representative sample (68% state they are very or fairly concerned). This is also reflected in respondents' own self-reported change in concern over the past 12 months. A significantly greater proportion of the *most directly affected* sample reported that their concern about climate change had increased over the past year (46%), than was the case in the national sample (26%).

Significant differences were also obtained for two of the three psychological distance items. A large and statistically significant difference was found in levels of agreement with the statement "My local area is more likely to be affected by climate change than most other places in Britain": 61% of the *most directly affected* sample strongly agreed or tended to agree with this statement, versus only 15% of the national sample.

**61% of the *most directly affected* sample**

**15% of the national sample**

**see their local area as more vulnerable to the effects of climate change**

A statistically significant difference was also found for the perception of climate change as a threat to self and family. The *most directly affected* sample were more likely to see climate change as a threat to themselves and their families, with 28% saying that this threat was very to extremely serious, as compared to 18% of the national sample.

Respondents in the *most directly affected* sample perceived climate change as closer in time (for example, 65% felt we are already feeling its effects) than did those in the national sample (55% felt we are already feeling its effects) – however, this difference was not statistically significant.

A relatively small and non-significant difference between samples emerged for levels of agreement with the statement "I worry about climate change on a day-to-day basis": 21% agreed with this in the *most directly affected* sample, versus 18% in the national sample.

#### Section 4 conclusions: The experience of flooding and its influence on climate change perceptions

- Compared to the national sample responses, those in the group (n=135) who were *most directly affected* by the floods during 2013/2014 are more concerned about climate change, more likely to state they have become more concerned in the last year, and more likely to see climate change as one of the most important issues facing the UK in the future.
- People who are in the *most directly affected* group are also more likely to consider climate change a serious threat to themselves and their family, and are much more likely to see their local area as more vulnerable to climatic events.
- These findings can be taken as going some considerable way to demonstrating cause and effect: our methodology was carefully constructed to allow us to examine the influence of flood experience upon climate change perceptions.

### Summary and implications of findings

**Our findings show that experience of the 2013/2014 winter flooding is related to key differences in climate change perceptions amongst the flood-affected group – and we conclude that this experience was most likely to be the underlying trigger for such differences. This applies both in terms of people’s perceptions of the proximity and threat posed from climate change, and in terms of the degree to which it is seen as a salient national concern.**

**These findings, together with those described in sections 1 and 2, point to the potential for experiences of extreme weather events to change attitudes towards climate change and to raise its salience among the public.**

## Conclusions and Implications

This report describes some of the headline findings from our study of British public perceptions of climate change, which was conducted in the autumn of 2014 following the major flooding events that occurred in the UK over the winter of 2013/2014. Taken as a whole these findings make a significant contribution to the international academic debate about the important relationship between public engagement with climate change and the forms of severe weather event that the world will increasingly have to deal with in the future. Although the data set is a complex one, and hence requires further more detailed analysis by the research team in subsequent months, several core findings are worthy of comment here.

Attitudes towards climate change in the UK as elsewhere have ebbed and flowed over the past 10 years (Capstick et al., 2015). The very high levels of concern seen in 2005 were followed by declines in belief over the period 2005-2010. Since then attitudes on various national UK surveys have tended to remain broadly stable. That being said, and looking at the period 2005-2014 as a whole, climate scepticism has only ever existed amongst a small minority of the British public, with large majorities (over 70% in most reliable surveys conducted during that period) endorsing that they believed the climate was indeed changing. The current results are therefore important in demonstrating, for the first time in a nationally representative sample collected since 2005, that levels of belief in the occurrence of climate change and its anthropogenic component are again close to those high levels last seen in 2005, while scepticism has correspondingly receded. That is an important initial finding of this research.

It is often argued that in relation to other everyday worries and concerns, climate change is a wholly insignificant issue for people. Very few people report worrying about climate change on a day-to-day basis, and the survey also confirms, not surprisingly, that other issues (such as the economy, the NHS, immigration) were deemed more important priorities for the UK today. This said, a significant proportion of our respondents did mention climate change as one of the three most important issues to face the UK over the coming 20 years. The proportion doing so is even more than those referring to crime and education, and not far below the number of people mentioning the NHS and health care, as concerns over the coming 20 years. Based upon this evidence, and that of the strengthening levels of belief in the reality of climate described above, it is clearly *not* the case to say that climate change has no importance for ordinary people. A further clear message to note, which has added significance given the international negotiations to be held in Paris at the end of 2015, is that people clearly expect governments to take the lead in tackling climate change, with very little opposition evident to the UK signing up to international agreements to do this.

Regarding the winter flooding of 2013/2014, the results are again complex and worthy of further detailed statistical analysis. But the findings from this survey make abundantly clear that, on a variety of measures, the British public have made various connections between the winter floods and climate change, and indeed viewed it as one of the contributing causes of the flooding. While other more immediate and obvious issues (perceived insufficient investment in flood defences, river and coastal management, floodplain development) were more salient, it is nevertheless genuinely surprising to see the large number of people

## PUBLIC PERCEPTIONS OF CLIMATE CHANGE IN BRITAIN FOLLOWING THE WINTER 2013/2014 FLOODING

who agreed with an attribution to climate change. Furthermore many also agree that the 2013/2014 winter flooding was an indication that climate change is impacting us now, and was a sign of further things to come. As Renn (2011) has put it, the floods may well be serving as a strong 'focusing event' drawing attention to climate change.

Alongside gathering a nationally representative sample of beliefs, a second core aim of the study was to investigate whether different understandings might exist within a flood affected sample. This in effect takes advantage of a naturally occurring experiment, where one group have a greatly amplified and personal experience of these disruptive events, as compared to a second group (in the national sample) who did not. This aspect of the research set the team a range of methodological challenges, not least to define a 'directly affected' sub-sample. In the event, and for the purposes of this report, we have focused on the relatively small group of people from the five flood affected areas who reported water directly affecting their property. The results are clear here too, with these individuals exhibiting a range of heightened concerns about the impacts of climate change both in general and in relation to their local area. It is particularly striking that amongst this group almost twice the proportion as found in the national sample answered unprompted, and at the very start of the survey before flooding was even mentioned by the interviewer, that climate change will be one of the top issues facing the UK in the next 20 years. In summary, these most directly affected respondents appear to be experiencing a reduced 'psychological distance' of climate change.

Reading across the evidence from both the national sample and directly affected respondents, our findings suggest quite strongly that a significant association between the winter flooding and climate change has already been formed in the British public mind. Perhaps this should come as no surprise, given the fact that climate change and UK climate impacts have been rising on the UK environmental policy agenda for well over 15 years now, while at the very same time incidences of major flooding have become a recurrent topic of British media attention stretching at least back to the major flooding in York in November 2000.

Our findings hold important implications for climate change communications also. As several previous analyses and commentaries have noted (e.g., Marshall, 2014a,b; Trenberth, 2012; Pidgeon and Fischhoff, 2011) the challenges faced by communicators seeking to engage the public around climate impacts are significant. Because of the probabilistic and often indirect link between 'weather' and 'climate', clearly worded statements about cause and effect – or confident predictions about the future – are often problematic. This is reflected in a further interesting finding of the current survey: that people were generally cautious in accepting that scientists could attribute any single weather event to climate change.

However, many of the most striking findings from a communication perspective relate to the consistently high levels of agreement with statements about the increasing prevalence of flooding, the attribution of flooding to climate change, and a widespread belief that the country was not prepared for what occurred. Taken together, these form the core of a potentially powerful message for communicators – and suggest that appealing to popular opinion on the need to tackle climate impacts more seriously may be an effective approach for prompting greater engagement with the issue. It is commonplace to hear politicians or campaigners refer to public opinion as a core justification for a

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policy or approach in many other domains – in effect, drawing on the power of social norms – and the current findings suggest that this may in turn also be a productive approach for engaging the public around climate impacts.

While data on public perceptions cannot overcome the challenges associated with the complexity of the relationship between weather and climate, the results presented in this report provide important guidance for the type of language and rhetoric that is likely to resonate with both flooded communities and the general population, ensuring that public engagement with climate impacts in the future is proportionate to the risks that they pose. We might also add that if many ordinary people themselves are beginning to make these linkages, both scientists and policy makers should be more decisive in seeking to demonstrate how weather events serve as an example of the future risks posed by climate change to the UK and its citizens.

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## Appendix 1: Socio-demographic profiles of the national and most directly affected sample<sup>49</sup>

	National sample (n=1,002); weighted	Most directly affected respondents (n=135); weighted
<b>Gender</b> (% male)	49%	60%
<b>Age</b>		
- 16-24	15%	23%
- 25-34	16%	11%
- 35-44	15%	16%
- 45-54	19%	18%
- 55-64	14%	11%
- 65-74	12%	15%
- 75+	9%	7%
<b>Social Grade<sup>a</sup></b>		
- AB	22%	34%
- C1	31%	38%
- C2	21%	13%
- DE	26%	16%
<b>Educational Attainment</b>		
- No formal qualifications	17%	8%
- GCSE/O-level/CSE	18%	9%
- Vocational qualification	10%	8%
- A-Level or equivalent	22%	32%
- Bachelor degree or equivalent	20%	26%
- Masters/PhD or equivalent	6%	11%
- Other	6%	6%
- Still studying	1%	0%
- Don't know	0%	0%
<b>Tenure</b>		
- Owner Occupier	64%	58%
- Renting	35%	39%
<b>Time lived in area</b>		
- Up to 3 years	15%	25%
- More than 3 and up to/including 5 years	7%	11%
- More than 5 and up to/including 7 years	6%	6%
- More than 7 and up to/including 10 years	10%	7%
- More than 10 years	63%	52%

<sup>a</sup>The social grades presented here reflect the social class definitions as used by the Institute of Practitioners in Advertising based on the occupation of the chief income earner. The classification is as follows: A: Higher managerial, administrative or professional; B: Intermediate managerial, administrative or professional; C1: Supervisor or clerical and junior managerial, administrative or professional; C2: Skilled manual workers; D: Semi and unskilled manual workers; and E: State pensioners, etc, with no other earnings (those at the lowest levels of subsistence).

<sup>49</sup> Descriptive statistics reported for the *most directly affected* respondents are weighted to the population of the over-sampled localities.

## Appendix 2: Questionnaire and Topline data

The following sections provide the complete data tables for all questions used in the survey conducted by Cardiff University.

- Results are based on 1,002 face-to-face CAPI interviews with members of the British public aged 16+.
- Data from flood-affected areas (as detailed in the methodology section of this report) have been excluded from this topline and will be presented elsewhere.
- Fieldwork was conducted between 28 August and 31 October 2014.
- Data are weighted to the profile of the known population.
- Occasionally results do not sum to 100, and this may be due use of multiple response categories, the exclusion of ‘don’t know’ answers, or rounding.
- Questions with multiple items employed random order presentation.
- Additional text that was used to obtain informed consent and assess eligibility to participate is not included here but is available from the authors on request.

Q1. **What would you say are the three most important issues facing the UK today? These don’t need to be environmental issues, but whatever issues you think are the most important.** (Unprompted spontaneous answers)<sup>50</sup>

Race relations / Immigration	35%
Economy / Economic situation	33%
Unemployment / Factory Closures / Lack of Industry	25%
National Health Service / Health care	20%
Terrorism	15%
Crime	14%
Poverty / Inequality	13%
Housing	12%
Education	12%
Climate change	11%
War / Conflict	11%
Protecting the environment / Dealing with pollution	9%
Inflation / Prices	8%
Pensions / Social security	6%
Politics / government / lack of faith / trust in politicians	4%
Don't know	4%

<sup>50</sup> In order to obtain informed consent from respondents, they were informed by interviewers before agreeing to take part that “We are carrying out a survey on behalf of Cardiff and Nottingham Universities about your thoughts, feelings and experience on a range of environmental issues, as well as views about your local area”. The first question of the survey proper (Q1) asked respondents to state what they saw as “the three most important issues facing the UK”. In order to be clear that there was not an expectation that they refer to environmental issues, they were also told within Q1: “These don’t need to be environmental issues, but whatever issues you think are the most important”.

Q2. **What would you say are the three most important issues that will face the UK in the next 20 years?** (Unprompted spontaneous answers)

Race relations / Immigration	31%
Economy / Economic situation	28%
Unemployment / Factory Closures / Lack of Industry	21%
National Health Service / Health care	19%
Climate change	15%
Terrorism	15%
Housing	14%
Poverty / Inequality	13%
War / Conflict	13%
Protecting the environment / Dealing with pollution	10%
Crime	10%
Education	9%
Pensions / Social security	8%
Inflation / Prices	6%
Population growth / over population	4%
Don't know	8%

Q3. **What first comes to mind when you hear the phrase 'climate change'?** (This question is not part of this report and will be analysed at a later stage. Percentages are aggregated for various terms that fell under the corresponding category.)

Weather	46%
Environment	39%
Concerns	12%
Scepticism	11%
Seasons	5%
Energy	3%
Neutral	2%
Miscellaneous	8%

Q4. **How concerned, if at all, are you about climate change, which is sometimes referred to as 'global warning'?**

	2005	2010	2011	2012	2013	2014
Very concerned	44%	28%	22%	24%	21%	<b>18%</b>
Fairly concerned	38%	43%	41%	50%	39%	<b>49%</b>
Not very concerned	12%	19%	22%	20%	27%	<b>24%</b>
Not at all concerned	3%	8%	13%	6%	7%	<b>7%</b>
Don't know	1%	2%	1%	1%	5%	<b>1%</b>

Q5. **As far as you know, do you think the world's climate is changing, or not?**

	2005	2010	2011	2012	2013	2014
Yes	91%	78%	80%	79%	72%	<b>88%</b>
No	4%	15%	13%	11%	19%	<b>6%</b>
Don't know	5%	6%	7%	11%	9%	<b>6%</b>

Q6. Which, if any, of the following best describes your opinion about the causes of climate change?

	2010	2011	2012	2013	2014
It is entirely caused by natural processes	6%	8%	4%	5%	4%
It is mainly caused by natural processes	12%	12%	12%	12%	9%
It is partly caused by natural processes and partly caused by human activity	47%	46%	48%	46%	48%
It is mainly caused by human activity	24%	22%	28%	22%	29%
It is entirely caused by human activity	7%	6%	4%	6%	7%
There is no such thing as climate change	2%	2%	2%	2%	1%
Don't know	3%	3%	2%	7%	2%

Q7. How serious a threat, if at all, is climate change to each of the following? Please read out the letter that applies.

	Extremely Serious	Very serious	Fairly serious	Not very serious	Not at all serious	Don't know
<b>You and your family</b>	5%	13%	39%	34%	7%	1%
<b>The UK as a whole</b>	9%	26%	44%	17%	3%	2%
<b>People in developing countries</b>	23%	38%	26%	6%	1%	5%

Q8. When, if at all, do you think the UK will start feeling the effects of climate change?

We are already feeling the effects	55%
In the next 10 years	12%
In the next 25 years	12%
In the next 50 years	8%
In the next 100 years	5%
Beyond the next 100 years	2%
Never	2%
Don't know	4%
No Opinion	0%

Q9. Thinking about your answers to the questions we have asked so far, how *confident* or not, would you say you are about your views on climate change overall? Please answer on a scale of 1 to 10 where 1 is not at all confident and 10 is extremely confident.

1 (not at all confident)	4%
2	2%
3	5%
4	7%
5	21%
6	12%
7	17%
8	14%
9	6%
10 (extremely confident)	11%
Don't know	0%

Q10. **How often, if at all, do you currently do each of the following?**

	Very often	Some times	Not very often	Rarely	Hardly ever	Never	Don't know
<b>Discuss climate change with your family and friends?</b>	6%	33%	17%	13%	14%	17%	0%
<b>Read and think about climate change?</b>	11%	35%	20%	12%	11%	12%	0%

Q11. **To what extent do you agree or disagree with the following statements?**

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>The impacts of climate change will be severe</b>	21%	44%	17%	8%	3%	6%	0%
<b>It is clear to me that climate change is really happening</b>	33%	45%	11%	6%	2%	2%	0%
<b>It is uncertain what the effects of climate change will be</b>	15%	50%	16%	11%	4%	4%	0%
<b>I worry about climate change on a day-to-day basis</b>	3%	15%	20%	32%	29%	1%	0%

Q12.

	Strongly support	Tend to support	Neither support nor oppose	Tend to oppose	Strongly oppose	Don't know
<b>Road pricing schemes to reduce traffic in town and city centres (Road pricing schemes require motorists to make a payment to the local council for each day they enter town or city centres. The payment tends to apply when congestion is heaviest.)</b>	15%	32%	18%	18%	15%	2%
<b>Tax increases to pay for more renewable energy</b>	9%	30%	18%	22%	17%	3%
<b>The UK signing up to international agreements to limit carbon emissions</b>	29%	45%	14%	4%	3%	4%

Q13.

**In the next few years, how likely or unlikely do you think you would be to do each of the following?**

**(IF RESPONDENT SAYS THEY HAVE ALREADY TAKEN ACTION: How likely would you be to do this again or to continue to do this in the next few years?)**

	Very likely	Fairly likely	About as likely as not	Fairly unlikely	Very unlikely	Don't know
<b>Change to a 'green' energy supplier which would reduce the impact on the environment from the electricity you use in your home (Your answers will not be shared with any energy companies for marketing or any other purpose, and they have no involvement in this research which is being conducted by Cardiff and Nottingham Universities.)</b>	16%	33%	24%	14%	9%	5%
<b>Cut down the amount you travel by car</b>	12%	28%	18%	21%	17%	4%
<b>Buy appliances that are more energy-efficient</b>	43%	41%	8%	5%	2%	1%
<b>Reduce the amount of energy you use at home</b>	31%	49%	12%	6%	2%	0%
<b>Write letters, email, or phone your local MP about climate change</b>	4%	10%	13%	27%	46%	0%
<b>Sign a petition about climate change, either online or in person</b>	17%	36%	14%	14%	19%	0%

Q14. **To what extent do you agree or disagree with the following statements?**

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>I would be willing to make significant changes to my lifestyle in order to help address climate change</b>	11%	42%	27%	13%	7%	1%	0%
<b>I would be willing to pay more for some goods and services in order to help address climate change</b>	8%	40%	21%	18%	11%	1%	0%
<b>Changing my lifestyle will make little difference with regards to climate change</b>	12%	33%	21%	25%	7%	1%	0%
<b>If everyone does their bit we can tackle the causes of climate change</b>	28%	47%	12%	8%	3%	1%	0%
<b>My local area is more likely to be affected by climate change than most other places in Britain</b>	2%	13%	21%	37%	23%	4%	0%

Q15. **Would you say you have become *more* or *less* concerned about climate change over the past 12 months, or have your views remained about the same?**

Much more concerned	5%
Slightly more concerned	21%
About the same	69%
Slightly less concerned	3%
Much less concerned	1%
Don't know	1%

THOSE WHO HAVE CHANGED VIEW TO MORE CONCERNED

Q16. **Why are you more concerned about climate change than you were 12 months ago?** (Top 15 mentions only, plus *don't know* and *no answer* responses)

Floods / heavy rain / rising river levels	26%
Weather / extreme weather / changes in weather patterns	25%
Media reports / seen it on TV / internet / news reports / newspapers	13%
You can see the effects / witnessed effects first hand	8%
Nothing's being done / political indifference / unwillingness to change	8%
Concerned for children / future generations	6%
Hot / dry weather / droughts / rising temperatures	6%
Pollution / emissions / poor air quality	5%
Education / learned about it at school / college / university / work	4%
Information / more info available / greater awareness	4%
Ice caps / glaciers / mountain peaks melting	4%
Storms / thunder / lightning storms	4%
Winters are colder / more severe	3%
Fossil fuels / fracking / over dependence on oil / gas etc.	3%
Effects can be seen overseas / around the world / global problem	3%
Don't know	2%
No answer	1%

Q17. **Have you noticed any signs of climate change during your lifetime or not?**

Yes	76%
No	20%
Don't know	3%

THOSE WHO HAVE NOTICED SIGNS OF CLIMATE CHANGE

Q18. **What signs of climate change have you noticed during your lifetime?** (Top 15 mentions only)

Weather / extreme weather / changing weather patterns	39%
Rain / heavy rainfall / floods / rising river levels	27%
Seasons / changes / early / no seasons	20%
Winter / wetter / warmer / milder winters	17%
Hot / dry weather / droughts / rising temperature	14%
Summer / changes to summer	6%
Summer / hot / dry summers	6%
Melting ice caps / glaciers	5%
Storms / thunder / lightning storms	4%
Winter / changes to winter	4%
Summer / cooler / wetter summers	4%
Pollutions / emissions / poor air quality	4%
Winter / snow / frost / heavy freezing / colder winters	4%
Flowers / plants / crops / impact on farming	4%
Rising water levels / sea / oceans / tides	3%
Don't know	1%
No answer	1%

Q19. During your life, do you feel the following have become more or less frequent in the UK, or stayed about the same?

	A lot more frequent	A little more frequent	About the same	A little less frequent	A lot less frequent	Don't know
<b>Dry periods without rain</b>	8%	35%	39%	13%	1%	4%
<b>Heatwaves, that is periods of very high temperatures</b>	7%	40%	36%	12%	2%	3%
<b>Flooding</b>	43%	42%	12%	1%	0%	2%
<b>Severe storms</b>	19%	45%	29%	3%	1%	3%

Q20.

	Virtually certain	Very likely	Fairly likely	About as likely as not	Fairly unlikely	Very unlikely	Exceptionally unlikely	Don't know
<b>Dry periods without rain</b>	7%	24%	33%	21%	9%	2%	0%	4%
<b>Heatwaves, that is periods of very high temperatures</b>	7%	25%	33%	20%	6%	3%	0%	5%
<b>Flooding</b>	22%	35%	26%	10%	1%	1%	0%	4%
<b>Severe storms</b>	13%	33%	30%	16%	2%	1%	1%	5%

Q21.

	Virtually certain	Very likely	Fairly likely	About as likely as not	Fairly unlikely	Very unlikely	Exceptionally unlikely	Don't know
<b>Major increases in food prices, as a result of extreme weather affecting harvests</b>	16%	37%	30%	9%	3%	1%	0%	3%
<b>More people's health suffering in extreme heat than is currently the case, due to more frequent heat waves</b>	7%	26%	33%	19%	9%	2%	1%	4%
<b>Fewer vulnerable people dying in the cold than is currently the case, due to milder winters</b>	3%	14%	30%	26%	17%	4%	1%	5%
<b>More homes being flooded than is currently the case as a result of heavy rainfall</b>	16%	35%	32%	9%	3%	1%	1%	3%
<b>Serious water shortages due to droughts and changes in rainfall patterns</b>	5%	20%	31%	19%	14%	5%	1%	5%

Q22.

	I don't think this is relevant to me	It is very unlikely I would do this	I would possibly consider doing this	I would definitely consider doing this	I am intending to do this	I've done this	Don't know
<b>Seek advice on how to cope with heatwaves and water shortages</b>	15%	28%	33%	17%	2%	4%	1%
<b>Find out about how to avoid health problems during heat waves</b>	16%	27%	28%	20%	3%	6%	1%
<b>Install a water re-use system (for example, to collect rainwater) in case of water shortages during droughts. (This could be to collect water for use in your home or garden.)</b>	11%	20%	27%	21%	3%	16%	2%

I'm going to ask you about your views on where you live, and about your views on other parts of the world

Q23. To what extent, if at all, do you feel a sense of belonging to the following areas? Please answer on a scale of 1 to 5 where 1 is no sense of belonging and 5 is a very strong sense of belonging.

	1 (no sense of belonging)	2	3	4	5 (very strong sense of belonging)	Don't know
<b>The local area where you live. By this I mean the area within a 15-20 minute walk from your home.</b>	4%	8%	17%	30%	41%	0%
<b>The city or county where you live.</b>	3%	8%	22%	31%	36%	1%
<b>Britain as a country.</b>	5%	9%	17%	26%	42%	1%
<b>Any other part of the world besides Britain.</b>	40%	16%	20%	12%	10%	2%

Q24. To what extent do you agree or disagree with the following statements about your neighbourhood, that is, the area close to where you live?

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know
<b>If I need advice about something I can go to someone in my neighbourhood</b>	21%	39%	18%	15%	6%	1%
<b>I believe my neighbours would help one another in an emergency of any kind</b>	50%	36%	6%	5%	2%	1%
<b>People in my local community pull together to improve the area</b>	22%	38%	21%	13%	4%	2%

I'm going to ask you about your thoughts on the floods which affected parts of the UK between November 2013 and February 2014. We appreciate you might have experienced flooding at another point but please answer the questions with last winter in mind, that is November 2013 to February 2014.

Q25. Was your current or previous property affected by the floods between November 2013 and February 2014? This could include any land surrounding your home such as a garden or drive. If you live in a flat it might include communal areas such as a car park or hallway. Please also answer yes if you stopped the water from flooding your property by using some form of flood defence such as sand bags or a flood gate.

Yes	3%
No	97%
Don't know	0%

QUESTION Q26 WAS ONLY ASKED OF THOSE ANSWERING 'YES' TO Q25.

Q26. Which if any of the following did the flood water reach? Please read out the letters that apply. (Remember please just think about any flooding which occurred between November 2013 and February 2014.) MULTICODE

Street or garden <i>outside</i> of the house/flat where I live	80%
Hallway or basement of my house/flat	4%
Below floor level in the lounge, kitchen or other habitable rooms	15%
Above floor level in the lounge, kitchen or other habitable rooms	9%
Business property or farmland	0%
My property was not damaged, but only because I took measures to prevent this (for example, using sandbags, flood boards)	0%
None of the above	7%

Q27. Did you experience travel disruption or disruption to your ability to work as a result of the floods or not?

Yes	20%
No	80%
Don't know	0%

THOSE WHO EXPERIENCED DISRUPTION TO TRAVEL OR WORK

Q28. How often did you experience this disruption during and after the floods?

Only on one occasion	21%
A small number of times	58%
Often	14%
Very frequently	7%
Don't know	0%

Q29. Did you experience disruption of essential services such as gas, electricity, water supply, drains, telephone or internet as a result of the floods or not?

Yes	7%
No	93%
Don't know	0%

THOSE WHO EXPERIENCED DISRUPTION TO ESSENTIAL SERVICES

Q30. How extensive was this disruption?

Very small	19%
Fairly small	29%
Moderate	44%
Fairly large	5%
Very large	3%
Don't know	0%

Q31. As far as you know, did other people in your area experience damage to their property from the floods or not? By your area I mean within a 15-20 minute walk from your home.

Yes	14%
No	83%
Don't know	3%

Q32. **As far as you know, were any of your friends and family directly affected by the floods or not? By directly affected I mean damage to their property or other types of significant disruption, for example to their work or to travel.**

Yes	23%
No	77%
Don't know	0%

Q33. **In summary, thinking about everything we have discussed so far, to what extent have you personally been affected by the floods that took place between November 2013 and February 2014?**

A great deal	1%
A fair amount	5%
Just a little	18%
Not at all	75%

QUESTIONS 34 TO 39 WERE ONLY ASKED OF THOSE WHO INDICATED THEY HAD BEEN AFFECTED IN SOME WAY (I.E. ANSWERING 'YES' TO ANY OF QUESTIONS 31 TO 33

**The following questions are about your experiences of the floods and how they affected you personally. We understand that some of the questions might be difficult for you to answer or ask for information you would prefer not to share. If there is any question you would prefer to not answer, just let me know and we'll move on to the next one.**

Q34. **At the time the floods were occurring in late 2013 and early 2014, to what extent, if at all, did they have a negative effect on your wellbeing? This could include how you felt physically or emotionally.**

They had no negative effect at all on my wellbeing	48%
They had a fairly small negative effect on my wellbeing	40%
They had a fairly large negative effect on my wellbeing	8%
They had a very large negative effect on my wellbeing	3%
Don't know	0%
Refused	0%

Q35. **At the time the floods were occurring, how well do you feel you were able to cope with the impacts of the flooding?**

Not at all well	2%
Not very well	8%
Fairly well	39%
Very well	40%
Don't know	0%
Not applicable	11%
Refused	0%

Q36. **At the time the floods were occurring, how much support, if any, would you say you had, either from friends, family or someone else?**

A great deal	8%
A fair amount	18%
Not very much	13%
None at all	25%
Don't know	1%
Not applicable	34%
Refused	0%

Q37. **As a result of the flooding, do you feel your household financial circumstances are better, worse or about the same?**

Better	1%
About the same	78%
A little worse	11%
Moderately worse	2%
A lot worse	1%
Don't know	6%
Refused	1%

Q38. **Which, if any, of the following have you experienced as a consequence of the flooding?**  
MULTICODE

Anxiety when it rains heavily	15%
Increased stress levels	10%
Sleeping problems	5%
None of the above	72%
Don't know	1%
Refused	0%

Q39. **To what extent do you agree or disagree that your life has got back to 'normal' since the floods.**

Strongly agree	43%
Tend to agree	17%
Neither agree nor disagree	16%
Tend to disagree	2%
Strongly disagree	0%
Not applicable	20%
Don't know	0%
No opinion	2%
Refused	0%

Q40. When the floods occurred between November 2013 and February 2014, how often, if at all, would you say you discussed the floods with your friends and family?

Nearly always	4%
Very often	24%
Sometimes	37%
Not very often	10%
Rarely	8%
Hardly ever	6%
Never	11%
Don't know	0%

Q41. When you think about the floods how strongly, if at all, have you felt each of the following emotions? Please rate each emotion on a scale of 1 to 10 where 1 means you have not felt it at all and 10 means you have felt it extremely.  
(If you have experienced flooding at other times, please just think about the feelings you have experienced in relation to the floods which occurred last winter, between November 2013 and February 2014. If you would like to say something about your other experiences then you will be able to do so towards the end of the interview.)

	1 (I have not felt this at all)	2	3	4	5	6	7	8	9	10 (I have felt this extremely)
<b>Sadness</b>	14%	7%	8%	5%	12%	9%	15%	13%	6%	11%
<b>Anxiety</b>	43%	15%	9%	6%	9%	7%	4%	3%	2%	3%
<b>Pride</b>	57%	8%	4%	4%	12%	5%	2%	3%	3%	2%
<b>Gratitude</b>	46%	7%	3%	5%	13%	6%	5%	5%	3%	6%
<b>Anger</b>	40%	10%	7%	5%	10%	7%	7%	6%	3%	5%
<b>Helplessness</b>	36%	8%	6%	5%	10%	5%	8%	9%	4%	8%
<b>Sympathy</b>	4%	2%	2%	3%	7%	6%	12%	20%	13%	30%
<b>Surprise</b>	23%	9%	10%	9%	16%	8%	8%	9%	3%	6%
<b>Indifference</b>	46%	13%	8%	5%	15%	4%	4%	3%	1%	2%
<b>Distress</b>	38%	12%	10%	5%	11%	7%	7%	5%	2%	3%

Q42. You rated the emotion [INSERT EMOTION FROM Q41] the highest, can you say a little more about why you experienced this emotion?  
You rated the emotions [INSERT EMOTIONS FROM Q41] the highest, can you choose one of these and say a little more about why you experienced this emotion?

Q43. Thinking about the floods which took place between November 2013 and February 2014, to what extent do you agree or disagree with the following statements?

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>The floods were some of the worst events to have happened to the UK in recent years</b>	28%	47%	13%	8%	2%	2%	0%
<b>The seriousness of the floods was exaggerated</b>	1%	8%	12%	39%	36%	4%	0%
<b>The extent of the flooding was completely unexpected</b>	18%	36%	17%	20%	5%	2%	0%
<b>The UK was not prepared for the magnitude of the floods</b>	42%	40%	8%	5%	3%	2%	0%
<b>Overall, affected regions around the UK coped well with the impacts of the flooding</b>	5%	31%	21%	29%	9%	4%	0%

Q44. Thinking about the floods and the impact they had. To what extent do you think each of the following contributed to the floods?

	Not at all	Just a little	A fair amount	A great deal	Don't know
<b>Climate change</b>	7%	25%	40%	21%	7%
<b>Poor river and coastal management</b>	4%	15%	37%	38%	6%
<b>Insufficient investment in flood defences</b>	3%	16%	32%	44%	4%
<b>Lack of preparation by households and businesses</b>	15%	33%	33%	13%	6%
<b>Development including house building in flood-prone areas</b>	4%	15%	27%	46%	7%

Q45. To what extent do you agree or disagree with the following statements about the floods that happened between November 2013 and February 2014?

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>The floods were caused, in part, by climate change</b>	11%	52%	19%	8%	4%	5%	0%
<b>There was no clear cause of the floods, they were just freak weather events</b>	6%	24%	19%	31%	15%	4%	1%
<b>The floods were a sign that the impacts of climate change are happening now</b>	19%	47%	18%	8%	4%	4%	1%
<b>Scientists don't know enough to be able to link the floods that took place earlier this year to climate change</b>	8%	28%	26%	23%	5%	9%	1%
<b>It is inappropriate to discuss climate change at a time when people are being affected by flooding</b>	5%	13%	19%	33%	28%	1%	1%
<b>It is impossible to link a single event like a flood to climate change</b>	12%	33%	18%	25%	8%	5%	0%
<b>The floods showed us what we can expect in the future from climate change</b>	22%	50%	17%	6%	4%	1%	0%
<b>Most media reports at the time linked the floods to climate change</b>	10%	42%	26%	11%	2%	8%	1%
<b>I did not pay much attention to news reports on the floods</b>	4%	13%	12%	41%	29%	1%	0%
<b>Some politicians at the time linked the floods to climate change</b>	9%	47%	22%	6%	1%	14%	1%
<b>People I know thought the floods were caused in part by climate change</b>	8%	46%	24%	10%	3%	8%	1%
<b>Most of the things I heard about the flooding had nothing to do with climate change</b>	5%	20%	25%	31%	11%	8%	0%

Q46. How many separate flood events, if any, have caused major disruption to your life since 2000.? This should include any experience of disruption over the past 12 months, as well as any major disruption you have experienced in previous places in which you have lived.

None	74%
One	10%
Two	9%
Three	3%
More than three	5%

I'm now going to ask you some questions about your thoughts on future flood risks, and the sorts of actions that can be taken to prevent against flooding.

Q47. Do you believe your property is at risk of flooding in the next 10 years?

Definitely at risk	2%
Probably at risk	10%
Probably not at risk	29%
Definitely not at risk	55%
Don't know	3%
Refused	0%

Q48. To what extent do you agree or disagree with the following statements?

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>If floods were to affect my property this year, I would feel able to cope with this</b>	9%	36%	14%	24%	11%	3%	1%
<b>Experiencing flooding can help bring a community together</b>	22%	58%	12%	5%	1%	2%	1%
<b>Individuals should be the ones to take responsibility to protect their homes from flooding</b>	8%	38%	21%	22%	10%	1%	0%
<b>The government has the main responsibility for protecting properties against flooding</b>	29%	42%	15%	11%	1%	1%	0%
<b>Communities are best placed to take responsibility to protect people from flooding</b>	9%	46%	23%	18%	4%	1%	0%

Q49.

**The following actions can be taken by individuals to help respond to the risks and the impacts of flooding. Which of the options best describes what you think about each of these?**

	I don't think this is relevant to me	It is very unlikely I would do this	I would possibly consider doing this	I would definitely consider doing this	I am intending to do this	I've done this already	Don't know
<b>Buying flood protection products such as flood boards or sand bags</b>	39%	24%	22%	12%	1%	1%	1%
<b>Making sure I have insurance cover for flooding</b>	23%	10%	15%	19%	3%	26%	3%
<b>Signing up for flood warnings from local agencies</b>	30%	18%	24%	20%	2%	4%	2%
<b>Seeking advice (for example, from a building surveyor) on how to protect my property against flooding</b>	34%	24%	21%	16%	1%	1%	2%
<b>Thinking through or preparing a plan of what I should do in a flood</b>	31%	18%	28%	17%	2%	2%	2%
<b>Attending meetings or joining a community group related to flooding</b>	31%	29%	26%	11%	1%	0%	2%

Q50. **To what extent do you agree or disagree with the following statements?**  
 (We are interested in people's wider beliefs about society and how these relate to attitudes on the environment.)

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	No opinion
<b>Discrimination against minorities is still a very serious problem in our society</b>	27%	39%	18%	9%	2%	4%	1%
<b>The world would be a better place if its wealth were divided equally among nations</b>	24%	33%	18%	15%	6%	3%	1%
<b>In my ideal society, all basic needs such as food, housing, education and health care would be guaranteed by the government for everyone</b>	37%	37%	10%	12%	4%	0%	0%
<b>People should be allowed to make as much money as they can for themselves, even if others are not able to</b>	17%	34%	19%	16%	10%	2%	1%
<b>When I have problems, I try to solve them on my own</b>	38%	47%	8%	5%	1%	0%	0%
<b>If the government spent less time trying to fix everybody's problems, we'd all be a lot better off</b>	19%	26%	22%	17%	10%	4%	1%
<b>Being environmentally friendly is an important part of who I am</b>	20%	47%	21%	8%	2%	1%	1%
<b>I think of myself as someone who is very concerned with environmental issues</b>	16%	42%	25%	12%	4%	0%	1%

Q51. **Before today, had you been interviewed about your opinion on climate change since November 2013 or not? This could have been an interview for a journalist, university researcher or market survey company?**

Yes	2%
No	98%
Don't know	0%

Q52. **Have you attended any public events in which the winter floods were discussed in the context of climate change?**

Yes	2%
No	98%
Don't know	0%

I would now like to finish the interview by asking you some questions about you and your household. The answers to these questions will help us understand the views of different groups of people on climate change and the recent floods.

Q53. **Here is a list of daily newspapers. Which, if any, of these do you read or look at regularly? By regularly I mean on average at least three out of four issues. MULTICODE**

Daily Mail	12%
The Sun	11%
The Guardian	8%
Metro	8%
The Daily Telegraph	5%
Daily Mirror	5%
The Times	5%
The Independent	3%
Evening Standard	3%
"i" newspaper	2%
Daily Star	2%
Daily Express	1%
Financial Times	1%
The Scotsman	1%
Daily Record	0%
None of these	55%
Don't know	0%

Q54. **How long have you lived in this area?**

Up to and including 6 months	1%
More than six months, up to and including 1 year	3%
More than 1 year, up to and including 3 years	11%
More than 3 years, up to and including 5 years	7%
More than 5 years, up to and including 7 years	6%
More than 7 years, up to and including 10 years	10%
More than 10 years	63%
Don't know	0%
Refused	0%

Q55. **In which of these ways does your household occupy this accommodation?**

Buying with mortgage loan	30%
Own it outright	34%
Part rent/part mortgage	2%
Rents (including rents paid by housing benefit)	33%
Living here rent free	0%
Don't know	0%
Refused	0%

Q56. **Which, if any, is the highest educational or professional qualification you have obtained?  
Please read out the letter or letters which apply.**

GCSE / O-level / CSE	18%
Vocational qualifications (=NVQ1+2)	10%
A-Level or equivalent (=NVQ3)	22%
Bachelor Degree or equivalent (=NVQ4)	20%
Masters / PhD or equivalent	6%
Other	6%
No formal qualifications	17%
Still studying	1%
Don't know	0%

Q57. OCCUPATION OF CHIEF INCOME EARNER;  
INTERVIEWER: RECORD OCCUPATION OF CHIEF INCOME EARNER THEN CODE CLASS  
BELOW. Position / rank / grade: Qualifications / degrees / apprenticeships: Industry / type of  
company: Number of staff responsible for: (PROBE FOR PENSION). SINGLE CODE ONLY

A	3%
B	19%
C1	31%
C2	21%
D	15%
E	11%

Q58. **How would you vote if there were a General Election tomorrow?**

Labour	21%
Conservative	16%
UK Independence Party	11%
Green Party	4%
Scottish Nationalist	3%
Liberal Democrats (Lib Dem)	3%
Plaid Cymru	0%
British National Party	0%
Democratic Party	0%
Other	1%
Would not vote	12%
Undecided	31%
Refused	2%

Q59. **Before we complete the survey are there any other comments that you'd like to make about  
what we have discussed today or your experiences of flooding?  
TO BE ANALYSED**

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