

“Communicating the hidden”: drought risk, water shortage and communities

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About DRY

The Drought Risk and You (DRY) project was launched, in April 2014, as one of four projects funded under the Drought and Water Scarcity Research Programme, funded by the UK Research Councils (NERC, EPSRC, ESRC, BBSRC and AHRC, grant number NE/L01033X/1)¹.

The DRY project specifically sought to connect natural science research with narrative and arts-based approaches to develop a decision-support tool for drought planning. It brought together natural and social scientists, with academics in the arts and humanities, together with local, regional and national stakeholders to co-create knowledge and understanding of drought risk in Britain.

This research summary forms one of a suite of outputs from the DRY project and its related project, 'About Drought':

- First briefing paper developed through the DRY project and led by partner Climate Outreach: *Communicating Drought in a Changing Climate*, which drew on the extant international literature to distil key principles from climate change communication that can be applied when communicating drought.
Available at: <http://dryproject.co.uk/1476-2/>
- DRY Public communication brief – *Reaching Publics: Tailoring and Targeting Drought Risk Communications*. Available at: <https://dryutility.info/resources/>
- DRY Briefing document – *Myth busting about UK drought: insights from the DRY project*.
Available at: <https://dryutility.info/resources/>

In addition, the 'About Drought' project (aboutdrought.info) has produced guidance on how water companies might communicate about drought to the public.

¹ Natural Environment Research Council (NERC), Engineering and Physical Sciences Research Council (EPSRC), Economic and Social Research Council (ESRC), Biotechnology and Biological Sciences Research Council (BBSRC), Arts and Humanities Research Council (AHRC).

Introduction

This summary of communication experiences draws on the expertise of a wide range of stakeholders involved in the Drought Risk and You (DRY) Project. These included:

- those with statutory responsibility for water resources (water supply companies; environmental regulators);
- those with non-statutory organisational roles (e.g. within NGOs); and
- those with personal interests in water use (e.g. NAS²).

Through the involvement of diverse regional stakeholders, we sought to capture and recognise the communication needs of wide-ranging groups (e.g. with different socio-economic backgrounds, distinctive cultural groups, those with different levels of science capital and water experiences). These stakeholders were involved, throughout the project, in workshops focused on seven case-study catchments, as well as a national stakeholder competency group. In addition to narrative evidence gathered through the workshops, interviews were conducted with 17 stakeholders to explore their experiences of communicating drought risk with public groups, and what they consider as examples of good communication practice in drought risk and water scarcity.

This summary outlines the wide range of understandings and relationships with water that were uncovered, through the various research strands within the DRY Project. As such, it presents a range of issues and considerations for connecting communities and publics with water. The summary will be of interest to those stakeholders who seek to engage communities with issues around water scarcity and drought, from national regulatory bodies, to local wildlife charities and NGOs working in community development and resilience-building. In this research summary, public participants are referred to by first name and region, while stakeholders are referred to by stakeholder category and region.

This research summary should also be considered in conjunction with materials already in the public domain, like the University of Lincoln, Nebraska's 'Hydro-illogical cycle', which highlights the issue of weather experienced by publics when trying to communicate about drought risk³.

² The National Allotment Society (NAS)

³ See Wilhite, Donald A., "Breaking the Hydro-Illogical Cycle: Changing the Paradigm for Drought Management" (2012). Drought Mitigation Center Faculty Publications. 53. <http://digitalcommons.unl.edu/droughtfacpub/53>

Challenges to communicating drought in Britain

Sensory perception of environmental hazards is known to be important for the public⁴. Whereas river, surface water, coastal and tidal floods are highly visible, media-profiled hazards which stimulate the senses and summon emotions of awe, anger and fear, drought is silent, slow onset, pervasive, diffuse and hidden. The high visibility of flooding can also lead to a perception that flooding is a more regular event, as explained by Ruth, East of England:

"We've had quite a lot of flooding in recent years. I remember, probably about 15 years or so ago, it flooded quite badly and even the country park, where most people go to walk and whatever, flooded quite badly. Yeah, we do have quite a lot of flooding in the area. The rivers do rise quite high, sort of going across paths. I don't think there's been any major damage to property yet, but certainly we do have regular floods."

Ruth, East of England

"The seasons and the weather patterns seem to be more, I am trying to think of the right word... We seem to get massive storms and then massive dry spells, so I think we get enough water over the year, but it's never at the right time or you just get one big hit."

Ian, East of England

Furthermore, from DRY project workshops and interviews, it is clear that there is a perception that Britain is relatively and persistently wet and therefore drought is not a concern. Across the range of stakeholders involved in the project, many highlighted the difficulty of getting the public's attention. Drought simply is not in the public consciousness as a salient risk because there is an assumption that "Britain is wet" and that, even if there has been a dry spell, it will rain soon. This view has been reinforced by memories of recent past droughts that have concluded with heavy rain. The DRY project found that different publics shared several pervasive drought myths (e.g. that water in the UK is infinite in supply; see separate briefing paper.)

⁴ Science Communication Unit, University of the West of England, Bristol (2014). Science for Environment Policy FutureBrief: Public risk perception and environmental policy. Report produced for the European Commission DG Environment, September 2014. Available at: <http://ec.europa.eu/science-environment-policy>

"I wouldn't say people [in Britain] would laugh if you talk about drought, but they don't take it seriously because they've been used to the opposite. It would be like, it sounds awful, but it would be like going to a community where nobody's got any food and saying 'are you worried about obesity?'"

NGO, Wales

We also know that people find it easier to recall personally salient past weather events⁵. At the start of the DRY project, Britain had not experienced a significant geographically extensive summer drought in a decade. This means that, for many of our interviewees, there was limited recent sensory experiences to which communication could be tied, leading to perceptual barriers in connecting past, present and future risk. The dry summer of 2018 provided an opportunity to connect stakeholders and publics with the risk of drought.

The 'iconic' drought of 1976 is likely to have been the last time many people in the UK experienced stand pipes, rota cuts or tankers (i.e. the last time there was direct impact of drought on public water supply). This particular experience is further complicated by positive memories, for those who were children, adolescents or young adults at the time, of barbecues, outdoor parties and enjoying summer sunshine. Memories of those who were running households, farms and other water intensive and reliant businesses are more 'hidden' and much of the adult British public today will have no living memory of the 1975–76 drought.

In fact, the most recent UK drought (2010–12) was the result of dry winters, a pattern not uncommon for UK droughts⁶. However, for the public drought is more often associated with heat–hot, summer weather⁷–which may also be perceived positively, providing a challenge to communication. Key communication challenges include the fact that all droughts are different, requiring flexible plans and messaging. Challenges in framing messages are further exacerbated by the fact that the word 'drought' can be used in different ways, is sometimes highly politicised, and some organisations prefer to avoid the word altogether, instead using phrases like 'prolonged dry period'.

From the DRY Project research, it seems that the typical UK residential dweller tends to conceive of their water supply as a black box, with guaranteed water coming in, from unknown sources, and sewerage going out. Water supply systems vary greatly around the country (i.e. surface water-dependant vs aquifer-dependant), and are affected differently by drought. Stakeholder interviews highlighted not only the public's lack of knowledge of local water supply systems, but also a general lack of understanding of how water cycles in the environment–how many people are aware of groundwater, for example.

⁵ Hulme, M. et al. (2009) Unstable Climates: Exploring statistical and social constructions of 'normal' climate. *Geoforum* 40: 197-206

⁶ Marsh, T.J., Parry, S., Kendon, M.C., and Hannaford, J. (2013). The 2010-12 drought and subsequent extensive flooding. *Centre for Ecology & Hydrology*. 54 pages.

⁷ De Bruin, W. B., et al. (2016). Promoting protection against a threat that evokes positive affect: The case of heatwaves in the United Kingdom. *J. Experimental Psychology*, 22(3):261-71.

Box 1: Britain's lack of connection to water issues presents key communication challenges

- Britain is perceived as wet
- Drought is not on people's radar
- Communication is reactive—people only talk about drought when one happens and, even then, there is concern about when to communicate
- Lack of receptivity—you can't talk about drought when it's raining
- Lack of understanding of water supply systems
- Lack of understanding on how water cycles through the environment
- Challenge of uncertainty e.g. over forecasts
- Psychological distance e.g. slow onset
- Language—the word 'drought' is taboo in some professional contexts

This general lack of public connection to water supply and their river catchments presents a major challenge for those seeking to communicate about drought risk. If people do not understand where their water supply comes from or goes to and assume, as many seem to, that drought only happens when there is an impact on public water supply, the scale of the communication challenge becomes clear. These challenges could be exacerbated by a lack of understanding over who has rights to water in the local context (e.g. farms, businesses, hydropower, canals, fishing). Security concerns were suggested as a reason water companies might not promote public awareness about where their water supply comes from—with regional and international differences in practice. Some of these key communication challenges are highlighted in Box 1.

A particular challenge, identified in the DRY Project, is the strong perceptual links that occur between drought and 'the other' nationally and globally; droughts are not something associated with the green and lush 'perennially wet' UK. Indeed, stakeholders emphasise that there may be 'enough' water, but that water may not be of sufficient quality. If communication about drought is challenging in Wales and southwest UK, then the perceptual bar is even higher in Scotland, where water is seen as a right. This is despite the fact that some 'unexpected' areas like the Scottish Western Isles have experienced relatively recent drought. There can also be a perception that droughts are caused by mismanagement of water (e.g. water pipe leaks), rather than water shortage, with implications for responsibilities for action and adaptation.

Defining drought

One of the challenges presented to those seeking to communicate with publics, about drought and water scarcity, is the range of different ways in which drought can be defined. Drought is a relative term, grounded in a local context⁸. We can describe drought as a relative dryness compared to background conditions. These background conditions can be defined based on rainfall, evaporation, soil moisture, river flow or similar measures. Definitions of drought, therefore, vary internationally, according to the local climate, and there is no single definition of drought. Nonetheless, droughts are characterised by some degree of rainfall shortage and vary in extent, duration, intensity and range of impacts. In the UK, the Environment Agency⁹ identify three main types of drought which may occur separately or together:

- **Environmental drought** – when a shortage of rainfall negatively impacts the environment through reduced river flow, low groundwater levels and insufficient soil moisture. This may result in signs of stress in wildlife, fish and habitats.
- **Agricultural drought** – when the shortage of rainfall and soil moisture affects crop production or farming practices, such as spray irrigation. Irrigation may be constrained. This often occurs before there is an impact on public water supply.
- **Water supply drought** – when the shortage of rainfall causes concern about human water supply. This can take longer to develop than environmental or agricultural drought because water company supply systems are developed to cope with dry weather (for example, use of reservoirs).

Table 1 illustrates the range of factors that influence receptivity to drought communication, as identified in the DRY Project. These present both challenges and opportunities for drought risk communication and shed light on the approaches that may be needed to reach specific public groups.

⁸ Marsh et al 2007. Major droughts in England and Wales 1800-2006, RMets, doi: 10.1002/wea.67; Environment Agency 2017. Drought response: Our framework for England. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625006/LIT_10104.pdf [accessed 26/09/18]

⁹ Environment Agency 2017. Drought response: Our framework for England. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625006/LIT_10104.pdf [accessed 26/09/18]

Table 1: Challenges to communicating with publics and stakeholders about drought risks in the UK

Factors that influence receptiveness to drought communications	Examples
Hidden, slow onset hazard	Drought is hard to see; drought is often associated with heatwaves; drought happens elsewhere
Definitions	Different types of drought; confusing and changeable definitions
Sectoral	Some sectors engage with drought (e.g. agriculture); sectors are affected by different types of drought (e.g. soil moisture or hydrological impacts)
Cultural	Britain is viewed as wet; media representations of drought (often as failure)
Psychological distance	Slow onset; little personal experience
Visualisation	Hard to visualise drought as a 'hidden risk'
Affective responses	Hard to find emotional hooks; flooding seen as more affective
Relevance	Uncertainty over who is responsible; lack of connection to catchments/water systems
Knowledge	Lack of knowledge of actions to take; lack of knowledge or risks of drought in the UK
Timing	Hard to determine when to start communications about impending drought
Language	The term 'drought' can be seen as negative or 'taboo' by some stakeholders; it is a politicised term; scientific and risk language are hard for some publics

During the course of the DRY Project, we had many opportunities to talk with members of the public at a wide range of local festivals and events. Ways into talking about drought were often with respect to an individual's wider water relations and behaviours. Conversations that were nominally about drought were also often turned to other things; discussion of local or recent flooding events was one common response, for example. We also noticed that politics and the privatisation of water companies offered a 'distraction' from talking about the causes and impacts of drought. When asked about their experiences of drought, we had many responses about the responsibility of water companies, shareholder profits and the perceived problems of leaks. These 'distractions' form a barrier to communication which water companies may be best placed to address. We have produced a briefing paper, drawing on the experiences of water companies, which will be available on the AboutDrought.info website.

Summary

Through our work with stakeholders and members of the public, it is evident that the British public largely lacks a connection to drought, viewing it as something that occurs elsewhere. This presents a challenge for stakeholders who wish to engage the public in discussions about drought risk, whether as an emerging risk during dry weather or as a longer-term matter of resilience. Perceptions of drought risk in the UK appear to share similarities with perceptions of climate change risk, in that droughts develop and emerge over relatively long timescales, making them 'hard to see' in the early stages. Further, for many groups within the public, a lack of connection with local water and water systems makes it hard to connect personal water use with available resources; the tap through which water arrives at the house is the visible part of a rather large black box, comprising the hydrological and water supply systems.

Droughts are notoriously hard to forecast, particularly in a maritime climate, such as that of the UK. What might look like an impending drought can, and does, turn into a flood as meteorological conditions change. It is also possible to have episodic flooding in conditions of underlying drought. While there may be some certainty with weather forecasts over the short-term, longer-term forecasts (which might be needed, in the context of when to implement a water restriction) are necessarily less certain. Research on future water resilience is further complicated by the need to draw on climate change predictions, further exacerbating long term uncertainties over risks to supply. Finding ways to engage the public with such uncertainties is challenging but necessary.

Follow up reading

Weitkamp, E., McEwen, L. J. and Ramirez, P. (submitted) Communicating the hidden: towards a framework for drought risk communication in maritime climates.



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