UNIVERSITY OF HULL

Flooding Through the Twentieth Century: A Hull of a Problem

A thesis submitted for the degree of

PhD Human Geography

Energy and Environment Institute,

University of Hull

by

Flavia Manieri (BA., MA.)

March 2024

A Lucky, trovato sul ciglio della strada in una fredda notte di inverno.

Dopo quattordici anni, continua a portare gioia e amore nelle nostre vite.

Acknowledgements

I would like to thank:

Colleagues at the Energy & Environment Institute and at the Department of Geography, Geology and Environment of the University of Hull.

The friendly staff at the Hull History Centre and the East Riding Archives for their assistance during my visits.

My mentor and friend Professor Anneli Ekblom at Uppsala University for her endless encouragement and support.

Fellow early career researchers and senior staff at the Department of Archaeology and Ancient History at Uppsala University for being so welcoming during my stay as visiting doctoral student.

My friends in Hull and the ones scattered around the world for giving me many, many things to enjoy outside of my research.

My parents for being there, always.

Finally, my partner Tom and my dog Odin, for giving me so much joy and simply for being their wonderful selves.

Abstract

The city of Kingston upon Hull, England, has a long history of flooding that has recently been brought back to life thanks to projects such as the Living With Water Initiative and the University of Hull's Arts and Humanities Research Council-funded Risky Cities project. This study contributes to the existing literature by offering an in-depth account of flooding in twentieth-century Hull. A timeline of floods occurred between 1901-1990 is constructed, with particular focus on the floods of 1921, 1936, 1954, 1961, 1969, 1983 and 1984.

This thesis uses accounts of local and regional newspapers, along with a few oral histories, to explore moderate and major flood events occurred in twentieth-century Hull and to examine changing public perceptions of flood risk during that time. By using newspaper accounts, this thesis highlights the importance of newspapers not just as an historical source for flooding, but as a gauge for public perceptions of risk. Newspapers accounts of Hull flooding both reflect public perceptions of risk and also themselves shape these perceptions. My study of newspaper accounts of Hull flooding helps amplify the theory that risk is culturally constructed and therefore the way a flood is perceived or acted upon by a community is largely determined by culture. Furthermore, knowledge from this historical exploration of twentieth-century flooding in Hull can provide better insight into current flood events (in terms of causes, impacts and responses) and help inform authorities on new strategies to reduce future impacts of flooding by looking at how previous floods were dealt with. Finally, this thesis highlights the value of approaching and studying flooding from an explicitly historical, social, and cultural perspective, and hopes to open more channels for mutual dialogues between the more traditional techno-scientific flood studies and the humanities and social sciences.

COVID-19 impact statement

This PhD was intended to be substantially archive-based, with data collection also including oral histories to be conducted with Hull residents. The COVID-19 pandemic began during the first year of my PhD, with the closure of the Hull History Centre and the East Riding Archives between March 2020 and April 2021. During the second lockdown in the fall of 2020, I decided to suspend my studies for six months as the COVID-19 pandemic and its related restrictions had a notable effect on my mental health. I agreed with my supervisors to return to my PhD the following year hoping I could resume research as (semi-)normal.

When I returned to Hull in May 2021, the second national lockdown was coming to an end, but many restrictions remained in place. Such restrictions included accessing local archives and meeting research participants for collecting oral histories. Both the Hull History Centre and the East Riding Archives were open in limited capacity and by appointment only until the end of 2021. This meant fewer and shorter visits at a time when data collection was supposed to be in full swing. Data collection was further complicated by restrictions on meeting people indoors. Even after such restrictions were eased in spring/summer 2021, many participants were still uncomfortable meeting in person and understandably many interviews were cancelled. Despite offering the possibility of being interviewed via Skype, participants declined my offer. However, between October 2021 and February 2022, I managed to conduct seven oral histories. The information gathered didn't prove to be always relevant to my study or sufficient to supplement archival material. I attempted to recruit more participants all through 2022 and part of 2023, but with no success. While some oral histories made it into this thesis, ultimately the study largely uses the online newspaper collections available on the British Newspapers Archive.

Table of Contents

List of Tables & Figures

1 Introduction

"Kingston-Upon-Hull is a city whose past, present, and future are built around water. The city is located where the river Hull meets the Humber Estuary and is built on reclaimed marshland. Throughout its history, water has shaped Hull's identity and helped the city grow and develop. As with many cities around the world, Hull's location was chosen due to the proximity of the water to provide transportation, power, and work opportunities. However, with the benefits that this location gave, it also brought problems of living with water and having to control nature." (Hull City Council 2010, p.5)

Map 1. Map showing the location of Hull within the UK (whereismap.net 2019)

Hull has a long history of flooding that dates back to the thirteenth century (Sheppard 1976, McDonagh et al. 2023, McDonagh et al 2024), which is not surprising considering its location, its proximity to the North Sea and low-lying land. By the twentieth century, flooding had become such a frequent occurrence that for some the city was known as the Venice of the North (Flashback Issue 143, HDM 2005). However, the history of flooding in twentieth-century Hull has remained unknown until now. There is no

published chronology of twentieth-century flood events for Hull, and little is known of the types of floods occurred and their frequency through the century. Within this thesis I set out to produce a historical record of flood events and an examination of changing patterns of flood risk perceptions and responses to flooding between 1901 and 1990, mostly through newspaper accounts. As highlighted in the literature review (Chapter 2), while current flood events can be similar to those in the past, the way they are anticipated and endured has evolved, partly because professionalised cultures of disaster management have emerged. Therefore, exploring floods through an historical lens can give insights into how coping mechanisms have changed over time.

Floods are not necessarily human-made, but people can intervene and influence environmental processes. We can limit damage by preventing settlement in areas with a high frequency of flooding or by using early-warning systems to predict the path of floods. At the same time, nature's dynamic is often beyond human predictability. A historical approach to floods can illuminate the interaction of the social and the natural, of chance and probability, of risk and safety, and allow us to expand and redefine our understanding of humanity's relationship to society and nature (Mauch & Pfister 2009).

"The past is not a simple toolbox that we can use to fix the problems of the present and prevent troubles in the future. […] But, if we treat history less as an assemblage of facts and more as a practice of mind, then the past becomes inseparable from the values we attach to it" (Kingle 2009, p.270). It is through history and within history, then, that meanings and values can evolve to meet the needs of the present and the immediate future. One of the strengths of the historical approach to disaster research is its capacity

to acknowledge both the immediacy of the "disaster" – its sudden incidence and the tragedy of the day – and the long-term effects of such events. Knowledge from this historical exploration of twentieth-century flooding in Hull can provide better insight into current flood events (in terms of causes, impacts and responses) and help inform authorities on new strategies to reduce future impacts of flooding by looking at how previous floods were dealt with. Ultimately, the study highlights the importance of historical information to establish accurate baselines for current and future flood risk management.

Newspapers are the main source used in this study. Newspapers have been "gauges of public opinion, and possibly the most valuable index we have of measuring popular attitudes" in the past few centuries (Knudson 1993, para 8). Studies in the UK and the US reveal that "historical newspapers are often the only source for historical flood data" (Jones 2006, p.19), providing highly descriptive reports of floods including information on flood frequency and flood damage (Bayliss & Reed 2001; Roger, Pielke et al. 2002). For this study, I used newspapers as primary sources to produce a historical record of flood events in twentieth-century Hull but also to analyse the "reality" within them. Newspapers "yield not only the information printed in black and white, but if one reads between the lines, they tell about the underlying assumptions and values of a society that produces and reads them" (Vanden Heuvel 1990, p. 17). Newspapers are an important source for the evaluation of public perceptions and that is the way their use is intended within my study. Other archival sources, such as government reports and letters, along with the 'SurgeWatch' database (Haigh et al. 2017) and secondary literature have been used in conjunctions with local and regional newspapers to cross-check flood dates and facts.

1.1. Purpose of the Study and Research Questions

The purpose of this research was to first and foremost reconstruct the history of flooding in twentieth-century Hull which had never been done. My aims included producing a historical record of twentieth-century flood events for Hull and examining changing patterns of flood risk perception between 1901-1990. Furthermore, I wanted to determine whether changing perceptions of flood risk in Hull had affected and guided the development of flood management through the twentieth century. Ultimately this study highlights the importance of historical research in identifying risk scenarios and undertaking targeted mitigation strategies to reduce impact on flood-prone communities, such as the ones in Hull.

Central research question:

RQ1: Had perceptions of flood risk changed through the twentieth century in Hull?

Additional questions:

SubRQ1: Had local newspapers shaped perceptions of flood risk in Hull?

SubRQ2: Had these perceptions influenced responses to flood events and consequently the direction and development of flood risk management in Hull?

A final RQ2 that guided the study is: How can this historical knowledge about flood risk perception in Hull inform local flood risk management agencies and support their work in decision-making and practice today?

1.2. Thesis structure

The thesis is divided into six chapters. Chapters 1,2 and 3 provide the necessary background information for the findings and discussion chapters that will follow. These also provide the research context and the methodological underpinnings of the study. The rest of the thesis will present the findings of the study, breaking it down into two chapters, of which one will consider the first half of the twentieth-century history of Hull floods, another focussing on the remaining years. Finally, conclusions and recommendations for practice and future research are made.

2 Literature Review

The aim of this chapter is to position this research within the broader literature. This study adds onto the histories of floods and more generally the histories of weather and climate and histories of disasters. Previous studies on histories of floods have often been the result of collaborative projects that have brought together several disciplines and different methodological approaches. Flood histories can be found within a range of fields from history to geography and philosophy, from engineering to economics and architecture, from literature to urban/rural studies and psychology. Being floods as much natural phenomena as social ones, researchers from all areas of study have an interest in dissecting this phenomenon, understanding its causes and implications, and more recently finding ways to make floods more manageable. Therefore, the literature on histories of floods is not linear and it can't be listed under one single field. However, as this study is concerned with the history of flooding in Hull and the relationship between flooding and people, the literature review will focus on studies that have been carried out under the umbrella of environmental history and historical geography. By approaching flooding from an explicitly historical, social, and cultural perspective, this study hopes to open more channels for mutual dialogues between the more traditional techno-scientific flood studies and the humanities and social sciences.

2.1. Histories of weather and climate

The histories of weather and climate provide one useful way to explore the history of flooding, as one cannot really talk about flooding without talking about weather and climate. In geography, weather can be defined as "the

state of the atmosphere in a given place at a given time" while "climate is the prevailing condition of the atmosphere deduced from long periods of observation. Thus, the knowledge of the climate is directly determined by the knowledge of weather; climate is a generalization while weather reflects a particular event" (Gomez Martin 2005, p. 572). Here, we consider weather and climate within their social and cultural context, therefore in the ways both affect people's lives.

"A need for the public to begin talking about climate change and integrating it into their everyday lives" has been shown in previous research (Lejano, Traveres-Reager and Berkes 2013, p. 62). This means that we need to separate local weather from global climate trends and investigate the everyday experiences of the weather rather than climate change per se (Hulme 2008, Hitchings 2011, Strauss and Orlove 2003). Climate should be localised, historicised, and encultured (Hulme 2012, Livingstone 2012); it should no longer be limited to science and should be "understood, first and foremost, culturally" (Hulme 2015, p.1). Recent work has highlighted the link between climate and culture and how it appears in daily life, in the built environment, in social memories of past events, in emotions, adaptations and in narratives of blames (Hulme 2015). There is now considerable interest in how different groups of people think about climate and respond to it (Strauss and Orlove 2003; Boia 2005; Behringer 2010; Dove 2014; Crate and Nuttall 2016). To further facilitate a 're-culturing' of climate, then we need to think more directly about weather (Hulme 2015). Weather is very local (Tredinnick 2013) and sets the background to our lives; weather can be experienced, monitored, observed, and has an "immediacy and evanescence" that climate does not have (Hulme 2015, p.3). People tend to draw on past personal experience to understand current and possible effects of weather. Therefore, gathering information about past weather

and how people recall weather events can provide information on the popular understanding of changing weather patterns and climate change. This in turn can help shape key management strategies and policy development. There is still limited research on weather and its effects on society and culture and much more limited is the literature specific to the city of Hull.

Extreme weather events often gain popular attention more than 'normal' weather conditions; these tend in fact to be remembered more vividly and to dominate people's memories of weather (Hulme 2009). Such events often lead to negative experiences of loss, disruption, and deprivation, but they can also draw people together, fostering a sense of community and collective cohesion, whether this is through a sense of belonging or through the shared experience of living through an event (Endfield and Veale 2017). Either positive or negative, historical experiences of extreme events can play a significant role in shaping perceptions and responses. Oral histories, for instance, can prove useful in helping to conceptualise and understand how weather has affected people at the local level (Lazarus and Peppler 2013). In this regard, important work has been conducted by McEwen and colleagues in the last decade (McEwen et al. 2016; Garde-Hansen et al. 2017; Garde-Hansen et al. 2013). McEwen offered a new consideration of memory and proposed the concept of "sustainable flood memory" as a critical and collective form of social and cultural remembering of learning how to live with floods. This interdisciplinary research on flood memories has increased our understanding of flooding, and how these memories provide a platform for developing and sharing lay knowledges while creating social learning opportunities to increase communities' resilience to flooding. Fundamentally, McEwen and colleagues argued for a deeper understanding of flood experiences and resilience through memories and

associated lay knowledges. These memories, knowledges and resilient thinking recognise individuals and communities as powerful resources for flood risk management. This work has been fundamental in suggesting that the public needed to take some responsibility for residual flood risk and their own protection, instead of relying solely on flood warning and flood defences. McEwen and colleagues have argued that residual risk management needs to happen at a local level and flood risk management needs networks, collaboration and communication, including increasing participation of local communities as key stakeholders. Clearly, this is only possible when preparation and resilience is present among communities, which means that flood risk management agencies need to better engage with, secure and enhance lay knowledges drawn from flood memories. This work has highlighted the importance of remembering past floods, of archiving and sharing flood memories between researchers, flood risk management actors and communities to help facilitate social learning over time. Fundamentally, McEwen's work has highlighted the need for using an historical approach in flood risk management research.

"Weather shapes, changes, and defines us, and we are who we are, indirectly and directly, because of the weather we lead our lives in" (Tredinnick 2013, p.15). Remembering past weather and weather events, how these have influenced everyday lives, activities and practices can shape our understanding of climate change today. With climate change as one of the greatest threats to the natural world and societies, talking about weather and exploring histories of weather is more relevant than ever. This is especially important for Hull, a city with a long history of living with flooding and currently the city with more homes at risk of flooding after London.

2.1.1. Recording extreme weather events

"Climate and weather have long been the subjects of private narratives, diaries, chronicles, and sermons dating back to the later seventeenth and eighteenth century" (Endfield and Veale 2017, p.3) and a diverse group of people observed and recorded weather in this period, including physicians, sea captains, members of the clergy, university professors and travellers. In the earliest records, emphasis was often placed on "qualitative and narrative framing of important weather" (Jankovic 2000, p.9) – the unusual or extreme event that disrupted everyday life at the local level. Extreme weather events were viewed as worthy of mention and descriptions of such events can often be found in many sources, such as newspaper reports, institutional records, and bulletins. Several studies on extreme weather events have made use of above-mentioned sources (Grattan and Brayshay 1995; Gallego et al. 2008; Waites 2018; Pearce 2018; Hall 2018). For instance Ian Waites' study (2018) of the 1976 heatwave and drought in the UK draws on content from both local and national newspapers, and Cathryn Pearce's study (2018) of shipwrecked fishermen and mariners in South-West England used material from local chronicles and weekly gazettes, while Alexander Hall (2018) makes use of local and regional newspapers in his work exploring the aftermath and commemoration of the 1953 East Coast floods. My study will add to this existing literature by using local and regional newspapers to explore the twentieth-century history of flood in Hull. My study then goes a step further in utilising newspapers as gauges of public opinion to investigate how public perceptions of flooding changed through the twentieth century.

Alongside newspapers, there are many other sources of information on historical weather events, including meteorological registers, legal documents, maps, photographs, paintings, travel accounts, crop and tax records, personal diaries, and collections of correspondence. Other ways to tap into local weather memories include interviews and oral histories. These can provide useful information on perceived changes in such unusual events, their frequency and intensity, the impacts of and responses to these events, and such sources can also reveal how people conceptualise and contextualise the risks of any future events (Leyshon and Geoghegan 2012). Several studies used oral histories to provide detailed accounts of extreme weather events, such as floods. In 1986, Robert Gant first described the lasting memories that people had of extreme weather events in the Honddu Valley. In 2004, Mark Riley used oral histories of farmers to gather information on the cumulative effects of management changes over the decades. In 2011, Holmes and Pilkington used oral histories as part of community engagement strategies in order to inform a flood alleviation experiment in Sussex. Personalised weather narratives have shown to play a significant role in understanding and remembering weather, weather events and climate. Oral histories were originally intended to be used in this study to investigate memories of past floods in Hull and assess perceptions of flood risk. However, the Covid-19 pandemic restrictions have made this impossible to achieve.

2.2. Histories of disasters

Research into disasters from a historical perspective is still relatively new (van Bavel 2020). “Despite growing recognition of the importance of historical depth by scholars investigating disasters, the temporal

dimensions of disasters have been understudied" (van Bavel 2020, p.5). Investigating past disasters enables historians to reconstruct the social, economic, and cultural effects of hazards that is not possible in contemporary disaster material. History offers the opportunity to identify social and environmental patterns and changes, and therefore improve our understanding of responses to disasters today. Disasters often reveal aspects of society which in normal circumstances remain hidden, for example, the vulnerability of particular groups within society. This is what my study aims to do, as I explore flood events – and the disasters sometimes produced – to better understand Hull residents' perceptions of flood risk in twentieth-century Hull. Furthermore, the study shows how through the lens of history, past events can be used for comparison with current events and in preparation for future ones.

The first research on how people reacted during 'natural' disasters was conducted by sociologists in the 1950s, who were investigating the social effects of disasters. Quarantelli, Dynes and Haas continued similar studies in the 1960s. These early studies started a field that was mainly interested in disaster management and in the aftermath of disasters. Disasters were seen as events that simply happened. This idea was later challenged by Wisner et al. (2003) who argued that:

> "the crucial point about understanding why disasters happen is that it is not only natural events that cause them. They are also the product of social, political and economic environments (as distinct from the natural environments), because of the way these structure the lives of different groups of people. There is a danger in treating disasters as something peculiar, as events that deserve their own special focus. It is to risk separating 'natural' disasters from the social

> frameworks that influence how hazards affect people, thereby putting too much emphasis on the natural hazards themselves, and not nearly enough on the surrounding social environment" (Wisner et al. 2003, p.4).

Wisner and his colleagues heavily contributed to change the belief in the "naturalness of disasters" (van Bavel et al. 2020) that had long dominated the field.

As climate change took a centre stage on the political agenda, the concepts of vulnerability, resilience and adaptation started to appear in disaster studies. This inevitably led to an increased interest in these topics in the social sciences, and slowly in history. It is in the 1970s that concern for the environment increased and led historians to question the historical interactions between humans and nature - this is when the field of environmental history emerged in the United States. From the very beginning, 'natural disasters' were an important subject in this new field. One of the first studies in environmental history, Donald Worster's American Dust Bowl (1979) explored the Great Plains' dust storms that damaged the ecology and agriculture of North America in the 1930s. More recent studies in histories of disasters include, for example, Greg Bankoff's work on the effects of past hazards on society and culture. His study (2003) on the history of natural hazards in the Philippines is a great example of how the threat of disaster can effect daily life so pervasively to generate a 'culture of disaster' – as he names it.

It is important to remember that historians are not the only ones concerned with past disasters. Scholars from other disciplines, such as archaeology, anthropology, geography, and climatology have all "enthusiastically embraced the potential of 'nature archives' – from sediments to ice cores –

to reconstruct, date, and interpret the role of both extreme events and long-term changes in the rise and decline of communities, societies, and empires in the past" (van Bavel et al. 2020, p. 10). The value of disaster history is in its ability of revealing why a wide range of hazards and disasters occurred in the past and how past societies functioned during a disaster.

This study adds to the literature outlined above in reconstructing the history of flooding in twentieth-century Hull and in understanding how Hull residents perceived flooding and coped with it during moderate and major flood events. The thesis mostly engages with environmental history by approaching flooding from an explicitly historical, social, and cultural perspective. Ultimately, the study aims at opening more channels for mutual dialogues between the more traditional techno-scientific flood studies and the humanities and social sciences.

2.3. Histories of water

We cannot talk about flooding without talking about water. However, environmental histories of British water are relatively underdeveloped. Some of the more prominent works include Hassan's (1998) study on the changing way water has been used in England and Wales since the industrial revolution, through the Victorian period and up to the 1990s. In his book the author traces the gradual recognition of water as a resource, and he does it from an economic and environmental standpoint. Hassan's book is a history of water resources, of water as a domestic and industrial consumer need, as a means of domestic and industrial waste disposal, as a resource to be conserved and managed, and as a natural resource to be preserved from over-exploitation and pollution. It is an interdisciplinary

book in which Hassan stresses the multiple and conflicting uses of water, and of the environmental, political and social issues around those. These include the development of water supply and sewage treatment industries, questions of river conservation, environmental protection and misuse, the impact of evolving patterns of water consumption, the struggles among interest groups to gain privileged access to water, and of the interrelationships between the water sectors, lobbies and the state. It is a remarkable work and more than 20 years later it still remains one of the most important contributions to the modern history of water in Britain.

Another important contribution to the histories of British waters is O'Hara's book (2015) that deals with the British people's late twentieth century engagement with water in all its domestic, national and international forms - from bathing and household chores to controversies about maritime pollution. It is an important work of environmental history and among other topics it engages with the history of flooding in Britain: worth mentioning is the chapter on the Great Flood of 1953, a catalyst for a re-examination of water bureaucracies and the chaotic nature of coastal defences on the UK's eastern shore. This story illustrates a host of water-related issues: the inadequacy of coastal defences, the inefficient division of the coast and river basins under the control of local authorities, the lack of sufficient funds allocated to flooding, and the over-reliance on voluntary organizations.

Other important contributions to the modern history of water in the UK include Taylor and Trentmann's 2011 study on the water politics of everyday life. Using the case study of new water networks in late nineteenth and early twentieth century Britain, the authors explore the interplay between new technologies, everyday practices and political mobilisation. Finally, worthy of mention is also *An Environmental History of*

Twentieth Century Britain (2002) which was the first textbook to focus on the environmental history of Britain in the twentieth century and traces the development of policies for managing both land and water resources, by using a wide range of archival sources. This thesis contributes to the work on the history of British waters by expanding the knowledge on water management in twentieth-century Britain, in particular related to flood management risk in Hull.

3 Methodology

Introduction

My study is multidisciplinary and uses a range of methods to gather the information required to conduct this research. The primary source of data was generated by searching the British Newspaper Archive online and scoping local repositories in person in Hull and Beverley. Further data was gathered during oral history interviews conducted between October 2021 and February 2022. This chapter will discuss the methodological approach used, the strengths and weaknesses of the chosen approach and how I addressed them. It will explore the sources used for the study and why these were chosen to answer my research questions.

One of the primary goals of this study was to establish a chronology of twentieth-century flooding in Hull. Locating historical flood information requires a meticulous approach that can be daunting, as many sources can be found to retrieve such data. Archer argues that "useful information, but of varying quality, may be obtained for a period of at least 150 years in virtually every flood-prone catchment in England" (1999, p. 192). There is in fact a vast range of historical flood data in the UK and much of it is still unexplored and undervalued. Among other things, my study highlights the importance of using historical data to further explore and understand flood events in the past, to better estimate future flooding and plan accordingly.

Sources that have been used in previous studies and provide data on floods, are for example parish registers, Public Record Office collections, estate records, diaries, chronicles, legal depositions, travel accounts, crop and tax records, maps, paintings, etchings, plans, epigraphic flood records and

correspondence. These sources, however, rarely address the social consequences of floods for communities and individuals (Jones 2006). While working in the archives, both at the Hull History Centre and the East Riding Archives in Beverley, I came across a variety of material with mentions and/or short descriptions of flood events in twentieth century-Hull. These included Hull City Council meeting minutes, River Board minutes, Environment Agency reports, correspondence, legal documents, local magazines and a book titled "East Yorkshire within Living Memory" (1998) containing some testimonies about extreme weather events in East Yorkshire. All the sources mentioned above contained some information about flood events occurred in the second half of the twentieth century. However, the information was minimal, and most descriptions were about Hull's geological setting and the geography of the River Hull. While this information was valuable and gave an insight into how the area was understood and studied at the time, it could not provide information on social impacts of flooding or on perceptions of flood risk.

For example, some of the correspondence found was between council officers and professors at the University of Hull discussing previous flood events and highlighting features of the River Hull and the Humber. The book found in the East Riding Archives, a collection of testimonies of East Yorkshire women through the years, was an interesting find as it contained a few stories about people experiencing flooding in the 1940s and 1950s. However, these stories were not about Hull but about small villages in East Yorkshire. On some occasions, the floods narrated in the book matched some of the floods that occurred in Hull, but the impacts on people's lives were different when compared to newspapers accounts. While all these archival findings represent important records and provided important lines of evidence for further flood investigations, essentially these were mostly

useful for cross-checking dates. For the purpose of this study newspapers and photographs were revealed to be the most exhaustive sources for obtaining information on the social impacts of past floods, to capture people's perceptions of flood risk and, importantly, to produce a timeline of flood events in the twentieth century. It is important to mention that the choice of sources used within this study was also dictated and limited by the Covid-19 lockdowns and restrictions imposed in 2020 and 2021, since both the Hull History Centre and the East Riding Archive were closed or had limited access between March 2020 and up until summer of 2021.

3.1 The use of newspapers

For my study, newspapers have been crucial not only in identifying floods and assessing flood frequency for the chosen time period, but they have given insights into people's lived experiences during and after the events. Hidden within newspapers are often important stories and perspectives hardly found in other historical sources; newspapers can be used to compile a chronological factual history and they can be studied as a reflection and creator of public opinion (Rhodes 1909). Rhodes argues that "the duty of the historian is not to decide if the newspapers are as good as they ought to be, but to measure their influence on the present, and to recognise their importance, as an ample and contemporary record of the past" (1909, p.97). My PhD does in fact accentuate the importance of seeing newspapers as valuable sources despite the controversy about their factual credibility. As other authors have similarly argued, newspapers need to be seen as tools to explore public opinion in the past (Nelson 1909).

> "History should not only be concerned with what actually happened in any given time or place, but also with what people thought was happening, as revealed to them through the means of mass communication, which may have conditioned their subsequent actions. Thus, the perception of events as filtered through the press may have changed the historical outcome" (Knudson 1993, p.9).

Therefore, it does not matter if the news is distorted as long as readers believed it and acted on their behalf. Then, newspapers become primary rather than secondary sources. Newspapers can also be used to "lend colour and vivacity to the past" and to create a "graphic description of society" (Salmon 1923). Unlike other sources, newspapers often offer descriptions of places, people, and events in a way that official documents simply cannot do. In this sense, newspapers help historians experience the past more vividly and understand it more accurately.

Newspapers are increasingly seen as an invaluable window into popular culture; not simply as a repository of facts but as a way of exploring the representations and narratives that circulated through society. The heterogeneity of their contents ensures that newspapers are a potentially rich source of information on a wide range of subjects: material can be found on everything from politics to personal relationships, from sports to weather. The increased interest in the popular press as a historical source has been dramatically reinforced in the last few decades by the digitisation of a vast number of newspapers and periodicals from the seventeenth to the twenty-first centuries (Gooding 2017). This revolution in the accessibility of newspapers archives has transformed scholars' enthusiasm

for them and significant research has been produced, particularly in social and cultural histories, but also in political studies (Bingham 2010).

Work on the press coverage of gender, class and ethnicity has become more common, for example the scholar Adrian Bingham (2004) researched the popular press coverage of gender in the 1920s and 1930s noting that newspapers mostly sought to confine women to the domestic sphere by promoting an ideology of domesticity. Class and its relationship to concepts such as 'mass culture' and 'public opinion' has been a key theme in a number of important studies of the press and so has politics and the role of political writing in twentieth-century press. The rapid digitisation of newspapers has certainly helped solving many issues associated with the study of newspapers but clearly, we cannot properly assess the political, social and cultural significance of newspapers by simply studying their content. As historians, we need to place them in their historical context and understand how they were produced and received. While this is not always an easy task, the use of newspapers as primary historical sources has changed the understanding of British history, and they deserve serious consideration by scholars.

3.2 The use of newspapers in geography and geology

Although newspapers might not seem a likely source of data used in geology and geography, both geologists and geographers have used newspapers as historical sources. In geology, newspapers are frequently used as source of data for historic seismology; newspapers from the eighteenth and nineteenth century are an invaluable source of data for historic earthquakes in Britain (Musson 1986). For example, in 1987, two

geologists made a systematic study of nineteenth century newspapers in the US in order to find reports of earthquakes and discovered several hundred reports for felt earthquakes that had not been previously recorded. The study challenged some pre-existing conclusions about types of seismic activity in the area of investigation (Seeber and Armbruster 1987).

Newspapers are often used as "sources of information for other types of historic natural disasters such as floods" (Bayliss and Reed 2001, p.8). In a report for the UK Centre for Ecology & Hydrology, researchers suggested that "newspapers provide highly descriptive reports of floods including information on earlier floods and flood height" (2001). They suggested that "this information is often vital if a ranked flood series is to be produced and local newspapers can often be the primary source of information of floods that occurred during the 1800s and 1900s" (Bayliss and Reed 2001, p.8). A similar study in the United States revealed that historical newspapers are often the only source for historical flood data other than FEMA[1], arguing that "only in newspapers archives from cities and towns across the nation might one find more complete reporting of historical flood damage. Indeed, a newspaper archive could be the best source of information on flood damage in a particular locale" (Pielke et al. 2002). For my study, in fact, newspapers were the best source of information to identify floods in the twentieth century and gather data on the before and after of such events.

[1] Federal Emergency Management Agency, responsible for mapping flood risk in the US.

3.3 Case study

My study adopts a case study approach. Case studies involve analysing a number of examples of the same occurrence to draw out relevant learning. A case study restricts its conclusions to the examples it studies and does not attempt to generalise its findings to cover society as a whole (Bates 2016). When using newspapers for a case study, it is important to be alert to what else was happening at the time. While flood events are frequently reported on in twentieth-century newspapers, there were times, for example during wartime, when war was the high-profile event to cover and flooding in Hull struggled to find a slot. This is particularly evident in national and regional newspapers, and that is why local newspapers (such as the Hull Daily Mail) were the most relevant to include in my study. Local newspapers are also most likely to contain the greatest details and were the key source to identify as many floods as possible in the 1900s. National newspapers had plenty of material to choose from and are likely to have printed the more extreme flood incidents rather than the routine ones. The flood events that received most coverage often had unusual features and did not reflect the situation as most people would have experienced it. It is important to understand what is the typical and place the atypical examples in context, this was particularly important for this study. As mentioned above, major floods inevitably received national attention while minor floods were only briefly mentioned in local newspapers, if they were at all. However, it is the minor floods that justified the “atypical” and made it less as such. Major floods in Hull have often been presented as new and unprecedented but this study shows that floods have clearly happened throughout the history of the city.

3.4 The use of digitized newspapers

As mentioned before, my choice of relying mostly on newspapers for this study was also dictated by Covid-19 lockdowns and restrictions. Furthermore, such restrictions have also limited access to newspapers in their traditional printed format or microfilm, which would have been otherwise available at the Hull History Centre. Therefore, most of my research was done by using digital newspapers via the British Newspapers Archive which contains most of the runs of newspapers published in the UK since 1800. While certainly microfilm copies greatly aided my work, the digital collection of the British Library's newspapers made my study possible and much easier. Having access to newspapers online allows for "greater access and much better searchability" (Jones 2006, p.20), in fact the digital format allowed me to spend more time on the material. An important benefit of using digitalised newspapers is that once a newspaper can be searched electronically, it is much less likely that a meticulous researcher will overlook something important. In the past, manual searching made it impossible for any researcher to be sure that something relevant had not been missed.

I started searching by keyword such as "Hull" and "flood/s" or "flooding", then I refined my search by date and place. A number of different regional and local newspapers appeared through the search, but my study mostly relies on accounts from the *Hull Daily Mail*. Inevitably, I found that the *Hull Daily Mail* reported on Hull floods in more details, reported on both major and minor floods but most importantly – in contrast to other newspapers – the *Hull Daily Mail*'s accounts frequently covered the aftermath of the events and included interviews with people affected by the floods. This information was crucial to understand people's perceptions of the flood at

the time it occurred. A few other newspapers, such as the *Beverley and East Riding Recorder* and the *Yorkshire Evening Post*, have also been used in reference to some of the major floods like the ones occurred in 1921 and 1954. Newspapers have captured and preserved a wealth of detail that was only of interest to their readers and was not recorded elsewhere. Some of this is information that helps to show a person's feelings, or how a community reacted in the face of tragedy (Bates 2016). This is precisely why newspapers have been used as primary sources in this study. As previously stated, hardly any other historical source can offer such detailed information about communities' or individuals' experiences of floods.

3.5 Benefits and Drawbacks

Some of the benefits of using newspapers as research tools include clarity, diversity, and empathy. Newspapers were produced for a general readership; therefore they were written in direct, plain language, which remains very comprehensible even after a century or more. Newspapers are also an excellent tool for understanding the complexities of how society functioned. Most historical sources tend to have a middle-class viewpoint and do not reflect very well the diversity of Britain's society (Bates 2016). For this study, as several of Hull's flood affected areas were in deprived neighbourhoods of the city, newspapers were the best source at hand. In addition, "newspapers offer a way of seeing through another person's eyes. It is possible to discover what people may have been reading at a key point in their lives, the influences they were exposed to, the major events that may have affected them and how they learned about them" (Bates 2016, p 37). Newspapers give the researcher the possibility to empathise with people from the past. Working with newspapers also offers the opportunity

to make new discoveries, as the amount of untapped material in old newspapers is vast. Having worked mostly with more established material before this study, I found that working with new sources was much more satisfying and exciting.

All historical sources have benefits and drawbacks, newspapers are no exception. However, when limitations are properly managed, quality research results. Newspapers were produced to meet the needs of a contemporary audience, not to be a chronicle for future generations, therefore newspapers can have frustrating and fundamental gaps for a modern researcher. For instance, it may be impossible to confirm someone's identity or, for this study, to have specific information about the height of a flood, its duration, the cost of flood damages, all the areas involved, the number of people affected, and so on. In many cases, newspapers only contain partial information about flood events. Therefore, it is essential to acknowledge that completeness is a limitation when using newspapers as factual sources and, on some occasions, persistence will not change results.

Furthermore, "newspapers are especially prone to errors of fact because of the number of times information was processed before it was printed" (Bates 2016, p. 58). Many errors in newspapers are not serious differences but mostly inaccuracies that can be identified by checking more than one report. This was in fact a way to overcome such limitation within my study, I would double-check facts with other sources – when available – such as official documents, like for example the Hansard record of the parliamentary debate or records of the Environment Agency. In some cases, it was also possible to compare different newspapers and ensure that all reporters agreed about facts. When there is any discrepancy, checking

several accounts is necessary to establish where consensus exists and what is in dispute (Bates 2016).

Fragmentation is another important limitation to consider when relying on newspapers as a source. Reports tend to be brief and rarely does one report provide the full story. When events unfolded over a period time, as happens for flood events, it is necessary to read reports for successive days to discover what happened and perhaps several different publications need to be consulted to gain a rounded picture. It can take more time than expected because newspapers often do not present information in a logical order. Working with digitalised newspapers partly solves this problem because an electronic search often locates several papers that contain a story with similar words and within the same time period.

Other problems that I have encountered while working with newspapers include language and legibility. Although I used twentieth-century newspapers for my study, the language used can still seem confusing to a non-native reader because of the writing conventions of the time. For example, the meaning of some words may have changed, while others are archaic and may not be in a modern researcher's vocabulary. In addition, scanned newspapers are not always in good conditions and may be difficult to read, and on occasions, the scanning software does not translate words or figures accurately. However, I also encountered issues with printed newspapers as they sometimes do not have headlines, the print size is small and lots of information is crammed into a very small space. Clearly, such problems are not impossible to solve but they can mean that research takes longer than hoped. This should then be factored into the PhD plan as time is a critical factor. One of the most common problems when working with these sources is that much of what newspapers print predominantly

focuses on the negative. “Some newspapers make a point of seeking the bizarre and the scandalous and presenting it in a sensational manner” (Bates 2016, p. 61). As a result, newspapers often describe events in a more colourful way that they actually were, therefore it is important to guard against false impressions that arise from sensational content.

3.6 Bias, Censorship and Propaganda

Other issues to consider when working with historical sources, and this is not exclusive to newspapers, include bias, censorship, and propaganda. Bias is present in almost every historical source. Individuals have their own value base and views, which are likely to affect their writing, especially when there are judgements to be made, or they are dealing with opinions rather than facts. Bias can cause difficulty but only when it is not detected, as it can deceive the researcher into drawing wrong conclusions. Therefore, the researcher needs to decide how much of it can be relied on, and for what purpose (Bates 2016). Newspapers are very susceptible to cultural bias; this occurs when a source reflect the values held by a particular group of people (Bates 2016). Newspapers were private businesses trying to make money by attracting regular readers. A way to secure that was to appeal to certain points of view and to present news reports and opinion pieces that resonated with people who held those beliefs. This is why newspapers can be an invaluable source if the researcher’s intent is to explore public opinion on certain topics or events. Individual bias can also occur in newspapers, as in other historical sources. Both a journalist and an editor are in a position to express their view in a report. In addition, newspapers’ owners could dictate the content and presentation of the news and editorial. The biggest challenge with bias is when it is hidden. While cultural

bias is easily detected, individual bias can be more difficult to detect as it can involve techniques such as deliberately falsifying information, misinterpreting facts, trying to portray opinions as facts, or selecting the facts that create a desired impression (Bates 2016). The best way to manage bias is checking more than one source, and when using mostly or solely newspapers as sources it is important to consult a selection of publications.

Censorship "involves the use of power or authority to prevent information being published" (Bates 2016, p.68). For my study, censorship was not a relevant issue as flood information was generally made public. However, if newspapers were to suppress some of the information, this would have been easily found in local authority reports. Propaganda "denotes the dissemination of information, which may or may not be true, in order to guide the reader to a predetermined viewpoint" (Bates 2016, p. 70). Like censorship, it was very common during wartime when a report may have been overly positive to maintain morale, or overly negative about the enemy, to incite patriotic feeling (Bates 2016). Propaganda can be hard to detect as it may use facts, though selectively, to establish the truth of its position. As with bias, guarding against propaganda in newspapers is possible by checking several sources. The number of newspapers and their different approaches makes it very unlikely that they would all emphasise the same points. Similarly to censorship, propaganda has not been a major issue for my study. Bias, censorship, and propaganda are important issues for all historians as they can lead to wrong conclusions. Although these factors may mean that some reports in a paper cannot be relied upon to reveal the full picture, it does not follow that everything in that paper is tainted or that it has no value as cultural history.

3.7 Photographs in Newspapers

Illustrations became staple content in many newspapers, magazines, and periodicals in the nineteenth and early-twentieth century (Bates 2016). Photographs began to be used more widely in the early twentieth century and newspapers gradually combined words and images when presenting stories. The main reason was the emergence of a market for news amongst the newly literate working class, many of whom did not have the advanced reading skills needed to cope with columns of dense printing in the existing publications. As the twentieth century progressed, "a visual element became essential to many stories and, in some situations, the picture was the most important feature, telling a story in a way that words could not" (Bates 2016, p. 154).

For my study, I have been able to find over fifty photographs showing scenes of Hull residents dealing with floods both during the event and in the aftermath. Most of them were retrieved form the Flashback series, a monthly *Hull Daily Mail* publication containing twentieth-century photographs of people, places, and events in Hull. These were mostly found in print at the Carnegie Heritage Centre in Hull. Other photographs were recovered from the various newspaper reports found in person at the Hull History Centre and the East Riding Archives or online on the British Newspaper Archive.

3.8 Oral History

If an event is within living memory, talking to those who can remember it may produce much richer material than is printed in any newspaper. Oral history has been used by historians to give voice to those hidden from

history and to restore them to the place they had been denied in the historical record (Thompson 2017; White, Miescher and Cohen 2001). Oral history has enabled historians to address areas of social life for which written documentation is particularly lacking (Roberts 1995). For example, historians have written extensively about the working class in the early twentieth century, but 'it is rather less common to hear or read how working-class people saw their own lives" (Roberts 1984, p.3). 'Ordinary people' rarely kept diaries or wrote letters, making oral evidence vital to reconstruct everyday life. Often referred to as 'recovery history', oral history has been used to evoke the memories of those who had been omitted from history. It is almost impossible to think of an aspect of social life in which giving participants a voice does not add to the historical record, even when other evidence exists[2].

Oral history is different from other genres of personal narratives in five main respects (Summerfield 2018). First, the genre involves the production of sources by historians themselves. Historians attribute to themselves and their practice the main distinction between these types of personal narratives and others, its orality. Second, because of the need to oral history of living interviewees, use of the method has necessarily focused on the relatively recent past. However, insights of oral history have been applied to much earlier periods and they have been used to understand the transmission by words of mouth of stories of family and community (Higham 2011; Abrams 2012). Third, changing technology helped historians to adopt the method as the reduction in size of recording equipment made the historian's job easier. Historians who use other types of personal

[2] See, for example: Browne 2014; Fraser 1979; Hammerton and Thomson 2005; Harris 2013; Humphries 1981; Merridale 2006; Terkel 1970; Xun 2013

narrative do not depend on technology in this way. Fourth, there has been an enthusiastic development of the method outside academia. Non-academic groups have used oral history for a wide variety of purposes, including therapeutic reminiscence work with the elderly and legal advocacy (Bornat 1989; Babcock 2012; Thomson 1998). Finally, to a greater extent than in the case of other genres, users of oral history have been required to defend its reliability for historical research. The doubts expressed about oral history were its non-documentary status and its similarity to social science methodologies that also used interview techniques. The first implied that oral history was incompatible with traditional historical archival practice. The second caused suspicion because open-ended interviews did not elicit data that was easily quantifiable, at a time when quantitative methods were dominant within social science. In the early days, this produced vigorous defence of oral methods that encouraged the development of oral history as a subfield (Thompson 1978).

Within this study, I initially intended to use oral history to back up other sources and help identify flood events that may have not been recorded in written documents. However, when I started discussing the purpose of the interview with the selected participants, I realised that memories about past flooding in Hull were very few and for the most participants remembered anecdotes related to flooding rather than specific flood events. Therefore, after careful consideration, I chose to include only three testimonies that better show Hull residents' feelings and perceptions of what was happening during flooding and to get a glimpse into their own experience (sections 4.5 and 5.1.2). Oral histories within this study serve the purpose of highlighting the importance of individual experience and providing an insight into the impact flooding had on the people involved. For example, one of the participants discussed how flooding was a

phenomenon that happened frequently through his life as a resident of Wincolmlee and how over time he had got used to it. The interviewee also highlighted how he would anticipate a flood and how he would respond to it. Oral histories allow for people to reflect upon and share their stories in ways that are most meaningful to them and one of the key benefits of this method is its ability to capture the subjective aspects of historical experiences. Furthermore, oral history's importance lies in its capacity to capture the lived experiences of individuals who might not be present in conventional historical records. The stories that I included offer insights into daily life, personal struggles, and social dynamics that written records did not fully address. By documenting these personal stories, the use of oral history has allowed for a more inclusive and comprehensive understanding of past flooding in Hull.

3.9 Methodological Influences

My approach to oral history is mostly inspired by the work of oral historian Alessandro Portelli, who stood out among oral historians as he adopted an approach more similar to contemporary narrative analysts. What makes oral history different said Portelli is "that it tells us less about events than about their meaning" (Portelli 2015, p. 52). To him, oral history is a personal, subjective form of evidence. Oral history tells us:

> "not just what people did, but what they wanted to do, what they believed they were doing, what they now think they did […] Its importance may lie not in its adherence to fact, but in its divergence from it […]. Subjectivity is as much the business of history as are the more visible 'facts'. Therefore, what informants believe is indeed a

> historical fact (that is, the fact they believe it), as much as what really happened." (Portelli 2015, p. 52)

While verification is necessary, fabrications and incorrect stories represent an underlying meaning that is also significant to the historical discourse (Portelli 2015). Oral sources are credible but in a different way than other sources. We cannot really talk about 'false' oral sources; "wrong' statements are still true (for the interviewee), and that truth may be equally important and relevant as factually reliable accounts. Oral sources are valuable to historians not so much for their ability to preserve the past, but for the changes wrought by memory. These changes reveal the narrators' effort to make sense of the past, to shape their lives, and set the interview and the narrative in their historical context. Memory is not "a passive depository of facts, but an active process of creation of meanings" (Portelli 2015, p. 52).

"Oral sources are not objective. This of course applies to every source, though the holiness of writing often leads us to forget it" (Portelli 2015, p. 54). The non-objectivity of oral sources is more evident as such sources are variable and partial. The content of oral sources depends largely on what the interviewer puts into it in terms of questions, dialogue, and personal relationship. This does not happen with written sources, as texts are stable and can only be interpreted as such. Both the interviewer and the interviewee play a role in the final result of the interview. In fact, oral testimony is never the same twice. This is true for all oral communication, but particularly so for oral history interviews because of their unstructured nature. The same interviewer will get different versions from the same narrator at different times. I have noticed this with some of my interviewees as we got to know each other better and dynamics changed. This happened often when I did follow-ups interviews and participants had

a better understanding of the interview's purposes and felt more comfortable sharing their stories, which sometimes differed in detail from the first interview. Furthermore, the fact that interviews with the same individual can go on indefinitely leads historians to question the completeness of oral sources. It is impossible to exhaust the entire memory of a single informant and the data collected with each interview are always the result of a selection made by both the interviewer and the interviewee. The unfinishedness of oral sources is something the researcher must accept, and as Portelli noted "historical work using oral sources is unfinished because of the nature of the sources; historical work excluding oral sources (where available) is incomplete by definition" (Portelli 2015, p. 56). No research is complete unless it has exhausted oral as well as written sources, but it is impossible to go through all sources in any research project.

3.10 Theoretical Framework: Narrative analysis of oral history

According to Portelli, "oral historical sources are *narrative* sources. Therefore the analysis of oral history materials must avail itself of some of the general categories developed by narrative theory in literature and folklore" (Portelli 2015, p.51). The term 'narrative' has become very common in oral history in the last two decades or so. Oral historians speak increasingly of narrators instead of interviewees, and of narratives instead of answers. Narrative is a way to make sense of experience and communicate it to others (Chase 2003).

> "We dream in narrative, daydream in narrative, remember, anticipate, hope, despair, believe, doubt, plan, revise, criticize, construct, gossip, learn, hate, and love by narrative. In order really to

> live, we make up stories about ourselves and others, about the personal as well as the social past and future." (Hardy 1968, p.5)

Like everybody else, oral history interviewees speak in narratives. Therefore, narrative analysis is often employed by oral historians. This type of analysis identifies and explains the ways in which people create and use stories to interpret the world. Narrative is not just the content of the story, but the telling of it. The narratives we construct are informed by and embedded in the cultural world we live in. The researcher's job is to decode these narratives, but first to give the greatest possible room to the interviewee to produce a narrative of his or her own – contrarily to what oral historians used to do in earlier decades. Oral historians tended often to seek responses to standardised questions, using questionnaires, making the interview seem more like an interrogation and did not focus on hearing people's reflective memories (Abrams 2010). This shift from questionnaire-style to narrative-style oral history reflects the researcher's intent to encourage a narrative response. This can then allow the researcher to conduct a narrative analysis and dig under the surface of the spoken words.

3.11 Application

There is no one model for how to do, understand, or use oral history, what is an appropriate balance of interpretation and story, theory, and practical consideration in one project may not apply to another (Shopes 2006). This is what makes oral history unique and interdisciplinary, as it enables practitioners to be engaged in a wide variety of ways.

Very often information from oral history interviews is used primarily to supplement written documents and analysed in the same fashion as other types of sources (Shopes 2006). For the most part, historians use oral

history to provide first-person anecdotes, a view to behind-the-scenes activity, and information about events not documented in the written record. When used carefully and weighed for reliability and validity, this is a legitimate use of oral history (Grele 2006). Initially, this was in fact the use intended for this study as well. However, as soon as I began conducting oral histories, I realised there was a unique nature to oral history that could not be ignored. Oral history gives historians the opportunity to explore meaning and significance of events and people's lives, and help us reflect on the relationship between the past and present rather than focusing solely on historical evidence. In this way oral history becomes a unique tool for examining what people remember about the past and how they tell their stories. This particular use of oral history is inspired by a less traditional approach in which oral history is used to tell more nuanced stories about not just 'what happened' but about what people think happened, and how those memories are incorporated into their contemporary identities (Charlton et al. 2006).

3.12 The Interview Process

The sampling method used for the interviewee selection in this study is the "snowball sampling' method, also known as chain-referral or network sampling (Parker et al. 2019). The Covid-19 situation made recruiting participants for this study particularly challenging, and ultimately this method proved to be the most successful to overcome the issue. Initially, I asked local archives and libraries to post a call for participants on my behalf on their social media accounts and later when covid restrictions were lifted, I left recruitment flyers at the Hull History Centre, the East Riding Archives, and the Hull Central Library. A few people contacted me after having seen

a few posts on Twitter but only one of them was further selected for the interview.

With snowball sampling, researchers usually start with a small number of initial contacts, who fit the research criteria and are invited to become participants within the study. These are then asked to recommend other contacts who fit the criteria and might also be willing participants, who then in turn recommend other potential participants, and so on – ergo the name "snowball" because the sample group grows like a rolling snowball. This method is a non-probability sampling technique, which means that researchers, and participants to some extent, choose the sample instead of randomly selecting it, so not all members of a community have an equal chance of being selected for the study (Parker et al. 2019). However, this method is beneficial because current participants are likely to know others who share similar characteristics that are relevant to the study. This technique can have applications in many fields, and it is one of the most popular methods of sampling in qualitative research (Parker et al. 2019). Anna Bryson (2007) used "snowball sampling" to obtain her oral history interviews for her investigation on the influence of collective memory on political identity in Northern Ireland. The same method was used by sociologist Rhoda Wilkie (2010) in her work on the connection between farmers and livestock in which she explored farmers' attitudes and behaviours towards animals who are slaughtered for food. This approach to sampling proved effective during this project, not only in recruiting interviewees but also in following networks of connections through the community. One location in which this method was particularly fruitful was at the Carnegie Heritage Centre, where the volunteer staff were able to use their connections to persuade potential interviewees to agree to speak with me.

The interviews took the form of an informal conversation in which a list of topics and potential questions was used to make sure that everything was covered, but the lead was ideally taken by the interviewee. The advantage of this method was that the information was not anticipated, and this technique was favoured by Ewart Evans (1987). Potential interviewees were contacted mostly by email, making sure to mention the mutual acquaintance who had recommended the person. Following this, a date and time for interview was arranged, putting the interviewee in control of when and where the interview was to take place. This was done in accordance with the Covid-19 restrictions in place at the time of the interviews. I opted for a friendly and casual atmosphere rather than a formal session, following oral history practices. Indeed, most interviewees were made nervous by the suggestion that the research was academic in nature. They often believed that their stories and knowledge about flooding in Hull would not be of any interest to a researcher. However, when I explained that the information would be used for my PhD research and introduced my work as "a history project", participants showed more interest and looked more comfortable when sharing information about their personal life.

Before the interview a participant information sheet along with a consent form were sent by email or given in person to all participants. This allowed interviewees to familiarise with the project and with the use of personal data. Following the interview, the implications of the consent form were explained once again, and I gave the opportunity for parts of the recording to be excluded from being used or shared, if they wished to do so. Anonymity was granted to all participants, following recommendation of the Faculty of Science and Engineering Ethics Committee. Furthermore, at the end of every interview, a small box of chocolates along with a thank you card was given to each participant and, considering the amount of time

most participants had given, I felt that this small effort was an important one to make. The Covid-19 situation has generally worked against me, as on many occasions people who were interested in being interviewed were reluctant to meet in person or to meet on university premises. Had we been in normal circumstances, I would have likely been able to reach out a larger number of people and collect far more interviews. However, the interviews collected are rich in details and contain invaluable information that allowed for this study to be innovative in a variety of ways.

3.13 Ethical Considerations

As much as it is desirable for an oral history interview to run flawlessly and in accordance with all the best practice from the numerous manuals and handbooks available to the postgraduate researcher, oral history involves living people, and is therefore possibly one of the most unpredictable methods of research open to the historian. The way the interviewee is approached, the phrasing of questions asked, and the identity of the interviewer can all have a considerable effect on the outcome of the research. Therefore, while the advantages of using oral history are many, this technique also generates ethical problems which differ from document-based history.

Ethical issues that were considered in this study include firstly informed consent which details the ways the recorded material may be used and allow the interviewee to specify what material may not be included. Briefing and debriefing sessions immediately before and after the interview were used in this project to ensure that interviewees understood how their recollections would be used, and the rights they had regarding the recorded

material and written transcripts. As a researcher it is also important to be well-informed prior to the interviews, and to bear in mind that the broader objective of oral history is that the material should be useful for other oral history projects in the future, and not simply for personal research. It was important to make the material as accessible as possible by transcribing the recordings, but also to maintain a good relationship with the participants through the whole process as further data could be gathered by other researchers wishing to interview members of the same community.

Another ethical issue considered in this study is impartiality. An interviewer cannot avoid being seen as an individual by the interviewee, and as individuals we are influenced by our own gender, class, national and racial attributes (Haraway 1991). At the beginning of this study, I was worried I wouldn't be able to gain access to information in the same way an insider would. However, I believe I was able to have a greater degree of objectivity and allowed the interviewee to relax and speak freely by not being part of the community. It is impossible that my own identity did not influence interviewees' responses in some way, and this can be negative as well as positive. For example, I noticed a tendency, particularly early on in the interviews, for participants to speak in a tone and language which did not seem natural to them. This often changed as the interview went on and interviewees felt more comfortable, but not always. My role as a researcher, my age and gender, may have all contributed to this.

Furthermore, when conducting oral history, it is inevitable to become concerned about the potential power inequality in the relationship and the ethical implications of such inequalities. On one hand, I wanted to equalize the relationship by ensuring interviewees were comfortable and as involved as possible in the interview process. On the other hand, I was wary of

becoming too close to the subjects, as I was concerned that would limit their ability to interpret the information honestly. While we can attempt to diminish distance in the interview relationship, it will always be unequal. As researchers, we initiate the project, provide the equipment, ask the questions, and decide whether or not to return for a follow-up interview. With oral sources, the narrator is pulled into the narrative and becomes part of the story but ultimately the control of historical discourse remains in the hands of the historian (Portelli 2015). The interviewee speaks *to* the historian, *with* the historian and *through* the historian, as the material is published. While there is a personal involvement of the narrator in the story, the historian is just as involved in the narrative-making and holds the responsibility to balance both roles. As researchers, we should make effort to equalise the power dynamic, but we must recognise that it exists and do the best we can.

Other ethical considerations include the transcription of oral material. The debate over whether to transcribe and how much to edit the interview transcript raises questions about both the nature of the evidence and the control over its presentation. Like most scholars who use oral history, I prefer the transcript to the tape because of ease of access. In addition, tapes can be easily damaged and/or lost, and researchers have the responsibility to secure and preserve the material at their best. A way to preserve oral history is by transcribing it. Yet there is also a broad consensus that the typed page cannot reflect entirely the spoken dialogue. Scholars have found it impossible to translate all nonlanguage verbal components of interviews along with the visual elements present in audio recordings (Charlton et al. 2006). The same scholars also believe that transcription takes authority away from the original storyteller and gives it to the person

transcribing it into printed form, which has more cultural authority and thus comes to represent the official version.

In addition, once historians decide to transcribe interviews, they are faced with the issue of choosing how much to "clean up" the text by editing or verifying. Particularly relevant to this project was the issue of the rendering of accent and dialect into text. Some interviewees for this project had strong Hull accent, and some used dialect words. The approach taken for these transcriptions was generally to use standardised spellings unless the pronunciation of a word was significantly different from standard. This decision was made to ensure that the work resulting from my oral history interviews would be usable and accessible to all interested and particularly for future research. Most scholars advocate for such approach as it does not take away from the original exchange between interviewee and interviewer and ensures that the material is as accessible as possible (Caunce 1994; Charlton et al 2006). The question remains: is the oral history a record of an interview, complete with non-linguistic elements of the exchange? Or is it a more polished, accessible story crafted by the researcher to reveal the narrator's meaning? A transcript is not a complete record of the spoken word and can never capture the full range of communicated meaning in the interview. However, in modern academic culture, we express ourselves in writing. Transcribing and editing an interview still represent the speakers in a respectful way, but it is important that the researcher uses the material with professional integrity and academic honesty that shapes any academic work.

Beyond this debate, the most frustrating problem for many oral historians is who has interpretative authority over the story. The oral history narrative is produced by a dialogue between two people, so who gets to say what it

means? Many oral historians aim for a collaborative approach and attempt to share authority with their subjects. However, once the interview is transcribed, edited, and used in public or scholarly presentations, interpretative authority seems to be in the researcher's hands. Ultimately, we have the responsibility to interpret the meaning of the interview and use it to understand broader historical and social phenomena. Certainly, on some occasions scholarly analysis and even presentation can go too far and alienate the material from the narrator. Therefore, it is important to remember that our responsibility as researcher is to interpret the material with recognition of the realities of the interview exchange and a focus on the narrator's stories of lived experiences.

Finally, beyond the ethical obligations relating to the treatment of data, oral historian Stephen Caunce noted that the interviewer has also social obligations: 'Many elderly people are lonely and get back something from oral history without being paid – indeed, a visit may have a significance you do not suspect, so do not miss one lightly.' (1994, p. 141). For this reason, every effort was made not to schedule more than one interview on the same day, so that conversation would not be rushed, and interviewees had the time to think over their answers. This was particularly relevant for the interviews conducted on university premises, as such settings can sometimes be intimidating for interviewees. It was important to spend some time making interviewees feel at ease as this would help facilitate the conversation and promote openness.

3.14 Conclusions

In this chapter I have outlined the use of newspapers and oral history within my study. Both sources allowed for a rich and multi-layered analysis of flood-related experiences, events, and memories of Hull people in the twentieth century. While there have been challenges in using these sources, I will demonstrate in the following chapters how this multi-method approach was useful to understand the complex relationship between people and flooding.

4 A Battle Against Nature: 1901-1947.

4.1. Setting the scene

The thesis focuses on higher magnitude events which either had significant impacts on people and properties, or which were in some way unusual in their physical characteristics or impacts, therefore reported in the newspapers. Through the thesis, I refer to flood events as minor, moderate, and major based on the severity classification used by governmental weather agencies including the Australian Bureau of Meteorology and the U.S. National Weather Service. The categorical definitions based on impacts are as follows:

> "*minor flooding* is defined as causing minimal or no property damage, but possibly some public threat.
>
> *moderate flooding* results in some inundation of structures and roads, and some evacuations of people and/or transfer of property to higher elevations may be necessary.
>
> *major flooding* results in extensive inundation of structures and roads, and significant evacuations of people and/or transfer of property to higher elevations are necessary" (NWS 2012, p.5).

A historical record of flood events which occurred in Hull between 1901 and 1990 is shown in Table 1. The record, mostly based on newspapers accounts, includes (whenever possible) the exact date of the flood, the type of flooding, the areas affected and the severity of the floods. The floods

considered more significant, in terms of impacts to people and properties, are highlighted in light yellow. Inevitably, the record is likely to be incomplete because some events may not have been reported or may not have been included in the British Newspaper Archive database. This was discussed in more details in the methodology chapter.

Table 1. Flood events occurred in Hull between 1901-1990

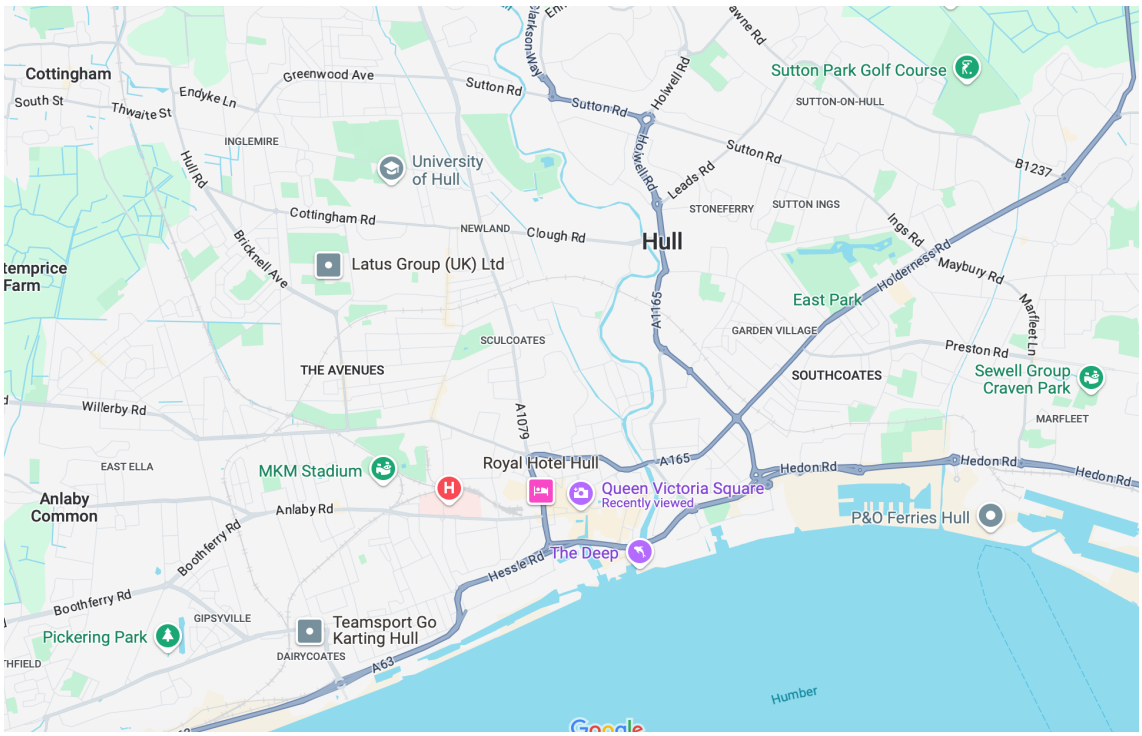
Year	**Location**	**Date**	**Type**	**Severity**	**Archival Source**
1901	Sculcoates	10 August	Tidal and Surface Water	Moderate	Hull Daily Mail, Beverley and East Riding Recorder
1906	Unknown	13 August	Surface Water	Minor	Leeds Mercury
1909	West Hull	1 August	Tidal and Surface Water	Moderate	Hull Daily Mail
1916	Wincolmlee	13 October	Tidal	Moderate	Birmingham Daily Post, Yorkshire Evening Post, Dundee Evening Telegraph
1920	Wincolmlee and Sculcoates	8 January	Tidal and Fluvial (River Hull)	Moderate to major	Hull Daily Mail, Dundee Courier, Yorkshire Evening Post.
1921	Wincolmlee, Old Town and Sculcoates	17 December	Tidal and Fluvial (River Hull and Humber)	Major	Hull Daily Mail, Shields Daily News, Dundee Courier
1921	Wincolmlee	31 December	Tidal and Fluvial (River Hull)	Minor	Manchester Evening Post, Lancashire Evening Post, Derby Daily Telegraph

1922	Wincolmlee	22 October	Tidal	Minor	Hull Daily News, Yorkshire Evening Post
1923	Wincolmlee	10 October	Tidal and Fluvial (River Hull)	Moderate	Hartlepool Northern Daily Mail, Shields Daily News
1924	Wincolmlee	5 February	Tidal and Fluvial (River Hull)	Minor	Hull Daily Mail
1926	West Hull	14 June	Surface Water	Minor	Hull Daily Mail
1928	East Hull	22 March	Tidal and Fluvial (River Hull)	Minor	Hull Daily Mail
1930	Unknown	24 September	Unknown	Minor	Hull Daily Mail
1931	Hull City Centre	4 August	Surface Water	Moderate	Hull Daily Mail
1931	Stoneferry and North Ferriby	14 October	Tidal and Fluvial (River Hull)	Minor	Hull Daily Mail, Leeds Mercury
1933	Unknown	25 February	High water levels in the Humber (blizzard)	Minor	Hull Daily Mail
1935	Victoria Pier (Hull), Stoneferry and Wincolmlee	15 September	Tidal	Minor	Yorkshire Post and Leeds Intelligencer
1936	West Hull and East Hull	29 January	Surface Water and Fluvial (River Hull)	Major	Hull Daily Mail
1937	Wincolmlee	14-15 March	Tidal and Fluvial (River Hull)	Minor	Hull Daily Mail
1937	West Hull	4 December	Surface Water	Minor	Hull Daily Mail
1938	Stoneferry, Wincolmlee	17 January	Surface Water and	Minor	Hull Daily Mail

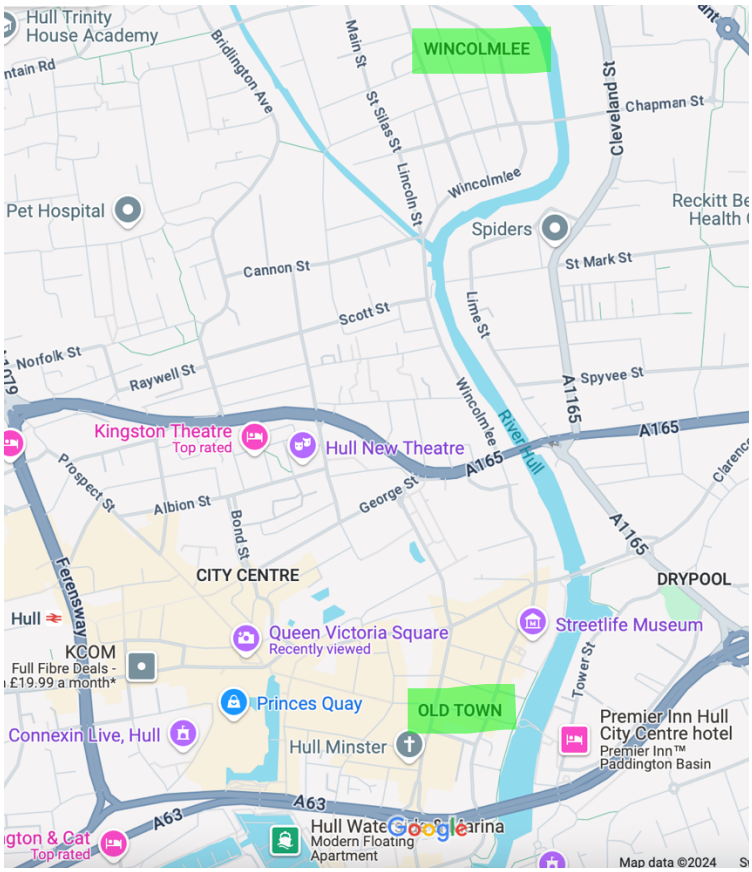
	and South Ferriby		Fluvial (River Hull)		
1939	East Hull	19 June	Surface Water	Minor	Hull Daily Mail
1939	West Hull, East Hull and Hull City Centre	5 August	Surface Water	Moderate	Hull Daily Mail
1943	Old Town, Wincolmlee and Victoria Pier	17 February	Tidal and Fluvial (Humber and River Hull)	Moderate to Major	Hull Daily Mail
1946	East Hull	13 July	Surface Water	Minor	Hull Daily Mail
1946	West Hull	19-20 September	Surface Water	Minor	Hull Daily Mail
1946	West Hull	20 November	Surface Water	Minor	Hull Daily Mail
1947	Unknown	18 March	Tidal	Unknown	Hull Daily Mail
1949	Stoneferry	17 March	Fluvial	Minor	Hull Daily Mail
1950	West Hull	16 July	Pluvial	Unknown	Hull Daily Mail
1950	Wincolmlee	15 September	Tidal and Fluvial (River Hull)	Minor	Hull Daily Mail
1950	Chapman St. and Cleveland St. areas	24 November	Collapse of tidal door	Moderate	Hull Daily Mail
1950	Chapman St. and Cleveland St. areas	25 November	Collapse of tidal door	Moderate	Hull Daily Mail
1951	Unknown	7 August	Surface Water	Minor	Hartlepool Northern Daily Mail
1953	Pickering Road and Hessle Road areas	12 December	Sluice-gate fail	Minor to Moderate	Yorkshire Evening Post

1953	Pickering Road and Hessle Road areas	24 December	Sluice-gate fail	Minor to Moderate	Yorkshire Evening Post
1954	Old Town and Wincolmlee	14 October	Tidal and Groundwater	Minor	Hartlepool Northern Daily Mail, Hull Daily Mail
1954	Old Town, Wincolmlee and Drypool	12 November	Tidal and Fluvial	Major	Yorkshire Post and Leeds Intelligencer, Bradford Observer
1955	Unknown	11 January	Tidal and Fluvial (River Hull)	Unknown	Hull Daily Mail
1958	Unknown	October	Unknown	Unknown	Hull Daily Mail
1958	Unknown	December	Unknown	Unknown	Hull Daily Mail
1959	Wincolmlee, Stoneferry and North Ferriby	30 December	Tidal and Fluvial (River Hull)	Minor to Moderate	Hull Daily Mail
1960	Unknown	February	Unknown	Unknown	Hull Daily Mail
1961	Wincolmlee and Stoneferry	20 March	Tidal	Major	Hull Daily Mail
1962	Unknown	7 February	Tidal	Unknown	Hull Daily Mail
1963	Unknown	June	Unknown	Unknown	Hull Daily Mail
1963	Unknown	August	Unknown	Unknown	Hull Daily Mail
1963	Unknown	December	Surface Water	Minor to Moderate	Hull Daily Mail
1965	Unknown	20 January	Unknown	Unknown	Hull Daily Mail
1966	Unknown	February	Unknown	Unknown	Hull Daily Mail

1967	Unknown	March	Unknown	Unknown	Hull Daily Mail
1967	Unknown	October	Unknown	Unknown	Hull Daily Mail
1968	Unknown	September	Unknown	Unknown	Hull Daily Mail
1969	Unknown	March	Unknown	Unknown	Hull Daily Mail
1969	Old Town and Wincolmlee	29 September	Tidal	Major	Hull Daily Mail
1970	Unknown	27 June	Surface Water	Minor	Hull Daily Mail
1970	Unknown	20 August	Surface Water	Minor	Hull Daily Mail
1972	Unknown	26 January	Tidal and Surface Water	Minor	Hull Daily Mail
1974	Unknown	August	Unknown	Minor	Hull Daily Mail
1976	Unknown	3 January	Unknown	Minor	Hull Daily Mail
1976	Unknown	June	Unknown	Minor	Hull Daily Mail
1983	West Hull and North Hull	8 December	Surface Water	Major	Hull Daily Mail
1984	Unknown	February	Unknown	Unknown	Hull Daily Mail
1984	West Hull, Anlaby, Hessle and Cottingham	3 August	Flash flood	Major	Hull Daily Mail
1987	Wincolmlee, Bankside, Great Union Street	September	Tidal	Unknown	Hull Daily Mail



Map 2. Map showing the city of Hull and the neighbourhoods mentioned in the text. (Google Maps 2024)



Map 3. Map highlighting the two areas most affected by major flooding in Hull before the construction of the Hull Tidal Barrier. (Google Maps 2024)

As shown in Table 1, the city of Hull experienced flooding in every decade of the twentieth century, with increased frequency in the 1920s, 1930s, 1950s and 1960s. Flooding included tidal, fluvial, and pluvial events, and occurred in every season of the year with no seasonal pattern. The first decade of the 1900s was characterised by three major floods. All occurred in August and were caused by heavy rainfall, but the floods of 1901 and 1909 were further exacerbated by high tides. The floods did not get much media attention and only local and regional newspapers such as the *Hull Daily Mail*, the *Beverley and East Riding Recorder* and the *Leeds Mercury* briefly reported on the events.

In the third decade of the 1900s flooding occurred more frequently than in the previous decades. Eight floods hit the city of Hull and the first three - in 1920 and 1921 - were major events. In particular, the year of 1921 is remembered by the people of Hull for "one of the worst floods of the century" (*Hull Daily Mail* 19 Dec 1921, page 7). This flood mostly affected the Old Town and the area of Wincolmlee, east to the city. While there was no loss of human life, the flood caused considerable damage amounting to c. £100,000. It received national press attention, and it is often referred to in later years, particularly when tidal floods of similar severity occurred again in Hull (1954, 1961 and 1969). The remaining years of the decade were characterised by a series of minor tidal floods (October 1922, October 1923, February 1924, June 1926, March 1928) that caused anxiety among residents but no damage or loss of life. Newspaper coverage of these floods appears to remain quite limited. Similarly to the previous decade, the 1930s saw Hull and the East Riding experience significant flooding all through the decade. The 1930s saw more flood events in Hull than any other decade in the twentieth century, some even occurring within months from each other (August and October 1931; January and March 1936; March and December

1937; June and August 1939). The floods included pluvial, fluvial, and tidal events but were either minor or moderate and caused no major disruptions. For the 1940s, the only records found are of two pluvial floods in 1946 and two tidal floods in 1943 and 1947. However, we must remember that Hull suffered severe destruction through bombing during the Second World War and understandably local and regional newspapers of the 1940s had a greater focus on the war and the Hull Blitz, rather than flooding. It is possible that more floods occurred between 1941-1949 but there is no record of them.

The 1950s saw the city of Hull facing numerous floods, three occurring in 1950 alone. Twelve floods overall can be accounted for the whole decade. The year 1953 is usually remembered for the East Coast floods, "the worst natural disaster to befall Britain during the twentieth century" (Baxter 2005, p. 1293). In January 1953, "a great storm surge swept down the east coast of England and overcame the fragile sea defences, leaving 307 people drowned or dead from the effects of exposure, before crossing the North Sea into Holland, where 1795 people perished" (Baxter 2005, p.1294). The 1953 event "was pivotal in shaping the current state of UK flood risk management and was a major incentive for scientific research and improved forecasts, warnings, and sea defences" (Haigh et al. 2017, p.2). Surprisingly, the city of Hull escaped the East Coast floods (Campbell 2023, Weir 2023) and, in the East Riding, only the nearby Sunk Island was submerged by floodwaters (Nicholson 1956). However, it is worth clarifying this here as many believe that Hull itself was indeed affected by the winter storm of 1953. While the east coast floods spared Hull in January 1953, eight more floods hit the area between December 1953 and December 1959, ranging from minor to moderate events. As the table above shows, thirteen floods are then reported in the 1960s. Two of which, the ones of

1961 and 1969, were significant and led to important decisions of flood management in Hull. This will be discussed in detail in chapter 5, section 5.2.

The floods occurring in the 1970s do not appear to have caused great inconveniences or be generally disastrous for Hull. There are, in fact, limited or no information on these events. We know that the floods of June 1970 and January 1972 were caused by storm surges, while the one in August 1970 was caused by high tide in Hull and heavy rains in the rest of the East Riding. The scarce information available on all the 1970s floods likely indicates that the floods were minor events, with minimal flooding occurring and no significant damages caused. Nonetheless, this decade is relevant for the history of flooding in Hull. "In 1971 the Yorkshire River Authority (YRA) prepared a preliminary report which examined in detail the case for constructing a tidal surge barrier. It placed a Bill before Parliament in 1973 which received Royal Assent to become the Hull Tidal Surge Barrier Act, empowering 'the Yorkshire River Authority to construct and operate a barrier, with a movable gate, across the River Hull in the City and County of Kingston Upon Hull' […] Work commenced on 17 January 1977 and the barrier was completed in 1980" (YWA 1974, para 4). In the 1980s, four flood events can be found but only the ones of December 1983 and August 1984 were noteworthy. Both floods, caused by heavy rainfalls, hit the Hull area within eight months from each other, bringing the issue of flooding in Hull to media attention once again (*Hull Daily Mail* 9 Dec 1983; *Hull Daily Mail* 4 Aug 1984; *Hull Daily Mail* 6 Aug 1984; *Hull Daily Mail* 1 Sept 1984).

4.1.1. Background to Hull's Drainage System and Water Authorities

During the late 19th century the city of Hull was drained via a series of water channels that discharged into the Humber. The first improvements to the drainage system occurred in 1884 with the construction of a pumping station in West Hull, but it was not until the 1940s that new schemes of drainage were approved and implemented (Coulthard et al. 2007). Between 1949 and 1975 a new drainage system was designed and constructed in Hull, with three major pumping stations – one for East Hull, one for West Hull and one in Bransholme (HCC 2020). In 2000 Yorkshire Water developed a new scheme to treat the sewerage generated in Hull's combined drainage system called Humbercare (Yorkshire Water 2008). This consists of a 10.5 Km-tunnel, running underground parallel to the Humber Estuary, that "connects West and East Hull sewers to a new sewerage works and outfall sited at Saltend. […] Humbercare drains all water from West and East Hull to Saltend, but when at capacity, East and West Hull pumping stations act as "emergency pumps" to remove excess water. […] The completion of this major scheme put an end to raw sewage being pumped into the Humber Estuary" (Coulthard et al. 2007, p. 26). Hull's integrated sewage system, completed in the 1970s, combined with the flood barrier built in 1980 greatly reduced any issues with flooding from the 1970s to the end of the century.

The administration of water law in Hull remained local under Hull Corporation until the Water Act 1973, which transferred responsibility for Hull and its catchments to Yorkshire Water. The Water Act of 1989 then brought "privatisation of the water authorities' water supply and sewerage functions [and] transfer of the river functions to a newly created National River Authority" (Coulthard et al. 2007, p. 25), which was later incorporated into the Environment Agency. "The Director General of Water Services is the economic regulator of water and sewerage services in England and

Wales and the head of the Office of Water Services, and is accountable directly to Parliament and Welsh Assembly" (Coulthard et al. 2007, p.25).

4.2. The Beginning of the Century

As seen in Table 1., only three major floods occurred in the first decade of the 1900s and few newspapers reported on these events. In the early 1900s, newspaper accounts tended to utilise a concise narrative and generally focus was given to the causes of flooding and the impacts on housing and particularly businesses. The extract below describing the 1901 flood is a good example of this:

> "A thunderstorm of almost unparalleled violence broke over Hull on Saturday afternoon. In the morning the heat was intense, and about 2 o'clock phenomenal darkness preceded the storm. For over an hour there were incessant flashes of lightning, closely followed by loud peals of thunder and accompanied by foaming torrents of rain. So unprecedently heavy was the deluge that it bore no small resemblance to the bursting of a waterspout.
>
> The tide was up, and the water, unable to find an outlet into the river through the main drains, which were practically choked for the time being, flooded the whole of the streets to the depth of several inches. In the Sculcoates district, which is the lowest part of the city, the flood rushed into the houses, and inundated the lower storeys. Many tradesmen in other parts of the city had their cellars flooded, and serious damage to stored goods followed. One tree on the Newland Road was struck by lightning and several hoardings blown down.

> Happily, there were no causalities to life or limb. Not a few public houses had to close to an early hour, for with the flooding of beer-cellars and loss of liquor no business could be done, and business was completely paralyzed. It is impossible to calculate the amount of damage done, particularly to the crops in the district, which must have suffered badly." (*Beverley and East Riding Recorder* 17 Aug 1901, p.5).

As seen above, after a brief description of the event, the reporter moved onto the damage caused to houses and businesses, goods, and crops. There is a reference to the fact that there were no fatalities, but no mention is made of the social impacts of the event and of how people responded to the flood. Although, surely, the loss of goods and crops must have had some negative impacts on people's lives; not only financially but also psychologically, as such losses may have easily caused emotional distress due to the inability of reopening stores or feeding livestock. In the early 1900s, reporters of the *Hull Daily Mail* were inclined to be succinct and only occasionally would critically approach the issue of flooding. A rare example of this can be seen in the excerpt below. Here a reporter of the *Hull Daily Mail* raised issues linked to city planning and to the role the Mayor of Hull played in dealing with flooding:

> "The storm on Saturday, and the flooding of cellars of business establishments in Hull has once more brought forcibly to the notice of the tenants and occupiers of such premises the necessity for finding some effective means for the prevention of the back flow of water and sewer gas. In one case a tradesman estimated his loss on Saturday at £1,000, and another large firm is estimated to have lost considerably more than that amount through damage to stock. Even

> the Chairman of the Corporation Works Committee had the basement of his dwelling in Kingston Square flooded and the puzzle of many is: How can the back flow of sewage and sewer gas be prevented in Hull? […] Since the storm, the Mayor of Hull has again been giving his attention to this problem in the City, and we understand he has consulted Mr Southern as to the gully traps now advertised in the "Mail" (*Hull Daily Mail* 13 Aug 1901, p.3).

Above, we can see references to possible solutions that the mayor was taking into consideration to avoid future flooding in Hull. This indicates that flooding was seen as an issue that the "City" should have been concerned about and dealt with, according to the *Hull Daily Mail*. The use of the word "prevention" is also an indication that the media started to frame flooding in Hull as "a problem to fix", but it is generally rare to see local newspapers discussing ways of managing water and flooding in Hull in the early 1900s. A recent study on flooding in Medieval and Early Modern Hull (McDonagh et al. 2024) has shown that living with flood was "a very normal part of dwelling in the medieval and early modern town" (p.29). While this is certainly true for the Hull of that time, the stories from the *Hull Daily Mail* in the 1900s contrast with this "living with water mentality" (McDonagh et al. 2024, p.29). In the twentieth century, newspaper accounts suggested that flooding started to become a pervasive, year-round threat to everyday life. When lives were not lost, properties were damaged or crops were destroyed, livestock was lost or people's health was affected. Flooding was no longer an accepted inconvenience in Hull and newspapers gradually changed their narrative around risk and responsibilities. This narrative likely contributed to changing public perceptions of flood risk and to the development of flood management in the city of Hull all through the twentieth century.

The floods of 1901 and 1909 were both moderate events caused by heavy rains and exacerbated by high tides: no casualties occurred during either flood, but damage was considerable through the city. In 1901, damage involved businesses and houses, particularly in the Sculcoates district. In 1909, both the Old Town and West Hull were affected by flooding, although damage was mostly limited to West Hull. Impacts on people, businesses, infrastructures, and crops were more significant than in 1901 and the areas of Newland Avenue, Park Avenue, Victoria Avenue, Endike Lane and Pearson Park remained underwater until the day after the flood due to the drains being unable to carry the water away. The 1909 flood is the first event of the 20th century to highlight the importance of the drainage system in Hull and the issues related to it. I'll discuss this further in this chapter as later floods accentuate drainage problems in the city.

The flood of August 1909 was described as remarkable:

> "On Sunday, the sky again looked fray and the genial sunshine, so much looked forward to for August bank Holiday, was lacking. The air was chill, but still it remained fairly dry (with the exception of a slight fall of mist) until the afternoon. Hopes of a fine holiday, on which so many thousands build their faith, were rudely shattered, however, during the afternoon. Rain commenced to fall soon after 2.30, and as the evening advanced, the gentle rain became a deluge. The scene in the Hull streets in the evening was remarkable. There were no crowds, no bustle, no good humour, as is usually seen on the eve of what is regarded as the popular Bank Holiday of the year. Those intrepid pedestrians who were out wore mackintoshes or else carried umbrellas. The streets were like canals, as the rain could not get away

quickly enough. The tram cars, excepting at church-going or coming-out times, were almost empty." (*Hull Daily Mail* 2 Aug 1909, p.3)

The *Hull Daily Mail* reporter used very dramatic language, as seen above. This isn't a new phenomenon and reporters do so to sell news, but the dramatic representation of the flood does not automatically translate into people's experience of it. The overly dramatic accounts of floods in Hull are present all through the twentieth century and particularly in the *Hull Daily Mail*. Flood accounts also tend to be more dramatic as floods increase in frequency in Hull particularly in the years between the 1920s and 1960s. Nonetheless, as Knudson (1993) showed in previous studies, history should not only be concerned with what actually happened but also with what people thought was happening, as revealed by the media. Thus, the perception of past floods in Hull can be understood through the press. Whether the 1909 flood was "remarkable" in its kind and it was characterised by "dramatic" scenes in Hull or not, as my only sources of information are the newspapers of the time, we have to assume that the flood was a "remarkable" event and that the people of Hull saw the flood as such. "Newspapers are gauges of public opinion [and] since their inception in 1609 they have become the lingua franca of society, the most valuable index we have of measuring popular attitudes" (Knudson 1993, p. 9). The history of flooding in Hull cannot simply be an account of material events, but also an interpretation of "the spirit of a time or locality". The spirit is "revealed both by the true and by the false accounts given by the press" (Salmon 1923, p. 8) so while newspapers may not represent a full picture of factual events, they show a general perception of such events.

4.3. The Flood of 1921

> *"Amidst all the progress of science and the wonderful things man can do with various forces of Nature, there yet remains one against which he must acknowledge defeat – water. It is the most terrible force in the world, pre-eminent in its sway, a veritable monster when unchained." (Hull Daily Mail 19 Dec 1921, p.7)*

On the 17th of December 1921 "at 6.15 pm, high tide followed by a strong gale caused first the Humber to overflow and then the river Hull to burst its banks and flood the Old Town to a height of three or four feet" (*Hull Daily Mail* 19 Dec 1921, p.7). The strong gale that had prevailed in the Atlantic and the North Sea a few days earlier had caused the tide to be "unusually high" (*Hull Daily Mail* 19 Dec 1921, p.7). The *Hull Daily Mail* reported that the sewers were unable to carry away the water until the flood tide had receded, and they were partly responsible for the flooding water welling up through the manholes at various points in the city.

> "[The flood] made the Old Town a miniature Venice, without, however, any of its beauties, and converted Wincolmlee into a district of lake dwellings" (*Hull Daily Mail* 19 Dec 1921, p.7).

The 1921 flood left the city of Hull in a state of chaos for a few days with great loss sustained in the Old Town and the area of Wincolmlee. Residents of Wincolmlee had experienced floods before, but newspapers give the impression that this flood took them by surprise. Despite all the attempts to block up their doorways with mats and wooden boards, residents were

unable to stop the water from getting in. The force with which the water burst through the wharves was "unexpectedly strong" (*Hull Daily Mail* 19 Dec 1921, p.7) and much of the lower part of the area was completely flooded. Hundreds of people were stuck on rooftops or on top of furniture in their homes or shops. When the water subsided, it had left behind "a thick coating of mud and the inevitable evil smelling refuse", that the residents had to remove all through the weekend (*Hull Daily Mail* 19 Dec 1921, p.7). The Fire Brigade was said by the *Hull Daily Mail* to have worked incessantly through the night to rescue people and to pump water out of basements and cellars. The flood also had a significant impact on transport and utilities in the days immediately following the 17th of December. The North-Eastern Railway main line was damaged in several places, particularly at Brough. The service of trains beyond Brough was suspended and the traffic to and from Selby and beyond, was diverted via Market Weighton and York. The gasworks at Hessle were also flooded to a 'considerable depth', leaving the town in darkness for hours.

The 1921 flood also brought attention to possible health impacts of flooding. It is only in the 1920s, in fact, that newspapers in Hull start discussing health and wellbeing as impacts of flooding:

> "Dr Smallman and Mr P.M. Croswaite, representatives of the Ministry of Health, visited Hull yesterday, and with Dr Wright Mason, medical officer, toured the district where houses were flooded. Dr Mason said that as the water supply had not been contaminated there was no fear of typhoid fever. What they were anxious about was chest and other affections resulting from damp homes" (*Hull Daily Mail* 19 Dec 1921, p.7).

Health impacts associated with floods did not receive great attention in Hull newspapers but there are references to both physical and mental health consequences particularly after some of the major floods (1921, 1954, 1961 and 1969). Often terms like “distress” and “anxiety” are used by reporters in the 1920s but the extent of the impacts of flooding on health is not usually explored further. A relief fund was opened for those most affected by the 1921 Hull flood, especially the residents of the Wincolmlee area whose houses were most damaged, and goods destroyed. Initially, damage caused by the flood was estimated at more than half of a million pounds. However, a few days after the event, several newspapers reported that the damage was greatly exaggerated, and an estimate of the total damage was set to £100,000[3] by the Lord Mayor (*Hull Daily Mail* 21 Dec 1921; *Pall Mall Gazette* 20 Dec 1921; *Shields Daily News* 21 Dec1921; *Leeds Mercury* 20 Dec 1921; *Northern Whig* 21 Dec 1921).

4.3.1. Community cohesion

Despite the challenging aftermath of the 1921 flood, generosity and community cohesion kept the spirits up in Hull. Community cohesion emerging in times of distress such as disasters is not unique to Hull. The literature on collective behaviour in disasters supports the idea that in the face of danger, solidarity behaviours prevail in the form of social support (Aguirre 2005; Auf der Heide 2004; Barton 1969; Fritz & Williams 1957; Solnit 2009). Disasters require that:

[3] Roughly equivalent to £3,000,000 in 2017. Currency converted using the Currency Converter:1270-2017 available on The National Archives website.

> "we act, and act altruistically, bravely, and with initiative in order to survive or save the neighbours, no matter how we vote or what we do for a living. The positive emotions that arise in those unpromising circumstances demonstrate that social ties and meaningful work are deeply desired, readily improvised, and intensely rewarding" (Solnit 2009, p.7).

In the history of Hull floods, people have shown acts of courage in the face of disaster almost after every flood showing that "the prevalent human nature in disaster is resilient, resourceful, generous, empathic and brave" (Solnit 2009, p.9). For example, newspaper accounts of the 1921 flood offer examples of Hull community spirit:

> "a bright morning revealed 'all hands' on deck working with a will to restore order and comfort in the homes. […] Carpets and canvases were hung out to dry from points of vantage, and furniture that one could never hope to use again was being washed down. […] All got to work to remove the mud left behind while it was soft, retiring to bed to snatch a few short hours of sleep before resuming the arduous task". (*Hull Daily Mail* 19 Dec 1921, p.7)

During floods, Hull residents have frequently engaged in profound acts of solidarity and supported their community. Community spirit is shown in various forms, from lending boards or sandbags to neighbours to protect their homes, to helping neighbours with post-flood clean-ups, or to more heroic acts like dragging people out of flooded homes (*Hull Daily Mail* 19 Dec 1921, p. 5, 7; Flashback Issue 5, *Hull Daily Mail* 11 Dec 1993, p.36; Flashback Issue 32, *Hull Daily Mail* 23 Ma 1996; Flashback Issue 204*, Hull Daily Mail,* 2 Aug 2010, p.10; Flashback Issue 168, *Hull Daily Mail* 30 Jul 2007; Flashback Issue 162, *Hull Daily Mail* 29 Jan 2007, p.14-15). While living

through a disaster is a stressful experience, it is also one of deep community, solidarity, support, and courage.

Disasters, such as floods, are events that can endanger large communities and in which vital resources or opportunities to reach safety are scarce (Fritz 1961; Quarantelli 2001). However, research on disasters has consistently found that "solidarity behaviours, that is, social support among survivors as a group in the face of adversity" prevail over competition between individuals (Aguirre 2005; Auf der Heide 2004; Barton 1969; Chertkoff & Kushigian 1999; Fritz & Williams 1957). Newspaper accounts confirm the idea that solidarity in a disaster situation prevails over self-interest and that the normal competitive mechanisms are overridden. Everyone affected by the disaster becomes concerned with the others' wellbeing because "they" are now "us" (Drury, Cocking & Reicher 2009). This sense of "we-ness" that arises among flood-affected people can be understood as an emergent shared social identity, a function of their sense of common fate in relation to the disaster. This would explain solidarity behaviours in emergencies and disasters, such as floods. A previous study conducted in Hull following the floods of June 2007 also highlighted the sense of community in Hull and the ability of Hull residents to "pull together and help each other" during and after flood events (Whittle et al. 2010), supporting the studies mentioned above.

4.3.2. Was the 1921 flood an "act of God"?

As mentioned earlier, newspapers accounts of the 1921 are numerous[4] and all tend to frame the event quite dramatically. To give one example:

> "The flood was the advance guard of the water of the Atlantic, which the gale had hurled into the Channel and then along the North Sea, finding outlet in the big rivers and estuaries of the East Coast. The Humber is a wide estuary, and the pent-up forces rushed into it, swept past Grimsby, and then, as the channel narrowed, the waters surged up into a mighty heap and plunged over the Corporation Pier, to race with the speed of a galloping horse into Queen-street. It happened so quickly that within a few minutes Corporation Pier became a stationary island in the river and Queen-street was transformed into a replica of Venice.
>
> It is gratifying to find that despite the catastrophe to property, human life was held sacred. […] As a flood regarded as an "act of God", compensation for material damage is not available, but since there are many cases of distinct hardship through damage to household furniture in the tenement houses, in all probability a Relief Fund will be opened. The generosity of the Hull people will see to it that those who cannot afford even a small loss without privation as a result are made good. We owe them no less". (*Hull Daily Mail* 19 Dec 1921, p.7)

[4] Apart from the *Hull Daily Mail,* which is often cited here in reference to the 1921 flood, other regional newspapers that reported on the event include: *Driffield Times*, *Halifax Evening Courier, Huddersfield Daily Examiner, Leeds Mercury, Sheffield Telegraph, Sheffield Independent, Wakefield Advertiser & Gazette, Yorkshire Evening Post, Yorkshire Post and Leeds Intelligencer.* However, the *Hull Daily Mail* is the newspaper that covered the 1921 Hull flood more extensively. This applies to later Hull floods as well.

Hull is often compared to Venice to stress the severity of the inundation but also to convey a more dramatic effect. In the extract above, the *Hull Daily Mail* refers to the event as an "act of God" but for a flood to be considered as such, it should be unpredictable, unpreventable, unavoidable, an act of nature and not linked to any human actions, lack of maintenance or negligence. Was it the case for the 1921 flood? The *Hull Daily Mail* wrote that:

> "the calendar time for high water at Hull was 7.47pm, but the tide actually made an hour before that, when the gauge at the Albert Dock registered 32ft 8in, or about 3ft 8in more than an ordinary spring tide. […] The exceptional height which the tide reached is attributable to the strong gales that had prevailed in the Atlantic and the North Sea for some days previously". (*Hull Daily Mail* 19 Dec 1921, p.5)

The tide coming in earlier and carrying an "unusually" high volume of water with it may have surprised Hull residents but as the *Hull Daily Mail* reported, strong gales had been experienced nearby for some days which perhaps should have been a warning sign for the East Coast of England. While the flood of 1921 may have been an act of nature, it was not totally unpredictable. It should also be noted that ruling floods an act of god was also a convenient way to avoid needing to pay compensation to householders and businesses. British newspapers confirm this tendency of presenting floods as "natural" and thus "beyond our control" to avoid liability (e.g. *Newcastle Journal* 27 Jul 1927, *Gloucester Citizen* 6 Jan 1928, *Leicester Evening Mail* 24 May 1932, *Hartlepool Northern Daily Mail* 6 Jan 1928, *Hull Daily Mail* 6 Jan 1928, *Dover Express* 20 Jan 1928).

An excerpt of the *Newcastle Journal* as follows:

> "At a meeting of the Sunderland Rural District Council last night, complaints were reported regarding flooding at Fulwell and Ryhope Council houses during the thunderstorm on Thursday last. There were threats of proceedings against the Council, but it was explained that all the sewers were in working order, and capable of dealing with anything but an abnormal rainfall and the floods which took place on Thursday must be regarded as an act of God, the Council not being in any way responsible for the deluge." (*Newcastle Journal* 27 Jul 1927, p.11)

In the 1920s, newspapers wrote about floods as natural, inevitable, and random disasters. This was not limited to newspapers or to the UK, generally natural disasters had been seen as "morally inert phenomena, chance events that lied beyond the control of human beings" for centuries (Steinberg 2006, xxi). This approach to natural calamity, that dominated politics in many Western countries over the last century, "has tended to overemphasise the natural factors at play while diminishing the human, social, and economic forces central to these phenomena. According to the dominant view of natural calamity, these events were understood by scientists, the media, and technocrats as primarily accidents – unexpected, unpredictable happenings" (Hewitt 1997, p. 24). Seen as unusual events disconnected from people's daily interactions with nature, no one could be held accountable for them. This vision that such disasters were caused solely by random natural forces, led to believe that occurrences such as floods lay "entirely outside human history, beyond our influence and beyond our control. In truth, natural calamities do not just happen; they are produced through a chain of human choices and natural occurrences" (Hewitt 1997, 13). However, as seen above, many newspapers published in the first three decades of the 1900s show that floods were mostly

understood as “acts of God” supporting the dominant view of natural calamity. The law relating to flooding in the United Kingdom developed from the principle that “flooding was natural and, as such, no one could be blamed for causing it” (Howarth 2002, p. 15):

> “The common law of the country regards the devastation caused by floods as an act of God, for which there can be no damage – so much that even when a man has collected a large quantity of water together for his own purposes and a sudden tempest causes this water to overflow, he is not liable for damages.” (*Hartlepool Northern Daily Mail* 27 Oct 1903)

This emphasis on “chaotic nature as the culprit” had penetrated the law and hugely affected flood management in the UK. The media representation of flood events seems to have mirrored the common law approach to the issue of liability for damage from flooding, particularly between 1920-1929 as I cited above. This approach gradually changed and a considerable body of case law in relation to flooding developed all through the mid- and late twentieth century, moving away from the idea that flood damage was a “natural nuisance” (Howarth 2002).

4.4. 1936: A Shift in Narrative

While all floods of the 1930s received some media attention, it was the flood of January 1936 that grabbed the attention of reporters. The flood affected both the east and the west parts of the city. Gardens, fields and

roadways along Cottingham Road and Hull Road were underwater as the drains were unable to get the water away quickly enough. Meanwhile, homeowners in Wincolmlee and Boothferry had their properties flooded.

> "Last night following many hours of rain the agricultural drains which pass through parts of Hull to empty themselves into the River Hull became very swollen. At high water they were tide-locked, and the Cottingham drain overflowed in several places. Fields and gardens were flooded to a considerable depth. In another part of the city, the subway on the Boothferry Road was also flooded." (*Leeds Mercury* 30 Jan 1936, p.1)

A few days after the flood, the *Hull Daily Mail* published a provocative piece titled "Who is responsible for recent Hull floods?". This is when questions over responsibility to prevent flooding first started to appear in twentieth-century Hull newspapers:

> "Well, what are we going to do about it? It is a very serious matter. We not only have had extensive floods due to the overflowing of the River Hull but there has also been the Cottingham-road drain; and the many hundreds of people who have been inconvenienced clamour to know who is responsible". (*Hull Daily Mail* 3 Feb 1936, p.6)

The *Hull Daily Mail* had received letters from "angry" residents who were affected by the flood of 1936 and demanded to know where responsibility lay. At the time, the Catchment Board was the authority responsible for the River Hull while the Internal Drainage Board would have been responsible for the drain in Cottingham Road. The article offers insights into the organization of water authorities in the 1930s and looks into how future floods could be avoided. At the time, the Catchment Board was responsible

"for the maintenance of riverbanks and the carrying out of other works with a view to the prevention of flooding" so understandably they would have been the one able to shed some light on the flood. The reporter argued that a scheme for riverbank repair was presented to the Board the previous year but "it was turned down by the voting strength of the Hull members". The scheme, according to the *Hull Daily Mail* reporter, would have avoided the overflowing of the River Hull in 1936:

> "Is it a fact that a scheme for the repair of the riverbanks in the vicinity of Silverdale and Sutton roads was brought forward for the consideration of the Board, and was negatived? And were the Hull representatives responsible for this?" (*Hull Daily Mail* 3 Feb 1936, p.6)

The Catchment Board called a meeting two weeks after the flood and a report on the flooding of 1936 was going to be submitted. "Now that the damage has been done, the work of repair will have to be put in hand without loss of time" (*Hull Daily Mail* 3 Feb 1936, p.6). There is no further information on this matter, and the surviving sources do not reveal whether repairs to riverbanks actually occurred as a consequence of the 1936 flood. It is relevant to stress that the *Hull Daily Mail* article, referenced above, is the first example of newspaper report holding the authorities to account for poor flood planning. In previous years, we have seen that floods were considered "acts of God" and water was seen as a "force of nature" that people had no power over (*Hull Daily Mail* 19 Dec 1921, p.7). In 1936, we see a shift in narrative with local authorities gradually gaining more responsibilities in managing flood risk.

The same *Hull Daily Mail* article also brought attention to a particular drain on Cottingham Road which caused flooding in the area "almost every winter" and "distress among residents" (*Hull Daily Mail* 3 Feb 1936, p.6).

> "Heavy rains run from the high lands, and if a spate coincides with a high tide, the water backs up the drain and flooding is inevitable. The only real and satisfactory solution of this nuisance is the total abolition of these drains" (*Hull Daily Mail* 3 Feb 1936, p.6).

The reporter offers his point of view on the issue by arguing that most drains in West Hull should simply be "abolished" and the space "used for widening footpaths or roads". According to the reporter, "abolishing drains" would not only improve areas of the city, but also public health.

> "Imagine what the public of Hull suffered last year through these drains, which are, by reason of the growth of the city, running through thickly populated districts. Last year a long period of drought was experienced when the waters ran low for many months. During this time complaints were rife as to the vile smells. Then again, abolition of the drain would banish forever that vilest of all operations, the cleaning out. If ever there was a menace to the health of the community it is this, and in many places […] the filth that was taken out was simply flung on either bank and left there" (*Hull Daily Mail* 3 Feb 1936, p.6).

The reporter had strong opinions about the city drains and argued how drains were a hazard for people's health – adding the complication of sewage and wastewater, plus the nuisance of mosquitos. In the aftermath of the 1936 flood, there was a conversation about this matter, and apparently "the diversion of all the drains into the Barmston drain was a comparatively cheap and simple matter" not only according to the *Hull Daily Mail* reporter but also the City Council (*Hull Daily Mail* 3 Feb 1936, p.6). In the 1930s, newspaper accounts on flooding become more insightful and reporters do not only limit to describe the events but write more

critically about flooding. This was the first time that debates about flooding, drainage and human health were reported in Hull newspapers, and this – as we shall see – contributed to later decisions to culvert waterways in Hull. Most importantly we see the start of a conversation about water management in Hull and more specifically flood risk management, which newspapers have contributed to.

4.5. Insights from the 1940s

As mentioned previously, we have records of four floods occurring in Hull in the 1940s. Two of which were tidal and drew attention once again to the vulnerability of Wincolmlee residents to flooding. The area of Wincolmlee is a particularly low-lying area in Hull and has long been home to a large working-class population (HCC 2010). The combination of flood risk and the relative poverty of residents made the district much more vulnerable to flooding than others in the city.

> "The water was deepest in the labyrinth of narrow streets in the Old Town […] [However] the worst of the flooding occurred in the Wincolmlee district, where the street level is below that of the wharves on the river side. Running down the decline, the water invaded the houses of many people, waterlogging the kitchens and living rooms on the ground floor. For about an hour and a half some families, after removing their matting and their portable effects to the rooms upstairs, could do nothing but wait for the flood to subside. They seated themselves to the kitchen table, marooned in their own homes." (*Hull Daily Mail* 17 Feb 1943, p.3)

Wincolmlee residents were often the ones suffering the most from both tidal and fluvial flooding. Flooding caused damage to homes and belongings, but also to people's physical and mental health. However, it seems that flooding in the area almost became normalised over the years, and it was somehow expected that Wincolmlee would flood because of its vicinity to the River Hull and its low-lying nature. This was borne out by the oral histories with Hull residents conducted during this thesis project. While talking with a Wincolmlee resident born in the 1920s, who grew up in the area and lived there all his life, he said:

> "As far as I can remember there have always been floods in Hull, and Wincolmlee was the worst. It wasn't easy to live through but still we had fun [laughs]. You know, it was one of those things, to pass a life. It wasn't always that bad anyway. There's nothing much you can say now, it was just the way it was". (Anonymous Informant #1, Interview 21st October 2021)

Another Wincolmlee resident in his nineties, also talked about flooding in Hull as a regular occurrence that usually passed unnoticed. He said: "every fortnight, spring tide, we'd get a flood. All the cellars and pubs were flooded out […] but it was nothing new" (Anonymous Informant #2, Interview 24th November 2021). It appears that while the residents were aware that flooding was a possibility, they did not necessarily perceive it as a threat to life.

Due to its position in Hull, Wincolmlee appeared to be more vulnerable to flooding and more affected by it than any other areas of the city. This is clear from the frequency the area in East Hull is mentioned in newspapers accounts of flood events analysed for this study. It could be concluded that inequality in flood exposure in the city of Hull was present, but cannot be

evidently traced by using newspapers sources alone as twentieth-century newspapers didn't sufficiently address the issue of inequality in regard to flood exposure at the time. However, further research investigating inequality in flood exposure in Hull would be beneficial to better assess levels of vulnerability across the city and plan accordingly for future flooding.

Flooding affects people differently depending on their pre-existing vulnerabilities. People within any given community have different capacities and barriers that affect their ability to prevent, prepare for, and cope with floods. Certain factors make specific groups more vulnerable or exposed to disasters, these groups often include low-income households (Tate et al. 2021). Kingston upon Hull is one of the most deprived cities in England, and it was ranked 6th among the most income-deprived in 2019 (Office for National Statistics). "Households considered to be socially vulnerable are less likely to be prepared for disasters (Phillips et al. 2005), less capable of responding to imminent flood events and have less capacity to recover after damages […] Households' ability to respond to and recover from flooding depends on income and wealth. Low-income households typically have limited access to transportation, lower saving rates, less insurance coverage and are often further disadvantaged by deficiencies in materials used to build their homes" (Gourevitch 2022, p. 420). Gourevitch and his colleagues have shown that, globally, lower-income households are "disproportionately exposed to environmental hazards and will likely bear the greatest burden of damages from climate change" (Gourevitch et al. 2022, p.?). Several studies have been done to investigate inequalities in flood exposure in England and Wales (Tapsell et al. 2002; Fielding and Burningham 2005; Walker and Burningham 2011; Fielding 2012), and few scholars have also explored inequality and vulnerability to flooding in the

city of Hull following the floods of summer 2007 (Coulthard et al. 2007, Whittle et al. 2010).

5. “There must be no more flooding”: 1950-1984.

5.1. Flooding in the 1950s: Malfunctions or negligence?

The floods of November 1950 are worthy of attention as they were caused by the collapse of a tidal door[5]:

> “Residents in the Chapman-st area of Hull were abruptly awakened from their sleep about 5.30am today by a policeman knocking on their doors. They came downstairs to find water gushing over their doorsteps, and before long linoleums were floating above the floorboards.
>
> The sudden flow had come from the Foredyke stream which had overflowed its western bank, pouring water into houses and factories.
>
> Reason for the flood was the collapsing of a tidal door near North bridge. Men are working on the breach, which is aggravated by tidal water flowing in one direction and freshwater in the other. The engineer of the Hull and East Riding Yorkshire River Board said today that he was hoping to secure a temporary measure which would prevent some of the tidal water coming in” (*Hull Daily Mail* 24 Nov 1950, p.1)

It is unknown if this was a technical malfunction of some sort or lack of maintenance, therefore a sign of mismanagement or negligence on the part of the River Board. However, the article suggests that that Board intervened

[5] Also known as sluice gate, a movable barrier that regulates water levels and flow rates in waterways.

promptly to find a temporary solution and mitigate the flooding. Unfortunately, the temporary measures taken did not suffice and twelve hours later "flood water again entered houses in the Chapman-st, and Cleveland-st areas of Hull […] With Hull's night tide there was a repetition of the early morning experience […]" (Yorkshire Post and Leeds Intelligencer 25 Nov 1950, p.6).

Despite people having "erected barricades" during the day to avoid more flooding, "water seeped into their homes" again in the evening (*Yorkshire Post and Leeds Intelligencer* 25 Nov 1950, p.6). No estimate of damages can be found but newspapers suggest that flooding inconvenienced residents of the area involved, and caused distress:

> "Workmen's buses normally using the Chapman-st area throughfares had to be diverted via Wincolmlee, Scott-st bridge, St. Market-st and Chamberlain-rd. […] Worst affected by the floods were the residents of Gordon-ave, off Chapman-st. […] Mr Fred Lennox […] had 14in. of water in his backyard and water seeped beneath his floorboard. Normally he would have been at work early at Priestman Brothers, but he remained at home to swill out the water and barricade the backdoor.
>
> All fear that the floods may return on tonight's tide […]" (*Hull Daily Mail* 24 Nov 1950, p.1).

As we have seen, flooding occurred again in the evening while "Hull police were [still] scouting the stream for the sluice door which had floated away from North bridge" (*Yorkshire Post and Leeds Intelligencer* 25 Nov 1950, p.6). The door was never recovered.

If these two flood episodes were not enough, one more came about only twenty-four hours after the second deluge:

> "The water flowed over the western bank of the stream for the third time [on Saturday]. Hull and East Yorkshire River Board were fighting against time this afternoon in an attempt to get the door fitted before tonight's tide. Fifteen men were preparing to fit the gate at ebb tide, and it was expected that would be in position in time to prevent further flooding" (*Hull Daily Mail* 25 Nov 1950, p.1).

Unfortunately, the River Board lost the "fight against time" and "a well of water anything up to 3ft. deep" was again standing "underneath the floorboards of the houses [while] fire brigade pumps were busy all afternoon" (*Hull Daily Mail* 25 Nov 1950, p.1). The residents of Chapman St. and Cleveland St. areas were once again put to the test by flooding and this time many showed signs of illness:

> "One woman said she had not slept all night because of the cold and damp, and children were already showing signs of chills" (*Hull Daily Mail* 25 Nov 1950, p.1).

We have seen similar references to the health impacts of flooding in newspaper accounts of the 1921 flood, but similarly the extent of these impacts was not further explored.

The floods of November 1950 also posed urgent questions over liability:

> "Ald Dunbar[6] added 'There is more to be done yet regarding other damage which people have suffered […] The residents in Chapman-

[6] Chairman of Hull Welfare Services Committee

> st. are not satisfied. This thing can be avoided and must be avoided at any cost. This job has got to be done now to save these poor people a repetition of what has taken place'. Alderman Dunbar pointed out that the righthand side of the stream belonged to the Corporation, and the lefthand side was the responsibility of the River Board" (*Hull Daily Mail* 8 Dec 1950, p.5).

Legal liability was apparently still in dispute, according to the newspaper account of December 1950. One of the main issues was that separate bodies were responsible for the River Hull and there was no general agreement on the matter of the collapsed tidal door. The sources available don't reveal much more on the incident or whether any action was later taken.

The three flood episodes of 1950 occurred within short intervals between each other causing enormous chaos among the residents of the areas involved:

> "Police had to seal off Chapman-st to road traffic […] Several cars and lorries were caught in the avalanche of water, and drivers had to wade knee-deep to rescue their vehicles. The [third] flood coincided with the tail-end of the evening rush home, and buses once again had to be diverted. Normal traffic working was resumed at 6.45pm. […]
>
> Chapman-st. housewives were cut off from their foodshops today and had to wait almost till lunchtime before they could go for their supplies and rations." (*Hull Daily Mail* 25 Nov 1950, p.1)

Similar disruptions were common when floods happened in Hull, but in November 1950, floodwater really did not give Hull residents a chance to

recover between each flood and frustration was shared among residents. Two days after the floods:

> "Fifty housewives from the recently flooded Chapman-st area of east Hull went to Hull Guildhall […] to see the Lord Mayor and demand compensation for the losses they had suffered through the weekend flooding of their homes. […]
>
> The Lord Mayor was not at the Guildhall, but sanitary inspectors will visit the homes today. The women are demanding extra coal, free of change, and compensation for carpets, linoleum and furniture which have been damaged." (Bradford Observer 28 Nov 1950, p.5).

Residents taking the matter in their own hands was certainly beneficial, as action was taken immediately. In fact, sanitary inspectors were sent to inspect damages on the same day. The Hull Corporation Health Department and Cleansing and Sanitary Department provided disinfectant and arranged for houses to be professionally cleaned. In addition, the Health Department assured residents that they would be "keeping a constant check for dampness in the area and watching the health of people" for the following months (*Hull Daily Mail* 16 Dec 1950, p.3). The actions taken to bring relief to the flood-affected residents of East Hull, at the council's cost, could be read as a clear admission of liability. Both Hull residents' and the City council's responses to the 1950 floods suggest that human error was to blame for these events.

Furthermore, the excerpt above shows initiative and teamwork from the female community of Chapman Street, which confirms what previous research has found. In disaster response, communities are "more effective than government bodies – more flexible, adaptive, rapid, thorough, and consistent – not only because they have local knowledge, but also because

they have an interest in a common good" (de Tocqueville 2000, p. 73). Inevitably, this excerpt mentioning the role of women fighting for their rights at the Guildhall is a reminder of the courageous and dramatic story of the famous Headscarf Revolutionaries. After the Hull Triple Trawler Disaster in 1968, four brave women who lived in Hessle Road mobilized Hull's fishing community to demand safety improvements onboard trawlers. Led by Lillian Bilocca, the Hessle Road women started a movement and "achieved more in weeks than unions and politicians ever did. They took their fight from the fish docks to Westminster and won" (Lavery 2015). Despite strong opposition from the fishing industry, the revolutionaries did not accept defeat and took campaigning into their own hands, very much like the Chapman Street women in the aftermath of the 1950 floods. Lillian and her fellow activists refused to let ships pass through St Andrew's Dock without adequate safety measures, drawing media attention to the cause and later taking the issue to Westminster. In a matter of weeks, the Headscarf Revolutionaries gathered 10,000 signatures and met with Harold Wilson, then Prime Minister, who later granted every one of their requests. The Shipping Laws were changed, safety at sea would be finally improved and countless lives would be saved. The heroic story of the Hessle Road revolutionaries, along with the story of the Chapman Street women, highlight the fact that change comes from the community. Community cohesion lies at the heart of what makes a safe and strong community, and the people of Hull have proved to function well in the face of adversity because social and community ties are indeed strong. The successful stories narrated above also highlight "the importance of including communities in disaster response and creating stronger partnerships between communities and government agencies" (Patterson et al. 2010, p. 34).

5.1.1. The Floods of 1953

As mentioned in the previous chapter, the east coast floods of January 1953 spared Hull. However, in December of the same year two minor floods occurred in West Hull, around the junction of Pickering Road and Hessle Road, within twelve days of each other. Both were caused by "a tidal drain alongside Pickering Road that overflowed through the jamming of a sluice gate" (Yorkshire Evening Post 12 Dec 1953, p.3). These floods had similar causes to the earlier floods of 1950 linked to the loss of the sluice gate near North Bridge.

> "The first signs of the flooding occurred at 9 o'clock. Police warned residents, and a contractor, taking part in a deep drainage job near Pickering Road, brought a pump into play. Only about six houses were seriously affected as the excavations took a lot of the water.
>
> The danger passed with the receding tide after 10.30 last night, and residents waited anxiously for today's tides. By then, however, work on the sluice gate had been carried out and an official of the River Catchment Board said there would be no more danger" (*Yorkshire Evening Post* 12 Dec 1953, p.3)

Unfortunately, the official's promise was not kept, as only twelve days later "shops and houses around the junction of Pickering Road flooded for the second time" (*Yorkshire Evening Post* 24 Dec 1953, p.5). While the flooding was caused by the morning's high tide - apparently the highest tide of the month, reaching over 27ft. - had the sluice gate not been "jammed", flooding would have not occurred (*Yorkshire Evening Post* 24 Dec 1953). As in November 1950, the flood of December 1953 was allegedly caused by a

technical malfunction. It is unclear from newspaper accounts if anyone was ever held accountable for these two events. However, floods like these underlined the need for better flood management planning in Hull.

5.1.2. The introduction of flood warnings in Hull

In November 1954, Hull was hit by "the worst floods [the city] had experienced since 1921" (*Bradford Observer* 13 Nov 1954, p.1). In the morning of Friday November 12, a tide of over 32ft caused the river Hull and the Humber to overflow and flood the city. Thousands were reportedly trapped in their homes and needed to be "ferried" to work by lorries (Met Office, 1954; Zong and Tooley, 2003). Over 1,000 properties were flooded, along with the marketplace and the main shopping centre, while traffic was severely disrupted (Northern Whig, 11 Jan 1955). As the map below shows, the areas most affected by the floods included the Old Town and the districts of Drypool and Wincolmlee, in East Hull.

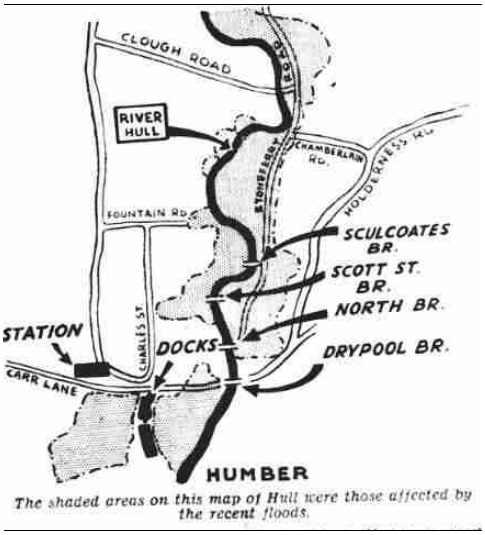


Figure 1. Areas affected by the 1954 floods (*Yorkshire Post and Leeds Intelligencer* 17 Nov 1954, p.6)

> "The whole of the old town was under water and in the industrial area residents were confined to the upper rooms of their houses until the floods had receded.
>
> The warning system operated by police patrols on the Humber banks undoubtedly minimised the damage as householders were able to take such precautions as moving carpets and furniture from ground floors before the water reached them" (*Bradford Observer* 13 Nov 1954, p.1).

Here we see a first reference to the effectiveness of flood warnings in detecting the threat of flooding in advance and allowing Hull residents to act against it. We'll see later in more details that it is in fact in the 1950s that a formal flood warning system is finally introduced in Hull as a result of the numerous floods experienced through the 1940s and early 1950s.

Even though the flood warnings had reduced some of the impacts, the floods of November 1954 nevertheless caused damage and anxiety particularly among the people living closer to the riverbanks. Two days after the event,

> "Several homes were still inundated, and many were seen cleaning up and sweeping mud from their homes day and night. […]
>
> Volunteers stood by the river danger spots throughout the East Riding from Selby on the Ouse, along the banks of the Humber and the River Hull. Housewives were also out anxiously watching the water. […]
>
> Arrangements were made for watchers to be out all weekend. There were fears that if the incoming tides were backed up by strong

> onshore winds sweeping up the Humber estuary and joined by rainwater coming down the River Hull, there would be further flooding." (*Bradford Observer* 13 Nov 1954, p.1).

A full emergency scheme for warning people in high-risk areas was set up and would have been put into immediate force had the tide continued to rise (*Coventry Evening Telegraph* 13 Nov 1954, p.18). However, no further flooding occurred. On 13th November, extra bags of coals were being delivered while officials visited the flood victims and inspected the damages. Pilots from Leconfield, Driffield and other RAF stations used 36 mobile space heaters to dry out houses in Hull. The operation was directed by the WVS[7] and the Hull Housing Department (*Bradford Observer* 13 Nov 1954, p.1). A national appeal fund for those who suffered the most was launched by the Lord Mayor and many around the country raised money for Hull. On the 30th of November, the Lord Mayor of Hull's Flood Relief Appeal Fund amounted to £6,790 which covered damages of both householders and shop owners (*Yorkshire Post and Leeds Intelligencer* 30 Nov 1954, p.8). The flooding affected between 1,300 and 1,400 houses to varying degrees and the *Bradford Observer* (13 Nov 1954) said the floods had left Hull residents very worried about further flooding. Yet, the city engineer was not of much comfort for the people of Hull. The day after the flood, he told reporters that the city had "no plans for the immediate future to dealing with flooding" and that they were all rather "in the hands of nature" (*Bradford Observer* 13 Nov 1954, p.1). While he agreed that something needed to be done and that a long-term policy was needed, no decision had been taken yet. Again

[7] Royal Voluntary Service, originally founded as the Women's Voluntary Services for Air Raid Precautions.

here, like in 1921, we see that floods are still considered by some as “acts of God”, “natural” occurrences out of people’s control.

However, the accounts of the floods of 1953 and 1954 show that some form of flood risk management was starting to be introduced in Hull:

> “Local authorities said that they are taking all precautions to avoid serious flooding. Thousands of pounds have been spent to reinforce sea walls and embankments, and the Hull and East Yorkshire River Board is continuously working on improvements. Plans were made for a country-wide system of warnings if tides exceed a certain safety level. […] (*Yorkshire Post and Leeds Intelligencer* 12 Sept 1953, p. 1).

As I briefly mentioned above, a formal flood warning system came into play in Hull in the 1950s, particularly as a response to the east coast floods of 1953.

> “We will be receiving two warnings if there is any likelihood of flooding. First, we will get a cautionary warning and then a danger warning. […]
>
> Methods will embrace every kind of communication from the radio and wireless cars to telephone messages and warnings in the Press. […]
>
> We will also get warnings from further north up the East coast, and at Immingham up the river. We should get at least two hours’ warning of any impending flooding.” (*Yorkshire Post and Leeds Intelligencer* 12 Sept 1953, p.1).

In 1961, the flood warning system in Hull developed even further and a letter from Chief Constable to Professor H.R. Wilkinson at the University of Hull revealed more details on the new system:

> *Object: EAST COAST FLOOD WARNING SYSTEM*
>
> *Changes in the flood warning system for the 1961/2 season*
>
> *Amber alert, Red alert, Public warning, On shore gale warnings*
>
> *And cancellation messages*
>
> *AMBER ALERT*: signifies that there is a <u>possibility</u> of the danger level being surpassed at the next high water after the time of origin. It is based solely on meteorological conditions and is normally issued about 12 hrs before the high water to which it refers (specified as the AM, or PM, tide of a particular day)
>
> *RED ALERT*: is issued about 4 hrs before the high water concerned, when sufficient tidal observations relating to the surge have been received to enable an estimate to be made of its magnitude and timing relative to high water. Rise above the danger level is probable. […]
>
> *AMBER ALERT CONFIRMED*: is issued about 4 hrs before the high water concerned instead of a RED ALERT to signify that the tide is expected to reach approximately danger level but will not exceed it or fall short of it by more than 6 inches.
>
> *WIND FORECASTS*: amber alerts and red alerts will include a forecast of the wind direction and force on the coast of the Division concerned at the time of high water. This is intended to assist River Boards to estimate the wave action to be expected at that time.

AMBER ALERT/ RED ALERT CANCELLED: issued as soon as circumstances justify when either amber alert or red alert is in operation.

CANCELLATION OF AMBER ALERTS OR RED ALERTS AT HIGH WATER: when the high water to which any amber alert or red alert still in force refers has passed, the alert is to be regarded as cancelled automatically without further signal.

ON-SHORE GALE WARNINGS: issued to enable recipients to prepare for the possibility of excessive wave action and do NOT imply that sea level is expected to reach the danger level. Only sent at spring tides when gales from NE, E or SE are forecast for the coasts of the Divisions concerned. Cancellations will not be issued. (Chief Constable 1961)

The letter, above, shows that in 1961 a well-detailed flood warning system – for coastal and fluvial flooding - was now in use. From the 1960s onwards, newspaper accounts often mention flood warnings being sent out in advance to warn Hull residents of the danger of flooding and reduce the adverse effects of flooding (*Hull Daily Mail* 21 Mar 1961; *Hull Daily Mail* 29 Sep 1969; *Hull Daily Mail* 14 Apr 1980; *Hull Daily Mail* 9 Dec 1983; *Hull Daily Mail* 1 Sep 1984). We will see later in this chapter that the effectiveness of the flood warning system was sometimes called into question and people's perception and understanding of warnings changed over time. However, it is important to note that other forms of informal warnings existed before the 1950s. During one of my oral history interviews, a 90-year-old man from Hull, who lived in Wincolmlee, said:

> "You know the thing is you have all the modern technology now but in the olden days all you had to do was to ask an old bargeman what the weather was going to be like, and he would predict within two hours whether we were going to have a flood" (Anonymous informant #1, Interview 21st October 2021)

Mostly it was men working on the river who had knowledge of the tides and could predict tidal flooding in Hull:

> "The old bargemen used to have a saying that if you could smell fish stock from here [Wincolmlee], you could get a flood. They called it the 'swell' – the ongoing tide and the incoming wind […] The bargemen would call me and say, 'get your boards up tonight, at 2 o'clock there will be a flood.' And they were right. It was the experience of the river, you know." (Anonymous informant #1, Interview 21st October 2021).

Before a formal warning system was introduced, people in Hull would simply warn each other of the danger of a flood by word of mouth, going house to house or by telephone, and did not expect authorities to send out warnings like they do today.

The last flood of the 1950s, occurred on the 30th of December 1959. Abnormal high tides – the highest since 1953 – caused extensive flooding in five areas of Britain: Bridlington, Hull, Dundee, Bo'ness (West Lothian) and Grangemouth (Stirlingshire) (*Birmingham Daily Post*, 1959). Tidal warnings were issued at both Bridlington and Hull. Both the Humber estuary and the river Hull overflowed and caused flooding in Wincolmlee, Stoneferry and North Ferriby. While newspapers accounts did not report much on the event, photographs found on recent Flashback Issues of the *Hull Daily Mail*

show that flooding caused minimal to moderate disruptions. The photographs below show that the floods mostly inconvenienced residents in Wincolmlee and North Ferriby, whom we can see cleaning up mud on New Year's Eve (figure 2), and drivers in Stoneferry who found themselves stranded on the day of the flood (figure 3). Figure 3 is a great example of the community cohesion discussed previously in this chapter. Here two young boys help a van of the Royal Mail to drive through floodwater and get to safety.

SCENE OF DESOLATION: This was how it looked outside Brickyard Cottage in North Ferriby as householders cleared up following flooding on December 31 1959

Figure 2. North Ferriby in the aftermath of the 1959 flood (Flashback Issue 291, 2017) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

Figure 3. Stoneferry Road in December 1959 (Flashback Issue 162, 2007) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

Photographs are important pieces of historical evidence and can provide a unique glimpse into a point in history. In local newspapers, most of the pictures published show scenes of Hull residents busy "mopping up" after a flood or helping rescue others. Images like these do a good job in showing the disruptions to people's daily lives. However, photographs only tell one side of the story and although they may have powerful visual impact, they do not have the ability to give an in-depth explanation of the event. Reporters use photographs like the ones above (figures 2 and 3) to convey their own interpretation of the story and consequently photographs trigger readers' emotional response to that interpretation. For these reasons, photographs cannot accurately provide details of people's perceptions of flooding in the twentieth century, but they indeed tell us that flooding

occurred, what kind of impacts it had on people and how people responded to it.

5.2. Times are changing: The Sixties

In the 1960s, Hull experienced several flood events, but only two of those were major and led to important changes in flood management for the city of Hull. On Monday March 20, 1961,

> "a 32ft 9in tide, whipped up by strong winds, hit Hull and caused flooding to hundreds of homes, dozens of factories and turned streets into swirling rivers. […]
>
> The flood also affected Paull, where water swept over the flood bank built in 1953, and North Ferriby, where cottage dwellers hurriedly moved furniture upstairs.
>
> In the industrial area near the river Hull, seventy girls on night shift were moved by rowing boats from Cocoa Mills while premises were still cut off by water [in the morning of 21 March]. Workers at the Danish Bacon Company's factory in Tower Street went to work by boat with their manager. Sculcoates bridge was closed for one and a half hour during the peak of the flooding. Students at the College of Arts and Crafts in Osborne Street had to wade through water two feet deep when they got out of their Monday evening classes" (*Hull Daily Mail* 21 Mar 1961).

As seen above, flooding caused disruptions to residents in different areas of the city. The most affected were Cleveland Street, Chapman Street, Castle Street, Commercial Road, Lime Street, Tower Street, Wincolmlee and

Stoneferry. Once again it was the hundreds of private householders living in low-lying areas around the river Hull that suffered the most – as seen in previous years (1921, 1936, 1943, 1950, 1954, 1959). A resident of Poplar Parade (in Wincolmlee) expressed his frustration by saying:

> "We're always being flooded out. It's about time something is done about it. There is water under our house all the time. It only needs a high tide for it to come seeping through the floor. Our gas has been cut off and we can't even make a cup of tea." (*Hull Daily Mail* 21 Mar 1961).

Other residents in the flood-affected areas expressed their anger and concern about the flood. Most were worried about the damage caused and what it would have cost (*Hull Daily Mail* 21 Mar 1961).

According to newspaper accounts, "an amber tidal warning was issued by the police in the afternoon of Monday 20, but it was not followed by the red danger signal" (*Hull Daily Mail* 21 Mar 1961). As we have seen previously, an amber alert only meant that there was a possibility for the high tide to represent danger, but if not followed by a red alert or by an amber alert confirmation, the warning would likely be ignored (Chief Constable 1961). On March 20, the tide was 4ft higher than predicted and arrived half an hour earlier than predicted. This, together with the missed warning, probably led the authorities and residents to underestimate the possibility of flooding and in fact authorities told the *Hull Daily Mail* that "flooding was entirely unexpected" (*Hull Daily Mail* 21 Mar 1961). Certainly, the fact that flooding was unexpected does not justify the significant loss and damage that Hull residents suffered. Hull was relying on the effectiveness of flood warnings at this point, and pre-disaster planning and preparedness for floods was quite poor or not-existent.

Figure 4. Osborne Street in March 1961 (Flashback Issue 162, 2007) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

The 1961 flood was debated in Parliament in May of the same year, when Commander Harry Pursey, labour MP for East Hull at the time, raised the issue of flooding in Hull. His view on the 1961 flood was different from the local newspapers' take on the matter:

> "Four parties are concerned, the Ministry of Agriculture, the Hull and East Yorkshire River Board, the Hull Corporation, and the Riparian owners. The owners are entirely responsible, financially and morally, that their banks and wharves do not permit flooding and the board and corporation have powers to ensure that that is the position.
>
> Nevertheless, on 20th March, in the darkness and coldness of eight o'clock at night, the river overtopped long lengths of wharves, seeped through several defective ones, and seriously flooded many areas. […]

> Reports appeared in the local papers with pictures of unfortunate householders 'mopping up', but what should have been published was photographs of the defective wharves which caused flooding.
>
> The Parliamentary Secretary in answer to a question of mine on 17th April stated the official attitude, namely: 'This flooding was the result of exceptional circumstances.' – [OFFICIAL REPORT, 17th April 1961; Vol. 638, c.787.] With my thirty years' naval experience of tides, I maintain that the only exceptional circumstance was that this tide was only three-eighths of an inch above the 1921 tide and so wharf owners had had forty years in which to make good the deficiencies then exposed. Consequently, there should have been no serious flooding six weeks ago tonight. […]" (HC Deb, 1 May 1961, Vol. 639, cc. 1087-98)

Pursey very clearly stated that the 1961 flood could have been avoided. He primarily blamed riparian owners for their negligence and for "having failed in their legal obligations to maintain their wharves at the proper height and impervious to seepage and other flooding, and in their moral obligations to raise their wharves when adjoining wharves have been raised to ensure the necessary freeboard" (Hansard 1961, p. 1088). Pursey agreed that the River Board had raised and strengthened riverbanks along some stretches of the river Hull but raised the question of why the Board did not do so throughout the whole length of the river.

> "Why has not similar actions, at similar expense, been taken in the centre of the city to save Central and East Hull from flooding, once and for all time? The board's policy appears to be one of protecting unoccupied land, at the expense of the most densely populated areas in the heart of the city." (HC Deb, 1 May 1961, Vol. 639, cc. 1087-98)

Pursey called attention to the issue of flooding in the centre of the city and particularly the area of Wincolmlee. These were the areas more frequently and more severely affected by flooding in Hull. He produced a very thorough and detailed description of the wharves that needed attention and stressed that time was "the essence of the problem to prevent further flooding" (HC Deb, 1 May 1961, Vol. 639, cc. 1087-98). The motion presented by Commander Pursey was answered by the Joint Parliamentary Secretary to the Ministry of Agriculture, Fisheries and Food, Mr Vane, who showed full support and agreed that something needed "to be done speedily to alleviate recurrent flooding in Hull and that his officers [were] at the disposal of the responsible bodies for any help or advice needed". (HC Deb, 1 May 1961, Vol. 639, cc. 1087-98)

5.2.1. The North Sea flood of 1969

The year 1961 was a turning point in flood risk management for the city of Hull. Flooding had now become a pressing concern for the people of Hull and a high priority issue for the local authorities. This was only made more evident in 1969, when the so-called North Sea flooding occurred. "The storm developed off the east coast of the US on 23rd September 1969 and moved northeast approaching the UK on 28th September. It then travelled north of Scotland, crossing Scandinavia, and producing northerly winds in the North Sea" (Pitman 2017, para 4). Several English coast towns were affected by the 1969 floods, including Hull (Met Office 1969; Hickey 1997; Zong and Tooley 2003). This was the worst flood to hit the east coast since the 1953 disaster (Eden 2008).

On September 29, 1969,

> "a tide of 33ft 6in swirled deep into the heart of Hull, cut off the village of Paull, and put thousands of acres of farmland under water.
>
> Fish swam in Hull's Old Town as the breakfast-time tide inundated shops, offices and factories, washed out the city's Humber-street fruit market, and did thousands of pounds worth of damage. […] Less than 15 minutes after the first trickle of water edged in, the street was up to 2ft. awash. It happened with such speed that the merchants had no chance to get their stacks to safety […]. Some of the damaged fruit and nuts may be salvageable for sale at knockdown prices. Much more will have to be written off. Supplies are adequate at present to prevent any shortage. But now worried Humber-streeters are planning for tonight's tide." (*Hull Daily Mail* 29 Sept 1969, p.4)

In Hull, the flood of 1969 affected the Old Town and caused huge loss to shop owners and merchants, as seen above. However, flooding affected housing as well, unsurprisingly in Wincolmlee. Damages were substantial in both areas and disruptions were widespread across the city centre.

> "Corporation Pier[8] was a floating island, and disembarked ferry passengers had to climb an iron gate on to the back of a lorry, which took them down Queen Street, Marketplace, Lowgate, along Alfred Gelder Street to the first dry place.

[8] Corporation Pier, also known as Hull Victoria Pier, was located at 7 Nelson Street. Hull Corporation Pier was the northern terminal of the Humber Ferry which ran between New Holland Pier station in Lincolnshire and Hull. The service ended with the opening of the Humber bridge on 24th June 1981. The building, once hosting the ticket office and waiting room for the Humber Ferry, has now been converted into apartments.

> Water in the cellars of the Minerva Hotel was 5ft deep […] and in Holy Trinity Church, water was 3ft deep in the vestry, said the vicar. 'A lot of carpets will have been ruined. The whole place is covered in a layer of mud.' […]
>
> Two hours after the height of the flood, hundreds of office girls and other workers were still waiting to start work in Whitefriargate. A Post office van, with a policeman on board, was ferrying people to bank doorways.
>
> Police stopped cars and lorries on Clough Road and warned drivers that the route to the Clough Road Bridge was more than a foot deep in water. Lorries were able to force their way through, but car after car was marooned." (*Hull Daily Mail* 29 Sept 1969, p.5)

These scenes resemble very much the ones seen in 1921, in the early 1950s and in 1961. It appears that the issues that Commander Pursey highlighted eight years earlier were still very much unresolved. The "continued and totally unnecessary flooding in the centre of the city and in Wincolmlee" had happened again, this time causing even more damages than in 1961 (HC Deb, 1 May 1961, Vol. 639, cc. 1087-98).

Figure 5. Alfred Gelder Street in September 1969 (*Hull Daily Mail* 8 Jan 2023) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

The "great flood" of 1969 was not unexpected, and flood warnings were given as was normal practice for the alert system in place.

> "Two warnings were given of the morning's floods. But hundreds of people were caught unprepared. And *Hull Daily Mail* reporters encountered a barrage of complaints about the alert system. Three factors seem to be to blame:
>
> (1) The real extent of the crisis did not emerge until 4am – just 4 ½ hours before splash over.
> (2) It was the weekend and fewer premises than usual were manned.
> (3) So many of Hull's past flood warnings have been cancelled or passed without incident that people have become complacent.
>
> Hull police were first warned about the risk of a high tide at 6.30 last night." (*Hull Daily Mail* 29 Sept 1969, p.5)

Residents complained about the inefficacy of the alert system and expressed frustration towards the council and the local authorities for not predicting the extent of the flood ahead of time. Why were Hull residents caught unprepared by flooding once again? Was it a fault in the warning system? Was it negligence on the part of local authorities? In accordance with the alert system, a red alert or an amber alert confirmation was to be sent 4 hours before high tide. Therefore, local authorities followed the protocol. On the 29th, warnings were likely disseminated via radio, TV or with the help of police boats on the river Hull, but it is possible that some residents did not receive the warnings. It is also possible that residents chose to ignore the flood warnings because – as the excerpt above highlights – prior to 1969, many flood warnings had been cancelled or alerted for floods that did not occur. A combination of all the factors above likely contributed to a low perception of flood risk for the 1969 flood.

There are no further details on why the alert system supposedly failed to reach all residents, or which area of the city was particularly caught unprepared by the flood of 1969. From the newspaper accounts, it appears all areas affected by the flood were in a state of chaos so either the flood warnings were disseminated poorly and/or too late – as suggested by the *Hull Daily Mail* reporter - or perhaps it was indeed that the warnings were ignored, and the flood was hugely underestimated. It is interesting to note, although not at all surprising, that one of the "worst hit area" – along with the Old Town – was Wincolmlee:

> "Housewives in Wincolmlee were today still mopping up after the freak flood which covered their ground floors with up to 4 inches of muddy water.

> The Chapman-street area was one of the worst hit and today residents were complaining about the smell that the flooding has left behind. […] (*Hull Daily Mail* 29 Sept 1969, p.4).

In 1969, the "mop-up" was an enormous undertaking for Hull residents:

> "By 9.45am the water had started to go down, but very slowly […] Everyone [in the Old Town] is joining in and doing what they can with mops. […]
>
> Housewives despaired as they tried to get the smell of the river out of their waterlogged carpets, while around the city, fruit, vegetables, groceries and even beer were being sent to the refuse tips.
>
> The message from the City's Public Health Department was: 'Water brought it in and in most cases, water will get rid of it as well'. Dr B.J. O'Brien, deputy chief medical officer of health, advised a good wash for dirty floors and coverings, rather than just covering the smell up with disinfectant.
>
> At Hull Guildhall, the City Archivist, Mr Geoffrey Oxley, had some of Hull's priceless documents hanging out to dry or under blotting paper. But he said that he had managed to get most of the archives off the lower shelves before the water came in, and nothing really important had been damaged. […]
>
> At Aaron and Co., Secretary Mr J. Baron said they were spending the day clearing up but would be back in business tomorrow. […]
>
> All the city's bridges were dried out with hot-air blowers, but Clough-road bridge at Stoneferry is still out of action. […] The fire brigade was still at five pumping jobs today, with five more to go. They have

> handled nearly 50 pumping operations [since the flood receded]. (*Hull Daily Mail* 29 Sept 1969, p.5)

The "clearing up" saw "all hands-on deck" as it happened in the past and the *Hull Daily Mail* reports give the impression that it was indeed a tiresome operation for all the residents affected. The damage was significant and ultimately estimated at over £1,000,000[9] (*Hull Daily Mail* 14 Apr 1980, p. 10).

Figure 6. Shop assistants trying to protect stock from the waters in Whitefriargate, 1969 (*Hull Daily Mail*, n.d.) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

[9] Roughly equivalent to £15,000,000 in 2017. Currency converted using the Currency Converter:1270-2017 available on The National Archives website.

Figure 7. Hundreds of pounds' worth of groceries and provisions were damaged at this Savemore shop. Assistants were seen clearing up the debris, 1969. (*Hull Daily Mail* 8 Jan 2023) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission*

As mentioned at the beginning of this section, the floods of 1961 and 1969 brought about important decisions in flood risk management in Hull. After the flood of 1969, newspaper accounts mentioned for the first time the possibility of "a barrage on the river Hull" to be built in the near future.

> "Mr Harrison said he did not think a Humber barrage to prevent further risks of flooding from high tides was a financially feasible proposition. […] But a barrage on the River Hull, he said, was on the cards.
>
> Wharf levels on the River Hull had been raised in the past to the practical limits in relation to existing warehouses. To raise the level

> any higher would involve considerable expense in rebuilding foundations of bordering buildings. […]
>
> But the river authority had brought out a comprehensive scheme estimated to cost £1,500,000 which was now being considered by the Minister of Agriculture. The scheme will raise the level of the Hull river banks from Stoneferry bridge north to the tidal limit at Hempholme [in Holderness]." (*Hull Daily Mail* 29 Sept 1969, p.4).

The severity of the 1969 flood accentuated the concerns about flooding that had been brought to attention by Commander Pursey in 1961. His suggestions were taken on board, as highlighted in the excerpt above. In addition, after the 1969 flood, the Yorkshire River Authority began discussing plans for the construction of a tidal barrier on the river Hull. It is this last flood event of the 1960s that led to the construction of one of today's most iconic Hull landmarks, the Hull Tidal Surge Barrier. The construction of the £3,500,000[10] flood defence barrier was completed in 1980 and was supposed to "better protect homes and businesses across the city from flooding" (*Hull Daily Mail* 14 Apr 1980, p.10). The construction of the Hull Tidal Surge Barrier will be discussed in more detail later in this chapter.

[10] Roughly equivalent to £13,700,000 in 2017. Currency converted using the Currency Converter:1270-2017 available on The National Archives website.

5.3. A New Era of Flood management in Hull: The Eighties

Figure 8. Flavia Manieri. The River Hull tidal surge barrier today. Sept 29, 2021.

Hull's tidal barrier "was opened on 15 April 1980 by Dennis Matthews, chairman of the Yorkshire Water Authority, which had superseded the Yorkshire Rivers Authority in April 1974" (YWA 1974, para 8). The tidal barrier has since then protected the Old Town from tidal flooding, and there are no records of severe floods in the Old Town from 1980 onwards. However, in 1980, the *Hull Daily Mail* may have co-created and supported the dangerous narrative that the entire city had become flood-proof thanks to the Surge Tidal Barrier.

On the day before the barrier was officially opened, the *Hull Daily Mail* featured an editorial outlining how the riverside ceremony was intended to:

> "pay tribute to the engineering skills employed to help protect Hull from its traditional friend – the River Hull – which sometimes turns into a frightening adversary.
>
> A touch of a button will be all that's needed to lower the gates and halt the flood waters. Engineers already know the barrier works, for an exhaustive series of tests have been carried out, particularly at high tides when the water pressure is at its greatest.
>
> But it's not just local weather conditions which will cause barrier supervisors and emergency services to keep a close eye on Mother Nature.
>
> High tides are seldom dangerous in themselves, but when a high tide coincides with an Atlantic Surge and strong winds, Hull is really in trouble.
>
> A low-pressure area over the Atlantic means the sea level will rise with a resultant surge eastward and round the coast of Scotland. If the surge joins up with high tides, the Humber Estuary is in real danger of being swamped.
>
> *Or perhaps the phrase should be 'was' in danger of being swamped. Residents of the Old Town and shop keepers and businessmen can* now look out over the rooftops and see the twin towers of the barrier, and *rest easy that Hull will never again face a losing battle with the sea.*" (*Hull Daily Mail* 14 April 1980, p.10).

While the tidal barrier has protected the Old Town from extensive flooding in the more than four decades since it was constructed, in the excerpt above the *Hull Daily Mail* editor conveys the idea that the barrier was going

to end flooding in Hull once and for all. The tidal barrier was designed for flood mitigation, not flood-proofing. In other words, it would reduce flood risk and mitigate the damage caused by future floods – in the Old Town - but would not put an end to Hull's history of flooding. However, I believe that the tidal barrier had caused locals to overlook the risk of flooding in other areas of the city and consequently reduced the overall perception of flood risk in Hull. In 1980, a few floods occurred in the Hull area (not involving the Old Town), and for the events we have record of, flooding was hugely underestimated. Could this be because of the recent opening of Hull's tidal barrier?

Two floods appearing in the local newspaper record occurred in December 1983 and August 1984. Both, caused by heavy rainfalls hit the Hull area within eight months from each other, attracting local media attention. On 8th December 1983,

> "heavy overnight rain left a damp and soggy North Humberside battling through a spate of floods.
>
> A constant downpour brought problems for drivers, householders, and emergency services throughout the county as roads and streets were turned into lakes and ponds.
>
> Nearly 2in of rain fell overnight, according to the Yorkshire Water Authority.
>
> As the deluge continued this morning, many country roads became awash. […]
>
> In Hull, the Fire Brigade was called to six flooding incidents in only two hours this morning, but all were said to be minor. […] The YWA

said there had been no major problems in any part of the city" (*Hull Daily Mail* 9 Dec 1983, p. 4).

According to the *Hull Daily Mail*, the Yorkshire Water Authority believed that flooding was minor, but the newspaper accounts show otherwise. This was an event of moderate to major scale and Hull residents' daily activities were disrupted throughout the day, particularly in the areas of Clough Road and Park Street as these were "under water" and traffic had to be diverted. Several incidents were reported across the city, to which Fire Brigade were called for assistance. In addition, people living in Bransholme, North Hull, had to be evacuated.

> "Elderly people were recovering today from a sleepless night after being evacuated when floods threatened their Bransholme homes last night. About 30 of them were taken by police to spend the night at a youth centre at Bransholme School. […]
>
> Mrs Catherine Atkinson (66) and her husband James were woken by police banging on their front door. She said: 'I looked out of the window and the back was like a pond'.
>
> Neighbours helped move furniture from the ground floor and they were taken to the centre, which was opened for the emergency.
>
> 'There's been no upset. We've been looked after, and we've been dry. There wasn't much panic, really. They've been marvellous to us here'. Mrs Spivey (69) and her husband Gordon (71) were also taken to the centre because of the threat to their bungalow. […]
>
> (*Hull Daily Mail* 9 Dec 1983)

The descriptions above show that the 1983 flood caused indeed problems to Hull residents. Given evacuation was necessary, the flood can be categorised as moderate or major. Did the Yorkshire Water Authority underestimate the risk of the 1983 flood? Given that the early warning systems in place in the early 1980s were concerned to predict only coastal flooding, it is likely that no warning was issued in Hull. The 1983 flood was caused by heavy rain, and while pluvial floods had occurred in Hull before, these did not typically cause severe flooding and/or significant disruptions or damages. The 1983 flood may have been "unpredictable", but the event stressed once again that preventive measures in Hull were still lacking. The Yorkshire Water Authority likely became complacent about flood risk after the tidal barrier was built.

The day after the flood of 1983, the *Hull Daily Mail* reported on the aftermath of the event:

> "A violent mixture of wind, rain, snow, and frost has left a battered North Humberside with a seasonal hangover.
>
> The county was today recovering after 24 hours of rainstorms, floods, and raging gales.
>
> Emergency services have been left clearing up the damage and destruction from a buffering by nature which left homes awash, roads under water, and trees uprooted.
>
> Humberside Fire Brigade reported 120 callouts in the past 24 hours – four times higher than average. […] Most emergency calls involved flooding […]

> As householders in Bransholme struggled back to normal today, shops in Yatesbury Garth were left clearing up the aftermath of floods. Huge puddles formed and shopkeepers had to resort to buckets to catch leaks. But they were told it could be up to a fortnight before Hull City Council workmen could repair the damage. […] (*Hull Daily Mail* 9 Dec 1983)

The aftermath of the flood was very difficult for Hull residents, particularly in Bransholme, where elderly people were forced to leave their homes in the middle of the night. The local authorities were caught somehow unprepared in responding to the flood and in meeting immediate recovery needs of communities and businesses – as shown above. As we have seen earlier in this section, the Yorkshire Water Authority told the *Hull Daily Mail* that "all incidents were minor", and "no major problems had been reported in any part of the city" (9 Dec 1983, p. 4). Clearly, the YWA did not take into consideration the social impacts of the 1983 flood, people's lives and livelihoods had clearly been affected. The social impacts of flooding were still underestimated in the 1980s. Only in recent years flood risk management authorities have started to acknowledge that flooding can hugely impact people's lives and that social impacts need to be fully addressed and included in future risk management strategies. Evidence of the social effects of flooding is important to improve future response by authorities and to help people understand what a flood could do to their lives.

Figure 9. Fire Brigade rescuing people from their stranded cars, December 1983 (Flashback Issue 5, 1993) *Image courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be reproduced without permission.*

The last significant flood of the 1980s occurred in August 1984. On 3rd August, "torrential thunderstorms brought widespread flooding" to West Hull, Anlaby, Hessle and Cottingham (*Hull Daily Mail* 4 Aug 1984).

> "Water reached 3ft in some places. Residents barricaded their homes and started bailing, and motorists abandoned their cars in streets that became lakes in a matter of minutes.
>
> Some roads were blocked completely by water and drivers who tried to drive through, found their engines cutting out and had to leave them until the morning.

> It was “all hands to the pumps” for the Humberside firemen, who dealt with 73 calls for help with flooding between 5pm and midnight.” (*Hull Daily Mail* 4 Aug 1984)

The scenes described above recall the 1983 flood, although flooding involved different areas of the city. As for the previous year, disruptions were rather significant and flooding hugely affected housing and road transport.

> “Dave and Glenys Smith returned from holiday yesterday to find themselves bailing out water seeping through the windows of their West Hull home.
>
> Armed with a piece of hardboard they pushed back the rainfall which had already drenched the kitchen and half of the living-room of their house in Kendal Way. […]
>
> When the fire brigade arrived started pumping off the water to the main drain in Anlaby High Road the flooding eased off, but they spent an hour and a half moving furniture and mopping up. […]
>
> The couple could not tell the extent of the damage, but Mr Smith said he would be contacting his insurance company.
>
> Mrs Smith said they had problems with flooding before, but this was the second time in the five years they had lived there that it had been so bad. […]
>
> West Hull Fire Station Officer John Norris said the flooding covered a large area, including Malham Avenue, Kendal Way, Legarde Avenue, Normanton Rise and Ingleton Avenue.

> Residents of Hessle Barrow Lane are veterans at coping with flooding and have hired their own portable pump.
>
> […] Mr Gerald Silver said that they were well-used to emergency tactics, but last night had been the worst yet. 'We are just sick to death of it. Every time there is a downpour, we think 'here we go again'. Hessle itself has not sufficient capacity to cope with excessive water and the water authority will not improve the drainage." he said.
>
> He and his wife Sandra and daughter Debra were sitting down for tea when the rain started and within a quarter of an hour the water had flooded the garden and was up at the door. […] (*Hull Daily Mail* 4 Aug 1984)

The flood event of 1984 confirmed once again that Hull was also at high risk of pluvial flooding, and that residents of West Hull and Hessle had suffered from the impacts of pluvial flooding for decades. However, newspapers appear to have given little attention to these areas of the city before the 1980s, possibly because tidal flooding in the Old Town and East Hull had more catastrophic consequences for the residents and the city itself. The excerpt above shows that Hessle residents were especially used to deal with flooding and held good capacity to respond to floods, e.g. by hiring their own portable pump – probably well-aware that the Fire Brigade would have been overwhelmed by requests of help. This indicates that Hessle residents had built great response capacity over time, perhaps greater than residents of other areas in the city. This is, in fact, the first reference to residents "taking the matter into their own hands" to some extent. Previously, we have seen residents using wooden boards and sandbags to stop floodwater to get into their homes or shops, and cleaning up the mud after the water receded but never have we read of Hull residents getting their own pump

and “fighting against” the flood themselves. This behaviour may have easily been driven by frustration and anger that accumulated over years of being flooded. As shown above, Hessle residents were “veterans at coping with flooding” and they seemed to hold negative feelings towards the YWA, which “had never improved the drainage system in the area” (*Hull Daily Mail* 4 Aug 1984). Hessle residents mostly blamed the poor drainage system for the flooding of 1984 as “drains were not equipped to cope with excessive water”, residents claimed (*Hull Daily Mail* 6 Aug 1984, para 7). The YWA assured Hessle residents that an investigation would be taking place and confirmed that they “had already asked the borough council, as agents, to undertake a detailed computer analysis of the sewage network in Hessle to find the most economical solution” (*Hull Daily Mail* 1 Sept 1984, para 9). The 1984 flood drew attention once again to the inadequacy of Hull’s drainage system. Hull is built on low, flat land and relies on pumps to always convey water through its drainage system. As mentioned earlier in this section, water authorities mostly focussed on solving issues related to tidal and fluvial flooding over the twentieth century, rather than paying attention to the city’s drainage systems, which is perhaps why pluvial risk escaped under the radar of flood risk management.

Today, discussions of and stories from the 1984 flood event would likely remind people of June 2007, when the city of Hull suffered extensive pluvial flooding causing damage to thousands of homes and businesses. As in 1984, the floods of 2007 were “due to issues with the conveyance of drains water in sewers and the performance of the three pumping stations” (Coulthard and Frostick 2010, p. 223). Urban drainage is not usually designed to accommodate flood events like those which occurred in 1984 and 2007, especially in a low-lying area like Hull with little or no natural drainage. We also know that there is no system of warning from pluvial flooding in the

United Kingdom, despite there being an extensive warning system for coastal and fluvial flooding. This makes flood preparedness and response more challenging, which is what we saw Hull struggling with in 1984 and again in 2007. Clearly, the 1984 event highlights the importance of a historical analysis of flood hazards in contextualising current events and potential future risks. The aim of this study was to construct a record of past flooding that investigated perceptions of flood risk in Hull and explored Hull residents' preparedness and response to past flooding. This would add to the existing knowledge of the history of flooding in Hull and offer lessons for future flood events.

6. Summary and Conclusions

As we have seen across the thesis, the twentieth century saw the city of Hull flood multiple times. In the first fifty years of the 1900s twenty-eight floods[11] occurred. In those years, a large portion of flood damages and flood-related distress are attributable to the high frequency of flood occurrence in Hull rather than to the severity of the events. Only three of those floods (1909, 1920, 1921) caused major disruptions to people's lives and provoked media scrutiny. While certainly the flood of 1921 is the one flood that people would most remember because of its severity and damages caused, it is the fact that flood episodes recurred within short intervals from one another almost every year throughout the century that made Hull increasingly vulnerable to flooding and stressed the need of effective flood risk management in the area. Newspapers have shown that the frustration, fear, and anger of Hull residents built up over the years as floods continued to be common occurrences.

In dealing with flooding, Hull communities showed remarkable resilience over the first forty years of the twentieth century. However, Hull did not have any system in place to support residents in coping with floods. There were schemes in progress to repair riverbanks and manage infrastructures, along with flood warnings of some sort, but we find no reference to flood risk management measures that addressed preparedness, response, and recovery to mitigate risks. Clearly, pre-disaster planning would have

[11] As mentioned in the introduction to this chapter, this is an approximate number based on the information I found. The number of floods between 1901-1949 is likely to be higher than the one reported here.

reduced impacts on Hull residents and built a more resilient community ready to face the upcoming floods.

The lack of flood risk management plans in the first two decades of the twentieth century can be attributed to the fact that floods were still mostly considered 'acts of God', out of people's control. Newspapers demonstrate a shift in public understandings of flood risk and flooding, from thinking of flood incidents as 'acts of God' to perceptions and understandings that floods should be preventable. The floods of November 1950 and December 1953 are discussed as events caused by negligence and malfunctions, suggesting human responsibility. Additional sources also supported this shift in flood perception, like the official document of Commander Pursey, discussed in chapter 5, which stressed human complicity in the flooding of 1961. This change of perspective helped prompt the introduction of new flood management strategies. For example, the official introduction of a flood alert system in the 1950s highlighted the importance of what we refer to today as 'flood preparedness and response'. While flood warnings were not always received or understood in the mid-twentieth century and preparedness and response to floods looked very different from today, the increasing role of warnings in flood management was an important tool to start protecting people and assets, minimising business disruptions and overall reducing disaster risk. The efficacy of flood warnings was questioned by Hull residents, as we have seen earlier in 1969, but overall the introduction of an alert system for coastal and fluvial flooding was a steppingstone in flood management for the area. The other relevant flood risk management strategies in the late twentieth-century included the construction of Hull's integrated sewage system in the 1970s and the construction of the Hull Tidal Barrier on the river Hull in 1980. Although the tidal barrier protected the Old Town from further flooding, newspapers

have shown that the rest of Hull continued experiencing floods which were underestimated. As already mentioned, this was linked to a narrative perpetuated by newspapers which caused people in Hull to overlook the overall risk of flooding in the city.

Between 1950 and 1987, thirty-five floods occurred in Hull and five of these (November 1954, March 1961, September 1969, December 1983, August 1984) were major events causing extensive inundations and significant disruptions to people's lives. Just like in previous decades, Hull's vulnerability to flooding was due to the high frequency of floods rather than the severity of the events. Vulnerability refers to "the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard" (UNISDR 2009, n.p). "Depending on the nature of the hazard, people can react to a greater or lesser extent. The vulnerability is proportional to the potential damage that can be caused in a specific area when the potential risk is triggered, giving rise to a catastrophe. Vulnerability includes exposure, knowledge, and risk management" (UNISDR 2009, p. 16). We know well that Hull has long been exposed to flood hazards but the perception of risk among the Hull community changed all through the twentieth century, because fundamentally risk is culturally constructed (Hoffman and Oliver-Smith 2002, Peretti-Watel 2001). Previous studies have argued that "because the perception of risks and the level of acceptance of such risks are constructed collectively, the perception of risk depends on the dominant patterns and beliefs in a particular society, i.e., on its culture" (Ouarda et al. 1998, p. 41). This explains why risk perception varies from one society to another. Research has shown that newspapers have a crucial role in shaping public opinion and the willingness of authorities to adopt certain strategies (Knudson 1993, Llasat 2009). Newspapers are some of the best tools to

understand societal trends both today and in the past. My study has found that newspaper accounts of Hull flooding both reflect public perceptions of risk and also themselves shape these perceptions. For example, perceptions of the 1921 Hull flood as a major event were largely shaped through the media accounts and national media attention the flood event received.

In more recent decades, the rising awareness about climate change and its impacts has been driving a major press coverage and consequently a major sensibility towards environmental issues (Llasat and Llasat-Botija 2008). The perception of climate risk has certainly grown because the media is now covering any sort of weather extreme: “natural” disasters, environmental degradation, food and water insecurity, the climate justice movement, international climate negotiations, and so forth. This is the same trend that can be seen by analysing newspapers of the 1900s, where perception of flood risk fluctuated over time and appeared to have largely been influenced by local and regional newspaper coverage. This is particularly in regard to the need for action on the part of authorities as flooding became an urgent issue in Hull and the East Riding.

While in the early 1900s perception of flood risk was rather low, as newspapers and oral histories have shown, flood risk perception increased particularly after the flood of 1921, as press coverage on the event was extensive. The overall media attention on flooding in Hull grew as flooding continued in the 1940s, 1950s and 1960s, and flooding became a more significant threat to public safety and to properties. However, as mentioned earlier, with the construction of flood-mitigation infrastructures in Hull between the 1970s and 1980s, perception of risk seemed to have decreased. The floods on record that followed in the 1980s and then later in the 2000s were in fact underestimated, likely because perception of flood risk in the

area had decreased again. Newspapers have contributed to create a false sense of security between the 1970s and 1980s which lowered flood risk perception and increased vulnerability in the city of Hull. With the help of newspaper accounts, this study highlights that culture very much determines the way flood events are perceived and acted upon by a community. Therefore effective communication of flood risk is crucial and should target communities depending on their vulnerability and risk perception. The historical knowledge brought about by this study can inform authorities on the need to improve flood management strategies, prioritising awareness and preparedness.

References

Abrams, L. (2010). Oral History Theory. Routledge, London.

Aguirre, B.E. (2005). Commentary on 'Understanding mass panic and other collective responses to threat and disaster': Emergency evacuations, panic, and social psychology. *Psychiatry*, 68, 121-129.

Archer, D.R. 1999. Practical application of historical flood information to flood estimation. Proc. IAHS Symp. Hydrological extremes: understanding, predicting, mitigating (eds: Gottschalk, L., Olivry, J-C., Reed, D. & Rosbjerg, D.), Birmingham, July 1999. *IAHS Publ. No. 255*, 191-199.

Auf der Heide, E. (2004). Common misconceptions about disasters: Panic, the "disaster syndrome" and looting. In M. O'Leary (Ed.), *The first 72 hours: A community approach to disaster preparedness.* Lincoln, Nebraska: iUniverse Publishing.

Babcock, H.M. (2012). "[This] I know from my grandfather": The Battle of Admissibility of Indigenous Oral History as Proof of Tribal Land Claims. *American Indian Law Review* 37(1): 19-61.

Bankoff, G. (2003). Society and Natural Hazard in the Philippines. Routledge.

Barton, A.H. (1969). Communities in disaster: A sociological analysis of collective stress situations. New York: Doubleday

Bates, D. 2016. Historical Research Using British Newspapers. Pen & Sword Books Limited.

Baxter, P.J. (2005). *The East Coast Big Flood, 31 January – 1 February 1953: A Summary of the Human Disaster.* Phil. Trans. R. Soc. A. 363, 1293-1312.

Bayliss, A.C. & Reed, D.W. (2001). The Use of Historical Data in Flood Frequency Estimation. Report to MAFF, 1-87

Behringer, W. 2010. A Cultural History of Climate. Cambridge: Polity Press.

Beverley and East Riding Recorder (1901). *Hull Inundated*. Beverley and east Riding Recorder, August 17 [Online].

Bingham, A. (2004). "An era of domesticity"? Histories of women and gender in interwar Britain. *Cultural and Social History,* 1(225-233).

Bingham, A. (2010). The Digitization of Newspaper Archives: Opportunities and Challenges for Historians. *Twentieth Century British History,* 21/2(225-231).

Birmingham Daily Post (1959). *Flooding in Many Areas.* Birmingham Daily Post, December 31, p.32. [Online]

Boia, L. (2005). The Weather in the Imagination. London: Reaktion Books.

Bornat, J. (1989). Oral History as a Social Movement: Reminiscence and Older People. *Oral History* 17(2): 16-20.

Bradford Observer (1950). *Hull Housewives Seek Flood Compensation.* Bradford Observer, November 28, p.5 [Online].

Bradford Observer (1954). *All-night Watch Kept in Yorks Flood Areas.* Bradford Observer, November 13, p.1 [Online].

Bryson, A. (2007). "Whatever you say, say nothing": Researching memory and identity in Mid-Ulster, 1945-1969, Oral History, 35(2): 45-56.

Campbell, J. (2023). Seventy years since 1953 floods claimed 307 lives and why East Yorkshire escaped worst of it, *Hull Live*, 1 February. Available at: https://www.hulldailymail.co.uk/news/history/seventy-years-1953-floods-claimed-8096308 (Accessed: 3 July 2023)

Caunce, S. (1994). Oral History and the Local Historian. Longman, London UK.

Charlton, T.L., Myers, L.E. and Sharpless, R. (2006). Handbook of Oral History. Altamira Press, Lanham, MD.

Chassanoff, A.M. (2016). Historians' Experiences using Digitized Archival Photographs as Evidence. PhD Thesis, University of North Carolina at Chapel Hill, Chapel Hill.

Chertkoff, J.M., Kushigian, R.H. (1999). Don't panic: The psychology of emergency egress and ingress. Westport, CT: Praeger.

Chief Constable (1961). East Coast Flood Warning System. Papers of George de Boer, U DDB/1/7/4. Hull University Archives, Hull History Centre, Kingston-Upon-Hull, UK.

Coulthard, T. J., and Frostick, L.E. (2010). The Hull floods of 2007: implications for the governance and management of urban drainage systems. *Journal of Flood Risk Management*, 3(3), 223-231.

Coulthard, T. J., Frostick, L., Hardcastle, H., Jones, K., Rogers, D., Scott, M. & Bankoff G. (2007). The 2007 floods in Hull. Interim report by the Independent Review Body. Hull City Council, 2007a, 1-36.

Coventry Evening Telegraph (1954). *Floods Danger Is Receding at Hull.* Coventry Evening Telegraph, November 13, p. 16 [Online].

Coventry Evening Telegraph (1954). Minister Sees Damage by Floods. Coventry Evening Telegraph, November 13, p.18 [Online].

Crate, S.A. and Nuttall, M. (2016). Anthropology and Climate Change: From Encounters to Actions. Oxford: Routledge.

De Tocqueville, A. (2000) Democracy in America. New England Review, 21(3), 185-214.

Dove, M.R. (2014). The Anthropology of Climate Change: An Historical Reader. Chichester: Wiley-Blackwell.

Drury, J., Cocking, C., Reicher, S. (2009). The nature of collective resilience: Survivor reactions to the 2005 London bombings. *International Journal of Mass Emergencies and Disasters,* 27, 66-95.

Eden P. (2008). Great British Weather Disasters, Continuum.

Endfield, G.H., Veale, L. (2017) Climate Histories, Memories and Extreme Weather: A Historical Geography Perspective. London: Routledge.

Evans, G.E. (1987). Spoken History, Faber & Faber: London.

Fielding, J. (2012). Inequalities in exposure and awareness of flood risk in England and Wales. *Disasters* 36, 477-494.

Fielding, J., Burningham, K. (2005). Environmental inequality and flood hazard. *Local Environ.* 10, 1-17.

Flowerdew, J., Horsburgh, K., Wilson, C., Mylne. K. (2010). Development and evaluation of an ensemble forecasting system for coastal storm surges. Q.J.R. Meteorol. Soc, 136:1444-1456.

Fraser, R. (1979). Blood of Spain: An Oral History of the Spanish Civil War. New York: Pantheon.

Fritz, C.E. (1961). Disasters, In *Contemporary Social Problems,* ed R.K. Merton and R.A. Nisbet, 651-694. New York: Harcourt.

Fritz, C.E., Williams, H.B. (1957). The human being in disasters: A research perspective. *The Annals of the American Academy of Political and Social Science,* 309, 42-51.

Gallego D., Garcia-Herrera R., Prieto R., and Pena-Ortiz C. 2008. On the quality of climate proxies derived from newspaper reports. A case study. *Climate of the Past*, 4(1):11-8.

Gooding, P. (2017). Historic Newspapers in the Digital Age. Search All About it! *Routledge.*

Gourevitch, J.D., Diehl, R.M., Wemple, B.C., Ricketts, T.H. (2022). Inequalities in the distribution of flood risk under floodplain restoration and climate change scenarios. *People and Nature*, 4(2), 415-427.

Grattan, J. and Brayshay, M. 1995. An amazing and portentous summer: environmental and social in Britain to the 1783 eruption of an Iceland volcano. *The Geographical Journal,* 1:125-134.

Grele, R.J. (2006). Oral History as Evidence, in Charlton, T.L. (eds), *Handbook of Oral History*, Lanham, MD, Altamira Press.

Haigh, I.D. et al. (2017). An improved database of coastal flooding in the United Kingdom from 1915 to 2016. Scientific Data 4(1).

Hall, A. 2018. Remembering in God's name: the role of the church and community institutions in the aftermath and commemoration of floods. In G.H. Endfield and L. Veale, *Cultural Histories, Memories and Extreme Weather: A Historical Geography perspective.* London: Routledge.

Hammerton, J., Thomson, A. (2005). Ten Pounds Poms: Australia's Invisible Migrants. Manchester: Manchester University Press.

Haraway, D. 1991. Simians Cyborgs and Women: The Reinvention of Nature, Routledge, New York.

Harris, A. (2013) Faith in the Family: A Lived Religious History of English Catholicism, 1945-82. Manchester: Manchester University Press.

Hassan, J. (1998). A History of Water in Modern England and Wales. New York: Manchester University Press.

Hewitt, K. (1997) Regions of Risk: A Geographical Introduction to Disasters. Routledge.

Hickey, K.R. (1997) Documentary Records of Coastal Storms in Scotland 1500–1991 A.D., DPhil Thesis, Coventry University.

Hoffman, S., Oliver-Smith, A. (2002). Catastrophe and Culture. The Anthropology of Disaster, School of American Research, James Currey, Santa Fe, N.M., Oxford.

Holmes, A., Pilkington, M. (2011). Storytelling, floods, wildflowers and washlands: oral history in the River Ouse project. *Oral History* 39(2): 83-94.

Howarth, W. (2002). Flood Defence Law. Shaw & Sons Ltd, UK. https://www.hulldailymail.co.uk/news/history/disaster-wreaked-havoc-hull-inspired-8002641 (Accessed: 18 June 2023)

Hull City Council (2010). Hull Character Study (Phase 1) - Draft. Hull Development Framework, SD033.

Hull City Council (2020). Flood Investigation Report. (Ref No HCCFWMAS190005)

Hull Daily Mail (1901). *Flooding of Hull. How can it be avoided? Problem for architects*. Hull Daily Mail, August 13, p.3 [Online].

Hull Daily Mail (1909). *Flooded Hull Suburbs*. Hull Daily Mail, August 2, p.3 [Online].

Hull Daily Mail (1921). *Flood Distress Relief*. Hull Daily Mail, December 21, p.3 [Online].

Hull Daily Mail (1921). *Humber Flood's After-effects.* Hull Daily Mail, December 19, p.5 [Online].

Hull Daily Mail (1921). *When Hull Became Venice*. Hull Daily Mail, December 19, p.7 [Online].

Hull Daily Mail (1936). *Who is Responsible for Recent Hull Floods*. Hull Daily Mail, February 3, p. 6 [Online].

Hull Daily Mail (1943). *River Overflows*. Hull Daily Mail, February 17, p.3 [Online].

Hull Daily Mail (1950). *Constant Watch on Hull Flood Area Urged*. Hull Daily Mail, December 16, p.3 [Online].

Hull Daily Mail (1950). *Give Us Anything That Will Burn*. Hull Daily Mail, November 28, p. 1 [Online].

Hull Daily Mail (1950). *Race Against Time to Beat Hull Flood Peril*. Hull Daily Mail, November 25, p.1 [Online].

Hull Daily Mail (1950). *There Must Be No More Flooding, Council Told.* Hull Daily Mail, December 8, p. 5 [Online].

Hull Daily Mail (1950). *Water Pours into Hull Works and Homes when Tidal Door Collapses.* Hull Daily Mail, November 24, p. 1 [Online].

Hull Daily Mail (1961). Hull Daily Mail, March 21.

Hull Daily Mail (1969). *Flood Chaos Hits Hull.* Hull Daily Mail, September 29, pp. 4-5.

Hull Daily Mail (1980). *Now We Can Lower The Boom Against Floodtides In Hull.* Hull Daily Mail, April 14, p. 10.

Hull Daily Mail (1983). *A Drenching Time Was Had By All!* Hull Daily Mail, December 9.

Hull Daily Mail (1983). *Flooding Threatened Old Folk.* Hull Daily Mail, December 9.

Hull Daily Mail (1984). *'Flash' Floods Wreak Havoc.* Hull Daily Mail, August 4.

Hull Daily Mail (1984). Call For Early Warning of Flood Danger. *Hull Daily Mail*, September 1.

Hull Daily Mail (1984). *Drains Probe to Begin as Angry Hessle Mops Up.* Hull Daily Mail, August 6.

Hull Daily Mail (2005). Flashback Issue 143, Hull Daily Mail, June 27, p.15.

Hulme, M. 2008. Geographical work at the boundaries of climate change. *Transactions of the Institute of British Geographers,* 33:5-11.

Hulme, M. 2012. Telling a different tale: literary, historical and meteorological readings of a Norfolk heatwave. *Climatic Change*, 113(1):5-21.

Hulme, M. 2015. Climate and its changes: a cultural appraisal. *Geo: Geography and Environment,* 2(1):1-11.

Humphries, S. (1981). Hooligans or Rebels? An Oral History of Working-Class Childhood and Youth, 1880-1939. Oxford: Oxford University Press.

Jankovic, V. 2000. Reading the Skies: A Cultural History of English Weather, 1650 – 1820. Manchester: Manchester University press.

Jones, A. (2006). The Many Uses of Newspapers. *Technical Report for IMLS Project "The Richmond Daily Dispatch".*

Kingle, M. W. (2007). Emerald city, an environmental history of Seattle. Yale University Press.

Knudson, J.W. (1993). Late to the Feast: Newspapers as Historical Sources. Perspectives, 31(7):9-11.

Lavery, B. W. (2015). The Headscarf Revolutionaries: Lillian Bilocca and the Hull Triple-Trawler Disaster. Barbican Press.

Lazrus, H and Peppler, R. 2013. Ways of knowing: traditional knowledge as key insight for addressing environmental change, theme introduction. *Weather, Climate and Society*.

Leeds Mercury (1921). Hull After the Flood. *Leeds Mercury*, December 20 [Online].

Lejano, R., Tavares-Reager, J. and Berkes, B. 2013. Climate and narrative: environmental knowledge in everyday life. *Environmental Science & Policy*, 31: 61-70.

Llasat, M.C., Llasat-Botija, M. (2008). Climate change and the perception of the risk of flooding in Catalonia, in: Public perception and policy of climate change in Catalonia, Barcelona, 55-69

Llasat, M.C., Llasat-Botija, M., Barnolas, M., Lopez, L., Altava-Ortiz, V. (2009). An analysis of the evolution of hydrometeorological extremes in newspapers: the case of Catalonia, 1982-2006. Nat. Hazards Earth Syst. Sci., 9, 1201-1212.

Mauch, C, Pfister, C. (2009). Natural disasters, cultural responses: case studies toward a global environmental history. Lexington Books, Lanham.

McDonagh, B., Brookes, E., Smith, K., Worthen, H., Coulthard, T.J., Hughes, G., Mottram, S., Skinner, A., Chamberlain, J. (2023). Learning histories, participatory methods and creative engagement for climate resilience. *Journal of Historical Geography,* 82, 91-97.

McDonagh, B., Worthen, H., Mottram, S., Buxton-Hill, S. (2024). Living With Water and Flood in Medieval and Early Modern Hull. Environment and History. Available at: https://doi.org/10.3828/whp.eh.63830915903577 (Accessed: 18 February 2024)

McEwen, L., Garde-Hansen, J., Holmes, A., Jones, O., Krause, F. (2016). Sustainable flood memories, lay knowledges and the development of community resilience to future flood risks. *Trans Inst Br Geogr*, 42(14-28).

Merridale, C. (2006). Ivan's War: Life and Death in the Red Army, 1939-1945. New York: Picador.

Met Office. (1969). Monthly Weather Report: September 1969, 86, 9.

National Weather Services (2012). Definitions and general terminology (Hydrological services program NWSPD 10-9 No. NWS Manual 10-950). Washington, DC: National Weather Services.

Nelson, W. (1909). The American Newspapers of the Eighteenth Century as Sources of History. *Annual Report of the American Historical Association,* 1: 209-222.

Newcastle Journal (1927). Floods An Act of God. *Newcastle Journal*, July 27, p.11 [Online]

Nicholson, H. (1956). Sunk Island. Autolycus Press

Northern Whig (1921). Hull Floods. *Northern Whig*, December 21 [Online].

Northern Whig (1955). Homes Vacated as Tyne Floods. *Northern Whig*, January 11, p. 1. [Online]

Office for National Statistics (2019). English Indices of Deprivation. Available at https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019 j

O'Hara, G. (2017) The Politics of Water in Post-War Britain. Palgrave

Ourda, T.B. M.J., Rasmussen, P.F., Bobee, B., Barnier, J. (1998). Use of historical information in hydrologic frequency analysis, Rev. Sci. Eau/ Journal of Water Science, 11, 41-49.

Pall Mall Gazette (1921). Hull Flood Damage. *Pall Mall Gazette*, December 20 [Online].

Parker, C., Scott, S., Geddes, A. (2019). Snowball Sampling, SAGE Research Methods Foundations

Pearce, C. 2018. Extreme weather and the growth of charity: insights from the Shipwrecked Fishermen and Mariners' Royal Benevolent Society, 1839-1860. In G.H. Endfield and L. Veale, *Climate Histories, Memories and Extreme Weather: A Historical Geography Perspective*. London: Routledge.

Peretti-Watel, P. (2001). Sociologie du risque, A. Colin, Paris.

Phillips, B.D., Metz, W.C., Nieves, L.A. (2005). Disaster threat: Preparedness and potential response of the lowest income quartile. *Global Environmental Change Pat B: Environmental Hazards,* 6, 123-133.

Pielke, Jr., R.A., Downton, M., Barnard Miller J.Z. (2002). Flood Damage in the United States, 1926-2000.: A Reanalysis of National Weather Service Estimates. Environmental and Societal Impacts Group. National Center for Atmospheric Research, Boulder, CO.

Portelli, A. (2015). What makes oral history different. In Thoms A., Perkes R., The Oral History Reader, London: Routledge, pp.48-58.

Quarantelli, E.L. (2001). Panic, sociology of. In N.J. Smelser & P.B. Baltes (Eds.), International encyclopaedia of the social and behavioural sciences. New York: Pergamon Press.

Rhodes, J.F. (1909). Newspapers as Historical Sources. *Historical Essays,* 83-97.

Roberts, E. (1984). A Woman's Place: An Oral History of Working-class Women, 1890-1940. Oxford: Blackwell.

Roberts, E. (1995). Women and Families: An Oral History, 1940-1970. Oxford: Blackwell.

Salmon, L.M. (1923). The Newspaper and the Historian. New York: Oxford University Press.

Seeber, L., Armbruster, J.G. (1987). The 1886-1899 Aftershocks of the Charleston, South Carolina Earthquake: A Widespread burst of Seismicity. *Journal of Geophysical Research*, 92 (B3): 2664.

Sheppard, J.A. (1976). The Draining of the Hull Valley. *East Yorkshire Local History Society.*

Shields Daily News (1921). Hull Floods Loss. *Shields Daily News*, December 21 [Online].

Shopes, L. (2006). Mellon Project on Folklore, Ethnomusicology, and Oral History in the Academy.

Solnit, R. (2009). A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster. New York: Penguin Group.

Steinberg, T. (2006). Acts of God: the unnatural history of natural disaster in America, 2nd ed, Oxford University Press, New York.

Strauss, S. and Orlove, B.S. 2003. Weather, Climate, Culture. Oxford: Berg.

Summerfield, P. (2018). Histories of the Self: Personal Narratives and Historical Practice, Taylor & Francis Group

Tate, E., Rahman, M.A., Emrich, C.T., Sampson, C.C. (2021). Flood exposure and social vulnerability in the United States. *Natural Hazards,* 1-23.

Taylor, V., and Trentmann, F. (2011) Liquid Politics: Water and the Politics of Everyday Life in the Modern City *Past and Present*, 211, 199–241

Terkel, S. (1970). Hard Times: Famine, 1958-1962. New Haven, CT: Yale University Press.

The Northern Whig and Belfast Post (1954). *RAF Dry Out Houses After Hull Floods.* Northern Whig and Belfast Post, November 15, p. 4. [Online].

Thompson, P. (1978, 2017). The Voice of the Past: Oral History, 1st ed, 4th ed, Oxford: Oxford University Press.

Thomson, A. (1998). Fifty Years On: An International Perspective on Oral History. Journal of American History 85(2): 581-595.

Tredinnick, M. 2013. The weather of who we are. An intimate essay of the weather, the self and Australianness. *World Literature Today*, 87(1):12-15.

UNISDR (2009). UNISDR Terminology on Disaster Risk Reduction. Available at http://www.unisdr.org/eng/terminology-2009-eng.html

Van Bavel, B. et al. (2020). Disasters and History. The Vulnerability and Resilience of Past Societies. Cambridge University Press.

Vanden Heuvel, J. (1990). Untapped Sources: America's newspaper Archives and Histories. New York: Gannett Foundation Media Center.

Wachinger, G., Renn, O., Begg, C., Kuhlicke, C. (2013). The risk perception paradox-implications for governance and communication of natural hazards. *Risk Anal.* 33(6), 1049-1065.

Waites, I. 2018. Learning to say "Phew" instead of "Brrr": social and cultural change during the British summer of 1976. In G.H. Endfield and L. Veale, *Climate Histories, Memories and Extreme Weather: A Historical Geography Perspective*. London: Routledge.

Walker, G., Burningham, K. (2011). Flood risk, vulnerability and environmental justice: evidence and evaluation of inequality in a UK context. *Crit. Soc. Policy* 31, 216-240.

Weir, L. (2023). Disaster wreaked havoc on Hull and inspired the iconic Tidal Barrier, *Hull Live*, 8 January.

Whittle, R., Medd, W., Deeming, H., Kashefi, E., Mort, M., Twigger Ross, C., Walker, G. and Watson, N. 2010. After the rain – learning the lessons from flood recovery in Hull, final project report for 'Flood, vulnerability and urban resilience: a real-time study of local recovery following the floods of June 2007 in Hull'. Lancaster University, Lancaster.

Wilkie, R. M. (2010). Livestock/Deadstock: Working with Farm Animals from Birth to Slaughter, Temple University Press.

Wisner, B., Blaikie, P., Cannon, T., Davis, I. (2003). At Risk. Natural hazards, people's vulnerability and disasters. Routledge, 2nd edition.

Worster, D. (1979). Dust Bowl: The Southern Plains in the 1930s. Oxford University Press.

Yorkshire Evening Post (1953). Homes Flooded as Sluice Gate Jams. Yorkshire Evening Post, December 12, p.3 [Online].

Yorkshire Evening Post (1953). Hull Shops and Houses Flooded for the Second Time in 12 Days. Yorkshire Evening Post, December 24, p.5 [Online].

Yorkshire Post and Leeds Intelligencer (1950). Homes Flooded Twice in 12 Hours. Yorkshire Post and Leeds Intelligencer, November 25, p.6 [Online].

Yorkshire Post and Leeds Intelligencer (1953) Coast Flood Alert from Monday. Yorkshire Post and Leeds Intelligencer, September 12, p.1 [Online].

Yorkshire Post and Leeds Intelligencer (1954). *Hull Flood Fund.* Yorkshire Post and Leeds Intelligencer, November 30, p.8. [Online].

Yorkshire Post and Leeds Intelligencer (1954). National Response to Hull Appeal. Yorkshire Post and Leeds Intelligencer, November 17, p.6 [Online].

Yorkshire Water (2008). Yorkshire Water Services. Humbercare Sewerage Network Analysis.

Yorkshire Water Authority River Hull Tidal Surge Barrier Planning Report, June 1974 (Hull History Centre, Ref C TCR/1/44/7)

Zong, Y. and Tooley, M.J. (2003). *A historical record of coastal floods in Britain: frequencies and associated storm tracks*. Natural hazards, 29(1), 13-36.

Appendix 1

UNIVERSITY OF HULL

Ethics Approval No: FEC_2022_95

Researcher: Flavia Manieri, Energy & Environment Institute, University of Hull
Email: F.Manieri-2019@hull.ac.uk

Participant Information Sheet

PROJECT TITLE: Flooding through the twentieth century: A Hull of a problem

You are being invited to participate in a doctoral research project titled "*Flooding through the twentieth century: A Hull of a problem".* Please read and consider the following information about the study and if you have any further questions do not hesitate to ask (our full contact details can be found on p. 3).

About the project

My name is Flavia Manieri, and I am a PhD candidate in human geography at the University of Hull. I am currently doing research for my doctoral dissertation investigating perceptions of flood risk in the city of Hull. As part of this research, I am conducting oral history interviews on people's memories of living with water and flood in Hull.

What does taking part in the study involve?

I am hoping to interview between 10 and 15 people with first-hand experience or knowledge of floods occurred between 1950-1999. If you agree to take part in the study, an oral history interview with me would involve spending as little or as much time as you are comfortable with talking about your memories. The interview will be conducted according to your preference - face-to-face at a mutually convenient location or remotely via Teams or Skype. You can choose not to answer any questions that make you feel uncomfortable, and you may stop the interview at any time. You can change your mind and decide not to take part in this project at any time, if you wish, without giving reason. If that occurs, I will do everything in my power to withdraw your data. I will not be able to withdraw all your data from the study once the data have been analysed and anonymised, and I will have started writing my dissertation, as this will have an adverse impact on the integrity and validity of the project. Interviews aim at making positive changes and usually benefits for participants outweigh risks. Nonetheless, participants may become distressed by discussing past flood events.

While I hope that being interviewed will be a pleasant experience for all participants, please be assured that I will seek appropriate support if needed. Should you become distressed during the interview, I will provide the contact details for local counselling services, alternatively you can also choose to contact your own GP or mental health provider. Your stories can contribute to fill in the gaps in the documented histories of Hull floods and they may also serve as the only sources of information available about a

certain flood event. Your viewpoints and perspectives are important to reconstruct past flood perceptions and help us build flood resilience in the Humber region.

What will happen to your interview?

Your interview will be recorded then transcribed exactly as spoken on to paper. Your personal data will be anonymised and therefore will never be used in any publication. In order to use your material in any future publications, we must ask you to sign a Consent Form. If you wish, your memories can also be used by subsequent historians and researchers who might wish to consult the archived interviews (subject to your further agreement via the Consent Form). We will be processing the personal data within your interview and transcripts thereof in accordance with the General Data Protection Regulation (GDPR May 2018). Your interview will be archived in the university archives, held at the Hull History Centre, according to the archival standards and best practices. Please also read our Data Protection Privacy Notice for more information.

We ask that you consider the information provided for no longer than two weeks and if you agree to be interviewed and for your memories to be so used, we ask you to complete a Consent Form prior to the interview taking place. This protects your legal rights, ensures that your interview recording, and transcript are properly and professionally archived and looked after and enables us as researchers (and subsequent researchers if you wish) to utilise your memories in any future research. This procedure is in line with your legal rights, and we operate strictly to the moral, ethical, and legal requirements laid down by the GDPR.

This investigation was granted ethical approval by the University of Hull Ethics Committee (Faculty of Science and Engineering).

Thank you for reading this information: If you have any specific questions about what is written here, about the research, about what taking part in an oral history interview involves or about what happens after the interview, please contact either me, my supervisor, or the faculty ethics office.

Contact details:

Researcher

Flavia Manieri
Energy & Environment Institute, University of Hull
Telephone: +44 7763 084654
Email: F.Manieri-2019@hull.ac.uk

Supervisor

Prof. Briony McDonagh
Energy & Environment Institute, University of Hull
Telephone: +44 (0)1482 465865
Email: B.McDonagh@hull.ac.uk

If you have any questions or concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact the University of Hull Faculty of Science and Engineering Research Ethics Committee: Fose-ethics@hull.ac.uk

Appendix 2

UNIVERSITY OF HULL

Informed Consent Return Slip

FLOODING THROUGH THE TWENTIETH CENTURY: A HULL OF A PROBLEM

Interviewees are asked to sign and return this slip to the researcher.

I confirm that I have read and understood the participant information sheet for the above project and the researcher has answered any queries to my satisfaction.

I consent to be interviewed for the purpose of the above project and for my interview to be recorded.

I understand that my participation is voluntary and that I am free to withdraw such participation at any time without giving any reason.

I understand that original audio recordings and transcripts will be retained in the university archives, held at the Hull History Centre.

I understand that any personal data will be stored securely in line with GDPR requirements.

I consent for my anonymised data to be shared in future publications.

I consent for my anonymised data to be used for future research by other researchers.

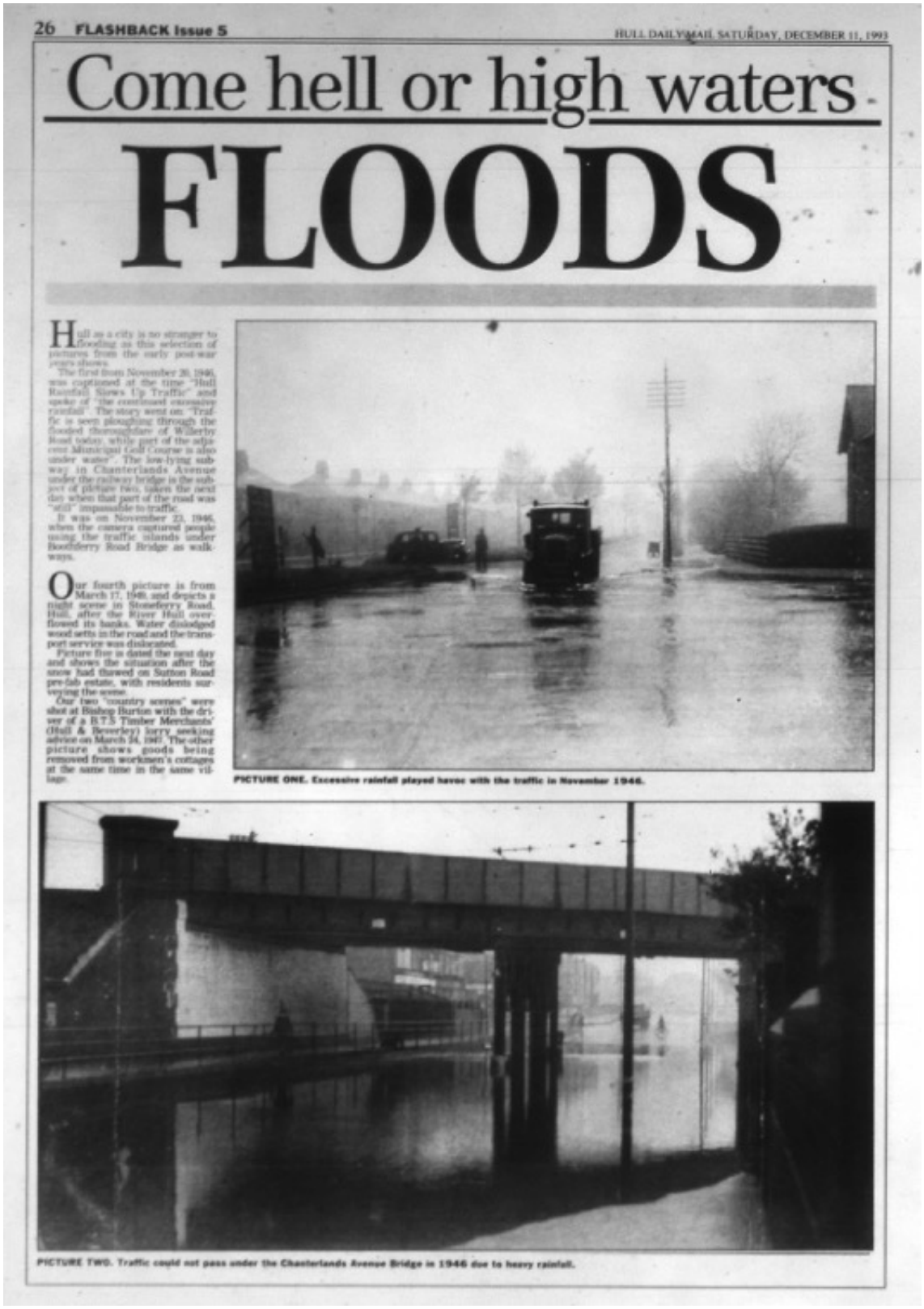
I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

I, hereby agree to take part in the above project	
Signature of Participant:	Date

If you have any further questions or concerns about this study, please contact: Flavia Manieri, tel. +44 7763 084654, email F.Manieri-2019@hull.ac.uk. You can also contact Prof. Briony McDonagh, tel. +44 (0)1482 465865, email B.McDonagh@hull.ac.uk or FoSE Ethics Office at Fose-ethics@hull.ac.uk.

Appendix 3

There follows a collection of more photographs recovered from the Hull Daily Mail and the Flashback Issues. These photographs show the social impacts that of a number of flood events had on Hull residents between the 1940s and 1980s. (*All images are courtesy of the Hull Daily Mail. Copyright Reach PLC. All rights reserved. Not to be produced without permission*.)



26 FLASHBACK Issue 5 HULL DAILY MAIL, SATURDAY, DECEMBER 11, 1993

Come hell or high waters

FLOODS

Hull as a city is no stranger to flooding as this selection of pictures from the early post-war years shows.

The first from November 20, 1946, was captioned at the time "Hull Rainfall Slows Up Traffic" and spoke of "the continued excessive rainfall". The story went on: "Traffic is seen ploughing through the flooded thoroughfare of Willerby Road today, while part of the adjacent Municipal Golf Course is also under water". The low-lying subway in Chanterlands Avenue under the railway bridge is the subject of picture two, taken the next day when that part of the road was "still" impassable to traffic.

It was on November 23, 1946, when the camera captured people using the traffic islands under Boothferry Road Bridge as walkways.

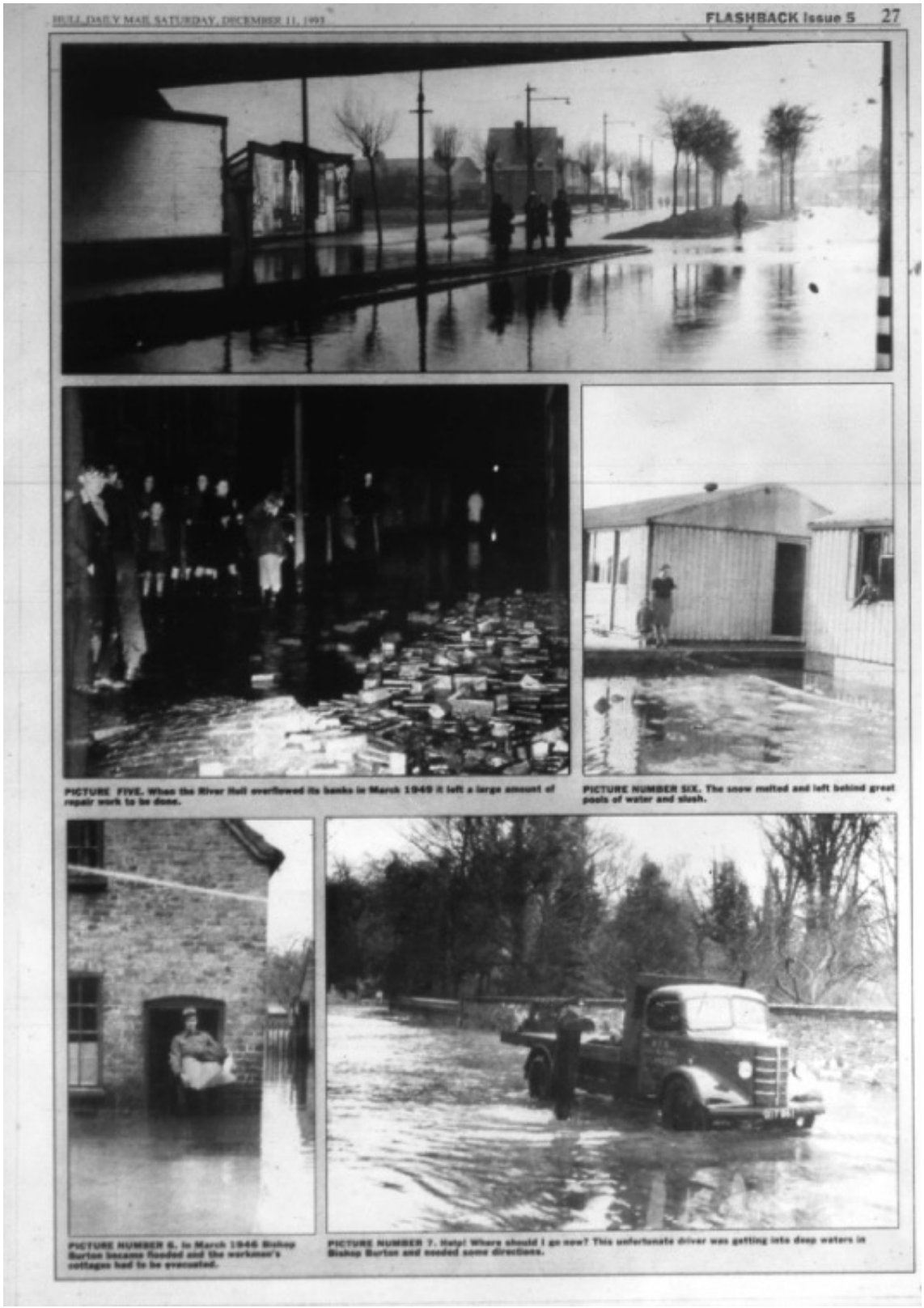
Our fourth picture is from March 17, 1948, and depicts a night scene in Stoneferry Road, Hull, after the River Hull overflowed its banks. Water dislodged wood setts in the road and the transport service was dislocated.

Picture five is dated the next day and shows the situation after the snow had thawed on Sutton Road pre-fab estate, with residents surveying the scene.

Our two "country scenes" were shot at Bishop Burton with the driver of a B.T.S. Timber Merchants' (Hull & Beverley) lorry seeking advice on March 24, 1947. The other picture shows goods being removed from workmen's cottages at the same time in the same village.

PICTURE ONE. Excessive rainfall played havoc with the traffic in November 1946.

PICTURE TWO. Traffic could not pass under the Chanterlands Avenue Bridge in 1946 due to heavy rainfall.



The images above are from post-war years and show flooded areas of Hull: *Picture One* and *Two* (page IV) show respectively Willerby Road on November 20, 1946, and the subway in Chanterlands Avenue under the railway bridge on November 21, 1946, both are "under-water". *Picture Three* and *Four* (above) show Boothferry Road Bridge on November 23, 1946, and a night scene in Stoneferry Road after the River Hull overflowed its banks (March 17, 1949). *Picture Five*

is from March 18, 1949, and shows Sutton Road after the snow thawed with residents watching the scene. The last two photographs were shot in Bishop Burton (a village North-East of Hull) in March 1947.

This picture, from our own files and dated December 1963, has the caption: Holme Church Lane was closed to traffic because of the floods, but a pedestrian made it through.

The heavens show no mercy

Hull and the East Riding woke up on Tuesday February 6, 1906, to widespread floods, after a night which brought rainfall for the previous 24 hours to one and a quarter inches.
In Hull, some gardens were under two feet of water.
At Beverley, pumps were called to flooded houses. Two areas of the town worst hit were Denton Street off Holme Church Lane, and Keldgate where Beverley Corporation quickly went into action with pumps.
Of nine terrace houses in Denton Street, two on the west side at the lower end had front and back living-rooms and kitchens flooded to a depth of two feet.
In the same street, a detached bungalow, the home of Mr H Markham, could not be reached as it was completely surrounded by water.
Mr John Rudd (38) a shop assistant who lived in the terrace of houses said he had got up at 6.30am to find water coming into the kitchen and it had been coming into the house since then.
He said it was no longer safe to continue living at home as the water contained sewage. His wife and child had gone to stay with his mother-in-law in Beaver Road. The view from the backs of the houses was of a continuous sheet of water to a line of distant council houses, broken only by the tops of fences and outhouses. In the flooded backyards, coke floated among rubbish from overturned dustbins.

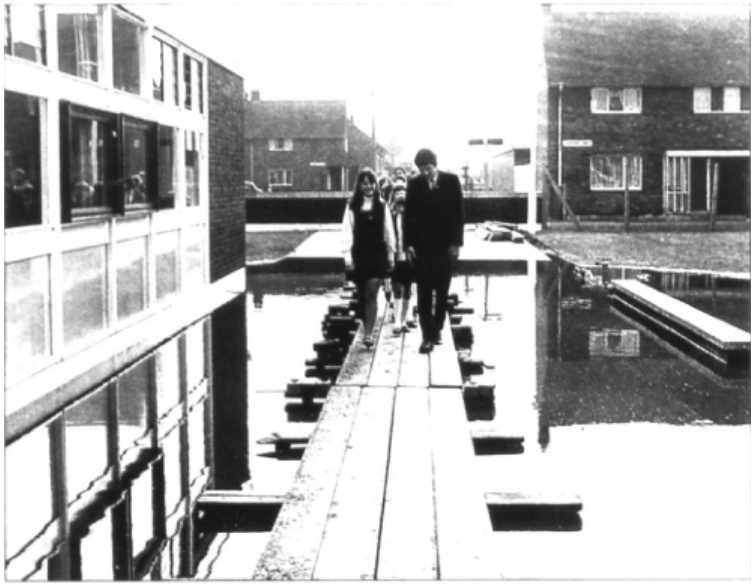
It was said that the nearby River Hull at high tide and swollen with overnight rain, had played a part in the combination of circumstances in conjunction with the tannery dyke.

The photograph above (Holme Church Lane, Beverley) is from December 1963, when both Hull and Beverley experienced flooding after a 24-hour rainfall.

Water chore!

If you lived in Charles Terrace, Derby Street, Hull, in August 1963, you may recognise someone on this picture which was taken about the middle of that month, showing residents sweeping away rainwater.

A typical scene of Hull residents sweeping away rainwater in Derby Street, in the Sculcoates area of Hull (August 1963).



Above pupils crossing a bridge of planks to get to class as floodwater reached 2ft around Setting Dyke High School, Hull, in September 1968.

Below a series of photographs of Hull residents clearing up after floodwaters entered their homes:

A WET END OF THE FIFTIES FOR SOME CITY RESIDENTS

A soggy New Year

IT WAS hardly a happy New Year for many Hull and East Riding people as December, 1959, drew to a close.

For they found their homes under water as river levels rose. Rush hour traffic in the city was halted as the waters rose, flooding roads.

The problem was caused by a freak tide, which burst the banks of the River Hull. Some families living in streets near the river had to move upstairs as water poured into their homes, wrecking furniture and carpets.

These pictures, all from the Hull Daily Mail on December 31 that year, show just how bad the problem was . . .

HELPING OUT: At Ferriby, too, there were flood problems. Here, eight-year-old John Spence lends a hand as flood waters swirl round his home

See pages 16 and 17 for more flood pictures

Ferriby, December 1959.

THE AFTERMATH OF A FLOOD-HIT NEW YEAR'S EVE

COMMUNITY EFFORT: Clearing the coating of mud and silt from Poplar Terrace, Chapman Street, Hull

THE AFTERMATH: A scene of devastation at Brickyard Cottages, North Ferriby, as householders clear up after the flood

Wincolmlee and North Ferriby, December 1959.

Florence Avenue, Hessle, March 1967.

Hodgson Street, East Hull, March 1961.

hulldailymail.co.uk/nostalgia

Monday November 13 2017 21

1950s Floods

SWEEPING OUT Mrs Oates is seen here bailing to keep water from her home in St Mark's Street on New Year's Eve in 1958

Floods didn't dampen the locals spirit

After the flood ... looking back to the 1950s and the problems caused when river levels rose

SPASH

Wincolmlee, October 1958 (left) and Wincolmlee, December 1959 (right).

Bransholme, North Hull, August 1974.

Harrow Terrace, September 1980.

Below a series of photographs showing Hull residents trapped by floods:

a)

b)

A man trapped on the top of his van in Wilberforce Drive, Hull, in 1969.

TRAPPED BY THE TIDE – BUT THEY WERE STILL SMILING

VERY HOPEFUL: Keeping themselves entertained while the waters went down were these workers, who tried fishing with a piece of string tied to a billiards cue as they sheltered on a doorstep at the General Post Office, in Alfred Gelder Street, in October, 1969. What they probably never realised was that fish were actually seen swimming about in the flood water

A WASHOUT: Sweeping out after flooding in High Street in February, 1962, are Mr and Mrs L Spencer, who ran the Tigress Inn

Tell Flashback

DO YOU have a story to tell about flooding in Hull and surrounding areas? Your memories please to Stuart Russell, Flashback, Mail Publications, Blundell's Corner, Beverley Road, Hull, HU3 1XS.

Workers trying fishing in floodwaters in Alfred Gelder Street, October 1969 (above) and the owners of the Tigress Inn in High Street unable to leave the premises, February 1962 (below).

'TWAS EVER THUS

THE recent chaos and devastation once again underlined the fact that for many families in Hull and parts of the East Riding the threat of flooding is a distressing fact of life. Over decades householders have faced the grim reality of knowing that their homes are at risk when rainfall is severe.
Here Flashback takes a look at just a few of the incidents which caused problems and made local headlines over the years ...

WILLERBY WASH-OUT: Cars plough through deep floodwater in Willerby Square in July 1969

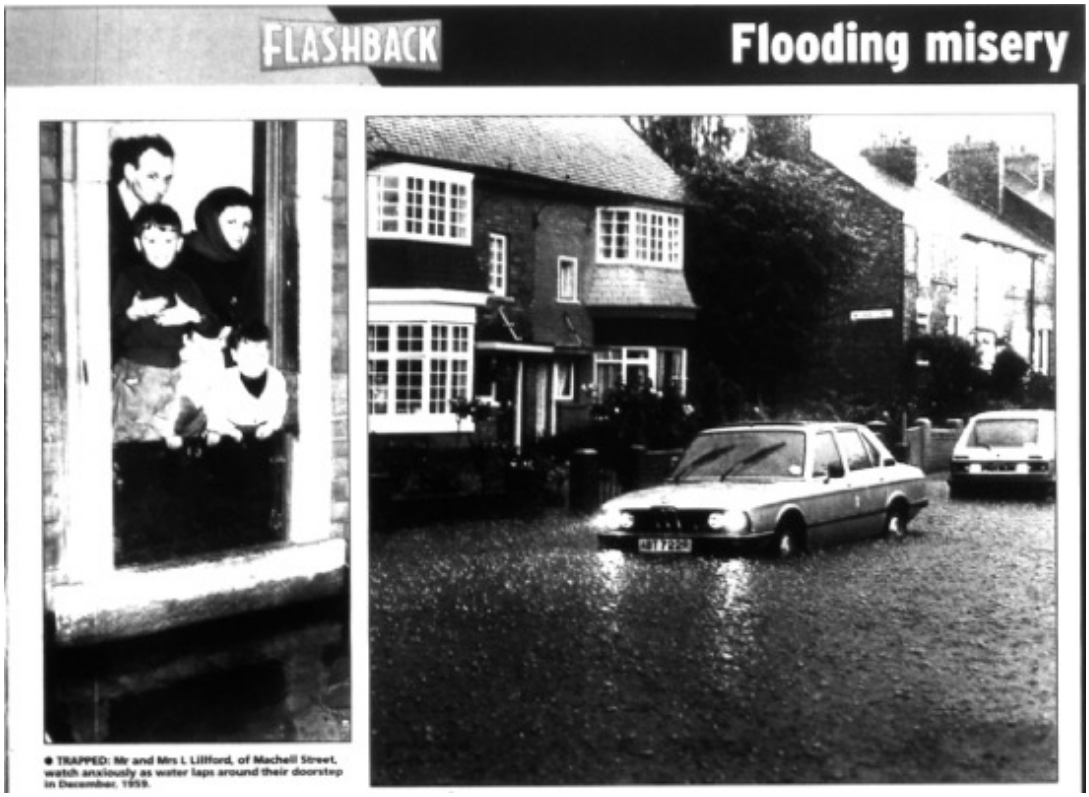
RUINED: Shaken, bewildered and unable to stop the tears at floodwater, Violet Vaus, of The Green, Market Weighton, is pictured here following flooding in July 1973. Mrs Vaus had put all her savings into her little cottage

PUB UNDER WATER: Tom Campbell recovers bottles from a flooded bar at the Corn Mill in this picture from 1978

Willerby Square, July 1969 (above), Violet Vaus in her flooded cottage, July 1973 (below left) and Tom Campbell in a flooded bar at the Cornmill Hotel in 1978 (below right).

A man trapped in his car in Market Weighton, February 1984.

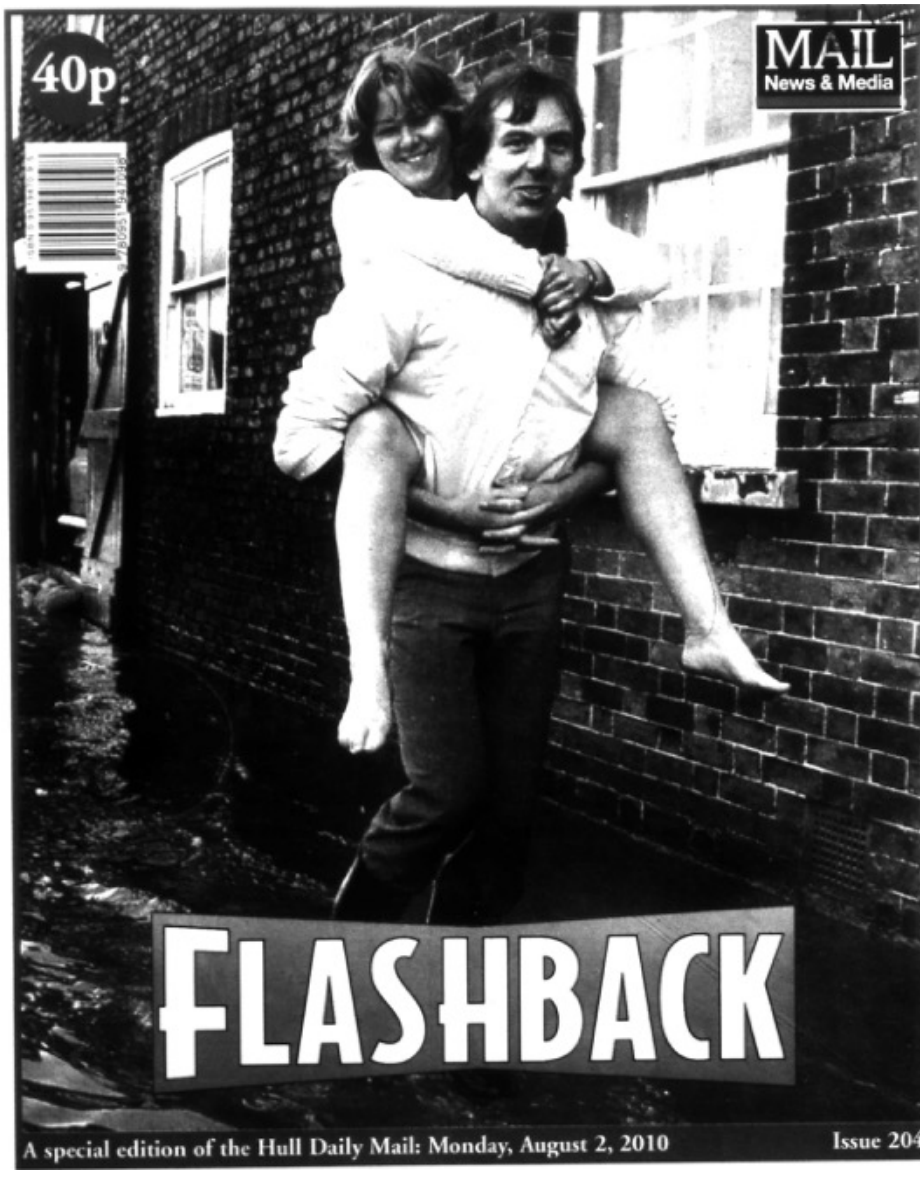
“A chivalrous chap helping a young woman reach work on a flooded morning”, Hull, 1969.



Mr and Mrs Lillford trapped in their home in Machell Street, watching anxiously as water lapped around their doorstep, December 1959 (left). Torrential rain in Barrow Lane, Hessle, in August 1984 (right).

"A man carrying a child to dry land" in Hull's Old Town, October 1967.

“Hull Guildhall workers looking across the floodwaters” in September 1969.



Steve Jennison and his wife walking through floodwaters in Market Weighton (n.d.).