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UNVEILING CLIMATE CHANGE AT PEVENSEY LEVELS:

A PHOTOGRAPHIC DOCUMENTATION OF A LANDSCAPE IN THE TEMPERATE CLIMATE OF SOUTHERN ENGLAND

Sally Bream

Doctorate of Philosophy

The University of Sussex

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Sally Bream

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Summary

My photographic research intends to locate and document signs of climate change within the landscape of Pevensey Levels. This is significant in that within the relatively temperate climate of South East England, the phenomenon of climate change does not initially seem to be noticeable to the human eye.

The project aims to integrate theory and practice in order to generate a reciprocal dialogue between the two endeavours. The photographic fieldwork has informed my choices of theoretical texts and I have then analysed these in order to further consider the notion of climate change visibility. In turn, the theoretical framework has informed the photographic practice by creating the focus of my visual investigations within the landscape. These concepts include the notion of the landscape as a cultural signifier, phenomenology and perception, geomorphology and the idea of a photographic archaeology of the landscape, narrative, mnemonics, and indexicality.

The photographic practice reveals how the landscape is managed and controlled to mitigate climate change. The marshland is drained with the use of pumping stations, sluice gates and networks of waterways. Water channels are enlarged to increase their capacity in order to prevent flooding. These act as conduits to channel excess ground water to outfall pipes at the seafront. Barriers such as shingle beaches are maintained as a consequence of rising sea levels and winter storms.

There are five chapters in the thesis. Chapter One considers the landscape of Pevensey Levels: its geology, geography, history, occupants, management agencies, and character of the land. Chapter Two explores the issues around the phenomenon of climate change and in what ways it might be perceived and represented. Chapter Three presents the context of landscape photography and some photographic representations of climate change, and I have situated my own photographic enquiries in relation to these examples. Chapter Four outlines the concepts that contextualise my photographic practice. Chapter Five considers examples of the photographic images in terms of their narrative and the ways in which climate change is indexed.

The research finds that it is possible to photographically document the presence of climate change, and concludes that its visibility is situated in three characteristics. First, in the control and management of the landscape, which results from scientific research on climate change. Then, in the intensive utilisation of the land, which consequently causes water and air pollution. This hinders recovery from the effects of climate change. Finally, plants respond to fluctuations in temperature and rainfall, which causes abnormalities in their growth patterns. The research shows that photography's ability to index and act as a mnemonic device aids the search for phenomena of climate change. Furthermore, documenting these phenomena photographically can intensify the spectator's perceptions of the landscape.

The culmination of the practical element of the research is a collection of 97 landscape photographs presented on CD Rom. 51 of these photographs have been selected for inclusion in a prototype photobook (Appendix 15), in a limited edition of ten. The photographs are grouped according to their attributes related to climate change in the landscape under four general headings: *Mechanism, Flux, Damage and Regeneration*, each of which has sub-headings. This provides the narrative structure for the body of photographic work. The photographs are annotated with their place names, OS Grid Reference and short description. This information has relevance for future observations and photographic research at Pevensey Levels. The title for the book and the portfolio of original colour photographs is *Unveiling Climate Change At Pevensey Levels*. A portfolio of fifteen original photographic C-Type prints, size 16 x 20 inches, has also been produced (see Appendix 14).

Acknowledgements

First and foremost, I wish to thank my very patient and incredible supervisors, Reader, Melanie Friend and Professor Nicholas Till, who have always given me constructive and helpful feedback. Their contributions have been invaluable to the progress of my research. They have also given much of their time generously. I also wish to extend my gratitude to the Arts and Humanities Research Council and Sussex University for funding this project, and without whose assistance, my research would not have been possible.

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 (Bream, 2015: Plate 29) © Sally Bream

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 (Bream, 2015: Plate 4) © Sally Bream

PRACTICE WORK SUBMITTED WITH THE THESIS 27

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PRACTICE WORK SUBMITTED WITH THE THESIS

1. I have submitted 3 CD Roms with the following files:
 - All research fieldwork 5x4 camera photographs x 97 jpeg images.
 - Pdf book proof file, *Unveiling Climate Change at Pevensey Levels*, Sally Bream, 2015 (see Appendix 15).
 - Pevensey Levels OS Map showing locations where the photographs were taken.
 - Jpg files of the portfolio images and a Word document file with the thumbnail images and titles for the portfolio photographs.
2. One Portfolio of C-Type photographic prints: 16 x 20 inches, presented in a portfolio box, with a printed map of the areas photographed and thumbnail images of the portfolio prints, showing their titles (see Appendix 14).
3. Three hard bound copies of the prototype book, *Unveiling Climate Change at Pevensey Levels* (Bream, 2015).

INTRODUCTION

PEVENSEY LEVELS LANDSCAPE: 'UNVEILING' CLIMATE CHANGE

In her article, 'Picturing the Clima(c)tic: Greenpeace and the Representational Politics of Climate Change Communication', Julie Doyle, an expert on climate change and visual communication, writes:

Where the discourse of photography places emphasis upon the indexical nature of the photographic sign as a form of truth (Barthes, [1980], 2000), I have argued that this proves particularly problematic in the context of climate change communication. The moment climate change can be photographed is the moment it becomes visible as a symptom (Allan et al., 2000), and thus too late for preventative action. (2007:146)

The idea of the visibility of climate change is controversial, since it is a matter of debate whether we are able to sense if climate change is happening or not (Carey, 2012; Rudiak-Gould, 2012). In terms of climate skeptics, Oreskes (2004) Oreskes and Conway (2010) and Robert Kenner in his documentary film, *Merchants of Doubt* (2014), have expressed their concerns about counter arguments against climate change. DiFrancesco and Young (2011), Timothy Morton (2013) and Bronnimann

(2002), have deliberated the idea of the visibility of climate change and how it is represented. Rudiak-Gould (2013) suggests that the dispute between climate change “visibilism” and “invisibilism” is not scientific so much as political, being a proxy war for a larger debate on scientific versus lay knowledge and the role of expertise in democratic society. Mark Carey uncovers the diverse climate meanings and narratives that exist in climate change historiography (2012). In her article, Doyle connects the notion of proof with truth. The idea of the photograph as truth is connected with its inherent ability as a medium to document accurately and in detail. What Doyle disregards, however, is the idea of an imaginative interaction between the environment, the individual and the camera, wherein a participative relationship to the land can take place. Looking and pointing to changes occurring in the landscape, which are felt and observable, connect us with phenomena from which we have been largely estranged by scientific proof (Rudiak-Gould, 2013, Carey, 2012).

How can we know if climate change is happening if we do not go outside and take a look? The camera helps us to record signs of climate change and as a result we become more aware of its impact on our environment. It is an authoritative object that has the ability to record, at times, what the eye cannot see.¹ It is in the examination of the still photograph, that connections can be re-traced between what we see in the image, our personal and cultural experience of landscape (Schama, 1995; Whitehead, 2009; Bate, 2010; Wells, 2011) and what is visible (Merleau-Ponty, 1968, Charlesworth, 2010; Morton, 2013). The photograph appears to separate us from the other sensations of being in a place, but also reconnects us with that place in terms of memory. The idea of indexicality is one that is important for this research (Peirce, 1932; Szarkowski, 2007; Sontag, 1977; Bazin, 1980). Memory about the landscape is also important as this connects us as individuals to our

¹ Consider Eadweard Muybridge’s (Brookman, 2010) photographic experiments with movement, or Chrystel Lebas’s (2006) long exposures at twilight, for example.

experiences of landscapes (Bachelard, 1958; Cosgrove, 1989 and 2012; Ingold, 1993; Schama, 2004; Massey, 2005; Bate, 2010, Wells, 2011, p. 261).

When I began my Ph.D. research, I concentrated on the idea of landscape in relation to the concept of Englishness, focussing on the Sussex South Downs and the Weald, at Pevensey Levels. This was initially inspired by Nicholas Pevsner's statement about the landscape that reflects, 'the spirit of the moment' (1956:23). I commenced by observing the landscape environment in terms of anthropocentric climate change. However, the South Downs became a National Park in 2011² and received widespread media coverage (Bates, 2011, BBC News Website, 2011, Lumley, 2011). I therefore decided to take photographs beyond the eastern side of the South Downs, at Pevensey Levels, in the Weald of Sussex, an area that had received relatively less attention. Situated between the two seaside resorts of Hastings and Eastbourne, it had not been included in plans for a National Park and therefore I perceived it as a space that was an outsider landscape. I identified Pevensey Levels as a place that was overlooked, and became interested in photographing this landscape in terms of its separateness from other areas, such as the more esteemed South Downs National Park area, which was defined by a boundary line on Ordnance Survey Maps (Ordnance Survey: 2004 and 2011).

Documenting Landscape Management

While significant drought conditions have not yet occurred at Pevensey Levels, flooding, due to inundation from the sea is, nevertheless, now a threat to the landscape. One of the expected changes in the atmosphere of the south east of England, due to climate change, is increased precipitation. The landscape's characteristic appearance, as drained marshland, seems

² South Downs National Park (2016)

to remain constant, while continuing to be maintained to provide resources such as water and land for grazing livestock. This has influenced my decision to photograph areas of the land that are being managed to mitigate the effects of climate change. In addition, I have also scrutinised the effect of a warming climate on plants and soils, including the *Floating Pennywort* plant (*Hydrocotyle ranunculoides*), which grows vertically and horizontally in waterways, causing disruption to the internal infrastructure (Lansdown, 2011). Furthermore, in agricultural land, pesticides and fungicides are being used to protect crops, vulnerable to increasing high temperatures and precipitation. Reed beds are being planted, to replenish the soil, to encourage biodiversity, and to provide a habitat for birds that are flying northwards earlier in the year, because of warmer weather conditions in southern Europe.

Because climate change itself is not always directly visible in itself, the research has led me towards looking at those phenomena associated with the *impacts* of climate change. Responses to the threat of climate change are more visible in the way that the land is managed and structured. Landscape adaptations are supported by government guidelines and economic incentives, based on policy documents, which outline the various impacts of climate change and strategies to deal with its effects. The edges of the drained marshland are increasingly under pressure from building developments (Amies and Thomas, 2009a). The Pevensey Levels landscape environment is controlled and managed to maintain the stability of its infrastructure partly in response to rising sea levels due to climate change (PLCD, 2016). However, the impact of rising sea levels, flooding, storms and drought may eventually affect intensive landscape maintenance to mitigate the affects of climate change, and at present, there is a 25 year Government provision to manage the sea defences (PLCD, 2016). With these anticipated changes in mind, my aim is to return to Pevensey Levels to take more photographs of the area.

My photographic research shows that engineering systems stringently control the landscape and its internal climate, and some of the main structures documented in the practice research include waterways, sluice gates, outfall pipes and beach shingle barriers, which are all involved in keeping water levels constant throughout the year. My photographs of Pevensey Levels show the landscape without people, as do Edward Burtynsky's early landscape photographs (Burtynsky, 2003, Figure 46). This gives my images a 'post-human' impression (Schuster, 2013: 193), wherein my photographs display human impacts on the landscape. In this way, my photographic practice is aligned with contemporary work that has been influenced by the original *New Topographics* project, in that I am engaged in photographing a 'Man Altered Landscape' (Jenkins, 1975). The original *New Topographics* exhibition of 1975 has since been understood in terms of environmental concerns about the despoliation of natural landscapes (Salveson, 2009). My work embodies this concern, by identifying the presence of the effects of climate change in the landscape through a photographic review of landscape changes.

METHODOLOGY

PREAMBLE: EARLY INFLUENCES ON THE RESEARCHER

Family Background and Visual Awareness of the Landscape

The following explanation describes the circumstances surrounding my choice for photographing the landscape without people, and thereby indicating the impact and visibility of climate change.

Loneliness and isolation were the qualities that defined my relationship with my family when I was young and this frustrating solitude eventually became an ingrained need to be alone. I began to see the traces of what was left in the landscape when people had gone. The landscape began to rest into its own familiar sounds; the stones on the bridge were hot after a day of sunshine. I think that this is why I prefer to photograph the landscape without people within it. There is a melancholy feeling that stirs within me at first when I am alone in the landscape. After an initial time of sadness, born out of a life of feeling alone, the landscape begins to heal, as gentler sounds take over from the mechanical sounds of the city or from the crude noise that combined voices make. Birdsong becomes important in an emptied landscape, the wind rhythmically sways everything in its path, and smells rapidly change from elderflower, grass, a ditch of standing water, and a breeze that comes from the South Downs bringing an alpine crispness. Without anyone to disturb my thoughts, the isolation of my body in the landscape allows me to look for as long as I want to and observe the movement of water, the tiny details of plants and the way in which modern structures have re-defined the landscape.

I was brought up in a flat, in a working class council estate, in Battersea during the 1950s and 1960s. The built up areas in London were a stark contrast to the greenbelt area of Surrey, the moorland of Devon and seaside resorts along the south coast of England. My family regularly visited the North Downs, Boxhill and Epsom in Surrey, Dartmoor in Devon, and Pevensey Bay in Sussex and my father chose the routes using an AA road map. He made lists on the back of scrap paper using a cheap biro from his workplace (Figure 1) and outlined sections of the journey, on various lists; the names of these places seemed connected to an ancient past, or resembled a poem or prayer when read out loud. The sound of his voice and the breath from his lungs combined in a gentle rhythm that expressed the essence of what might constitute each town or village. The night before we travelled, he sat and went through the list memorizing the various towns and villages such as Amesbury, Mere, Wincanton and Ilchester. These words became a mantra spoken in unison by us both as he drove and this marked the journey's progression. The miles distanced us from our dour South London suburb as we drove towards the heather and fern filled moors, streams that cut through roads and rock-topped hills, to Dartmoor. Radio One pop songs brought the city to the rural domain in a majestic mix, expressed in the optimistic vocals of The Three Degrees' song, 'When will I see you again?' We floated around the twists and turns of narrow lanes in our car, in complete happiness. It was then that I fell in love with the countryside. In my innocence it represented an unsullied, ideal world, in which pesticides, pollution and animal diseases were not yet fully apparent to me. We did not consider ourselves to be tourists and kept away from crowds. My father found places to visit that were secluded and relatively wild. We boiled water for tea with a methylated spirits burner at roadsides and wandered around the landscape.

In the evening, at our bed and breakfast in Lower Cator Farm, the sitting room was filled with the smell of wood smoke. The ticking grandfather clock made time seem endless and the farmhand who slept in a caravan ate his tea and rested on a chair. Mrs. Irish, the farmer's wife locked away the hens. The dogs were shut into the barn. I would sneak in and sit with

them on the straw in the half-light until I was found by the farmer and sent out. Early in the morning, the cattle mooed from the misty field to be milked and the cockerel woke me with his urgent call to watch the sun rise. Opening the window, I peered out onto fields. The smell of grass began to strengthen in the warmth of the rising sun. The geese were released from their hutches and began to make mischief, splashing their flat feet across small rivulets. Before breakfast, the farm dogs followed us down the lane to the brook that sang and burbled in its own dialect. My heart broke the first time we went home after staying there. I am still fascinated by the countryside and places where there are no people in the landscape. My photographic research reflects this attitude. Re-visiting the same landscapes, without people, was a feature of my early experiences of the countryside. I absorbed a sense of my father's melancholy regarding the ways that the landscape was changing due to expanding tourist industries, increasing impersonal farming practices and the destruction of hedgerows in favour of open field systems. The desire to find an idyllic landscape for my photographic work is connected to the experience of listening to my father talking about his memories of the countryside landscape of Surry on returning home from army service after the Second World War in 1945. He bought a motorbike at that time with payment he received from the army, after being de-mobbed, and he continued to maintain a motorbike into the 1960s (Figure 2). This bike transported him quickly out of London and into the relative peacefulness of the countryside (Figure 3).

SUNBURY M3
 BASINGSTOKE TAKE A30
 NORTH WALTON
 ANDOVER
 BELL INNS AMESBURY FOOD
 CHICKLADE
 MARE
 WINCANTON
 SPARKFORD
 ILCHESTER
 ILMINSTER
 TEA - (BROADWAY TURN OFF
 HORTON CROSS)
 HONITON
 EXETER

Fig 1.
 Route by Car from London to Devon, 1974.
 H.C. Bream. © Sally Bream

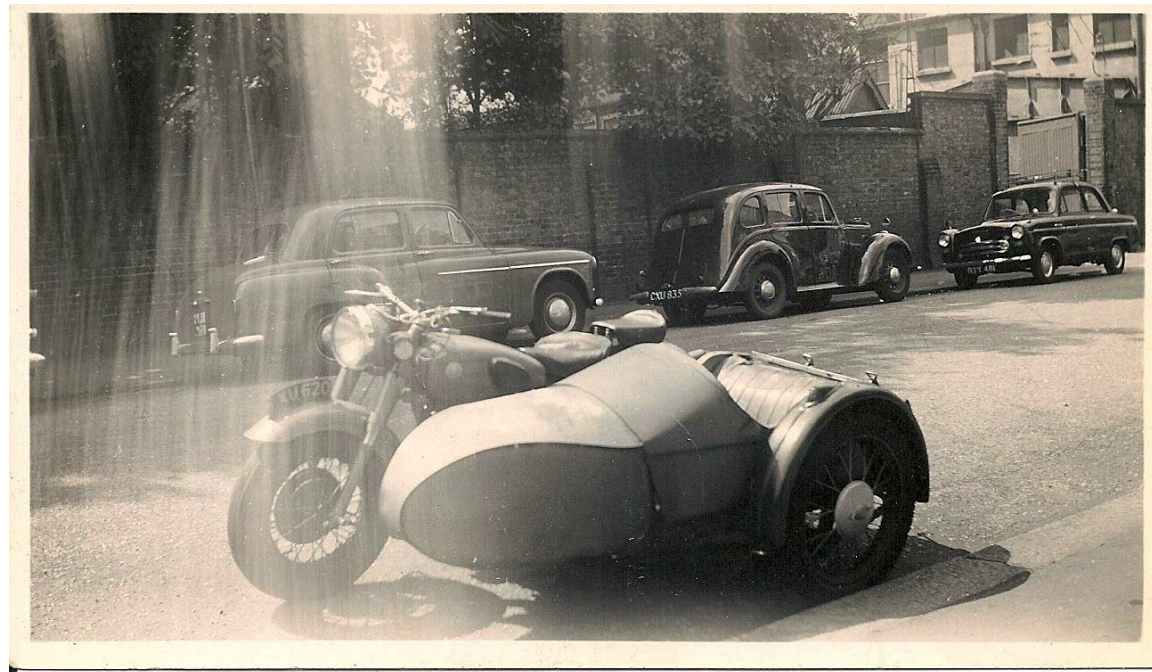


Figure 2.
My Father's Motorbike, 1963.
Photograph: H.C. Bream
© Sally Bream



Figure 3.
The North Downs, Surrey, 1964.
Photograph: H.C. Bream
© Sally Bream



Figure 4.
My Father, near Bellever Bridge, Dartmoor, 1973.
Photograph: Sally Bream
© Sally Bream

For my father, visiting the countryside was an antidote to his memories of military service. Dartmoor National Park (Figure 4), and Addlestead Wood near Epsom, reminded him of the rural countryside before the war. These places, in the 1960s and 1970s, contained a fragment of something he recognized from his childhood living in London. I found a postcard in Tooting Library, of a watercolour, circa 1800, showing a church named St. Nicholas, in Church Lane. It was apparent that rural and town identities were less distinct at the time when my grandparents were young, when they had worked in St. Benedict's Hospital, which was on a hill beyond the church. The rural landscape gradually receded outwards from these small towns. Later on in life, it was clear to me that my father and his sisters held romanticized memories of their younger days in Kent, where they had gone to pick hops, or had cycled along the old A23 to Brighton for the day. By the 1970s, they were constantly shocked at how the rural and city landscape had changed. Roads were busier, faster, wider and noisier but they also enjoyed the convenience of being able to travel out of the suburbs by car to get to the countryside.

Since the 1970s, the city and the countryside have become increasingly separate (Matless, 1998). When I was young, my father encouraged me to regard the countryside as a rural idyll that could act as an antidote to life in the city. He persuaded me to look more closely at plant details such as blackberries or flowers. He described their colours, shapes and structures, and close observation of the natural world became important in my visual development, very early on in my life. The photograph (Figure 5), taken in a wheat field next to Addlestead Wood in 1960, shows me, aged about 2, pointing to a poppy. By 1986, the quiet of Addlestead wood was dominated by the sound of traffic from the newly opened M25 motorway. The enchantment of that quiet woodland area is now gone.

When I was six years old, I remember visiting my grandparents in Lavender Road, Tooting Bec, in London. My grandfather was disabled and in a wheelchair, the result of years of window cleaning in the rain. He was also an anti-hero, who was told to leave the ranks as he was marching off to war in 1914, because he had flat feet. He was an angry man and in terrible pain.

I would creep into his bedsit style room in their house, to watch him as he sat at a small table. With his arthritic hands, he would painfully paint small gouache landscapes. His small paintings made on postcards or greetings cards, were of imagined rural scenes, possibly from his childhood, in Kent (Figure 6). Creating these miniature paintings seemed to bring him comfort. He let me stay, taught me how to paint, by explaining how to use a brush. He showed me how a picture of a house is made of squares and triangles, and how the shape of a path can appear to move into the distance by becoming narrower; how painted trees can get their textures by the way that the hand trembles over the paper with the pigment, and how there is always a sun somewhere on the horizon in the composition.

In (Figure 7) I am in a pose, at aged 18, set up by my father, at Bellever Stream, when we were on holiday in Dartmoor, Devon. Although I am smiling in the photograph, I had protested about the pose beforehand. My father portrayed me as a feminized body in a rural setting. This event raised my awareness about how the female body is defined in terms of landscape and nature by the male eye. I think that this is when I began to become aware of the relation of the female body and its inscription onto concepts about nature. I eventually analyzed the notion of the female body and the objectifying masculine gaze, in my BA Fine Art Degree work, *Addressing The Doll* (1996).



Figure 5.
Sally Bream, age 2, near Addlestead Woods, Epsom, Surrey, 1961.
Photograph: H.C. Bream
© Sally Bream



Figure 6.
Gouache painting on an old greetings card, 1964.
Possibly a view of a village in Kent.
Stanley Bream
© Sally Bream



Figure 7.
Sally Bream standing in East Dart Stream, Dartmoor, 1974.
Photograph: H.C. Bream
© Sally Bream

Educational Influences on the Approach to the Research

The connection between theory and practice in my photographic work is situated in a 20,000 word thesis for my B.Ed. Degree in Early Years education, entitled *Critical Studies: The Value of this Approach as Part of the Visual Art Education of Seven to Eight Year Olds* (Bream, 1988). I was interested in how the work of artists could be understood and interpreted in relation to the development of children's creativity.

Photography became my main medium during my BA Degree in Fine Art Printmaking, 1993-6, since it enabled me to connect historical, political and conceptual meanings. Sophie Calle's work *Suite Vénitienne* (Calle and Baudrillard, 1988), which was carried out between 1980-96³ and Barbara Kruger's work *Love for Sale* (Kruger and Linker, 1996) inspired me to make work that challenged the masculinized gaze and to include a performative dimension at a time when reportage photography was more dominant in the University.

In *The Art of Control* (Bream, 1995: 28), I examined the controlling nature of a post-Stalinist Polish government. The 1995 exhibition, *Der Riss Im Raum: Positionen der Kunst Seit 1945 in Deutschland, Polen, Der Slowakei und Tschechien*⁴ (Flügge and Svestka, 1995), included the work of Polish photographer Zofia Kulik, *Marsch, Marsch, Marsch* (1990)⁵, which assisted me in finding an aesthetic expression for my photographic visual approach in terms of spectator and gaze dynamics. My BA Fine Art Degree exhibition of photographs and a video, *Addressing the Doll* and essay (Bream, 1996:), expressed ideas about the way that women have been defined as fetishized objects.

³ White Cube (2016) *Exhibitions*, 'Sophie Calle' [Online] Available at:

http://whitecube.com/exhibitions/sophie_calle_suite_vnitienne_duke_street_1997/ (Accessed Monday 28th March 2016).

⁴ Translated: *The Crack in Space: Positions of Art Since 1945 in Germany, Poland, Slovakia, Germany, Poland and Czech Republic*.

⁵ See Flügge and Svestka (1995), pp.260-261.

My MA in Women's Studies Dissertation (Bream, 1999) discussed the spectator and gaze dynamic in relation to the female nude. The MA acted as a catalyst for my ensuing photographic work. After the MA, I continued to make performative photographic images of the female nude, such as *Untitled* (Phoenix Brighton, 2001) in which the female nude was shown balancing in different positions. These works were influenced by female performance artists including: Carolee Schneeman, *Interior Scroll*, 1975 (Schneeman, 1979: 235), Marina Abramović, *Dragon Heads*, 1994; *Luminosity*, (1997) (Abramović, 1998), and photographer Marianne Müller, *A Part of My Life* (Müller, 1998).

I began to combine performative and documentary approaches in works, such as *The Barbershop Series* (Bream, 2004) and *The Whistlers* (Bream, 2005). I then started to work outside of the studio, and decided to take photographs of the landscape, and during my Photography MA Degree 2006-8, I began to photograph areas of the South Downs, influenced by ideas about the beautiful and sublime. The focus of my theoretical work at this time was concerned with the differences between narration and description, and I began to take photographs within Friston Forest and the Cuckmere Valley. I was particularly influenced by Svetlana Alpers' book, *The Art of Describing: Dutch Art in the Seventeenth Century* (1983), especially her analysis of what a picture can convey in terms of its descriptive qualities. Discussing Johannes Vermeer, she writes that the idea of just looking, for the sake of it, was an aspect of his painting *View of Delft* (1660-1). She states that this painting represented a scene that is, 'just there for the looking' (Alpers, 1983: 27). The idea of representing a view of the landscape that was just there to be looked at, in detail, with a large format camera, became important in my work, although I was also interested in showing particular aspects of the landscape such as the beautiful or sublime. The work of Fay Godwin (1979; 1983; 1985; 1990; 1995), Thomas Joshua Cooper (1988; 2004) and Jem Southam (1992; 2000; 2005) also influenced my work, in terms of their photographic narration and description of the landscape (Bream et al, 2008). My MA photographic work aimed at conveying the description of landscape areas by emphasising textures, shapes and colours.

THEORY AND PRACTICE: KEY AIMS

Visual Discernment of Climate Change in the Landscape: The Processes of the Photographic Documentation

My Reflexive Approach to my Photographic Practice and Autoethnography

...autoethnography starts from the position that first and foremost all researchers, positivists included, are writers, and that all research is storytelling. From this standpoint, both the process of inquiry and the “truths” derived are social constructions that emerge from lived experience. For an autoethnographer, the personal and the professional are a seamless, integrated, whole (Rambo, 2006:273).

The textual headings for the photographs in my prototype book (Bream, 2015) encapsulate my observations of and reflections within the landscape. The text defines my photographic images, by describing the evidence of some signs of climate change. These headings are situated in an approach, which can be identified with autoethnography. Autoethnography integrates both the process of inquiry and social constructions through written narratives (Rambo, 2006: 273). The ‘cutting edge’ of this practice is termed ‘evocative autoethnography’ and is exemplified, in anthropology education, by Carolyn Ellis’s book, *The Ethnographic I: A Methodological Novel about Autoethnography* (Rambo, 2006: 274). My photographic work does

not fully enter the territory of evocative autoethnography, as my photographic practice still maintains a strong connection with observable evidence of climate change in the landscape, rather than being purely imaginative. However, the photographic work does begin to enter the realm of evocation in some images. An example of this is where I identify the idea of air pollution, which cannot be seen in the photograph (Bream, 2015, Plate 51), as well as the speculative notion concerning the connection between climate change and trees collapsing (Plate 31). These photographs are also associated with the concept of the visible and the invisible in phenomenology (Merleau-Ponty, 1968) as well as writing by Timothy Morton, who describes unseen phenomena in environmental crises, such as pollution and global warming, as hyperobjects (2013). The text in my book highlights areas where these seen or unseen hyperobjects evoke the presence of climate change in the landscape at Pevensey Levels. Therefore, my observations of the landscape constitute part of my imaginative enquiry into climate change.

Denis Cosgrove points out the connection between geographical exploration and methods of enquiry, when exploring the landscape for phenomena, that John Ruskin developed at Oxford University in the nineteenth century (Cosgrove, 2008a). This approach connects both scientific and artistic investigation (Cosgrove 2008b). My speculative enquiries into phenomena in the landscape are not only triggered by an intuitive reaction to an area, but are also influenced by geomorphological terminology such as *urotshistshes* and *facies* (Sauer, 1925), or *cutting edge* and *material areas* (Solnetsev, 1948), which have helped me in defining more accurately what is being observed in the landscape. My research project has entered into a self-narrative style at times by my situating my experiences of the landscape in relation to taking photographs of climate change. This autoethnographic self-narrative emerges from an effort to analyse my own biography as a resource for illuminating larger social or cultural phenomena and using my reflective ruminations on my research fieldwork encounters (Butz and Besio, 2009, p.1). Butz and Besio state that 'all types of Autoethnography dissolve to some extent the boundary between authors and objects of representation, as authors become part of what they are studying' (2009, p.1). This self-reflexive approach can also

be observed in contemporary photographers' responses to their work in the form of interviews (Torosian, in Burtynsky 2003) and reflections on the landscape (Adams, 2005a, p.163-164).

Intuition and self-reflexive research

Climate change and the Weather

One example of my intuitive response to the landscape was that I deliberately kept an open mind about what I would find. At the beginning of the research project, I focussed on weather conditions, but then realised that researching the connection between weather and climate change would be problematic, when taking photographs over a short period of two or three years. However, weather and climate change can be understood through scientific research (Higham et al, 2015; Seinfeld, 1998; Lane, 2008a; 2008b), cultural interpretations (Rose, 2010; Daily Mail Reporter 2012; Morton, 2009; 2013) and by direct observation. I began to understand that in this landscape, climate change could be situated in terms of the structural mechanisms that aim to control it, and that some of the visible signs of climate change occur in plants, soils and atmospheric conditions (Bream, 2015). The notion of climate change, I concluded, was in this respect connected to the visible and the invisible. Therefore, as I walked around the landscape, I was open to new phenomena, which would start a line of thought into investigating any connection to climate change. In this way, I investigated the fallen tree and the Pennywort plant, as they were striking features, which seemed to suggest a traumatic event caused by the climate. When I investigated these phenomena, I found that there was some evidence to suggest a connection, however minute or direct, to climate change.

The Visible and the Invisible

‘I propose that cultural meaning is constructed in part through the interplay of visibility and invisibility, or elision and display...’ (Adrián, 2014, p. 378).

Part of my intuitive response to the landscape was to look for areas to photograph that would indicate invisible phenomena, such as air (Bream, 2015, Plate 51). This photograph adheres to a strong conceptual idea concerning the visibility and invisibility of a phenomenon that is not always immediately evident. Some of my photographs demand the viewer to be imaginative in order to connect the photograph to the idea of climate change (Bream, 2015: Plate 51), in which the mist rises and holds the contaminants invisibly in the saturated air. I do not see this approach as a contradiction with a more straightforward observational approach that directly shows the effects of climate change in the landscape. Instead, I see this type of searching for the invisible and visible within the landscape as combining an imaginative and objective approach to visualising the landscape. One way in which the visibility or invisibility of phenomena have been identified is through the idea of indexicality (Peirce, 1932).

Michael Charlesworth terms the invisibility of the indexed object, ‘white mythology’ (2010, p.131), wherein the idea of the index emphasises ‘the ontology of the image rather than on the question of viewing the image’ (p.132). He gives an example of Alfred Watkins (1855-1935) and his study of Ley Lines (Watkins, 1925) to highlight how an invisible object, the ley-line, has been represented through landscape photography. Similarly, my photographic work shares the same idea about identifying a phenomenon, which is only visible through an ontological leap of the imagination. Jordan Bear asks, ‘Can a photograph prove the existence of something whose existence is a matter of visual interpretation?’ (2010, p. 91). And despite Joel Snyder’s cynicism towards the index as a ‘pointless’ idea (2007, p. 369) for understanding the world through photography, it is crucial for my working process as a way of defining the presence of climate change in the landscape. As Anne McCauley states,

‘there is nothing within the concept of indexicality that claims that the thing/event indexed has to resemble the index and that we should be able to “name the objects”...’ (2007, p. 417).

Beauty and the landscape aesthetic: ‘How does intuition relate to the notion of self-reflexive practice that is trying to counter the seductions of the picturesque?’

At Pevensey Levels, the area is intensely bright because of the openness of the land. This gives the landscape scenery a seductive beauty, owing to the saturated blues found in shadows, deep green and dark blue colours in the waterways and bright greens found in the plants. Because of this, it is tempting to take a photograph of a scene that looks picturesque but does not show signs of climate change. This means that the choice of subject matter is reduced. I have found that picturesque areas were a distraction, and that I had to determine where the impacts of climate change could be more effectively located. When I realized that I was being seduced by an aesthetic of the beautiful in the landscape, I needed a strategy to counter-balance the picturesque, with an approach that could lead me to some evidence of climate change. Consequently, I devised research questions in order to focus my search for signs of climate change in the following way:

- To what extent do government policies about climate change impact on the visual appearance of this landscape in terms of conservation or preservation?
- To what extent is the idea of the ‘character of the land’ (Natural England, 2013b) an important factor in decision-making that drives the management of the landscape at Pevensey Levels, thereby alleviating the effects of climate change?
- What phenomena seem to be present in the landscape that might be connected with the effects of climate change?

Although the picturesque still emerges as part of an aesthetic in my work (Plates 47 and 49, for example), there were many areas that I did not photograph as these did not combine the picturesque with my set of defining questions. The questions helped me to identify areas such as the new reed beds at Chilley Farm (Plates 44 and 45). I was passing this area of land and noticed that the topsoil had been scraped away. I then asked the local farmer what was happening and was told that a new reed bed was being created. By being open to changes in the landscape I was able to identify areas that were connected to climate change.

THE PHOTOGRAPHIC FIELDWORK AT PEVENSEY LEVELS

In this section, I discuss the practice journey that led to the use of 5x4 camera, the use of single images (as opposed to time-based images or multiple perspective images). I will discuss the digital research images, video recordings that were made during the photographic fieldwork, and a 35 mm image, from the Pevensey Levels Coastal Defence office computer archive, that was two images montaged together and the significance of these archives for my research large format photographs. I aim to critically reflect on what alternative possibilities the 5x4 method emerged from (Such as use of panorama; composite imagery, moving image and sound and why these methods were also relevant for exploring the landscape and making my 5x4 images.

The practice journey that led to the use of the 5x4 camera⁶

In 1994, I was using a 35 mm Nikon film camera with black and white film, and made photographic prints from negatives in the darkrooms at the University of Brighton, using DeVere enlargers. At this time, I also began to develop an understanding about the various qualities of film emulsions and grains, ISO speeds, film and print developing times and different types of photographic printing papers. In addition, I continued to improve my studio lighting and darkroom skills while also purchasing a twin lens reflex Mamiya 220 6x6 format camera and taking photographs in both the studio with professional lighting equipment, as well as outside using available lighting. Subsequently, in 2001 I changed to using a medium format Mamiya RZ67 Pro film camera and continued to do until 2007 during the first year of my MA Degree course in Photography. However, in my final year of this course, I then decided to change to a large format 5x4 Ebony bellows film camera to carry out my landscape photographic project, which culminated in a group exhibition and booklet (Borthwick et al, 2008). This was significant as I felt that the 5x4 format allowed me to make large prints of my work while retaining detail in the image, which is still important for my work, as I need to show minute detail within the still image as well as the overall composition. Photographers such as Ansel Adams, Jem Southam, Mark Power, Jim Cooke, Fergus Heron, Andreas Gursky and Thomas Struth, all use large format cameras, in order to show greater detail within the photograph and it is the work of these photographers, particularly their landscape images, that have ultimately influenced my decision to take photographs with a large format camera. For instance, Ansel Adams's books *The Camera* (2003), *The Negative* (1981) and *The Print* (1983)

⁶ Ebony RW 45E field camera was used with a Schneider Kreuznach COP APO Symmar 1. 5.6/150 mm lens.

have also been influential by providing me with an understanding of the techniques involved in using a large format camera, the exposure of film and the characteristics of printing photographs. Although these books consider traditional methods of photography, there is still much relevant technical advice, which can be considered when combining these methods with digital media. 'The Zone System', for example, still has great relevance for emphasising exposure of the subject and colour intensity when taking a photograph (Adams, 1981, p. 47-97).

Around 2007, the use of digital technology, such as Photoshop computer software, negative scanners, printers and professional digital lab processing equipment was used more extensively within the Photography department at Brighton University during my MA course, and eventually, digital production superseded the wet processes of developing and printing in the darkroom. Throughout the period of my PhD research begun in 2009, I have continued to work with a large format camera with 5x4 negative film as my main medium, which allows me to work slowly and methodically, compared to digital camera media. This gives me time to assess the landscape view and to make highly complex decisions about the scene before I take a photograph. When using a large format field camera, there is one sheet of negative film for each photograph, which needs careful consideration and time to obtain the exposure required. This slowing down of the process is further accentuated by the different operating procedures needed to take a photograph with the 5x4 camera. This includes light meter readings, use of a tripod, a ladder to gain height above the scene to increase depth of field, shutter cable, dark slides, a magnification lens for viewing the focus of the image on the glass back, and black cloth, which blocks out the surrounding light in order to see the projected image more clearly. The processing and scanning of the resulting negative takes between 3 to 7 days. For this reason, at the time of taking photographs with the large format camera, I also take photographs of the same scene with a digital camera, or make a video recording of the scene to remind me about the colours and setting of the landscape. I also take additional photographs of the surrounding area if I feel that this might enhance my understanding of the image captured

on the exposed 5x4 negative, and can then assess the relevance of the image of the landscape photographed. In this way, the digital images and videos act as aide memoirs and as an archive that can be reconsidered and re-evaluated, to help me to plan further visits to the landscape, while waiting for my large format images to become available.

The original intention of the PhD research was to make individual 5x4 images of areas in the landscape where climate change could be seen and photographed through identifying land management strategies, plant responses to a warming climate, and human interventions within the land to mitigate the effects of rising sea levels and extreme weather, such as heavy rainfall on the environment. The impact of pollution and the use of chemicals that leech into the landscape environment were also considered, as these are also connected with climate change. If water and soils are polluted, then this combined with a warming climate threatens these life-sustaining resources. My photographic work aims to show through a stilled moment in time, the impact of and the efforts to mitigate, the effects of climate change and how they are evident in the albeit subtle changes in the landscape. In his project, *New Pictures From Paradise* (2002), Thomas Struth documents forests in an intuitive and objective way, whereby the images, 'present a kind of empty space: emptied to elicit a moment of stillness and internal dialogue' (Struth, cited in Reust, 2002: 150). Likewise, my photographs contain the idea of a space only temporarily unoccupied by humans and therefore connected to stillness. This is the reason why I preferred to use large format still photographs in my work, rather than moving image or video stills. Similar to Edward Burtynsky, the large format camera enables me to slow down my process of observation and it is also a method of taking a more formal photograph, as Paul Lori has noted in Burtynsky's work, 'The act of setting up a tripod and viewing the scene on a glass screen under a black cloth fosters a more contemplative approach and in the end, results in a more formalized view' (Burtynsky, 2003, p. 13).

Methods for Gathering Information about Pevensey Levels

Interviews

The notion about the index is fundamentally concerned with the act of pointing to the landscape, and being able to say, 'this is climate change'. I have found that people who are familiar with the landscape of Pevensey Levels have been able to point areas out to me, to show where climate change is visible. Therefore, interviews with farmers and workers at Pevensey Levels have been relevant to the research, in showing the level of concern that exists in the local environment in relation to climate change. In addition, government documents also informed me about the local and global effects of climate change.

During the course of my research I have interviewed seven farmers, Environment Agency workers and other significant groups, who manage the landscape at Pevensey Levels. These interviews have given me an insight into management practices that mould and shape the landscape, and their views and comments about the land and sea have not only assisted me in broadening my approach to researching the landscape, but also gave me a greater understanding of the connections between people who live or work at Pevensey Levels and their landscape. I have included three of the annotated and edited interview transcripts in Appendix 4. The interviewees are anonymous, and their permission has been granted to use these transcripts in the thesis. A draft of each interview was sent to the interviewees who were able to check their transcript and to make any adjustments that they felt necessary. Copies of the interview questions were also sent to them, with information about how the research would be used, and interviewees who agreed for their transcripts to be included in this thesis signed a consent form. The Rephotographic Survey of Mark Klett and Byron Wolfe (2004, 2005, 2012), similarly involves interviewing people as part of their approach to understanding the landscape they photograph. Mark Klett writes that 'In many cases the

history of a place and the changes it may have experienced are clarified through an interview, a text, or a video clip' (Klett et al, 2004, p. 11).

Walking

As my research progressed, I decided to work within the boundary defined by the Environment Agency, which includes the seafront area at Pevensey Bay and Normans Bay. In my experience, Ordnance Survey maps cannot fully portray the terrain of a landscape; therefore, walking in the landscape has been important in the research fieldwork, in order to more clearly understand the constituent parts of the land. I came to the conclusion, after taking some photographs within Pevensey Levels, that I needed a comprehensive strategy whereby the area could be defined and recorded. Thus, I re-organised the terms of the project and limited the area being studied, to the drained marshland and the seafront immediately connected to the water systems of Pevensey Levels, which I outlined on an annotated map (Figure 8). My aim was to consider the interrelationships between the inland areas at Pevensey Levels and the seafront directly adjacent to it, in terms of climate change. I walked and took photographs in order to connect my body and mind with the landscape terrain (Phillips, 2005; Wylie, 2005).

In terms of Access to the land, I experienced, at times, a sense of disorientation in the landscape; which affected my work by slowing me down and making me feel dizzy. Joseph Sonnenfeld (1994) writes that, 'Geographic disorientation tends to be a negative experience. It implies spatial confusion or misdirection' (1994: 376). I initially felt a sense of incompetence, or lack of experience, in walking through the landscape when trying to define the most relevant areas to photograph. Even if access to land is granted by the landowner, as it was with regard to the new reed bed on Chilley Farm land, the direction from which to photograph, to capture what the eye sees, is challenging and can involve a further sense of disorientation. The sun's

direction and intensity can affect the photographic process, and determines where the photographer is practicably able to stand to take a photograph. In the open, exposed and flat landscape at Pevensey Levels, the sun's brightness is often intensified through misty precipitation, making the act of intense visual observation a painful physical experience.

The landscape can reduce the researcher to an outsider, tourist, visitor or intruder. Certain parts of the landscape are not accessible due to private land ownership, or because the way ahead is in some way hindered, inducing a further sense of spatial confusion, as these barriers prevent enquiry. Fay Godwin's photographic work considers issues in relation to accessibility within the land. Wells (2011) describes her landscape photographic work as, 'one of the few examples of women who include territorial vistas' (p.190). Her book, *Our Forbidden Land* (Godwin, 1990), was a 'polemical look at the state of the UK environment with a plea for the basic human right of access to the land and for a freedom of information act' (Godwin, 1994, and cited in Godwin 2016). In her introduction in this book, she outlines the ways in which the English landscape has been undermined by government policies, which affect land access as well as clean water and farming practices (Godwin, 1990, pp. 10-28). She writes, 'I intended my book to be an exploration of access, but once I started, the question of what sort of countryside we were asking for access to could not be avoided. So it has become my personal exploration of the countryside now' (1990, p. 27). While Godwin's photographs are often signposts of non-access to the land, my work shows signs of the influence of climate change, which has come about as a result of human existence. Where our work overlaps, is that I could not gain access to all of the landscape at Pevensey Levels – and this affected what I could take photographs of - because of private landscape ownership, which shows that the issues that Godwin outlined are still an issue.

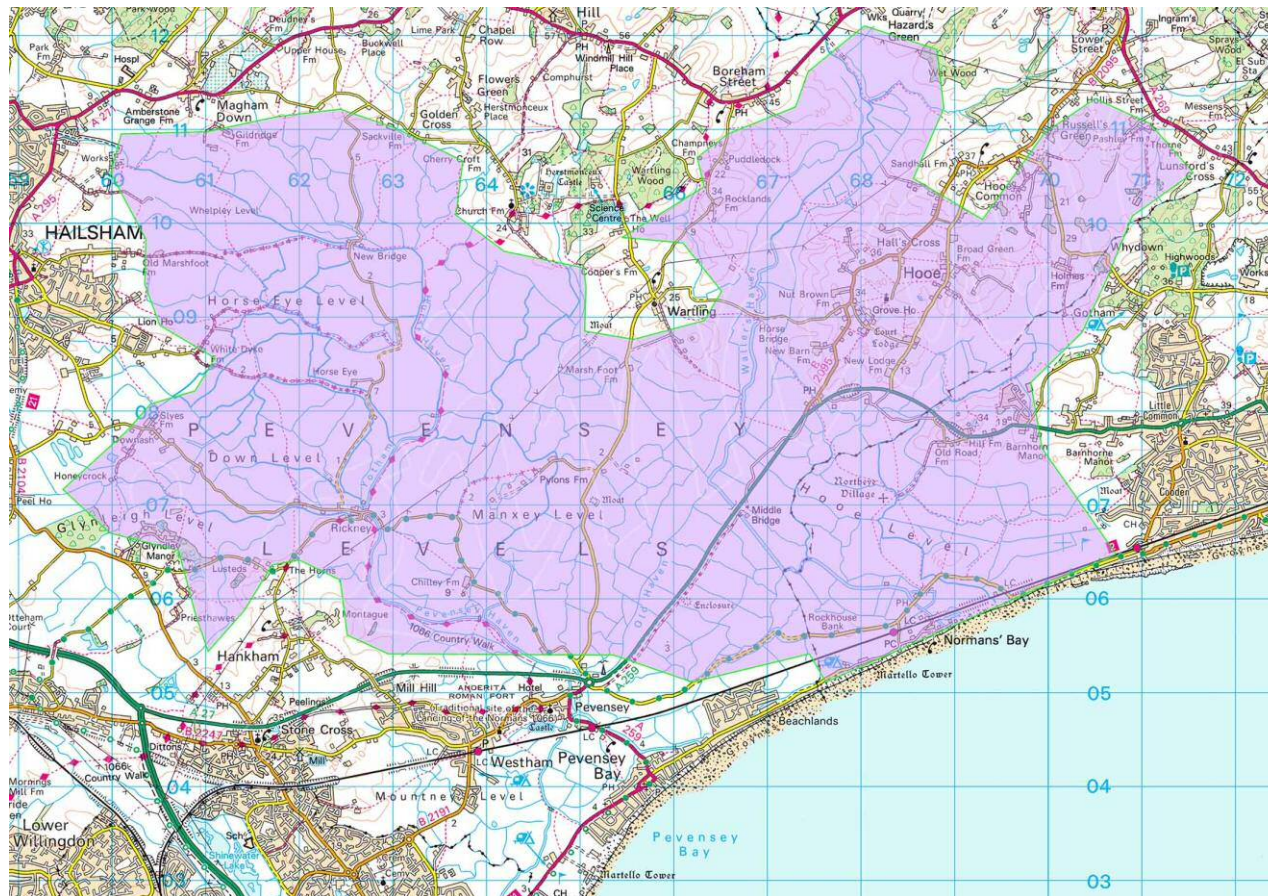


Figure 8.
 Annotated map, showing my annotation, in purple shading, of the initial boundary of the area I chose to take photographs.
 Default print scale 1:40,000
 © Digimap Roam Ordnance Survey

Using a digital camera and walking around the landscape

During the course of my explorations of the landscape, I used digital cameras, including my iPhone, a Nikon Coolpix S620, an iPad and a Nikon D7000 SLR camera with a zoom lens. These digital cameras enabled me to walk around and observe the landscape more rapidly than I could with the heavier large format camera. I used the digital cameras without a tripod, which was a more flexible way of being able to capture images quickly. These digital images not only helped me to identify some locations to return to with the 5x4 camera, but also acted as sketches, which were immediately accessible for me to view, and from which I could assess the framing of my large format photographic work. On my return to a computer, I examined the digital photographs and made notes recording my observations. As an immediate archive, the digital images have helped me to notice gradual changes taking place in different parts of the landscape, such as the proliferation of the Pennywort plant in late summer, or the digging of a new reed bed.

I addressed the issue of the impact of climate change connected with the destruction of the road system infrastructure, in the image of the bridge repair (Bream, 2015, Plate 42). The cracks in the bridge brickwork indicate the less visible phenomenon of air pollution that is created by vehicle exhaust emissions. In addition, the bright yellow sandbags and drainage pipes, suggest that this idyllic and tranquil area of land has reached a crisis point and that this is directly connected to air pollution, a key contributor to climate change. Plate 41 (Bream, 2015) shows a viewpoint, in front of the broken bridge, with the sluice gates raised. A series of pumps and tubes took the water over the road and deposited it into the waterway after the bridge. Prior to taking the 5x4 photograph, I took some digital photographs (Figure 9) and short videos (See Figures 10, 12, 13, 14) with a Nikon Coolpix camera and digital video camera, to remind me about the disruption to the area.

Consequently, these images and videos facilitated an assessment on where to take the final 5x4 photographs of the bridge repairs and how to contextualise them in relation to the notion of unveiling climate change.

The videos, digital images and sound recordings as an archive

The digital photographs and video footage have functioned as part of a background archive for my large format photographs and as such, operate as an aide-memoire of the different areas that I photographed using the 5x4 camera. Nevertheless, these archived photographs and videos could be re-examined in the light of future photographic work at Pevensey Levels, to re-contextualise and extend the original project. There is growing knowledge in the area of climate change historiography (Carey, 2012). I have already used archival material such as maps and historic photographs within my book and thesis as a way of expanding on the situation of climate change and its impact in the past on this landscape. The Keep archives in Brighton and a small computer-based archive at Pevensey Levels Coastal Defence have helped me to consider the landscape area in terms of some changes that have taken place. I have also used a wider range of archival materials to inform my photographic work (See Appendix 11). One such archival image, was a composite landscape photograph of the seafront area, taken by an unknown photographer employed by the Environment Agency to create a record of the seafront area when work was being carried out to protect the beach area from storm damage (Figure 11). This image shows that sea surges and sudden storms were a concern in the 1950s, particularly as houses were being developed above the shoreline at Pevensey Bay, and there was a need to preserve these properties against damage from high 'spring' tides in stormy weather in the winter. I have not used these archival images in conjunction with my large format photographic work; however, they might provide a possibility of re-contextualising the research photographs at a later stage. Mark Klett writes that 'The methodology for making rephotographs include making test shots' (Klett et al, 2004, p. 4). This included videos,

audio interviews, sound files to convey a sense of places visited, field notes and panoramic images. He writes that, 'The reason for collecting so many materials was to increase the probability that something interesting would be discovered from casting a wide net' (Klett, in Klett et al, 2004, p. 5).

The archival video footage and the still camera image

I made some short recordings of areas at Pevensey Levels, in order to capture phenomena of sound or movement as they unfolded, to contextualise some of my still photographs. These recordings included Pevensey Levels at Sunrise, 24 July, 2014 (Figure 12), Pevensey Bay seafront at Sunrise, 27 July 2014 (Figure 14) and an area near Water Bridge, Rickney, 27 July 2014 (Figures 10 and 13).

I initially went to Pevensey Levels on 16 July 2014, to photograph the mist rising (Bream, Plate 51), and returned again on 24 July 2014 to make a video recording of the area, in order to record the mist rising. However, when I arrived at 5 am, there was no mist and about a hundred sheep were grazing in the field that I wanted to photograph. Instead, I turned the video camera around to the opposite direction to record the changing landscape colours and atmosphere at dawn as the sun rose in the twilight hour of dawn. I recorded this sunrise scene, listening through headphones that were attached to the video camera. This amplified the sounds made by birds, insects and nearby water in the ditches, as well as traffic and nearby engines at Rickney, which were being used to pump water across the road while the bridge was being repaired. I wanted to capture the movement of the sun as it rose above the field in order to make a record of time unfolding, as well as colours changing as the morning sunlight began to saturate the landscape. As I listened and observed changes in the landscape throughout an hour, I was aware of the ways in which animals within the landscape respond to the scene becoming brighter by becoming more active and noisier. It also seemed that by giving full attention to the scene that time seemed to move slowly.

The colours in the video are brown and golden. I made this short video in order to consider the movement of the sun and its slow but steady progress through time. By marking time in this way, I wanted to see for myself how the land begins to change because of the increasing intensity of the sunlight, and in turn, try to define what the continual movement of images had in common with a single still 5x4 image. I wanted to see for myself how their fundamental differences might present themselves within the context of my research project.

A discussion of the video footage and photographs at Pevensey Bay and Rickney Bridge, 27 July 2014

Video: *Pevensey Bay Seafront at Sunrise, 27 July 2014* (Figure 14)

Sunrise 05:21

Moonrise 04:03

Low Tide: 06:01 (1.10 m)

High Tide: 11:58 (6.80 m)

Slight breeze.

At about 5:40 am I took a photograph of the west of the beach at Pevensey Bay as the sun was rising, aperture to f.22 at 1 second I had set up the video recorder earlier and this was placed next to the camera and tripod. I made a short recording of the sun rising and I had hoped to record the stillness of the scene but a local resident began to talk to me. I decided to delete the sound from the recording, as I wanted to focus attention on the visual information. The scene appears to

be fairly still. The sea on the right and the flag and wind turbine on the right are moving as well as birds that fly across the area. The sun gradually becomes more intense and is reflected on the eastern side of the sea.

After this video recording I took two more photographs, one of the south facing aspect; of the sea and shoreline and one of the west side of the beach (Figure 16), a replicated version of the eastern beach view. I decided not to include these images in the book, as I wanted to distil the idea of the beach as sea barrier into the single image of the eastern view of the beach (Figure 56). However, I would exhibit these three photographs as a triptych in the context of an exhibition in order to place the spectator in the centre of the scene by using these three angles of view. The central image reinforces the idea of the place at which sea levels are expected to rise because of climate change. The three views also give me a reference point to take more photographs in the future to search for changes.

Video: Water Bridge, Rickney, 27 July 2014, 12 noon (Figures 10, 13).

I made a short video recording at Water Bridge area in Rickney after I had taken a photograph of the sandbags near the bridge and the pumping station nearby. I found the phenomenon of the sound of the water being pumped away from the bridge, and the visual effect of the rings of water had an ephemeral quality. The combination of these mechanical disruptions and the peacefulness of the area, which was disturbed by the noise of the engines that drove the pumps, and the smell of diesel burning, created a strange combination. The area was being preserved yet these temporary intrusions allowed the area to once again rest back into a rural idyll once the machinery and trucks had finished the job of repairing the bridge. The photographs' aesthetics capture the juxtaposition of these two worlds of mechanical intrusion and rural idyll. The colour in the photographs is both subdued and intense. The large plastic yellow sandbags (Figure 61) and the bright green foliage in both

of the images are signs of an intrusion into the landscape by modern technology that manages the land to counter-balance the effects of climate change.

The focus of both the photographs and the video recordings were to look at the stillness of the scene. When comparing the video recording, and the photographs taken with a 5x4 camera it can be seen that the camera images of the sandbags or of the sunrise at Pevensey Bay have what Jonathan Friday describes as an 'unchanging persistence of the photograph's pictorial pointing to its own cause. The same uncanny sense of the past being made forcefully present that Bazin⁷ gestures toward and that Barthes explores at length has its basis in our sudden awareness of an object at the temporal limit of the photograph, preserved through time in the form of an iconic indexical reference to its own origin' (Friday, 2006, p.51). The video recordings aim to point the spectator towards the moment in time when the photographs were made, when the visual field was preserved in the photograph. Roland Barthes⁸ points out that the moment at which the photograph is viewed has a resonance with the religious idea of 'resurrection' (Barthes, 1982, cited in Friday, 2006, p. 52). The previous time is recalled to the present moment. The moving image by its restless motion and repetition when re-viewed, has a feeling of continual agitation, as if it is on a virtual time loop that never stops because of its inherent function in relation to dynamic motion.

I found that in taking a photograph using a still camera, I have time to contemplate and analyse what is being represented. As Edward Burtynsky notes, 'You can find details in images that you would never understand if you were watching them on film...We don't analyse a film frame by frame, we analyse the narrative, the characters. Still images hold our world still for long enough to be able to think about it' (Burtynsky, 2008, p. 157). This is also true during the time of taking a

⁷ Bazin, A. (1967, 1980).

⁸ Barthes, R. (1982, 2000).

photograph as it is for looking at a photograph, especially with a plate camera, which involves a slower process than might a digital camera. The still photographic image seems to transfix our attention onto its surface details, whereas the moving image propels vision along dynamically and temporally. The video's moving image mesmerises us into a dreamlike state, where sounds and movement then jolt us from the dream, like the sound of a fish splashing in the water, or a fly buzzing close to our ear. There appears to be a sense of anticipation as well about the ending of a video film, and some disappointment when the video stops. The still image, however, lets us consider it for as long as we like, and we can nevertheless, imagine sounds and movement in the photographic image (Ingold, 1993). Burtynsky also comments that, 'In the reading of stills, the image offers only part of the information, the viewer brings to it the other part, and together they create a unique gestalt that is never exactly the same from one person to the next' (Campbell, 2008, p.43). As Jonathan Friday points out, 'cinema has none of the completeness or totality of the photographic image'; and quoting Roland Barthes, he writes that the photographic image, "is without future...Motionless, the photograph flows back from presentation to retention" (2006, p. 50). Therefore, it seems that the photographic image might have a contrasting result compared to video or film, which seems to agitate the senses by its sound and movement. Laura Mulvey states, 'As the cinematic experience is so ephemeral, it has always been difficult to hold on to its precious moments, images and most particularly, its idols' (2006, p.151). Photography then offers not an absence of motion, but a presence, according to Friday, who writes that, 'Photographic stillness fills the image and displays itself as unchanging pictorial reference to its originating cause, and thus, photographic stillness is not, as Bazin would have us believe, the enfeebled lack of something that cinema possesses' (2006, p. 51).

Why the single 5x4 image?

I have focused on the single still image throughout my photographic research. The photographs have been taken at eye level or at a slightly elevated angle. My aim is to emphasise the individual areas of landscape where climate change becomes visible, and also where the lighting, colour and weather conditions combine to indicate a moment in time when the scene reveals itself as a point at which climate change is unveiled. The lighting then, is crucial to this unveiling, as are the weather conditions for suggesting the atmospheric surroundings of the landscape. For example, in Plate 35, *Close-up of Foam and Brown Sediment with Floating Pennywort, Watersmeet, Rickney, 19 November 2014*, I knew that the foam was a phenomenon that would not last more than a few days, and I observed that the sun was increasing in intensity while I was present at the scene. I wanted to frame the foam, Pennywort plant and the edges of the waterway within the photograph, and to ensure that the depth of field was equal throughout the pictured image when setting up the shot. The foam was moving slightly in the waterway and I wanted to re-enforce this idea of gradual movement, through emphasising the visual phenomenon of the ripple of brown and white foam shapes, which are directed at an angle as if passing from right to left past the viewer. I also wanted to place the spectator between the two trees, to create a space through which the foaming water is framed. This constructed an intimate area from which to view the spectacle of climate change unfolding. I wanted to create an image that was unique and this is the case for the images chosen for the portfolio and the prototype book. These images represent a significant moment in time, which cannot be replicated elsewhere. The reason why an additional photograph (Plate 34) of the foam was included in the book, was because this image emphasised the presence of climate change in two ways: by the combination of the layer of foam that signifies pollution, and the Pennywort plant suggesting a warming water environment, in an ecosystem which was encouraging the weed to grow rapidly.

Some of my work, however, including the examples of Plates 34 and 35, do utilise more than one view of a place. For example, in addition to the two photographs of Down Level, 31 January 2014 (Plates 32 and 33), I had also taken two other photographs by moving the camera about 20 meters apart at intervals along a roadside. The resulting photographs would show a wider view, or panorama, of the flooded marshland. My intention is that if these images were to be exhibited together, they would be considered separately by being individually framed and set slightly apart from each other (Figure 15). The intention with each of these particular images is to show that in a specific moment of time, the flooded landscape area, combined with the surrounding lighting and weather conditions created a visual aesthetic which appeared to support the idea of revealing climate change; a place where a concern for climate change and its management through the land could be observed. These images also point to the temporary and annual creation of an area of flooded marshland, supported by government funding, indicating that overwintering birds are encouraged to nest in the area. This farming management strategy allows the land to revert to its usual function as flooded marshland in the winter, in order to enrich the soil and to encourage biodiversity. The images therefore, show efforts to moderate the effects of climate change.

In a similar way, I took some preliminary photographs using a digital camera at Pevensy Bay seafront at sunrise on 27 July 2014 (See Appendix 10). The emphasis was on the immediate beach and sea area, or liminal area, where high and low tides fluctuate. After taking initial photographs with my smaller digital camera, I decided to take three photographs with the 5x4 camera, one of which was included in my prototype book and portfolio (Bream 2015, Plate 28). The single image was placed under the headings of 'MECHANISM: Barrier'. The barrier that the image refers to is the strip of pebbles on the high water mark of the beach that is continually maintained by tractors and diggers, which re-profile the shingle to keep it at approximately 30 metres width. This is a form of defence against rising sea levels. Another photograph, which was not included in the book, shows a similar view of the west of the beach. The central photograph of the calm sea shows

the point at which climate change is expected to emerge in the form of rising sea levels. The idea was to group the images in order to reinforce the notion of the places and objects that form a *barrier* between the sea and the land beyond it. I wanted to use single images of specifically chosen areas at the seafront, in order to highlight some of the different types of 'barriers' that can be found in this location (Bream, 2015, Plates 25-29). The two remaining images of the beach taken on 27 July 2014 could be shown together in order to provide a view of the landscape from east, west and south. The main emphasis was on the sea in these images, which is why I chose not to photograph the north side of the beach area. Similar to the extra photographs taken at Down Level on 31 January 2014, the three beach images could be shown, in an exhibition, framed individually, and placed adjacent to each other. Further photographs could be taken to show these areas again after a storm, or when some other change has occurred.

The close-up photographs of Plates 20, 38, 47, 48 and 49 (Bream 2015) show discrete areas of the landscape, which reveal the structure of soils and variety of plants. The closer view of the landscape is more abstracted from its wider context. The aesthetics of these works are reminiscent of the personal, reflective and intimate spaces created in the work of Susan Derges's series *Alder Brook*, 2012 (see Figure 43), Wout Berger's *Ditch*, 2005 (Figure 44), as well as Edward Burtynsky's earlier work, *Grasses*, 1981 (Figure 46), which are discussed in Chapter Three.

THE DEVELOPMENT OF THE PHOTOGRAPHIC NARRATIVE: THE BOOK

My practice research has culminated in the production of a prototype monograph of my landscape photographs *Unveiling Climate Change at Pevensey Levels* (Bream, 2015). It is comprised of 51 photographic images taken at Pevensey Levels between 2012-2015. These 51 photographs were selected from the entire photographic fieldwork collection of approximately 100 5 x 4 inch photographic negatives. The prototype book has become an important focus by which the final creative and critical photographic research project has been realised, and brings together the conceptual approach to my creative and photographic process. Creating a prototype book has helped me to structure the photographic work into a narrative. This photographic narrative concentrates on how the land is being managed to control the effects of anticipated climate change events. In this way, the visibility of climate change is unveiled through the way in which humans have handled objects within the landscape. I had initially decided to organise the photographs chronologically, emphasising the process of my journey in the landscape I subsequently focussed on the concept of the visibility of climate change and arranged the photographs according to this narrative.

I considered editing the collection of photographs solely in terms of their geographical location (Appendix 5). I would have favoured this approach more if I had concentrated on a smaller area of Pevensey Levels. However, with the intention of returning to the same areas to take more photographs, I have grouped the images in the book in terms of their connection to concepts about the visibility of climate change, as outlined in the text headings. I have recorded the map co-ordinates of the places where the photographs were taken in order to locate the same areas in a future project. I have also drawn red dots on an Ordnance Survey Explorer map, to indicate the location of each photograph (Bream, 2015: xv 1-2). The photographic images are grouped therefore, in terms of their narratives under four general headings, each with further sub-

headings (see Appendix 1). I therefore concluded that the photographs were as much about the concept of the visibility of climate change in the landscape, as they are about time and place. In this way, these general headings and sub-headings could be utilized, to explore different landscapes, in order to investigate the visibility of climate change. In this way, the headings provide a narrative structure, which can be added to and developed for further photographic work.

The Context of the Photographs in the Prototype Book (Bream, 2015)

The purpose of the prototype book was to show the main groupings by which the idea of climate change might be indicated using photographic images of areas within the Pevensey Levels landscape. The photographic images, as articulated in the prototype book, have concentrated on showing specifically chosen areas of the landscape, using single images or a group of images of the same location. An exhibition of the work would aim to emphasise the details of the landscape by printing the photographs to a large scale. Some images have been envisaged as being viewed next to each other, such as those of Plates 15 and 16; 32 and 33. There are also additional photographs, not included in the book, which could be shown to supplement the book images, in the setting of an exhibition. The prototype book could also function as a conceptual template whereby the photographs can be grouped under their headings, when exhibited. The role of the text within the prototype book is to create a conceptual framework in which the work is contextualised. The headings are minimised and a further explanation of their meaning is included in a brief outline of the project, at the back of the book. This illustrates that the project is not only a documentation of the landscape but also a creative project that engages the reader's imagination. Additional text, such as that on pages i-iii at the end of the book, under the title 'An Unveiling', could accompany the exhibited photographs, to outline the general ideas connected with the headings. Supplementary archival images, such as the photographs held by Pevensey Levels Coastal Defence and the maps from the book, could also be included to understand

the landscape as drained marshland, and its management over time. The reason for using a large format camera was in order to capture as much detail as possible and to exhibit large photographs of approximately 100 x 80 cms, at least. My plans to do this so far have been hampered by financial concerns.

The Documentary attribute of my photographic work.

In this section, I outline what documentary photography signifies and how my work is defined in terms of a documentary mode that aims to creatively examine landscape. Jae Emerling writes that, 'In general, documentary photography refers to photographers documenting, reflecting, and intervening in local and global conflicts and issues' (p. 83). Terri Weissman (1996) writes that documentary photography, 'Refers in the broadest sense to any use of the photographic medium as visual evidence. This use arises out of the special relationship to the material world that photography has been imagined to have in the West since the 19th century.' However, she adds:

But this straightforward description of documentary is deceptive. In the historiography of photography, no consensus exists on whether documentary is a historically specific genre or a descriptive quality that can be applied to a variety of images across time periods. Documentary thus has two histories: one is the retrospective construction of a history of evidentiary or informational photography that stretches back to photography's beginnings; the other concerns the development of a photographic approach

to which photographers and critics in Europe and the US applied the term 'documentary'.

I have defined my practice as a photographic documentation and as evidence. I have also referred to the project as a type of survey of the landscape, as well as including a creative approach to interpreting landscape phenomena. William Kaizen (2009) outlines new developments in broadening the meaning of documentary to include representations of artifice. He writes that artifice is a condition of any document and that, 'fiction is the basis of history by engaging head-on with fakery. The exhibition turns on this reversal' (p.2). Gaston Bachelard writes about the idea of speaking of the territories that we have traversed and of making a survey of maps by speaking of our memories of landscapes, and in illustrating this he evokes a poem by Jean Wahl, which describes how the movement of trees in the landscape has become embedded in the soul of the observer (1958, 11-12). Photographing the landscape is not only about obtaining the finished product of the photograph, but also about the way in which the land imprints its mark upon the photographer, and indeed on any of us who interact with the land. In other words, documenting is what we all do, and photography is able to capture certain moments of our interactions within it. My photographic research aims to record visible signs of climate change and to reveal some evidence of this phenomenon. My practice methodology demonstrates how a diverse range of enquires has occurred, through time, in order to find specific places, which show some visual evidence or trace of climate change. The large format images rely on searching, by interviewing, making sound recordings and video recordings, taking digital photographs, walking, and obtaining documents in archives, that can articulate the location of climate change visibility in the specific landscape that I chose to dwell upon. As Liz Wells writes, 'Photographs demonstrate something! They can seem incontrovertible' (2011, p. 11). In considering Simon

Schama's book, *Landscape and Memory* (1995), in which the author combines personal memory with cultural knowledge, she notes how the factual quality that photographs have relies on the subjective autobiography of the photographer, as well as the context of 'broader cultural developments' (Wells, 2011, p. 262). I see my work as situated within the bounds of this description, as my work aims to create a study of the character of the landscape as it has been moulded by human intervention and in this way cultural geography has informed the visual approach of my work.

Conclusion: Why were different methods of collecting visual and sound recordings relevant for exploring the landscape and making the 5x4 images?

As an outsider to Pevensey Levels, I employed a variety of ways in which I could become more familiar with the particularities of the landscape. One of the ways this was achieved was through meeting and interviewing different people who live and work at Pevensey Levels, in order to find out their perspective on the land in which they lived. These insights helped me to connect with the people and their concerns for the landscape, as well as discovering their optimism in dealing with anticipated climate change. Furthermore, making contact with some of these people enabled me to access private land and to observe the landscape in more detail than would be available to a tourist. I also made sound recordings of my own voice as I walked across the land. These breathless staccato and jarred ideas acted as a way of formulating what I experienced and observed and quite often, a minor but significant idea came from these hours of my rambling talk into the voice recorder. However, there were also walks and excursions that resulted in disappointment at not having taken a photograph. The various methods of using sound recording, interviews, making videos, writing notes, taking digital photographs and finding relevant archival material all helped to inform the large format photographic project. This diverse

supporting material of archival images, video and sound recordings have informed the decisions that ultimately led to the large format photographs. These additional materials operated as an archive, which can facilitate a reconsideration of the original project when the area is 'rephotographed'. This method, in which the photographer returns to the original landscape to re-photograph the area is exemplified in the work of Mark Klett and Byron Wolfe (2004; 2012), whose work I discuss in Chapter Three. This approach would involve collecting further information to add to an existing archive of materials, in order to re-examine changes in the landscape and to re-define my existing large format photographs.



Figure 9.
 Photograph: Sally Bream, *Selection of six archive photographs showing Rickney Bridge Repairs and Highway Maintenance machinery*, 27 July 2014.
 Nikon Coolpix Camera
 © Sally Bream

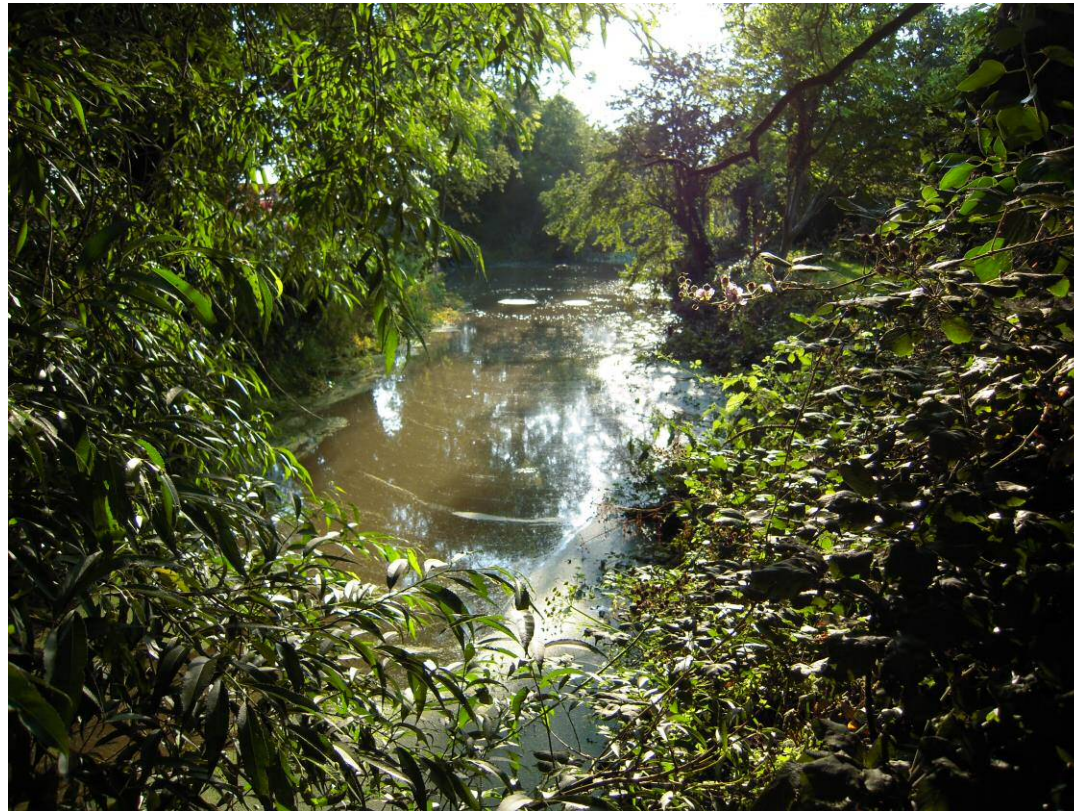


Figure 10.

Image: Sally Bream, Nikon Coolpix example of a video still showing the area at Rickney, Water Bridge where repairs to the bridge were taking place.

A short video was taken with the camera's video function, as a record of the phenomenon of the rings of water being produced by the drainage system, as well as the noise levels of the syphoning machinery.

24 July 2014.

© Sally Bream



Figure 11.
Promenade, Split Image, 19 December 1957
Two photographs spliced together to show a panoramic view of the shoreline.
With permission, Pevensey Levels Coastal Defence computer archive.
© Pevensey Levels Coastal Defence Ltd.



Figure 12.
Image: Sally Bream, Video Still, 5 a.m.
Pevensey Levels, Sunrise, 24 July 2014
Duration 21:45
© Sally Bream



Figure 13.
Image: Sally Bream, Video Still, 9 a.m.
Rickney, Water Bridge, 27 July 2014
Duration 1:57
© Sally Bream



Figure 14.
Image: Sally Bream, Video Still, no sound, 5:20 a.m.
Pevensey Bay, 27 July 2014.
Duration 11:29
© Sally Bream



Figure 15.
Image: Sally Bream, Quadtych, Down Level 31 January 2014
© Sally Bream



Figure 16.
Image: Sally Bream, Triptych, Pevensey Bay Sunrise, East, South and West, 27th July 2014.
© Sally Bream

CHAPTER ONE

THE PEVENSEY LEVELS LANDSCAPE

Introduction

This chapter considers the landscape of Pevensey Levels in relation to some of its key features, as I have observed them during my visits to the landscape. I first outline some observations made in the past about the landscape at Pevensey Levels, in terms of landscape character. I then go on to point out that I have noticed that climate is not a homogenous entity, but that there are observable microclimates, as elsewhere in other landscapes. I briefly summarise some of the impacts within the landscape, such as conservation, preservation, management, geographical features, water controlling mechanisms, tourism, farmers' adaptations to climate, access to the land, and the artistic profile of the landscape.

The Character of the Landscape

William Gilpin visited Pevensey Levels during his tour of the southern counties of England. When he saw the landscape of Pevensey Levels, after descending the South Downs, he described what he saw as:

...that vast, uniform, extended surface called Pevensey Level, stretching away far to the right towards the sea. These immense plains, uninteresting in a picturesque light, gave a swell to the imagination,

which distends itself in the contemplation of them. They are the more valuable, as they rarely occur; the scenery of most countries being broken into a variety of parts, which destroy the idea of unity.
(Gilpin, 1804: 48-49)

Although the landscape at Pevensey Levels did not fit into Gilpin's vision of the picturesque, he describes the land as immense and flat, and that this quality enabled his imagination to expand precisely because of its flatness and vastness and because of its *opposite* qualities of the picturesque: its plainness and dreariness. The land had not been divided up, as other regions had and his idea of the landscape as picturesque was connected to the idea of the landscape as panorama rather than smaller details within the view. It was a summing up of the whole visual field of the land rather than all its diminutive parts.

The artist, J.M.W. Turner visited Pevensey Levels between 1806-1810 and filled sketchbooks with drawings of trees, water and sky. In the image below, it can be seen that there is a veil of mist surrounding the area of the marshland (Figure 11). It is noteworthy that Turner, being interested in atmospheric conditions within the landscape, chose Pevensey Levels as a place that needed to be explored not only for ruins, such as Herstmonceux Castle, at the time, and Pevensey Castle, but also for the marshland area. His drawing shows a typical scene within Pevensey Levels, which seems still familiar even today, in that it evokes this landscape's character. This image has similarities with my photographic work, such as *Trees, New Bridge Road, Rickney Sewer, 9 November 2013* (Bream, 2015: Plate 30), and also, *Mist Rising at Down Level, New Bridge Road, 16 July 2014* (Bream, 2015: Plate 51).



Figure 17.
Herstmonceux and Pevensey Sketchbook, Landscape with Trees (c.1806-10)
Joseph Mallord William Turner
Chalk and graphite on paper
128 x 201 mm
© Tate, London 2015

The landscape's relationship to the idea of rural picturesque beauty is threatened by change evident in terms of a rising population in the south east of England and the government's plans for increasing house building. These factors will alter the structure of rural areas on the peripheries of Pevensey Levels. An example of this type of transformation is that Wimpy Homes has just put in a bid to build a new residential area east of Battle Road, Hailsham, near Longley's Farm. The area to be built on is a privately owned 'greenfield' site of approximately 16.38 hectares, and should this development go ahead, Pevensey Levels would diminish in size, meaning farming practices would have to change, farmland newly adapted to meet those conditions. Grass for cattle will need to be grown outside of Pevensey Levels, to the north of Hailsham and livestock will be required to move onto marshland, which will be, as a result, drained for grazing (Appendix 4, Interviewee 5).

Climate Change and Pevensey Levels

Climate change has been linked in part, to the global over-production of carbon gases, pollution, industrialisation and the despoliation of large areas of land under threat from building development. Pevensey Levels is situated between large towns and a busy road network. Due to its ability to retain vast stores of water, it is a green infrastructure functioning as a life support system for the surrounding areas. Consequently, Pevensey Levels has become a highly mechanised and managed stretch of land, relying on technology in the form of computer programmed pumping stations and sluices linked to rivers, drains and ditches inland, that are monitored by the Environment Agency (Frost, 2006). The *Conscience* report (Marchand, 2010) outlines how the land would flood if ditches and rivers were not continually drained into the sea at low tide.

Pevensey Coastal Defence Limited, outline how the sea would flood Pevensey Levels if there were a storm surge and a high spring tide, with the sea overtopping the shingle beach and engulfing the land beyond (PLCD, 2016). The landscape character would change if this occurred, the area becoming a salt marsh estuary. By 2010, it was recognised that rising sea

levels, due to global warming, were threatening to inundate Pevensey Levels again (PLCD, 2016), though higher land or 'islands', at North Eye, Horse Eye, Rickney and Chilley would remain above sea level. The reconstructed map (Figure 18) drawn by Stuart Murrell (1980), gives an artists' impression of the extent of the inland water levels at the time of the Roman occupation, circa 340 AD.⁹ The sea had receded by the medieval period allowing the construction of ditches to reclaim the land for farming. The yellow islands in the image represent the areas of Horse Eye, Rickney, Chilley and Northeye. The Levels would again resemble this scenario if water were not constantly drained into the sea at low tide and if the sea barrier at the shoreline was not continually replenished. Pevensey Levels Coastal Defence Ltd., have a website which shows a short animation film of the history of the inundation of the sea at Pevensey Levels (PLCD, 2016).

⁹ Note that Ptolemy the Roman cartographer made maps of the British Isles.

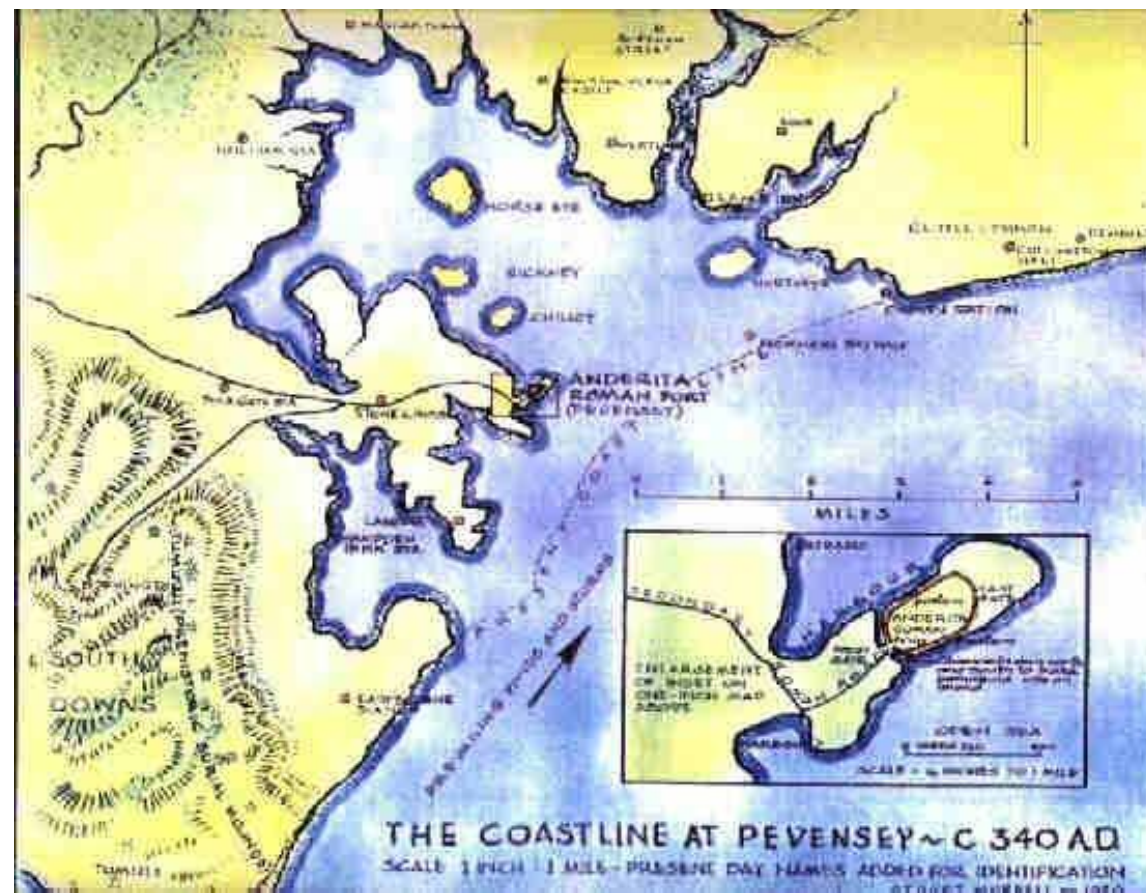


Figure 18.
The Coastline at Pevensey – C 340 AD
 © Copyright, Stuart Murrell (1980).
 Source: Poster Supplied by Tourist Information, Pevensey Bay, East Sussex.
 With kind permission from The Court House Museum, Pevensey, East Sussex.

The sea defences that prevent the English Channel from inundating Pevensey Levels at high tides include tunnels and tidal flaps on the beach. These allow water to drain out into the sea at low tide from the river tributaries of Pevensey Haven, Waller's Haven and East Stream. Seawater is prevented from returning through the outlet tunnels at high tide as the tidal flaps close by the force of the incoming seawater. Wooden barricades at Normans' Bay, near Herbrand Walk, a single-track road, is the site where sea defence barriers are buried underneath the beach (PLCD, 2016). Hidden underground, hundreds of car tyres, tied together, create a platform, which retains the shingle. Each high tide draws away the larger shingle formations at the top, requiring tractors to replenish the shoreline in the winter months, in order to prevent high tides and storm water from flowing onto the lower levels of land, north of the beach. The sea dredger, *Sospan Dau*, is used when extreme weather depletes the shoreline. This ship can transfer shingle from the seabed back onto the beach near Eastbourne, where tractors then bring the shingle to the seafront as far as Cooden Beach, to the east. This level of management is in place until 2025 and is part of a sea barrier defence strategy against rising sea levels, due to climate change (Marchand, 2010). The lack of the acceptance of rising sea levels can be seen in the way that people manage their seafront gardens in the area called Beachlands, a ribbon of housing on the beach. As I will mention in Chapter Three, Nicholas Pevsner remarked on the picturesque garden as compensating for the loss of green landscapes (1956:185). Re-built 1950s beach huts have been transformed into permanent housing, with front lawns displaying objects that reference a variety of narratives about the countryside and the sea. Insurance claims against storm damage might eventually become unsustainable due to the high level of risk to properties near the sea, and consequently the landscaped seafront gardens express almost a sense of denial regarding the dangers of living so near to the coastline.

Microclimates and Boundaries

Landscape is understood in this research in terms of its *microclimates* within microenvironments, rather than as a uniform landscape in which all its contents are homogenous. It can be observed by travelling across the land in a few hours in one day that there are variations in weather with the geology of the area also affecting these weather systems.

When the landscape is experienced through walking, it is soon discovered that the terrain is not a unified space in terms of climate or the distribution of plants. However, policy directives, such as the *National Character Area Profile* document, produced by Natural England (2013b), emphasise the homogeneity of landscapes by instigating artificial boundaries. In reality, geologies and geographies fold into and each other, they move and disperse and re-form again. This can be seen on the return journey from Pevensey Levels, where along the A27 westbound road, there are traces of marshland reeds that continue to grow at the edges of the roadside, up to the area near the village of Folkington, and Approximately 3 Kilometers away from the western edges of Pevensey Levels. The boundaries that are put around landscapes are generally used for the purposes of land management, and diverse impacts on the environment, brought about by changes occurring within and outside the area of land under consideration, shape the landscape. I perceive the landscape at Pevensey Levels as a place in which micro-management takes place in response to micro-environmental terrains. Through my photographic fieldwork and by walking through the landscape, I have come to understand Pevensey Levels not as a standardized area, but as a variety of environments that respond to the impacts of weather and climate change. These microclimates, within small geographical areas, have been mostly influenced by manufactured interventions such as built structures, re-routing of rivers to the north of Pevensey Levels or water irrigation pipes. A multiplicity of false boundaries separates one part of the landscape from another to form synthetic margins. I am photographically documenting areas of the drained marshland landscape that have been, or

are being modified, because of mitigation and adaptation strategies, as a result of government policies for the infrastructure, or because of localised decisions, such as farming or nature conservation.

Conservation and Preservation of the Landscape

I have also interpreted the idea of climate change in relation to the conservation and preservation of the landscape at Pevensey Levels, as well as the steps taken by local government authorities to mitigate climate change in this area. The management of the land for the purpose of conservation, seems at times overly intensive, including the cutting back of trees and hedges near waterways, in order to maximise the grassland for grazing cattle. Landscaping is a tactic used by developers to ameliorate existing communities, when new housing estates are scheduled at the fringes of the marshland. For instance near Polegate at Shepham Lane, as well as the new garden centre situated near the top edge of Glynleigh Level, that brings not only man-made structures into view in the landscape but increases light pollution and traffic in the area. Landowners and the Environment Agency cut back hedgerows and marsh plants at the margins of waterways or roadsides in order to control the growth of wild grasses and plants during spring and summer. These decisions have an effect on biodiversity as well as having a visual impact on the marshland area. The biodiversity of the area is depleted rapidly and brutally by this continual land management, which does not take this into consideration, with the result that, the marshland edges can appear visually unattractive, resembling brownfield sites. In spring and early summer, tree branches and hedgerows are broken and cracked by mechanical cutting. The disturbance to wildlife has not yet been recorded in relation to this practice of destroying natural habitats during the nesting and growing season in the marshland environment and decisions about 'tidying' the area create a sense of constant disturbance. The natural growing season of plants and their symbiotic

relationship to the wildlife are put under stress by these practices. On 11 February 2014, hawthorn bushes were being pulled out from the banks of Hurst Haven by a mechanical digger to allow access for trucks carrying out dredging of the waterway (Figure 19). The action of the digger was brutal, pulling out mature hedgerows rapidly, as if they were weeds. Consequently, the management and maintenance of the land seems to be at odds with the expectations that are held by conservation authorities, which aim to define this same landscape as a place of ecological harmony, or in need of recuperation. Therefore, one of the consequences of climate change is to bring a reduction of biodiversity within the Pevensey Levels landscape.



Figure 19.
Photograph: Sally Bream, Hurst Haven, Side of waterway after hawthorn clearing.
13 April 2014.
© Sally Bream

Management of the Land

In relation to climate change, I discuss the idea of the landscape at Pevensey Levels, as an *evolving* environment. The landscape is changing because of the way that the land is *managed* in response to written recommendations by government agencies to prepare the land for the impact of climate change. The landscape is labelled, analysed and named in these official documents, with additional texts of various kinds informing the contents within the landscape's interior spaces. Furthermore, these same texts continue to define the landscape's cultural meanings, which then adhere to the land and its contents. In *The Control of Nature* (1989), John McPhee, writes about people's attempts to maintain the land and its contents, in the face of nature's continual progress. In my photographs of Pevensey Levels, I portray a landscape *unpeopled*. Simon Schama writes, 'But of course the very act of identifying (not to mention photographing) the place presupposes our presence, and along with us all the heavy cultural backpacks that we lug with us on the trail' (1995, p. 7). Human activity is evident in my photographs, first by my presence as the photographer, as well as through the inscriptions made on the land by those in direct contact with it, and my photographs show the traces of human endeavour in changing the land. The photographs show fragments of time when management has occurred and the environment continues to develop in the aftermath of human intervention, the overall project showing that the landscape is intensively managed. In Pevensey Levels, it seems impossible for the land to revert to a state of wilderness. The continual cutting back, tidying up and regeneration of areas within the landscape, reveal the necessity to control the environment. Certain areas of the landscape are maintained for wildlife, such as the reed bed areas the government pay farmers to implement and maintain. This deliberate wilding of the environment is done in a controlled manner. My photographic work aims to show that the landscape we see today is the result of historical man-made and environmental changes, but that despite this; the landscape is not a passive entity. Tim Ingold writing about

the landscape, states: 'As the familiar domain of our dwelling, it is *with* us, not against us, but it is no less real for that. And through living in it, the landscape becomes a part of us, just as we are a part of it' (1993: 154).

Natural England's aims for the landscape at Pevensey Levels seem an antithesis to the Environment Agency's management strategies or Highway Maintenance work. Natural England's *National Character Area Profile* document for Pevensey Levels describes the area as 'a low-lying, open landscape with few trees and wide views to surrounding high ground and the sea, giving the impression of remoteness' (2013b: 7). However, it is a landscape that is still troubled by pollution and the depletion of its biodiversity: 'Expansion of urban development on the fringes of the Levels has impinged on the open character of the landscape in some places, with associated pollution often damaging the fragile ecology of the area' (Natural England, 2013b: 7). Their intention is ultimately to aid the process of enrichment of the existing natural environment in this 'recovering' landscape by gradually adopting landscape practices, which are more favourable to conserving the ecology, but management strategies do not seem to connect, in order to preserve the overall conservation of the landscape. A recent study has shown that the main cause of lack of diversity in plant species is due to the mechanical water drainage systems that have been in place since the 1960s (Toogood and Joyce, 2009). In contrast, Defra (2008) found that encouragement of native wild plants depends on landscape management, such as dredging waterways. Their *Information Sheet on Ramsar Wetlands* lists these indigenous species:

Floating and submerged aquatic plants such as duckweeds *Lemna* spp., pondweeds *Potamogeton* spp. or water fern *Azolla* spp. represent the pioneer stages. These are followed by larger floating or emergent plants such as frogbit *Hydrocharis morsus-ranae*, bur-reed *Sparganium erectum* and arrow-head *Sagittaria sagittifolia*. Finally, common reed *Phragmites Australis* or hawthorn *Crataegus monogyna* becomes dominant. Left undredged, the ditches lose their diversity and varied structure. A rich bankside flora is also present on site. An area of shingle and intertidal muds and sands is another important component of the site. Some flora associated with the shingle is present. For example, yellow horned-poppy *Glaucium flavum* and sea campion *Silene uniflora*.
(2008: 4)

My photographs show some of these native plants, although they are not as widespread as they could be, as they grow in discrete parts of the landscape.

Some Geographical Features and Landmarks at Pevensey Levels.

The drained marshland, waterways and farmland of Pevensey Levels are situated between Eastbourne and Bexhill-on-Sea, near the East Sussex coastal area of England, and cover approximately 3,578 hectares. It is a region east of the South Downs and south of the Sussex Weald. In the Ordnance Survey map (Figure 8) the area, shaded in purple, showing a rough outline of the site of my research, indicates that Pevensey Levels reaches as far as the seafront area, next to which is situated the South-East Coastway train line, an engineering project originating in the nineteenth century, at the beginning of steam locomotion.

Contemporary networks of major roads surround the fields and marshes. Wastewater from three towns, Hailsham, Eastbourne and Bexhill, is treated at various sewage plants at the edges of Pevensey Levels. The treated wastewater then drains into the ditches and rivers and excess water is also channelled into Shinewater Lake, a man-made lake at the southwestern side of Pevensey Levels at Eastbourne. There are some higher levels of land on the perimeters of Pevensey Levels, at Hooe, Herstmonceux and Hankham. Rain flows down into Pevensey Levels from the South Downs and the surrounding farmland areas, joining ditches, dykes, drains, and rivers, which convey excess water out to sea, through outfall pipes on the beach at Pevensey Bay and Normans Bay.

The internal drainage systems, controlled by pumping stations and sluice gates, prevent flooding and protect housing, semi-permanent dwellings and caravan parks built at or below sea level. Older farmsteads and settlements situated on higher ground such as Horse Eye, Chilley, Herstmonceux, Hankham and Hooe are less likely to be flooded, but risk being cut off by flooding from the sea in the future. Management of the land is divided between farmers, the Environment Agency, Natural England, the water boards, angling clubs, golf clubs, and private landowners.

Mechanisms for Controlling Water in the Landscape

Networks of guts, scrapes, drains, ditches, streams and rivers, as well as the soil, which is either clay or layers of peat, conduct the flow of surface water and partly determine the extent of saturation within the landscape. Pumping stations direct water to specific areas across the landscape, as well as out to sea. Deliberate oversaturation of the land with ground water and mechanically controlled flooding or draining of tracts of land by farmers, prevents some fields from draining out at Pevensey Levels. Preventing excess water from draining away into surrounding ditches and waterways by closing sluice gates also retains water. The sluice gates that control the flow of water to pumping stations will also be shut off to allow the water to flood the land. Flooding of grazing marshland is connected to climate change in terms of the conservation of wildfowl habitats and this action allows a richer biodiversity of plant as well as animal life in winter months. Farmers, who have elected to join Natural England's Higher Level Stewardship Scheme, manage their land accordingly, and have undertaken additional practices such as planting reed beds to encourage the integration of the ecology with a changing climate (Toogood and Joyce, 2009).

Tourism

There are two castles – one near the sea, *Pevensey Castle*, an 11th Century Norman fortification, built on the remains of a Roman Fort, called *Anderida*. The other, Herstmonceux, at the north end of Pevensey Levels, was a 12th Century manor house that was crenelated in the 15th Century by its owner, a knight named Roger Fiennes. The grounds today retain the picturesque landscape style of the 18th Century in addition to a landscaped Elizabethan garden. Another significant landmark in the vicinity is the Royal Observatory, which was founded by King Charles II in 1675. It was a site of astronomical research

until 1990, and is now a working science museum. Apart from Pevensey Castle, and churches in the area, this is one of the most significant landmarks near Pevensey Levels.

Farmers and Their Adaptations to the Climate

Farmers are aware of changes in seasonal weather systems and adapt to the changes in the climate at Pevensey Levels. The landscape in Pevensey Levels can also be understood in terms of its function as a type of factory, or public utility that distributes and controls flows of wastewater from the surrounding communities. A drainage system has been in place since medieval times, but today sophisticated drainage channels and pumping stations dominate the way that the land interacts with water, affecting the visual impact of the landscape.

In the marshland, Indigenous plants grow in boggy, fenland areas, and at the edges where the water is less disturbed. In the lower areas, much of the land is drained for cattle, sheep grazing and horses, while on higher ground, towards the slopes of Hooe Level and Herstmonceux; fields support crops such as maize and wheat, and a vineyard. Indigenous plants are grown in areas of land that are permitted to flood, as well as areas that are not over managed by ditch maintenance; an example being a rare flowering Marshmallow plant that grows in Pevensey Levels in areas that have been deliberately left uncultivated. However, this highly utilized landscape supports only a small proportion of the indigenous plant life, and therefore the biodiversity that accompanies these indigenous plants is also minimized (Natural England, 2013b).

Land Access and Rights of Way

Access to the land has been one of the major problems that I have encountered during my fieldwork. It is possible to gain access to some parts of land that have distinct footpaths, but private land in Pevensey Levels, tends to have restricted admittance, unlike the nearby South Downs National Park, and access to riverbanks is at points where there is a public right of way or by permission from landowners. In addition, the various ditches surrounding the fields have an elaborate pattern that can lead to a dead-end. At Pevensey Levels, it is the ditch and not the fence that generally creates boundaries for grazing cattle.

Paths are not always maintained and way marked. On one occasion I made a detour of a quarter of a mile before I realised that the map was correct and that due to bad maintenance of a right of way, a stile along a pathway was broken and therefore not immediately visible. This might reveal that public access across Pevensey Levels is a low-priority for the organisation responsible for maintaining routes across the land. I have walked within private land and felt fearful that the landowner might confront me. I have also walked through the landscape with a bird-watcher¹ and it seems that people who are looking out for birds have a certain amount of flexibility and kudos with landowners as they walk through the landscape as long as they are showing that their role is ornithological, by displaying their binoculars and striking a pose of the birdwatcher and wearing neutral-coloured clothes. Ownership of the land affects public access to green spaces, and Pevensey Levels has historically had many different landowners (See Figure 20). The black lines shows the divisions in the land, which are separated by ditches rather than by fences, to stop livestock from moving across different areas.

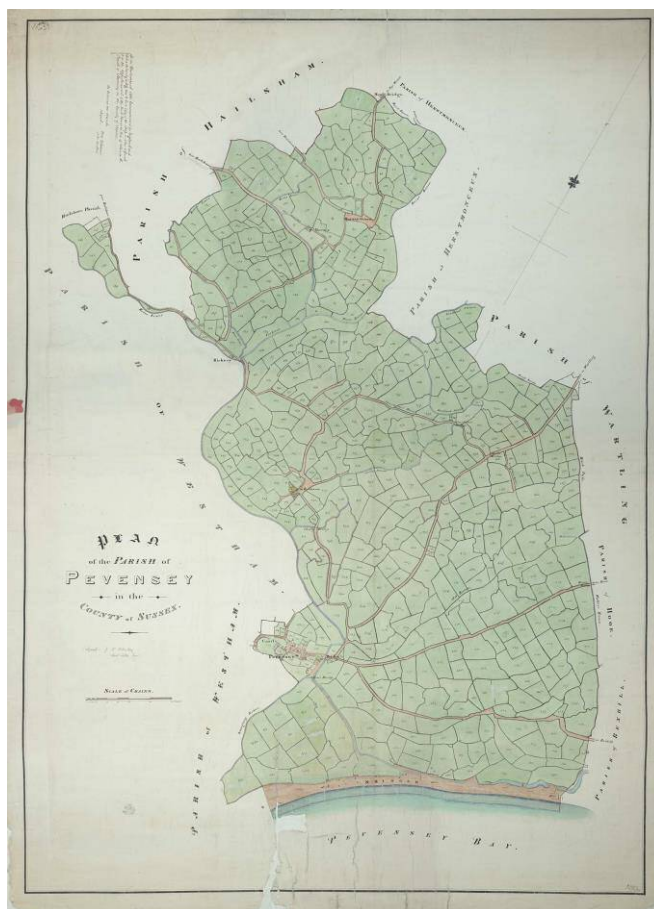


Figure 20.
 Pevensey Tithe Map, 1839.
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 Accession Number: TD-E083

Pevensey Levels is a privately owned landscape. It is possible to walk through two or three areas of owned land without knowing who the owner is, and permission to access land can involve having to contact any number of individual farmers, as well as the Environment Agency, Angling clubs, Natural England, Southern Water or private owners. Keeping to marked paths restricts exploration of the land and consequently, this affects the walker's connection with the land since perception of the landscape is heavily restricted (Edensor, 2000).

Natural England's *National Character Area Profile* (2013b) describes Pevensey Levels' physical characteristics in detail (2013b). The land has been designated a Site of Special Scientific Interest (SSSI), due to the existence of rare species of plants, and animals, such as the Ramshorn Snail and the Fen Raft Spider, habitats are protected by law. In the document, the condition of the land is given a short assessment, that outlines the pollution levels due to farming practices, the encroachment of invasive plant species, the water quality and the maintenance of water levels in the main rivers and ditches. It points out that the seven sewage treatment works discharge into Pevensey Levels (Natural England, 2013b: 12).

One third of the land here is categorised as 'unfavourable-recovering' and plans are in place to counteract some of the damaging effects of common agricultural practice, such as slurry run-off into waterways, the use of crop fertilisers and insecticides and Floating Pennywort control, all of which create a potentially impoverished environment for biodiversity in a *natural* landscape. Trees thrive in the central areas alongside ditches and roads. Near the waterways, however, they can be half-submerged, clinging on by their roots to the bankside (Figure 21). Trees that do grow taller are vulnerable to high winds and can potentially fall down across the waterways. This is mainly due to the exposed nature of the land, and the winds, which blow through Pevensey Levels in the winter, as well erosion at the sides of the waterway.



Figure 21.
Photograph: Sally Bream, Willow Trees after Storm Damage, Kentland Fleet, 13 April 2014.
© Sally Bream

Changes in the trees and vegetation are clearly visible, such as in the growth, colour and management of trees that have either fallen, become diseased or have suffered wind damage to their leaves or buds. As global warming intensifies, weather systems will cause plants to respond to the new weather conditions, either by growing earlier in the year, or by leaf fall being delayed by warmer autumn conditions. The absence of the trigger of cold air temperatures will prevent trees from forming an abscission layer, which allows the leaf to separate from the branch. I have noticed this happening in East Sussex in last three years, although I have not documented this phenomenon using photography. This observation connects with my approach to questioning environmental changes in the landscape through the process of geographical imagination, which I discuss in Chapter Four.

Pevensy Levels has a lower public profile than the South Downs National Park, in part due to its size, which is significantly smaller and therefore has fewer paths, and in terms of its accessibility. In addition, it has possibly been perceived as an area of land that lacks a substantial heritage that is visible, although this is being revised with the area now receiving more attention in relation to its wealth of historical, archaeological, and cultural significance. For instance, an annual event called Water Week sets out to explore the value of water in this environment, and also, the *Pevensy Timeline Association*, (Mead, 2015) was launched in April 2014, and aims to extend knowledge about the historical background of Pevensy Bay Village and Pevensy Levels.

Artistic Representations of the Pevensey Levels Landscape

Major art galleries have so far not shown any significant artworks that represent the Pevensey Levels landscape despite there being various artists who have been inspired to make work in the vicinity (see Appendix 7: *Artistic Works made at Pevensey Levels*). An exception to this is a premiere of the film, *The Moo Man* (Heathcote, 2013) that was shown at the Hailsham Pavilion Cinema in 2012, portraying a few days in the life of an organic dairy farmer on Pevensey Levels. However, despite the presence of significant galleries in the south east, such as the Towner Art Gallery, to the East of Pevensey Levels, in Eastbourne and the De La Warr Pavilion Gallery in Bexhill-on-Sea, to the West, The Jerwood Gallery in Hastings and the Lucy Bell Fine Art Gallery in St. Leonard's-on-Sea, to date, have not shown major exhibitions of works inspired by Pevensey Levels. The Blackshed Gallery in Hailsham, to the north of Pevensey Levels shows work by local artists, though photography is not included in their exhibition Programme.

Pevensey Bay has a small museum, Pevensey Court House Museum, devoted to the historical background of the village. The Castle and Churches are also venues containing historical artifacts pertaining to the area. Since 2012, there have been a few educational projects that have raised the profile of the area, such as *Underwater Edge*, a walking exploration project, which began in 2014, led by two artists who explored the historical connections of the landscape, and two *Water Week* exhibitions have taken place in venues around Pevensey Levels in 2014, and 2015 (Whistler, 2015). The *Water Week* 2015 exhibition took place in a local space, The North Gallery, Hailsham, East Sussex. The Star Inn, near Normans' Bay has a collection of historical and anecdotal artifacts on the wall, and the drama, *The Quiet Woman* (Gilling, 1951) was filmed there.

Conclusion

The fundamental character of Pevensey Levels may not have appeared to have changed since William Gilpin visited in 1804, and it can be seen that the ditches shown in the Tithe map of 1839 remain the same, although a modern map reveals that extra waterways have been added to the area, to increase drainage and land irrigation. However, the landscape of Pevensey Levels has been developed into a highly controlled system of waterways, ditches and rivers that support farming. This water system is now managed in order to alleviate the effects of climate change, with the control of water within the landscape aimed at moderating the effects of rising sea levels, flooding and drought. Nevertheless, the land is now defined in terms of high maintenance and costly mechanisms, such as computerized sluice gates. The density of drainage ditches and the deepening of water channels, are also determined by an expanding population that demands a consistent water as well as food supply, increasing the burden put on the landscape to provide the essential components for human survival.

Although the historical profile of the area is increasing area seems to be increasing (Mead, 2015), it still remains unnoticed. There has been interest from artists in the past that have made paintings of the area, such as J.M.W. Turner, in 1806-10, and later, George Vincent, in 1824 (See Appendix 7). George Gissing (1927) also wrote a brief description of the landscape in one of his novels (See Appendix 3). However, despite these interesting records of the landscape, it still retains its status as an outsider landscape, with a low profile, which is why I was initially attracted to the idea of taking photographs there.

CHAPTER TWO

ISSUES AROUND THE PHENOMENON OF CLIMATE CHANGE: SOME PERCEPTIONS AND REPRESENTATIONS

Introduction

In this chapter, I discuss some issues around the perception of the presence of climate change. In the moderate climate of South East England, climate change can take the form of rising sea levels, higher precipitation levels, and sudden extremes in temperature, flash flooding, storms and hurricanes. Reactions towards the landscape, due to these anomalies, might illuminate where the presence of climate change is in the landscape. Nikolaus Pevsner maintained that England's art was characteristically influenced by a 'moderate' climate (1956:185). The idea of an English climate that is both moderate and changeable makes the perception of climate change difficult to decipher, and this is why I have chosen not to concentrate solely on weather conditions in my photographic work. In this chapter, I consider public and media reactions to extreme weather occurrences, which are attributed to climate change, in order to highlight the disconnection between apparent climate change and public perception. I conclude that the presence of climate change can be perceived, not only by experiencing extreme weather events, but also through visual representations of the landscape and their contextualisation in relation to ideas about perceptions of the landscape, which rely on an individual's observations and imagination. In some government documents climate change evidence sometimes presents numerous scientific graphs and data (IPCC 2013a & 2013b). Photographs of catastrophes become something that is out there, rather than something that is happening near to us, in the

air we breathe, in the supply and demand of food. In this way, the spectacular image becomes a 'sight' to be consumed (Berger, 1972: 1).

Policies on Climate Change

Government policies have created strategies for climate change management in relation to the environment. The Climate Change Act (2008) sets out plans to reduce carbon emissions in the UK by 2050, 'It also strengthened the UK's leadership internationally by highlighting the role it would take in contributing to urgent collective action to tackle climate change under the Kyoto Protocol' (Committee on Climate Change, 2015). The UK government's attitudes to climate change, outlined in the White Paper, *The Natural Choice: Securing the Value of Nature* (DEFRA, 2011) sets out plans to combat the progress of climate change.

The natural environment is described as having a neutralizing effect by absorbing pollutants causing climate change: the land is a source of fertility, purity, and self-regulation and the White Paper makes suggestions for the control of an unruly natural world (Defra, 2011). The government believes that nature's role is to absorb climate change and that trees provide a protective shield against the unpredictable forces of flooding, and air or noise pollution (Defra, 2011). The UK Government established the *United Kingdom Climate Impacts Programme* (UKCIP) in 1997. It is an authority on adaptation to climate change in the United Kingdom, and provides information about climate risk management for businesses involved with the nation's infrastructure.

The United Nations' Intergovernmental Panel on Climate Change (IPCC), have produced the most influential report on climate change to date. The *Working Group I* contribution to the *IPCC's Fifth Assessment Report (AR5)* states that, 'Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to

millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased' (IPCC, 2013b: 4).

The Public and Climate Change

Public awareness of climate as a changeable feature of the environment in England has been described as having its origins in the eighteenth century and the Enlightenment era, in relation to perceived inconsistencies in localised weather conditions (Janković, 2000; Golinski, 2007; and Markley, 2008). Rob Roggema (2012) writes that one of the earliest storms recorded in southeast England occurred in 1703. Daniel Defoe's account of the storm of 1703 was one of the first pieces of journalism concerning a natural disaster in England (Defoe, 1704). Extreme weather conditions exposed tensions within society.

Janković (2000) points out that a connection was made between political upheavals and God in pre-nineteenth century England. Contemporary newspaper headlines about significant events act as *aide-memoires* that reinforce these past experiences of storms (Rayment, Langley and Clayton, 1987). Similarly, in the aftermath of the destruction of the 'Great Storm' of 1987 in southern England, a Guardian newspaper article, commenting on the north-south economic divide at the time, noted that Britain's north, largely a bystander in the economic boom of the 1980s, "could be forgiven for thinking there is a touch of nemesis here" (Watkins, 2007). After the storm of 1987, there were calls for the phenomenon of climate change in Britain to be investigated; yet the government was reluctant to fund such initiatives at the time (Schoon, 1988).

Public Involvement in Local Environments

The Stern Review (Stern et al, 2007) outlines the economic global impacts of human induced climate change. In Europe and the UK, inundation from rising sea levels will threaten fresh water supplies inland, causing water shortages. Flooding will become more prevalent and unpredictable due to the rise in air temperature and precipitation. Various poisonous gases, such as methane, will be released into the air from both sea and marshland areas. The water cycle will be accelerated and precipitation so high that crop failure is likely. The report shows that the UK and Europe will experience relatively mild changes compared to developing countries, who will suffer famine, drought and flooding, threatening their already vulnerable infrastructures. While the threat to the United Kingdom (UK) economy, according the report, is serious, it will be the global economy that will face irreversible damage if greenhouse gases continue to rise. The report shows various types of diagrams, which need interpretation.

Lack of public motivation in response to signs of climate change in the UK could be caused by the lack of responsibility, or skill people have, in managing their local environment. Robert Markley (2008) suggests that, 'we have inherited the moral calculus that makes humankind the agents of change rather than - in Bruno Latour's sense - actants within complex, socionatural networks (*Science; We Have*)' (Markley, 2008: 120). Rob Roggema (2012) believes that skepticism arises out of differences between local needs, versus government dictates. He suggests that landscape planning in response to climate change should come from the public rather than from the government elite. *Natural England* has collaborated to outline guidelines with *The South East Green Infrastructure Partnership* (Smith et al, 2009), and subsequently produced a document titled *The South East Green Infrastructure Framework*. The strategies in the study suggests that there should be future planning for the creation of green areas in new housing estates that will act as sites to replenish natural resources, thereby, mitigating local effects of climate change.

Re-designing the built environment is seen as a way of creating new visions for landscapes, while responding to the unpredictability of a changing climate (Roggema, 2012; Metz, 2012). It is further believed that urban environments, where the carbon footprint is difficult to lower due to population needs and economic factors, are dependent on rural landscapes (Roggema, 2012 and Defra, 2011). To complicate this, since the Second World War intensive farming has continued to deplete soil nutrients (Matless, 1998). With the management of the rural landscape in Britain continuing to be determined by the requirement of food resources.

Evidence of Climate Change Visibility

The debate about climate change skepticism was evident in media reports during January and February 2014, in the context of the storm events and flooding in England and Wales. Climate change was perceived only to be an issue in relation to housing that was situated directly in the vicinity of the flooding in rural land, near shorelines and waterways. The need to reduce carbon emissions or to encourage green technologies was rarely mentioned. Naomi Oreskes has highlighted her concerns about the counter-arguments that climate change skeptics put forward (Oreskes 2004; Oreskes and Conway 2010 and Kenner, 2014).

The English weather as an unpredictable force is echoed in John Urry's suggestion that people tend to observe the extraordinary and revelatory power of weather, rather than climate change. He writes, "Since the dangers of global warming are not tangible and visible, most people will do nothing concretely until its dangers become more tangible" (Urry, 2011:14). Mike Hulme (2009) suggests that the emphasis on climate change as a phenomenon encourages people to respond according to their beliefs, values and attitudes, rather than creating a reaction where people want to take action. George Montbiot (2015) believes that crucial power struggles between governments and multinational businesses are being played

out in the 21st Century within the arena of the global warming crisis and concerns for landscape conservation and preservation. The lack of action by the government on this issue has led the *Campaign Against Climate Change* group (2015) to put pressure on the government to produce ecologically sound solutions for tackling climate change in the UK.

A recent example of reactions to extreme weather and climate change can be illustrated by the flooding at Somerset Levels in January 2014. This raised public anxiety about whether excessive rainfall was indeed due to climate change or bad management of the landscape. The response to flooding in the Somerset Levels in January and February 2014 was simultaneously regarded as an act of God and a lack of land maintenance (Daily Mail, 2014). One of the residents of Muchelney stated, 'They're all going to church now; they think God's got something to do with all this water' (Tyzack, 2014).

The simultaneous flooding in other areas of the UK that happened at the same time triggered government decisions to provide funding for flood plain areas and coastlines vulnerable to storm damage, For instance, H.M. Government (2013) *The National Adaptation Programme*. At Somerset Levels there were discussions about introducing a mini Thames barrier on the main river, to prevent sea water from coming too far inland, to minimise flooding levels and the length of time that the water stays in the ground (Chapman, 2014). The recent flooding at Somerset Levels shows that there is an imaginary about the landscape, which exists alongside practical approaches to coping with flooding disasters.

The Role of Imagination and the Perception of Climate Change

The landscape at Pevensey Levels has only a few trees, but where they do occur, they have significance for the way in which the landscape is maintained to adapt to climate change. Trees grow at the margins of roads and waterways. Willows are the most common tree species. Therefore, when these trees collapse, they act as a powerful reminder of the symbiotic

relationship between the weather and plant life at Pevensey Levels. Fallen trees become objects, which unsettle the infrastructure and therefore the economy. The tree has associations, then with human survival.

The photograph itself is not scientific evidence of climate change and yet, it can convey a message about climate change. The photograph acts as semantic device, which can point to scientific references about climate change. Mary Ann Doane (2007) notes the divide between that which is signified and the signifier. The division between memory, text and photograph and between the photograph and scientific evidence of climate change, creates a gap in perceptions about the notion of proof, and this might explain why there is public inaction to prevent the causes of climate change: the connection cannot yet be made between what is seen in the landscape and scientific evidence. My aim is to combine an imaginative and speculative approach to looking for signs of climate change, with an informed approach, where there is evidence management or responses to the effects of climate change.

Climate Change and Memory

David Bate (2010) considers the idea of photography's inherent function, as an aide-memoir for collective memory. He writes that 'as sites of memory, photographic images (whether digital or analogue) offer not a view on history, but acting as mnemonic devices, are perceptual phenomena upon which a historical representation may be constructed (Bate, 2010: 255-6). He indicates that there can be more than one reading of the original event due to photography's ability as a mnemonic device, rather than as a conveyer of reality. Neil Cummins (2014) has pointed out that the era of climate change and global warming can lead to such a scenario of philosophical ideas, and an example of this is Luce Irigaray's, *The Forgetting of Air in Martin Heidegger* (1999), air is aligned with climate change, and used as a metaphor for the way that women may not fully

breathe the air in a masculinized society. By searching for signs of climate change, I have questioned my own beliefs about pictorial beauty and the landscape.

My photographs show the subtle signs of climate change, whereas media images rely on the spectacular, to convey its presence, no matter how macabre the scene might appear. As Guy Debord writes, 'The language of the spectacle consists of signs of the ruling production, which at the same time are the ultimate goal of this production' (1967, 447 [Kindle]). The photograph's function as spectacle is to establish a matrix of endless dialectical interpretations. Climate change representations of landscape disasters are aligned with human experience, associated with an economy in crisis. In contrast, my photographs aim to reveal the less obvious aspects of climate change, showing instead the subtlety by which climate change engulfs the landscape and is beginning to reveal itself in this landscape. My photographic approach aims to bring the spectator back to the realization that the local environment is affected by climate change in *minute* ways that can only be observed through time.

Climate Change Adaptations At Pevensey Levels: “Hyperobjects”

DiFrancesco and Young (2011), Timothy Morton (2013) and Bronnimann, (2002) have discussed the idea of the visibility of climate change and how it is represented. The proposal for a wind farm at Pevensey Levels in a field next to Shepham Lane was rejected because of some of the local community were opposed to the visual impact of wind turbines on open fields. A poster at Rickney urged people to protest to their MPs (Figure 22). There seems to be what Macnaughten and Urry (1998) term ‘A diversity of contested natures’ (Macnaughten and Urry, 1997, p.1). The idea of change within the land also exemplifies notions of cultural loss or anxiety around the transformation of a geographical area that is perceived to be natural or containing nature.

‘Hyperobjects’

Timothy Morton (2013) believes that objects affected by the anthropocene era have become virtual objects, *hyperobjects*, which are no longer in their original composition. Pevensey Levels could be understood in terms of its *hyperobjects*, as it is a place that has been reconstructed, polluted and reconfigured. Morton suggests that the idea of the inclusion of wind farms, and solar panel fields, disturb people because they confront us with the reality of the presence of climate change, and the impending calamity that will ensue. However, these *hyperobjects* already exist in other forms. Due to demand for electricity, gas and water, the countryside is filled with objects and structures that maintain the comfort of our post-industrial and technological lives.

The air is jammed with radio waves and satellite beams, and these *Hyperobjects*, according to Morton, are unseen clutter in the air (Morton, 2013). Similarly, anthropocentric climate change is an unseen presence in the landscape, which is only made visible by land management responses to it, or in the ways in which plants and animals are responding to changing

temperatures. Taking this model of the idea of *hyperobjects*, I have documented some of the structures and objects within the landscape at Pevensey Levels, which I believe convey the idea of the presence of climate change. In the following sections I have subdivided the areas of the landscape into water, land and air in order to discuss the idea of hyperobjects within Pevensey Levels.



Figure 22.
 Photograph: Sally Bream, *No Wind Farms on Shepham Lane*, Saturday, 26 May 2012
 Poster at Rickney
 © Sally Bream

Water And Land: Fresh Water and Climate Change at Pevensey Levels

Ivan Illich (1985) wrote, 'But we do not feel free to question the natural beauty of water itself because we know, yet cannot bear to acknowledge, that this "stuff" is recycled toilet flush' (Illich, 1985: 3). Water control at Pevensey Levels is designed to meet human consumption as well as to encourage biodiversity. The threat of climate change has led to the implementation of systems of water control, which accompany traditional methods of land drainage, and management for farming. Inland, waterways containing treated sewage flow out to sea at low tide. Intensive management helps to mitigate flooding and drought. Pevensey Levels might be understood as a large hyperobject, in which water is controlled, as well as having its own rhythms and life cycles.

At the seafront, adaptations for climate change take place to reduce the risk of contaminating the inland fresh water with salt water from the sea. The shoreline exists as a man-made strip of land, which protects the area beyond it from flooding. In this way, the beach area could be viewed as a hyperobject, as it signifies the economic effort involved in preventing flooding and from the sea, which would destroy the infrastructure.

Some *Beachlands* seafront properties were originally beach huts, built as holiday retreats after the Second World War, which have successively been developed into permanently occupied houses. There were tougher building regulations after the 1960s, as well as insurance policy changes that meant that the bungalows along the shoreline were more vulnerable to storm damage (Amies and Thomas, 2009c). Some of these houses have been re-built and raised above sea level to combat rising sea levels and the threat of storm damage. 'White Horses' on the beachfront, has been re-built above sea level, because of past winter storms which destroyed the previous property (See Figure 23). The seafront houses evolve in relation to the effects of climate change and can therefore be considered as types of hyperobjects.



Figure 23.
White Horses property on Pevensey Bay Seafront, destroyed by high tide storm.
January 25, 1965
Photographer Unknown
© Pevensey Levels Coastal Defence Ltd.



Figure 24.
Aerial View of Pevensey Levels Coastal Defence Offices and Beach.
(2000)
Photographer Unknown
© Pevensey Levels Coastal Defence Ltd.

An aerial photograph of the seafront (Figure 24) shows that the properties act as obstructions, preventing the sea from eroding the shingle beach, because the land erodes in gaps between houses (Amies and Thomas 2009b: 6). The company, *Pevensey Coastal Defence Ltd* and the Environment Agency protect these properties by maintaining at least 30 meters of shingle between the houses and the sea at high tide. My photographs of the seafront at low tide shows the constructed barrier of shingle that protects the seafront houses from storm tides in the winter months and prevents the sea from overtopping the beach during spring tides. This shingle barrier again connects with the idea of Morton's 'hyperobjects'. The shingle area is there due to constant mechanical replenishment of the shoreline. We are looking at an artificial stretch of land. In the same way, my photograph of the Commissioners Cottages shows how properties seem untouched by the sea because the sea defence work protects these buildings from storms. A comparison between my photograph, *Commissioners Cottages, Beach Area, Normans' Bay Village, 12 September 2013* (Figure 25) and a photograph of the same building in 1962, *Commissioners Cottages, Heron View, Normans' Bay Village, Seafront* (Figure 26) shows the excavated sea defence system beneath the beach.



Figure 25.
Photograph: Sally Bream, *Commissioners Cottages, Beach Area, Normans' Bay Village*,
12 September 2013.
(Bream, 2015, Plate 29) © Sally Bream



Figure 26.
Commissioners Cottages, Heron View, Normans' Bay Village, Seafront.
November 23, 1962
Photographer Unknown
© Pevensey Levels Coastal Defence Ltd.

Land

Adaptations have been made to the landscape infrastructure at Pevensey Levels and the area has been described in terms of its flatness, its network of waterways, its status as an ecologically protected landscape, and in terms of its proximity to the sea, the Weald and the South Downs (Natural England 2013b). The link between Pevensey Levels and climate change was made in 1993 in an unpublished Report (Douglas, 1993 cited in Natural England, 2013b: 32). Since June 2000, the marshland and beach areas at Pevensey Levels have been maintained because of rising sea levels and flooding (Amies and Thomas, 2009c: 1-8). Since 2012, when I began my research at Pevensey Levels, climate change and the unpredictability of the weather has become a central government, Met Office and media issue, focussing on, extreme weather such as high winds, heavy rainfall, flash-flooding, heat waves and drought. Adaptation of the landscape at Pevensey Levels is supported by the idea that the environment can assimilate the effects of climate change (Defra, 2011; IPCC 2013a & 2013b), which will bring more challenging conditions for plants and animals. There is now temporary flooding, supported by government funding, in some areas of Pevensey Levels, for instance, at Down Level, in the winter months, to encourage migrating wetland birds to overwinter in the area. Climate has also meant that in the summer months, birds are now migrating from the southern hemisphere further north to cooler conditions. The protection and nurturing of bird species is deeply valued as in landscape management by government agencies and farmers. The need for biodiversity is also connected to climate change, with the green infrastructure depending on a wide variation of plants and animal species in order to maintain a healthy environment. My photographs of new reed beds at Court Lodge Farm, Chilley Farm and Hankham Level show this new adaptation to climate change (Plate 45. *Court Lodge Farm, Reedbed with Small Island, 13 July 2014*; Plate 47. *Chilley Farm Land, New Reed Bed, 15 October 2014*; and Plate 48. *Wind Powered Water Pump, Hankham Level, 18 March 2014* (Bream, 2015).

Adaptation to climate change is a key factor in farming practices at Pevensey Levels. Farmers are particularly aware of minute, as well as large-scale changes, that affect their land. Ecological awareness, and changes in land use have been at the forefront of farming practices for the last twenty years (Interview Transcript 5, Appendix 4). Various diseases have affected livestock since the 1980s. With climate change and warmer temperatures, airborne diseases are a potential threat to farming. Farmers are well aware of the diversity of factors that could impact on their livelihoods, including the effects of drought, floods and climate change as well as housing developments, which put more pressure on environmental resources. Some farmsteads have continually adapted their working methods in the light of airborne diseases (Farrant et al, 2000). The photograph, *Close-Up of Soil, Ploughed Field, Sown with Red Coated Seeds, Herstmonceux, 2 May 2015*, shows seeds coated with a red-coloured fungicide in the newly ploughed field (Plate 40: Bream, 2015).

Air

The average temperature for 2014, was the mildest since records for England began in 1654 (Met Office, 2015). Air is another type of 'hyperobject', which I consider as part of my photographic research, and is represented in my work as mist, which vaporises under the heat of the sun, to become clouds, and drawing up gases into the atmosphere. Timothy Morton writes about the effect of pollutants in the air and the 'layer of radioactive materials' deposited around the earth's circumference since 1945, when the atom bomb was dropped (Morton, 2013: 163). In *Mist Rising at Down Level, New Bridge Road, 16 July 2014* (Plate 51: Bream, 2015), I imply that the air quality at Pevensey Levels is affected by urban developments and road systems that produce greenhouse gases. The IPCC Report states that, 'Because the saturation vapour pressure of air increases with temperature, it is expected that the amount of water vapour in air will increase with a warming climate' (IPCC, 2013a, p. 42). Air pollution is significantly increased by air traffic. The government policy booklet, *Meeting the UK*

Aviation Target – Options for Reducing Emissions to 2050 demonstrates that aircraft affect air quality (Turner et al, 2009). Greenhouse gases affect air above and at ground level and there is now evidence that air and water contribute to forming the ozone layer by conveying pollutants into the atmosphere, which then fall back down to earth causing acidification and eutrophication (Seinfeld, 1998; Turner et al, 2009; Higham, 2016). Plants are also responding to climate change (Panchen et al, 2012; Førde et al, 2015).

Climate Change Visibility: Close-Up And Distance Photographs: Geomorphology

The idea of showing climate change through photographic representation has led me to consider some ideas put forward by cultural geographers, in uncovering some less dramatic signs. My practice research applies some of the ideas suggested by N.A. Solnetsev (1948, in Wiens et al, 2007), and L.S. Berg (1915, in Wiens et al, 2007), whose methods include an analysis of the structure of landscape through the visual identification of the interconnectedness of soils and plants with the whole vista. This geomorphological approach has helped me in interpreting how some areas of the landscape are responding to climate change. Solnetsev points out that Berg analysed the landscape in terms of its geo-botanical features. Berg proposed an approach to visualising and identifying both organic and inorganic features in the landscape, in that the land can be divided into geographic zones called *urotshistshes*, meaning the wider landscape areas; and *facies*, meaning parts of the landscape, such as marshland, river and estuary. This shares some similarities with film and photographic techniques of distance and close-up views. The emphasis is however different in that the close-up image is emphasising an understanding of geological and geographical events in the landscape.

'Urotshistshes' and 'Facies'

Carl Sauer previously determined the importance of climate in the landscape. He wrote, 'In the physical structure of landscape, climate is first in importance' (Sauer, 1925: 58). Climate is also a form as much as the soil. Sauer further comments, 'As a form, climate is an areal expression, the sum of the atmospheric features of the area' (Sauer, 1925: 58-9). This fine-tuning of the way that we observe landscape is important for my research, as it focuses attention to details and their interconnectedness in the whole landscape. For instance, my photograph *Chilley Farm Land, New Reed Bed, 15 October 2014* (Figure 27), in which the foreground recedes into the distance, shows the texture and quality of the soil, which is depleted of nutrients by its overuse for grazing livestock.

The whole area here would be the *urotshistshes* and the foreground shows the *facies* of the area. The new reed bed is now being constructed in order to enrich the soil and increase biodiversity. The area can be re-visited and photographed to consider the changes that take place over time. At Pevensey Levels, a *urotshistshe* might be an open space where arable land changes to drained marshland. For example, *Pevensey Levels, from Herstmonceux, 19 July 2013* (See Figure 28). The idea of bearing in mind these geographic terms in my photographic practice enables me to document both the wider vista of the landscape, as well as its fragments, in order to be able to point to the details of visible climate change.



Figure 27.
Photograph: Sally Bream, *Chilley Farm Land, New Reed Bed*, 15 October 2014
(Plate 45: Bream, 2015) © Sally Bream



Figure 28.
Photograph: Sally Bream, *Pevensy Levels, from Herstmonceux*, 19 July 2013
(Plate 50: Bream, 2015). © Sally Bream

It was Carl Sauer who pointed out that the study of the landscape is not an exact science and neither should it be, as it concerns not only scientific study, but also a consideration of cultural attitudes that embed themselves in the landscape. He writes, 'geography is based on the reality of the union of physical and cultural elements of the landscape' (Sauer, 1925: 46). The photograph, *Clay Soil with Debris, Manxey Level, 24 January 2014*, (Figure 29), acts as a device to identify plants and soils in this particular habitat. These details, or *facies*, cannot be revealed in the landscape photograph showing the wider vista. The two approaches of close-up and distance in photographing the landscape are valuable in terms of cross-referencing the general and the particular contents of the land. The land is represented as a macrocosm and as a microcosm of soil, climate change cultural impact.



Figure 29.
Photograph: Sally Bream, *Clay Soil with Debris, Manxey Level, 24 January 2014*.
(Bream, 2015: Plate 20) © Sally Bream

'Cutting Edge' and 'Material Areas'

Lev Solnetsev (1948) suggests the idea of a 'cutting edge', which is situated where changes are immediately perceptible, from one part of the landscape to the next, because of their close proximity. The photograph, *Dredged Pennywort, Down Level, 9 November 2013*, (Figure 30), shows the dredged waterway and the Floating Pennywort plant on the banks of the drainage ditch. The field beyond has been flooded to encourage over-wintering birds. The image shows the transition from ditch to marginal areas at the sides of the waterway, where some marsh plants are growing in clay soil, to the grass pasture, with ossified reeds on the horizon. A geomorphological approach emphasises the way in which the landscape is managed across an expanse. The image shows different microenvironments, which connect to each other. The idea of the cutting edge encourages a view of the landscape, which is interconnected by different terrains or microenvironments. It is important for my photographic representations, as this idea concentrates the eye's movement across the terrain, while noticing different connections.

Eutrophication can occur in places where the ecosystem responds to the addition of substances, such as nitrates and phosphates, contained in crop fertilizers, sewage or detergents ending up in aquatic environments. The photograph, *Floating Pennywort, Pevensey Haven, Rickney, 8 September 2012* (Figure 60), shows the invasive Pennywort plant, which has grown vigorously during the summer. Schindler and Vallentyne (2004) write about this type of phenomenon in *The Algal Bowl: Overfertilization of the World's Freshwaters and Estuaries*. The depletion of water quality has a direct connection to climate change, in that it increases the acidification of the river water, and therefore the eventual acidification and warming of the sea.



Figure 30.
Photograph: Sally Bream, *Dredged Pennywort, Down Level*, 9 November 2013.
(Plate 16: Bream, 2015) © Sally Bream

Climate change might also be evidenced by the accelerated growth of invasive plant species, like the Floating Pennywort, as well as other weeds, in warmer weather (Hussner, 2009; Førde and Magnussen, 2015; Wasowicz et al, 2013 and Crossman et al, 2011). During summer, this plant grows in abundance in waterways where water is flowing slowly, and it has the ability to soak up the chemicals from whatever soil or water it thrives in. This plant increases the chances of flooding during the winter because it clogs up the sluices and prevents water moving through the rivers. Andreas Hussner believes that it is possible that, 'The increase in species number and the abundance of invasive aquatic plants is certainly related to increased trading, and its rapid growth in the summer months, which is caused by eutrophication and climate change' (Hussner et al, 2009: 506).

'Material areas' in photography tend to cut the landscape off from the rest of the surrounding land, thereby making an abstract representation of it. Material areas show the construction of the land, the material and its composition in detail. These images perform an approach similar to archaeology. An example of this occurs in my close-up photograph, *Grass Verge, Pevensey Haven Riverbank, 12 March 2015* (Figure 31). The material areas are also where the land is left to regenerate, but this rarely happens, once the land has been changed. Solnetsev writes that, 'Complete harmony between landscape morphology and the pattern of the impact of physical-geographic processes is impossible' (Solnetsev, 1948: 21). *Urotshistshes*, *facies*, *cutting edge* and *material areas*, are concepts that are part of a geographical and scientific approach to visualising the landscape. When combined with the idea of *indexicality*, those concepts lead to an observational, evidential and aesthetic consideration of the landscape and climate change at Pevensey Levels.



Figure 31.
Photograph: Sally Bream, *Grass Verge, Pevensey Haven Riverbank*, 12 March 2015.
(Plate 48: Bream, 2015) © Sally Bream

Indexing Climate Change

Charles Sanders Peirce's (1932) concepts of *indexicality* and particularly *deixis* have relevance for my practice in terms of the interpretation of subject matter. The idea of the index, in its function as a point of reference, also suggests that there should be a response to that which is indexed. The photographic image can reveal areas of the landscape where preparations are taking place to alleviate climate change, and indexicality can therefore construct climate change as a tangible presence for the spectator of the photograph. In contrast to Doyle's belief, I think that the photograph's role in recording and indexing places where climate change might be present reinforces the *fact* of its existence. The photograph, therefore, can act as a visual stimulus, which raises awareness about climate change, enabling discussion and questioning about the landscape environment, in terms of the effects of air and water pollution, rising sea levels and changing weather patterns.

The photographic index points to something, 'here, now, this', and the object photographed constitutes itself as a presence. It is in this space, which Doane points out in her example that, 'the disconcerting closeness of the index to its object raises doubts as to whether it is indeed a sign, suggesting instead that the index is perched precariously on the very edge of semiosis' (Doane, M A. (2007a: 2). The index, in other words relies on what is going on at the moment of its reception by the spectator, in terms of information prevalent at that particular time. Similarly, to Mary Ann Doane (2007), Timothy Morton (2013) describes an 'ontological' rift between the object and the thing that it represents. He writes that, 'The uncanniness of human being is that it stirs up the oceans, divides the rocks, and ploughs up the soil' (Morton, 2013: 3521, [Kindle]).

Another example of how the presence of climate change might be demonstrated is through the ways that land is maintained or modified by in relation to different kinds of crop plantation, as pointed out by Toogood and Joyce (2009). The photograph, *Ploughed Field, Sown with Red-Coated Seeds, Herstmonceux, 2 May 2015* (Figure 32), when compared to

another, *Foam and Brown Sediment with Floating Pennywort, Watersmeet, from Water Bridge, Rickney, 19 November 2014* (Figure 33), shows the connection between what is situated on higher ground and the lower ground. The waterway creates an uncanny connection between poisons in other areas that can leach into the water cycle. As water will be a resource that will be under considerable pressure with climate change, the connections between water quality and a warming planet are crucial.



Figure 32.
Photograph: Sally Bream, *Ploughed Field, Sown with Red-Coated Seeds, Herstmonceux, 2 May 2015*
(Plate. 37: Bream, 2015) © Sally Bream



Figure 33.
Photograph: Sally Bream, *Foam and Brown Sediment with Floating Pennywort, Watersmeet, from Water Bridge, Rickney, 19 November 2014*
(Plate 34: Bream, 2015) © Sally Bream

Conclusion

Some recent government information about climate change focuses on spectacular events such as hurricanes and floods, which occur in distant countries (IPCC, 2013b; Climate Change Act, 2008; Defra, 2011). Texts that accompany images aim to de-cipher the representation, but government documents about the impacts of climate change tend to employ textual information foremost, with some graphs, to communicate about climate change, in order to justify and implement their policies for its mitigation. These documents may not be easy to understand and the graphs are possibly difficult to decipher.

Public opinion and media reporting tend to merge during an extreme weather crisis (Watkins, 2007; Rose, 2010; Corner, 2014), yet some activist groups do seem to emerge from climate change disasters locally, such as *Campaign Against Climate Change* (2016). Skepticism seems to be at its strongest, however, when the economic structure of society is threatened by the implications of plans to utilize green energy, in order to replace fossil fuels. Lack of motivation on the part of people generally, might be the result of a loss of connection with the landscape in everyday life. The idea of the garden city seems to be used by planning agencies in order to placate any unrest within the local community about the loss of a part of the green infrastructure.

Added to this, weather and climate change become entangled, resulting in climate change being forgotten after the disaster has receded. It has been suggested that an emphasis on climate change as a phenomenon, creates emotional responses, rather than motivating people to take action (Hulme, 2009). However, Montbiot (2015) believes that the notion of climate change is a concept around which power struggles continue to develop between governments and multinationals.

My photographic project aims to reveal climate change by focussing on the interconnections in the environment, in terms of the various changes to the infrastructure that are taking place. Some of these signs are reactions within the organic

structure of the landscape, such as pollution in waterways or the use of poisonous substances in sowing crops, or the exaggerated growth of weeds, such as Pennywort, due to warmer water containing high levels of nitrates. The process by which water is moved through the land also indicates that this is now being carried out to mitigate against flooding or drought, caused by climate change, and the role of air and the water cycle in carrying pollutants into the atmosphere. The photographic project reveals how human need and power relations affect the natural world, to bring about change. They aim to represent the landscape environment and how its biological and ecological formations influence human decision-making in managing the landscape.

CHAPTER THREE

PHOTOGRAPHIC REPRESENTATIONS OF CLIMATE CHANGE: CONTEXTS

Introduction

This chapter aims to address how climate change has been represented in photographic work, and in my own landscape photographs wherein the unpeopled landscape is an important part of the overall concept. With this in mind, I initially present a brief historical overview of the peopled and unpeopled landscape in painting and photography. This aims to define the significance of a landscape without people, particularly where the landscape is the principle subject of a concern for climate change. Landscape is a concept that denotes both the natural and man-made world and is therefore understood in terms of cultural meanings (Mitchell, 2002a; Cosgrove, 1998; Wells, 2011). I also give an overview of recent photographic projects that have focused on environmental concerns, which can lead to different types of activism, raising awareness of environmental issues that lead to climate change such as pollution. These landscape photographers who create topographies of specific landscapes are important influences for my work. The work they have made has acted as a stimulus for my decisions about colour, lighting and composition in my work. I consider the role of the 1975 American exhibition *New Topographics*, curated by William Jenkins and its emphasis on a man-altered landscape as well as Rephotographic Survey Project led by Mark Klett in the 1970s, which revisited areas photographed by previous photographers in nineteenth and twentieth century America. I discuss photographers who have made a survey of places in relation to environmental concerns

and climate change, as well as those who concentrate on both topographical *and* morphological representations of landscapes. I have referred to some archival material while developing my photographic project, and I therefore consider some photographers who have used a similar method, and discuss the significance of their approach of using archival materials. I go on to examine the idea of spectacular representations of ecological disasters, as these works create a contrasting narrative to my own approach, which reveals localised and less dramatic signs of climate change. I then reflect on the combination of image and text as a contextualising strategy employed to convince an audience of the existence of climate change, and refer to my monograph book of photographs (Bream, 2015). I then consider the exhibition venue as a space in which knowledge concerning climate change can be disseminated. The traditional landscape aesthetic of the beautiful and picturesque can be problematic in showing signs of potential or present disaster. I question what role aesthetic beauty provides in the context of the photographic image. As Liz Wells, 2011 has pointed out, contemporary art still resonates with the idea of beauty, and I have found that the landscape of Pevensey Levels, although highly managed, still includes areas of beauty. Furthermore, close-up photographs of the land provide greater detail of specific landscape areas and I discuss the importance of this for my images in the context of other photographers' works.

AN OVERVIEW OF THE PEOPLED AND UNPEOPLED LANDSCAPE

The topographical style drawing showing landforms as well as buildings, by Leonardo da Vinci, in *Landscape Drawing For Santa Maria Della Neve*, 1473 (Figure 34), is 'the earliest landscape study in European art' (Chapman and Faietti, 2010, p. 202). Leonardo was clearly interested in the geographical, artistic and geological formation of the environment, as well as fluctuations in weather and atmospheric conditions (Baroni, 1964). Significantly, Leonardo compares the earth's atmosphere and landscape geology to that of the human body. He writes, "So that we might say that the earth has a spirit of growth; that its flesh is the soil, its bones the arrangement and connection of the rocks of which the mountains are composed, its cartilage the tufa, and its blood the springs of water. The pool of blood which lies around the heart is the ocean, and its breathing, and the increase and decrease of the blood in the pulses, is represented in the earth by the flow and ebb of the sea; and the heat of the spirit of the world which pervades the earth, and the seat of the vegetative soul is in the fires, which in many parts of the earth find vent in baths and mines of sulphur, and in volcanoes" (Leonardo da Vinci, cited in Baroni, 1964, p. 457). What this philosophical and scientific observation demonstrates is Leonardo's interest in the landscape environment specifically when it is considered without people present within it. It is within an unpeopled landscape that artists and scientists can assess the organic relationship between humans and the earth in terms of their survival and existence. The human body and earth's environment are 'parallel' organisms (Baroni, 1964, p. 457) and the unpeopled landscape intensifies human consideration about the other organism: the earth. I have a small postcard of this drawing, which I have looked at since I saw the original in an exhibition at the British Museum in 2010.¹⁰ The exhibition guide (The British Museum, 2010)

¹⁰ The British Museum (2010) *Fra Angelica to Leonardo: Italian Renaissance Drawings*, 22 April- 25 July 2010.

states that drawing became increasingly important for artists in the 1400s, yet these drawings were never intended to be seen outside the artist's studio.

At the point of photography's invention in the nineteenth century, photography and painting as art forms shared common characteristics in terms of their picturesque aesthetic, (Bartram, 1985). Contemporary landscape photography can often be defined in terms of those same approaches and therefore, an overview of the history of painting can reveal some of the ideas that now inform the inclusion or exclusion of people from the landscape. This is significant for my photographic work, as I have chosen not to include people within my landscape photographs.



Figure 34.
Leonardo da Vinci
Landscape Drawing For Santa Maria Della Neve, 5 August 1473
Pen and two shades of brown ink, 19.4 x 28.5 cm
Galleria degli Uffizi, Florence, Italy.
Image Source: http://www.britishmuseum.org/whats_on/all_current_exhibitions/italian_renaissance_drawings.aspx (Accessed 12 September 2016). © Trustees of the British Museum.

Helen Langdon (1996) gives an overview of the development of the Western tradition of landscape painting from the Roman era at which point two major landscape themes, visions of shepherds or farmers, offered an ideal of refreshment and beauty. In the fifteenth century, Renaissance classical vision theorists wrote of landscape in terms of pleasure and the comfort that ornamental landscape frescoes gave (Langdon, 1996). Denis Cosgrove (2008) describes the idea of the garden represented in Renaissance painting in which the wild and cultivated areas were a metaphor for social, gendered, corporeal and cultural hierarchies (p. 52). He gives the example of a painting by Giovanni Bellini, *St. Francis in Ecstasy*, 1480-85 (Fig. 3.1, p.52), as a trope to show how the enclosed garden of Christendom was opened out, and the wild world beyond threatened to transgress its broken barrier (p. 53). He writes, 'Conventional art history has often looked to the gradual exclusion of human presence and narrative as the measure of a maturing landscape art. In fact corporeal presence is central to understanding the cultural significance of landscape' (p.55). Langdon again writes that 'Throughout the 16th century landscape artists portrayed either pastoral scenes of aristocratic leisure or Georgic landscapes enriched by agricultural activities that the aristocrat could observe with satisfaction. The Christian tradition added the theme of the hermit saint, to whom nature offered either an ascetic harshness or a sweet tranquility in which the soul might recover a lost innocence' (1996). She notes that the first writer to discuss the aesthetics of landscape was Giovanni Paolo Lomazzo, who in his *Trattato dell'arte della pittura* (Libro VI, vol. lxii; Milan, 1584), drew distinctions of lasting significance, 'between 'privileged places', enriched with noble architecture, wild landscapes, with forests, rocks and stones, and 'places of delight' with fountains, fields and gardens' (Langdon, 1996).

Langdon explains that in the seventeenth century, landscape painting remained a lesser genre in the hierarchy of painting.¹¹ Roger de Piles defined categories of the heroic ideal landscape and the pastoral rustic landscape and these ideas were developed in northern Europe that continued into the nineteenth century (Langdon, 1996). Simultaneously, during the eighteenth century Edmund Burke's treatise on the Sublime became influential and William Gilpin and Uvedale Price developed the ideal of the picturesque, a category that included the sublime and the beautiful (Langdon, 1996). Charles Harrison points out that English landscape painting represents, 'a form of alternative to portraiture or even of resistance to what portraiture tends to picture. The mechanisms of this resistance are not to be understood in terms of gradual artistic processes. Landscape achieves autonomy as an artistic genre in England only when the countryside can be viewed other than the property of the landed gentry-or rather, to be precise, only insofar as the task of representation of the countryside comes to be distinguishable from the business of reinforcement of title.' (2002, p. 215). Writings on landscape in the nineteenth century, such as those by John Constable and John Ruskin, were concerned with the problems of representing a naturalistic landscape (Langdon, 1996). Langdon (1996) indicates critical writing on landscape painting in the early years of the twentieth century initially concentrated on the development of style and of a modern attitude to nature. Kenneth Clark's *Landscape into Art* (1949) discusses European landscape themes such as the symbolic, factual, fantasy and ideal. The development of landscape painting became a contested subject and its exponents were Ernst Gombrich and Max J. Friedländer. Charles Harrison writes that the development of landscape painting as a modern form of art involves displacement of the forms of figure-ground relations, and that there is also a shift in the relation of the spectator to the subject

¹¹ David Bate (2009, p. 139) outlines how contemporary photography continues to be contextualised into genres in a similar hierarchy to that of classical French painting.

matter that the picture shows (2002, p. 217). According to Langdon (1996), after the 1960s many new approaches developed; landscape was studied in a socio-economic context, as the purveyor of ideas about property, status and social class; more attention was paid to theoretical texts and to the intellectual background in which landscape artists worked; other studies have sought parallels between art and literature, and explored the role of metaphor and symbol.

In nineteenth century America, the U.S. Geological Survey teams assessed the nature and quantity of available resources in this recently colonized country. Though these were survey images, to find places for mining, logging and the creation of rail lines, some bureaucrats were also struck by the raw beauty of the natural landscape depicted in them (Ware, 2011, p. 9). The U.S. Geological Survey¹² commissioned photographers such as William Henry Jackson, T.H. O'Sullivan and William Bell to take photographs of the landscapes in order to find geological and land resources for exploitation and manufacturing. These photographs have provided an archive that reveals what the interior areas of America looked like at that time. Katherine Ware writes, 'while the nineteenth-century expedition photographers often added people to their pictures for scale and sometimes included their own wagons and equipment, much of twentieth-century landscape photography was all about the view, whether exalted or pedestrian' (2011, p.48). Carleton Watkins's impact as a photographer inspired environmental walkers and writers such as John Muir, and Watkins's images eventually led to the United States Government forming the first national park in Yosemite. Weston Naef writes that,

¹² Which, incidentally, still operates today. See: U.S. Geological Survey (2016) in Bibliography.

Watkins achieved a poetic beauty in his 1861 Yosemite series that surpassed in quality and size any other landscape photographs made in America to that time...The photographs elicited in people who saw them a belief that what he showed must be protected from harm, and as such they are the very beginning of a movement that had not yet been named.¹³ Early proponents of the drive to protect and preserve natural resources, such as Frederick Law Olmstead and John Muir, studied Watkins's photographs and admitted to their influence. John Muir later spent many hours with Watkins and literally walked in his footsteps by retracing the photographer's travels (Naef, cited in Hickman, 2011).

However, this idealized account of wilderness and discovery encapsulates a more sinister characteristic in Watkins's photographs when we are reminded that the Ahwahnechee Native American tribe had been driven out of Yosemite in the early 1850s (Mazel, 2000). Therefore, 'American culture is saturated with the wilderness mystique...the construction of the environment is an exercise of cultural power (University of Georgia Press, 2016).

Ware (2011) mentions the role of the unpeopled landscape situated in photographs of the environmental conservation of Yosemite National Park by Ansel Adams, and his part in showing that landscape to a wide public through his monographs and exhibitions, such as *This is the American Earth*, 1955, (Ware, 2011, p. 20). These were associated with perceptions about a western national identity and the landscape as beautiful. Adams's images became important tools for the Sierra Club

¹³ This became the environmental movement in America.

to pursue its agenda to raise environmental issues and preserve the landscapes shown in Adams's images (Ware, 2011, p. 20). However, as more people wanted to visit the landscapes photographed by Ansel Adams, the project of preserving them became more futile, as new roads were made to gain access to them (Ware, 2011, p. 22-23). By 1975, the *New Topographics* photographers showed the effects of humans in the landscape, but they concentrated on the constructed world and only infrequently included the people themselves' (Ware, 2011, p. 48).

My own preoccupation with the unpeopled landscape reflects my concern for environmental changes in the land that are caused by anthropocentric climate change. The photographic images taken during my research aim to foreground various processes by which water is managed and maintained in the drained marshland at Pevensey Levels. They also show the way in which rising sea levels are controlled by numerous barriers. Although the images do not have people within them evidence of human intervention can nevertheless be perceived. Additionally, the spectator of the image can view the landscape as the sole observer, and the images can be read both in terms of their aesthetic qualities as well as documentary evidence of the ways in which different areas of the land have been managed to mitigate against climate change. The work concentrates on the response of the landscape towards its management. Therefore, the inclusion of human activity within the environment would be a distraction from the fundamental emphasis on the land itself.

LANDSCAPE: RECENT PHOTOGRAPHIC PROJECTS

Landscape can be deceptive.

Sometimes a landscape seems to be less a setting for the life of its inhabitants than a curtain behind which their struggles, achievements and accidents take place. For those who, with the inhabitants, are behind the curtains, landmarks are no longer geographic but also biographical and personal (Berger, 1976, pp. 13, 15, cited in Cosgrove 1998, p. 271).

The Lie of the Land: Different Approaches in Contemporary Landscape Photography

If I had to assert what most landscape photographers have in common, it would be that their interaction with this subject matter means that they become obsessively and intimately connected to the landscape they are representing. Contemporary landscape photography comprises an extensive variety of different approaches. It would be impossible to outline a complete bibliography of photographers who have made work in response to climate change and ecological disasters that affect the ecosystem. I will mention however, some notable photographic works, which can be defined by the idea of landscape photography as documentary evidence, whilst being fully immersed in a language of artistic practice and concern about the effects of human interference in the landscape and climate change. Liz Wells outlines photographers' works that

vary considerably in their aesthetic approach, while reinforcing a contemporary, political, social and environmental attitude within their work. Under the heading, 'Sense of Location', Wells considers the notion of landscape as Topography, Journey and Memory (2011, p. 261). Jem Southam's photograph *River Hayle January 2000*, from the series *Rockfalls, Rivermouths and Ponds*, she writes, is 'one of a series which records the same place in 1996 before work was done to support the cliffs...' (p.261). She continues, that photography documents environment, and since its beginnings has recorded sites and noted changes due to human presence, and that because of this, 'Photography thus has a role within cultural geography, one that is founded in realist principles, in the credibility of the photographic' (2011, p. 262). The work of Nadav Kander, *Yangtze, The Long River* (2012), is an example of cultural geography and environmental concern that traces the impact of land development on a river, which is a symbol of Chinese culture. Kander states that, "China is a nation that appears to be severing its roots by destroying its past. Demolition and construction were everywhere on such a scale that I was unsure if what I was seeing was being built or destroyed, destroyed or built." (Flowers Gallery, New York, 2012).

Simon Read's photographs record his direct action to ameliorate environmental damage within the landscape, as he collaborates with others to design environments that enable ecosystems to regenerate. His sketchbook drawings and photographic work, such as *Sutton Saltmarsh: Tidal Attenuation Barrier, 2009* (Read, 2011, p. 89), shows an old timber and earth causeway after renovation to protect the saltmarsh shoreline. He writes, 'My approach is coloured by a sense of dismay at our culture's inability to generate a grass-roots understanding of current environmental challenges and the impression that the cultural dimension has been largely ignored in favour of the belief that solutions are down to the application of political pressure to ensure correct governance and hard cash. My view is that it is the duty of the visual arts community to explore ways in which it can re-integrate itself in this debate' (Read, 2011, p. 80). Liz Wells adds that, 'He explores social attitudes to land and landscape pointing to examples where economic and political factors have overridden arguments for the

conservation of particular rural areas' (Wells and Standing, 2011, p.7). In one project in collaboration with the River Deben Association, he devoted his attention as an artist and activist to protect part of the Sutton Saltmarsh opposite the Woodbridge Tide Mill. The result is a structure, which now replaces an older river wall, and will provide protection against erosion of the salt marsh and thereby encouraging vegetation to regrow. This took four years for Read to negotiate and throughout that time he made photographic records and drawings. Such projects blur the line between the artist as photographer, draughtsman, sculptor and environmental activist. He writes, 'My identity as an artist in projects like this is ambiguous. In any such partnership, the question of authorship is not really appropriate, neither should the status of the structure be an issue' (Read, 2016). Read's involvement with the landscape shows is that it is difficult for groups or individuals to claim ownership or a sense of belonging to a landscape because this is inhibited by regulations, which 'tend to be comprehensively applied' (Read, 2011, p. 91).

Political activism is bound up in the work of Conohar Scott, who, in his Doctoral thesis, *The Photographer as Environmental Activist: Politics, Ethics & Beauty in the Struggle for Environmental Remediation*, questions 'how the photographer can play a role in the promulgation of environmental activism' (Scott, 2014a, p. 2). His website, *Environmental Resistance*, includes the following statement, 'The objective of *Environmental Resistance* is to protest against incidents of industrial pollution in the landscape, with projects undertaken on a unilateral basis or in partnership with environmental activist networks. Using the combined skills of its members, *Environmental Resistance* aims to educate, promote and provoke, in order to improve the visibility of the environmental struggles' (Scott, 2016). His photographic images show mounds of earth that are various categories of waste materials from aluminium manufacturing. His publication, *Almásfüzitő: An Index* (2014) gives a graphic portrayal of the aftermath waste of the Almásfüzitő Aluminum Factory in Hungary. Red mud is an industrial by-product from the process of refining bauxite ore into aluminium, which was deposited by the factory into vast ponds at the

edge of the River Danube (Scott, 2014b, Introduction). The book is a protest against the pollution created by the company TATAI and supported by the country's Environmental Protection Authority. The account at the front of the book states, 'The text which follows has been lifted from TATAI's licence, granted by the Hungarian Environmental Protection Authority. The purpose of the text is to illustrate the astonishing variety of toxins which the company are "legally" entitled to 'compost' into the earthen prisms at Pond 7' (Scott, 2014b, Introduction). The text appears on the opposite page of the photograph of the mud hills thereby creating the divergence of text and image as codes to be de-ciphered. The spectator of the image has to become actively engaged with the meanings in both the serialized texts and images. The photographs show the way in which these mounds of earth have been carefully profiled into small hills by tractors and show the intermingling of waste materials. The mounds of earth are small-scale dumpsites that give them a quality of three-dimensionality. All of the photographs show an overcast sky diffusing the light and minimizing highlights and deep shadows. The scale of the mounds of earth is suggested by the tyre tread marks in the mud. His work echoes the end processed of manufacturing in the work of Edward Burtynsky, such as *Oil* (Burtynsky, 2009) or *Urban Mines* (Burtynsky, 1997). Yet unlike Burtynsky's work, these small mounds are photographed from eye level, creating a sense of being a spectator standing within the landscape.

Mitch Epstein's photographic work *American Power* (2009) considers the consumption and production of energy in the United States. He writes, 'I could not ignore energy production, climate change, and an increase in deadly weather...these pictures question human conquest of nature at any cost' (Epstein, 2009, p. 4-5). He connects the impact of energy consumption in America with images of the aftermath of Hurricane Katrina, thereby connecting the two. The photograph, *Biloxi, Mississippi, 2005*, (Epstein, 2009, p. 28) depicts a tree in a garden with the possessions of local householders hanging in its branches. A double mattress is speared onto a branch; a car in mid distance is upside down and mangled, while the interior of a nearby house can be seen, its wall ripped away by the storm. This scene shows that there is another type of

power that equals the American one. Epstein asks us what all this energy is for and he suggests the answer lies in brightly lit hardware stores, or the electric chair. He writes, 'The electric chair in the Moundville State Penitentiary, for instance, might appear incongruous to this series. Yet aside from being an icon of electrical power usage, the chair presses the question: for what exactly are we importing all of this oil, burning all of this dirty coal, and drilling into our oceans and our national parks?' (Epstein, 2009, Afterword, p. 1). Fossil fuel power as well as renewable energy has become synonymous with social and legal powers and he writes that as he progressed through the project after a year he realized that, 'power was like a Russian nesting doll. Each time I opened one kind of power, I found another kind inside. When I opened electrical power, I discovered political power, when I opened political power, I discovered corporate power; within corporate was consumer; within consumer was civic; within civic was religious, and so on, one type of power enabling the next' (Epstein, 2009, Afterword, p. 4).

Contemporary landscape photographic projects appear as collective studies, such as the website *Documenting Britain* (2016), a Scottish web-based collective of artists who are formulating a creative response people and places within the British Isles. The purpose of these artists, photographers, filmmakers, composers and poets is to 'deliver a critical record of the archipelago on which we live' (*Documenting Britain* 2016). Most artists on this website have a synopsis of their work, showing that they are presenting cultural developments through individual autobiographies, and their interest in social and political events. The work is varied, with an emphasis foremost on place; memories, personal, political or social issues, and change. Mostly, it is about the encounter between the artists and society. The various works give an overview of concerns that photographers and artists are engaged in. One member of this group, Iain Sarjeant, photographs the interaction between natural and man-made environments in urban and rural settings. Concerned with human impact on the landscape and also the reverse, where nature regains its hold. He is the founder and editor of *Another Place*, a website which showcases contemporary landscape photography. His project, *Out of the Ordinary: a Journey Through Everyday Scotland* (2016a), shows

his photographic journey through everyday Scotland and how people interact with the built environment. He notices that these places are in a constant state of flux as the natural and manmade world seem to compete for territory. This work does not state its concern for environmental issues but nevertheless shows the impact of the built environment on the natural world. The photographs reveal how the natural world continues to regrow in the cracks between the built materials of the urban sites. His work resonates with my own work in which the natural and built environment struggle and compete. *Document Scotland* (2016) is a web-based group who are photographically documenting changes in landscapes in Scotland. In a recent interview they describe Sarjeant's work as 'poetic responses to the way that modernity and its resultant constructions and overspill have fitted-in and around the hills, rivers and forests that feel intensely familiar to most of us (Document Scotland, 2016). These group initiatives show that photographers and artists are continually reassessing their environment and using photography to record changes occurring in the landscape. Yet although there is a consideration of different phenomena in nature, such as the tidal fluctuations in Luke Brown's work, *Time and Tide Wait For No Man* (Brown, 2014), none of these Scottish photographic projects seem to focus on climate change.

Earth Now: American Photographers and the Environment (Ware, 2011) is an historical survey about photographers' responses to the natural and man-made landscapes in America. The book uses as a reference point the nineteenth century photographic projects of Carleton Watkins and William Henry Jackson, the twentieth century work of Ansel Adams, Eliot Porter and the *New Topographics* project (Adams et al, 1975) and twenty-first century photographers who engage with environmental issues that are current in America. The book shows work that addresses issues such as the human place in the landscape, land and water use, industrial pollution and mounting consumer waste (Ware, 2011, p. 10). Ware states that the context of the work in the book is artistic, 'Despite their social comment, these pieces were made by people who consider themselves artists. Their work is presented, almost without exception, in galleries, museums, and art-world magazines, rather

than being seen in the context of propaganda or advocacy' (Ware, 2011, p. 10). The work reconciles itself with tensions between the natural environment and the built environment, showing adaptations, compromises and even acceptance of the situation. Ware describes the photographers' works in the book as a holistic view, which shows the integration of human ideals about nature conservation and the realities of a man-altered landscape. Ware asks if the role of art in this current situation is a social one and suggests that art is about examining what it is to be human. She writes, 'Just as our scientists work to evaluate climate change and measure the rates of ice melting, so, too, are artists hard at work trying to understand and interpret our present situation' (Ware, 2011, p. 11). The works aim to explore and understand the subject, to pose questions in order to involve the viewer in the inquiry, to create a dialogue to contemplate 'the state of our lives and our culture' (p. 11). The question put by the works is whether we change our habits or keep going the way we are and then face the consequences of our present actions on the environment. The project is seen as one in which artists, photographers, function 'to refine and enliven *perception*' (Wendell Berry cited in Ware, 2011, p.11).

In 2012, the exhibition, *Sense of Place: European Landscape Photography*, represented a range of photographers whose work examined, 'the physical, psychological, and spiritual responses to our environment' (Barnes, 2012, p.16). The message of the section 'North –The Channel / The North Sea' is that the 'political, economic, and social powers of humanity excavate their mark in each of the landscapes...Yet, for each of these photographers, in the final analysis, they imply that nature will prove to be the more powerful and redemptive force. Given time, it will claim all of man's efforts of subjugation, protection, or control' (Barnes, 2012, p.18). The coastline is seen as a point at which rising sea levels will inevitably impact in Carl de Keyzer's series of photographs *Moments Before The Flood*. His photograph, *Vrouwenpolder Nederland* (2012, p. 27) shows a coastline area that signifies an absence of catastrophe, which he believes sets up the tension of the impending danger of rising sea levels. He writes, 'I don't want to photograph the disaster; I want to photograph the disaster waiting to

happen. “Moments before the Flood” is a photographic project about waiting...It makes Europe seem literally restless or “uncanny.” (de Keyser, cited in Wells, 2012, p. 26).

The publication *Broken: Environmental Photography* (Hedberg et al, 2014) is part of an ongoing research project in association with the University of Gothenburg’s Valand Academy and The Hasselblad Foundation, names environmental photography as a new genre wherein artist photographers deconstruct previous representations of the endangered environment, as well as responding to present landscapes. Hedberg et al write, ‘Environmental photography is a field that, from an aesthetic perspective, raises questions about the damaging effects of capitalism on our ecosystems, as well as questioning in more general terms the position adopted by us humans with our culture and economy from which we exert a dominant influence over all aspects of our ecosystems’ (Hedberg et al, 2014, p. 7). The editors, writers and photographers in this project believe that photography can play a part in addressing some of the issues affecting the environment: the exploitation of land and sea for natural resources, financial growth, industrial production, and consumption that are tampering with the earth’s entire ecosystem, disrupting biodiversity, and creating climate change.

Six approaches to understanding what form a ‘new genre’ of environmental photography might take are presented in *Broken* (Hedberg et al, 2014, p. 7). Kate Palmer Albers asks what is at stake when we supplant experiences in the real world on site with virtual reality. She explores through her essay how new technologies and social media such as GPS, Google Maps, Twitter, and Flickr position us with regard to our surroundings, to our environment, and to the landscape. She believes that these technologies are revising our relationship to the environment, particularly in regard to individual and shared experience. Colin Westerbeck discusses the interface between two American photographers, Ansel Adams and Robert Adams, whose works take as their subject matter the landscapes of the Mid West. Mark Klett considers new Topographics, which has been an influence on photographers for the last fifty years. Different modes of investigation are discussed by Liz

Wells. Chris Wainwright discusses the sublime as an aesthetic trope that can be use to portray our contemporary relationship with nature. Anne Noble discusses her project *Bitch in Slippers*, which deconstructs the hero mythology of Antarctica.

In my work, the struggle is situated in the way in which the environment is continually bombarded by human needs, which is leading to climate change because of the depletion of natural resources. The neutrality of the landscape is the curtain behind which the struggles to maintain this landscape are hidden. My work presents a critical photographic record of an area of land that is in the process of changing.

CREATING A TOPOGRAPHY OF SPECIFIC LANDSCAPES

A Man-Altered Landscape

The 1975 *New Topographics: Photographs of a Man-Altered Landscape* photographic exhibition, which came to define a contemporary aesthetic for a new generation of American landscape photographers, has influenced my landscape photographic work in terms of concentrating on details and in identifying how humans have altered the landscape. My work identifies in particular with Robert Adams's photographs. In her essay 'New Topographics' (Adams et al, 2010, p.11-67), Britt Salvesen re-examines the 1975 exhibition originally curated by William Jenkins (Adams et al, 1975). She writes that the photographs have the quality of surveying the 'here and now' (p.11). And although the aesthetic of the exhibited works was originally perceived by Jenkins as, 'stripped of any artistic frills and reduced to an essentially topographic state, conveying substantial amounts of visual information but eschewing entirely the aspects of beauty, emotion and opinion' (Adams et al,

1975, p. 5-7), it can be seen that Robert Adams's work has continued to develop ideas about personal response and beauty within his photographs, that is combined with a topographical approach. A recent newspaper article points out that the unifying theme of the original exhibition was hinted at in its sub-title: *Photographs of A Man-Altered Landscape* (O'Hagan, 2010). In this article Sean O'Hagan noted that, 'William Jenkins's 1975 exhibition rewrote the rules of landscape photography', to 'find beauty in the banal' (2010). He defines this quality of beauty in terms of a mesmeric quality that he finds in a work by Stephen Shore, a colour photograph of an alley in Presidio, Texas (1975) and in the starkness of the printed images mediated by the publication of the updated exhibition of 1975. Otherwise, the photographs remain a banal take on the American landscape of the 1970s (Adams et al 2010). The 1975 *New Topographics* project was associated with a significant shift in attitude toward the landscape as photographic subject and cultural preoccupation. Salvesen (Adams et al, 2010) notes that the photographs show that the artists perceived a challenge in regards to the impact of human construction and consumption on the American landscape. They were interested in the extent to which the landscape could be controlled, and who had responsibility for it.

Jenkins associated the word Topography with its original meaning, 'The detailed and accurate description of a particular place, city, town, district, state, parish or tract of land' (1975, p. 6). The 2009 exhibition widens the context of the photographs to consider concerns such as land use, environmentalism and national identity (Salvesen, 2010, p. 12). The *New Topographics* exhibition in 1975 has since become contextualised and associated with movements and disciplines such as cultural studies and environmentalism (Salvesen, 2010, p.14). Salvesen claims that the background to the development of interest in landscape in the United States was situated in cultural landscape studies, and specifically in the work of Carl Sauer (2010, p.20). She points out that, although *New Topographics* might seem to have captured concerns and contradictions of 1970s environmentalism, the exhibition was not read at that time in this way. The concerns were the incessant terrifying

scientific revelations (about the dangers of population growth, pollution, pesticides, and as the decade wore on, prolific energy consumption) and the contradictions were the beatific publications of The Sierra Club that were published at the time of Rachel Carson's *Silent Spring* (1962) which alerted the public to the pesticides being used on the land. According to Salvesen there was only one reviewer, William Wilson, who observed any connection with the ecology in the show. He pointed out that the photographs reveal the 'critical disdain' of the photographers towards industrial buildings, 'nudging the exhibition toward ecologically based social criticism about the mess man has made of nature, and the mess modern industrialism has made of man' (Wilson, 1976, p. E10). The visual aesthetics of the works from the *New Topographics* exhibition (Adams et al, 1975) have been described as epitomising the paradox of indifference by 'being boring and interesting' at the same time (Salvesen, 2010, p.37). This contradiction surrounding the visual references in the photographs, writes Salvesen, can be situated in the fact that many artists, and I think that the indication here is predominantly male artists, in the 1970s cultivated a detached stance towards their subject matter as a form of expressive power to create interest in the subject matter.¹⁴ This could be because they had no alternative visual aesthetic and so the photographers applied practical reasoning 'to produce unassailably objective images' (Salvesen, 2010, p. 37). Salvesen locates an indifference towards the landscape subject matter in that the photographs were a direct record. She identifies this approach as 'equivalence relation' that she describes as involving various qualities of symmetry, reflexiveness and direct engagement with the subject matter (Salvesen, 2010, p. 37).

¹⁴ Could it be that there was a crisis of the male gaze that is indicated in the *New Topographics* photographs (Bright, 1993)? Second wave feminists in America were increasingly finding a voice within the arts during the 1970s in such works as Judy Chicago's *The Dinner Party*, 1974-79 (Brooklyn Museum, 2016) and Ana Mendieta's *Siluetas Series*, 1973-77 (Museum of Contemporary Art, 2016). However, Robert Hirsch has pointed out that there was work being made in the 1970s that showed ideals of the 'picturesque and sublime' (Hirsch, cited in Nordström, 2010, p. 76).

The sense of indifference in *New Topographics* as a mode of aesthetic interest is in part due, according to Salveson, to the works' constituting the notion of being a survey, which was in turn connected to historical archives of the U.S. Geological Surveys of the nineteenth century. These photographic collections were held at George Eastman House and published in books such as *T.H. O'Sullivan: Photographer* (Newhall, Newhall and Adams, 1966) thereby setting up an argument for a lineage of photographic history that reinforced the idea of the camera's ability to record objectively. The photographs were associated with the U.S. Geological Survey photographs of William Henry Jackson¹⁵ and Carlton Watkins¹⁶ wherein style was suppressed in order to produce detailed studies of the land (Salveson, 2010, p.37). This tactic was continued by John Szarkowski who was the director of the department of photography at The Museum of Modern Art, New York from 1961-1991. Salveson notes that at the time of the 1975 *New Topographics* exhibition John Szarkowski advanced the theory supporting the notion of the photographic medium's capacity for objective representation. In his book *The Photographer and American Landscape* (Szarkowski, 1963) he wrote of the U.S. Geological Survey photographers: "The nineteenth century believed – as perhaps at bottom we still believe - that the photograph did not lie. The photographers themselves, struggling to overcome the inherent distortions of their medium, knew that the claim, strictly speaking, was false; yet, with skill and patience and some luck the camera could be *made* to tell the truth, a kind of truth that seemed – rightly or not –to transcend personal opinion." (Szarkowski, cited in Salveson, 2011, p.38). Salveson points out that William Jenkins, the curator of *New Topographics* was aware of these collections, although he became unconvinced about whether there was such a thing as a "perennial style" in photography (Jenkins, cited in Salveson, 2011, p. 38).

¹⁵ From 1870-78 (University of Chicago Library, 2016)

¹⁶ Watkins became official photographer for the California State Geological Survey in 1865 (John Paul Getty Museum, 2016).

New Topographics has an historical association with mapping the land and Salvesen notes that there is a connection with the old and new, in the defining title of *New Topographics* (2010, p.39). Andy Grundberg suggests that *New Topographics* was set up as an alternative fiction to the one created by Ansel Adams, which was about presenting the national park of Yosemite as wilderness, rather than carefully tended and supported parkland. He writes that 'Photographers following in Adams's footsteps...saw through this ruse and devoted themselves to an alternative fiction...what Ansel Adams chose to make implicit: that the natural world is less beautiful with human presence' (Grundberg, 2005, p. 2). However, within the new exhibition curated by Salvesen it is noted that Robert Adams's more recent photographic projects such as *Turning Back* (2005) can be seen to share some of the environmental concerns of Ansel Adams, such as a belief. Salvesen writes that what initially connected the two photographers was their awareness that humans have marred the world and also a belief in 'the redemptive power of the Western light' (2010, p. 44). John Rohrbach supports the same notion that the photographers of *New Topographics* can in retrospect be seen to have been emphasising a nuanced relation between the humans and the land. He writes:

By drawing attention to the contemporary landscape, the *New Topographics* exhibition broke substantially from the outlook of Ansel Adams and Eliot Porter that had dominated landscape practice over recent decades. Where Adams and Porter defined landscape as separate from humanity, to these younger photographers, nature and humanity were interwoven. Even Robert Adams, who most closely

sympathised with the outlooks of Ansel Adams and Porter, asserted that detritus by the side of a Colorado road or river was as much a part of the landscape as grass and trees and mountains. Many of the *New Topographics* photographers recognized that broad economic shifts were changing the face of the land, and they were interested in drawing attention to the bland, repetitive appearance of the results (Rohrbach, 2013, p. XVII).

Therefore, *New Topographics* raised the question of 'style' in photography (Jenkins, 1975, p. 5). All works, except for Stephen Shore's colour photographs, were monochrome prints yet Britt Salvesen points out that a feature shared by *New Topographics* photographers was that the prints were 'straight', exhibiting sharp focus, tonal range, minimal grain and full-frame printing. She writes that 'Shore's pictures stood out as the only color prints in *New Topographics*, but were otherwise compatible with the other works in the exhibition in terms of subject, scale and affect. Max Kozloff observed that Shore's color, suave and beautiful, was also assertive and unforced. In other words, color could be just as cool as black and white' (Salveson, 2010, p. 48).

Uniformity of subject matter can also be observed. The nine bodies of work reveal patterns, trace resemblances, or gather types. This 'straightness', according to Robert Hirsch, is in contrast to other 1970s photographic representations of the landscape that conveyed the aesthetic of 'romantic notions of the picturesque and sublime' (Hirsch, cited in Nordström, 2010, p. 76). Kelly Dennis notes that, 'the laconic irony of many of the photographs preserves their romanticism...while reminding us of the true definition of nostalgia – to long for a version of the past that never truly existed' (2005, p. 4). Despite of, and

possibly because of these contradictions, between romanticism and straight photographic aesthetics, the 'style' of *New Topographics* is one that has continued to dominate contemporary landscape photography in America and Europe since the 1970s.

Alison Nordström conducts a survey of New Topographics since 1975, noting that 'The 2008 exhibition and publication *Nature as Artifice: New Dutch Landscape in Photography and Video Art*, is a major survey of contemporary Dutch landscape photography, featuring work by Hans Aarsman, Wout Berger, Edwin Zwakman, and others, most of whom claim *New Topographics* as a major influence, as does the exhibition curator Maartje van den Heuvel' (Nordström, 2010, p. 78). Exhibited at George Eastman House at the same time, *Nature as Artifice* was the counterpoint to the reconstructed New Topographics exhibition curated by Salveson 2009-2012. The exhibition *Nature as Artifice* notes its context in relation to Dutch seventeenth century painting because, according to the directors of the publication, the works are 'a new and powerful visual statement from this low-lying land: this time about contemporary landscape, portrayed in contemporary media and using contemporary perspectives and styles' (vd Heuvel and Metz, 2008). In her essay, 'Beauty is not the issue: so what is?', she points out that, 'The goal seems to be to open our eyes to a new reality through an objective confrontation with the landscape as we have shaped it, warts and all. The tone is one of ironic, amused commentary, seemingly objective and characterized by the absence of a judgemental attitude' (Metz, 2008).

REVISITING THE LANDSCAPE OVER TIME TO DOCUMENT CHANGES

The 'Rephotographic Survey Projects'

Mark Klett and Byron Wolfe were engaged in their Rephotographic Project Survey (RPS) *Second View* (Klett and Manchester, 1984) at the same time as the *New Topographics* exhibition, in the 1970s (Wells, 2011, pp. 129-133), and although their aims were different to *New Topographics*, their work intersected, in that theirs was a re-photographic survey of the American West, revising and making work in the original sites of great expeditionary photographers of the nineteenth century such as William Henry Jackson, T.H. O'Sullivan and William Bell (Klett et al, 2004). The 1970s preoccupied Mark Klett and his associate team of rephotographers in the exercise of collecting nineteenth-century photographs of the American West. Eric Sandeen points out that 'Klett carefully updated iconic photographs by finding the precise camera position of nineteenth-century shots and making his images in the same format, at the same time of day and seasonal angle of sun, in order to show both changes in the landscape and the subtle manipulations that had created a national anthology of views of the west' (2009, p.105). Klett and his associate photographers working on the *Second Sight* survey did not duplicate any of the views. Their Rephotographic project is viewed as a dialogue between the new photograph and the original, and between the rephotographer who engages by responding 'to the setting as it now appears' (Kumar, 2014, p.2014).

Third Views: Second Sights (Klett et al, 2004) 'began with questions [such as] what has happened to the land in the last twenty years?' (Klett et al (2004, p.8). The project 'was designed to address issues of representation, popular western mythologies and the ever-changing relationship between nature and culture' (Klett, 2004, p. 4). The idea of representation is connected to Klett's idea of what a landscape photograph is about. Their meaning, he believes, 'concerns our essential connection to place, to each other, and, most important, to time' (Klett, 2004, p. 1). Klett notes that the RSP fieldwork found

that landscape photographs are the result of interaction between the landscape, personal experiences and cultural influences. The 'Field Notes' essay by William L. Fox reveals some of those personal experiences and cultural influences. His diary, written over twenty-three days in a self-reflexive manner, unravels the minute details of the team's daily experiences. His hope is that the reader will connect with both the writing and the photographs in order to connect with the team's experiences. He writes,

'Saturday July 4, 1998 – Logan Springs, Nevada. 10:30 A.M.: We wait for light to fall on the cliff as it had for the first photograph more than 125 years ago, in the meantime exploring the nearby stone house. The first view photo shows a settlement of several buildings, and it looks as if this one was expanded with stones from the others.

The original purpose of the town is unclear to us - no mines, logging operations, or corrals are visible. The house, its ceiling taking a slow, entropic dive onto the floor of decaying shag carpet squares, is full of religious tracts, political advertisements, and women's stockings' (Fox, 2004, p. 197-8).

The working notes of Fox are accompanied by photographs of what is referred to in the text and creates an insight into the reactions of the photographers as they progress through the project. The reflections and photographs seem to set the tone for the rest of the project. In the text accompanying the rephotographs of Logan Springs (Klett et al, 2004, p.81), Klett

notes that this site represented ‘an evolving concern for the project: to visualize how the past, present and future overlap at common points in space’ (Klett, 2004, p. 81). The scene is suggestive of a few narratives that feed the viewers’ imagination about the question of why was this site abandoned, apparently abruptly, with the inhabitants leaving behind many possessions. Klett notes that details such as this challenge historical ideas about a place. A photograph of the original site, taken by Timothy O’Sullivan, ‘Water Rhyolites Near Logan Springs, Nevada (U.S. geological Survey), 1871’, is juxtaposed with a new black and white photograph using the same format camera (Pages 82-3). A comparison of the two photographs shows that some details of the landscape remain the same, although it can be seen that there has been some erosion of the surrounding rocks and hills. The shape of the land has changed over time, as there seems to have been some sort of geological shift, caused by humans or by the process of time, as the rock definitions have slightly altered.

The work carried out in *Third Views* (2004) is of particular relevance for my work, as a working process and method by which to gather information to create the final project. I have already begun to make notes, take digital camera snapshots, and walked around the area near the main site of the large format photograph, to make small video records of some areas. As a research method, this seems to define the larger project by connecting personal responses of the photographer to cultural meanings within the landscape, as well as the broader concerns of the main project. There are two key features of their Rephotographic Project Survey that are of particular relevance for my practice research. One is the idea of making a survey of the land in order to discover how it has changed through time. I have revisited the landscape in order to rephotograph changes that have occurred, and this part of the methodology will be continued in the future. What the two photographs mentioned above show is that small changes in the landscape can be viewed over time and these changes can, if researched in more detail can be connected to climate change, to show how an area is affected by changes in water supply, drought or pollution, all of which are connected to changes in the climate. Klett writes that, ‘We also believe that the West is a

micro example of land and environmental issues that affect many parts of the nation as well as other places around the world (Klett, 2004, p. 9).

Mark Klett and the RPS (Klett et al, 2004) also used archival information as part of their exploration of the landscapes they rephotograph. Klett writes that 'other questions that engaged us concerned the people we met through fieldwork...we found that every site has human stories...The intimate knowledge of a region by its residents has changed the once common view that the west is empty geography' (Klett et al, 2004, p. 9). This is an important point, because people who live within the land have an insight into and knowledge of their locality that may stretch back for generations. I found that in some of my interviews, people discussed the land in terms of their families and, having lived there for some time, had perceived gradual changes in weather patterns. This was not scientific evidence, but was nevertheless important in terms of understanding people's perceptions about climate change and the narratives that were used to either prove or disprove changes over decades (Appendix 4, Interviews). The RPS is a dialogue between the new photograph and the original, between the rephotographer who engages by responding, 'to the setting as it now appears' (Kumar, 2014, p.143). However, as Liz Wells has noted, giving as an example the earlier work in *Second View* (Klett and Manchester, 1984), 'despite repeated attempts, the research team found themselves unable to produce the original image due, presumably, to slow geological shifts and to climate change' (Wells, 2011, p.130). This has implications for my research, as it shows that some landscapes can change completely over a longer period of time and this has implications for taking further photographs at Pevensy Levels.

Examples of photographers' works: A Survey of Places and Environmental Concerns

My photographic research at Pevensey Levels has taken place over three years, during which time I have made repeated excursions to the landscape to look for signs of climate change. This has meant getting to know the terrain of the landscape by walking around it, and making notes, taking digital photographs, making short videos and meeting and interviewing people. I had to be disciplined in making the distinction between locations that seemed to contain the information that I needed to photograph for the purposes of my research and places that I found seductive for their picturesque qualities, colour and lighting. The ways in which humans occupy the land has a direct influence on its appearance and I chose this as a particular focus of my work. In a similar, but extreme way, human occupation of the land in Robert Adams's project *Turning Back: a Photographic Journal of Re-Exploration* (2005) shows how destruction of the land by mechanical means has depleted the forested environment in the American Northwest (Adams, 2005). The aftermath of deforestation in his work resembles the effects of war on the landscape, as in Sophie Ristelhueber, *(W)est (B)ank* (2005), or Roger Fenton's Crimea War photographs (1988). In his work, *Clearcut, Humbug Mountain, Clatsop County, Oregon, 1999-2003* (Figure 35) trees that once formed a vast forest of ancient evergreens are now razed to the ground. The work demonstrates what has been lost, what remains and what is at risk of being further destroyed in the landscape of Oregon. The photographs show a landscape that is linked to the emptiness of those destroyed by war or natural disasters. However, I chose Pevensey Levels as a site of investigation because it is an unassuming landscape where it appears, on the surface, to be unchangeable. I found that the marshland and seafront area are intensively managed to create this sense of immutability. In revisiting this landscape, I became emotionally attached to it. Likewise, for Robert Adams, his project, *Robert Adams: a Road Through Shore Pine* (Adams, 2014), was a return to a trail where he had walked with his family, and it is a landscape replete with memory and emotional ties for Adams.

The tree-lined road leads to a sandy beach on the coast of Oregon, USA. Although climate change is not suggested by the accompanying text in the book, there is a sense in which the photographs could be used to refer to time, change and memory.



Figure 35.
Photographer: ROBERT ADAMS
Title: *Clearcut, Humbug Mountain, Clatsop County, Oregon, 1999-2003.*
© Robert Adams, courtesy Fraenkel Gallery, San Francisco.



Figure 36.
Photographer: ROBERT ADAMS.
Title: *Nehalem Spit, Oregon*, 2013.
© Robert Adams; courtesy Fraenkel Gallery, San Francisco.

The notion of landscape transformation over a period of time is important to my practice and I have been influenced in this way by the work of Jem Southam (2000; 2007; 2012). His work is a survey of the land because he returns to a place to rephotograph the same areas, and because, as Gerry Badger points out, he aims to find a narrative about a landscape and the human attachment to it (Southam, 2005, pp. 125-131). In *Rockfalls* (2000), Southam represents the slow erosion of the geology at the edges of coastlines. His project is situated in both the South of England and in France. Martin Barnes comments that 'By choosing to photograph locations on the English south coast as well as their counterparts on the Normandy coast, his photographs make links from the island across to the continent' (2012, p.17). In *St. Pierre-en-Port, November 2005* (Figure 37), an image from that project - nature and time, along with the elements of water, wind and air contribute to the decline of the landscape, caused by the process of weathering as well as climate change. The erosion occurs as part of the ongoing weather conditions along the coast, and these rockfalls resonate with the notion of sea surges and rising sea levels; a consequence of climate change. Surfaces, textures and colours are important to convey the idea of erosion, and these photographs suggest that there is inevitability about the way in which all things have a life span and a time scale. The notion of decline, both human and geological, can be read into the images, and yet, ironically, time is stilled by the photographic image. Ian Jeffrey suggests that the colour and metaphoric attributes of the work allow the photographs to be read slowly. He writes, 'This is important in Southam's overall aesthetic, with its dependence on suggestion and discovery - even of uncovering by slow degrees' (Jeffrey, 2000: 3).



Figure 37.
Photograph: Jem Southam
St. Pierre-en-Port. November 2005/2008
© Jem Southam

In *Footprint: Our Landscape in Flux* (2008), Stuart Franklin documents the impact of climate change across Europe. Franklin writes that, 'After looking at the unsustainable landscape of Spain's horticultural industry, I started to look for signs of climate change impacting on the landscape or affecting the way we adapt to living in it' (Franklin, 2008: 7). He writes, 'As the work progressed, I became more interested in the detail of the landscape, especially the foreground detail... I was keen to focus the eye – my eye, the viewer's eye - on the human impact on the environment, and on our footprint as we walk into the landscape, to see how it is changing (Franklin, 2008, p. 6). He comments on 'how the absence of human figures can be used to great effect' (Pföhler, 2008, p 10). In one sense, this associates his work with other photographers who also use the absence of the human figure in their photographic work, such as Richard Misrach, whose *Desert Cantos* series 'present landscapes of an eery beauty' and Edward Burtynsky's concern with "Manufactured landscapes" (p.10), although people are visible in the *Shipbreaking* photographs (Burtynsky, 2003, pp. 133-149). In another sense photographing the landscape without people prioritises environmental concerns. Heike Strelow suggests that the subjects in the foreground, which then take precedence over other information, can suggest the transformation of a landscape. These foregrounded subjects include, 'Dead trees, melting ice, wind turbines, regions under construction, flooded areas' these scenes, he believes, emphasize processes and together with a plethora of images that already exist in the mind of the viewer, each of his images becomes a powerful symbol with the natural world in the foreground (Strelow, 2008, p.11). The natural world, that is, that has been affected by the impact of industrialization and globalization. Strelow writes, 'The leading role is played by the landscape, the environment itself' (2008, p.10).

Thomas Struth's *New Pictures from Paradise* (2002) shows areas of ancient forest. 'He began to research forests and jungles around the world, using trips to China, Japan and Australia, often scheduled for other reasons, to seek out possible locations. The first eight of the Paradise pictures were made in the tropical rainforest in Daintree in the northeast of Australia in 1998. Struth then made several works in Yunnan province in China, on the island of Yakushima in Japan, and in the forests of Bavaria, Germany, in 1999' (Lingwood and Bezzola, 2010). Struth claims that the photographs are about pictorial qualities relating to classical painting, 'Whilst a small number of these pictures reprise the compositions of classical landscape paintings, with foregrounds, vistas and horizons, most of them position the viewer before a screen of forest or jungle that includes a plenitude of details of nature without offering any hierarchy or structure to the viewing experience' (Lingwood and Bezzola, 2010). Struth comments that, "Although they have a strong feeling of time, they are ahistorical. One sees a forest or a jungle but there is nothing to discover, no story to be told. They have more to do with the self. The viewing process is complicated, and the viewer becomes more aware of how he or she is processing the information, heightening an awareness of the here and now" (cited in Lingwood and Bezzola, 2010). Lingwood and Bezzola point out the motifs of trees and plants within specific forests denote the idea of cultural identity. With echoes of Simon Schama's ideas about landscape and memory (1995), they write, 'The photographs made in the rainforests of Peru and Brazil connect with the idea of an exuberant Latin American culture whilst the works made in the pine forests of Bavaria draw on the formative importance of the motif of the forest - 'Der Deutsche Wald' - in German art and literature' (Lingwood and Bezzola, 2010).

Struth's photographs are picturesque images on a large scale showing varied hues of intense green and a lush fecundity of forest growth. This gives a sense of being engulfed by the forest landscapes. However, the lack of references to the wider environment in the work might emphasize the exotic and picturesque qualities of the images rather than imply an unstable ecosystem. The political information about the ideas surrounding Struth's *Paradise* photographs varies. On the one

hand, an online overview of his work, set up with corporate banking support, named *thomasstruth32.com* indicates that ‘He was more interested in the kinds of observation, contemplation or experience that the works could stimulate and a melancholy reflection at the turn of the millennium as to what kind of utopian or progressive thinking might be possible after the end of the Cold War’ (Lingwood and Bezzola, 2010). Within the website *thomasstruth32.com* he understates the *Paradise* photographs’ connection to climate change, and underlines that he chose the title to communicate, ‘that the pictures were not primarily focused on botany, nor some kind of elegy for a paradise lost’ (Lingwood and Bezzola, 2010). The images are nonetheless provocative in that the title connects them to the idea of a paradise. Yet in an essay in the monograph *New Pictures From Paradise* (Struth, 2002) Ingo Hartmann notes the connection between actual rainforests, their destruction and their redemptive power for earth’s existence and Thomas Struth’s intention that his photographs will have benefits for life by ‘using beauty as an entry vehicle’ and that ‘For humanity as a whole, the rainforests are one of the most important natural resources the earth has to offer’ (Hartmann, 2002).

The series has been situated in comparison with Struth’s urban photographs: ‘In unleashing all that the initial series repressed – color, the exiled public, the inaccessible interiors, and the landscape beyond – these successive series redefine the framework of the urban streetscapes...Through such interworkings, Struth’s four series produce what I have elsewhere detailed as a complex matrix structure of human urban sociocultural production’ (Last, 2010, p. 64). Indeed, it cannot be denied that the urban and forest regions are intricately connected (Langston, 2009). Struth’s work connects with other contemporary landscape photography about the environment by his focus on the state of the forests and jungles; his photographs were included in the ‘Plants’ section of *Vanishing Landscapes* (Barth, 2008), a compilation of photographic work, which is aligned to the idea of climate change. The key to understanding the presentation of the photographs in this book is in the statement given by Friedrich Tietjen: ‘There is no doubt that a book containing photographs like these is part of the

commodification of the landscape. But unlike the photographs in glossy magazines, holiday brochures and publications on environmental protection, they avoid the moralizing tone which...places landscape photographs in the service of a good cause, even if that cause is one of relaxation' (Tietjen, 2008, p. 10). A moralizing tone is strategically avoided in Struth's work by the contrast between the images as both pictorial representations of an imagined paradise and as iconic reminders of scientific research, newspaper and television reports about the destruction of rainforests and how that is contributing to climate change.

Topographical and Morphological Representations of Landscape Transformation

The Pond at Upton Pyne, by Jem Southam (2005), is a series of photographs taken between 1996-2003, which shows a small pond at the centre of a photographic narrative about how, over time, an area of land is transformed. The pond is an abandoned manganese mine, on a plot of land in Devon, which undergoes changes over time due to neglect and then the efforts of two residents, who have tried to turn it into an area of relative tranquillity. Some photographs are shot from approximately the same place at different times of the year to show how the weather and seasons have affected and changed the area. Two photographs, (*diptych*) *The Pond at Upton Pyne January 1997*, were exhibited as part of the 2011 exhibition *Romanticism Gets Real*, at Tate Britain. The two images show the panorama of the area near the pond, during a frosty season of weather (Figure 38). Gerry Badger notes that there is a strong narrative in the work, a 'tendency toward seriality and a debt to *New Topographics*' (2005:125). Southam returned to the same landscape over a number of years, to record its subtle changes. Human management has engineered these changes, but the photographs also reveal the area's unique microclimate. Southam states that, "Part of the reason I get attached to a place is because it gives me a picture-making problem to solve. And also, it speaks to me in some deep, unconscious way." (Badger, 2005, p.130). In a similar way, the landscape at Pevensey Levels initially moved me to photograph it because of the smells, the wind in the air and rustle of the

reeds, as well as the bird song. It was an inner area of land that is relatively calm compared to the outskirts, which in comparison, are noisy and busy. It felt to me as if this area of land was something special that I could relate to. In re-visiting the area over time, I began to discern its implications for climate change.

Although Southam's project was not intended to focus on climate change, it is apparent that his approach is valuable for consideration in terms of making photographic representations of a place, and recording changes that occur as the result of climate change. In this way, Southam's project has influenced my photographic research, my observations of the landscape, and documentation of places, in terms of returning to the same area to take photographs. However, my work has not followed the same topographical approach as Southam. I have not concentrated on one small section of the landscape, and I have not returned to individual areas as frequently. Instead, my project has considered a wider area of the landscape, in pursuit of spaces where the phenomenon of climate change has emerged. As Southam's work shows, it is by revising an area that the features of the land become clearer and that is often due to the changes in the morphology of the land. My work shares with Southam the same indicative response to taking a photograph of the landscape, in that I search for areas where people change the land and the land responds to those changes. The presentation of the two images juxtaposed together is a presentation method that I would use for some of my photographic work, in particular the two images of the drained ditch at Down Level, 9 November 2013 (Bream, 2015, Plates 15 and 16).



Figure 38.
Photograph: Jem Southam
The Pond at Upton Pyne, January 1997
From the series: *The Pond at Upton Pyne*
Photographs (diptych)
Width 85 cm x height 68 cm
© Jem Southam



Figure 39.

Photo: Timothy O'Sullivan.

Larger Soda Lake near Ragtown, Nevada, 1867.

Image: Courtesy of the U.S. Geological Survey, Department of the Interior/U. S. Geological Survey.

The USGS home page is <http://www.usgs.gov>.

© Timothy O'Sullivan and The U.S. Geological Survey.

(See also Klett and Wolfe, 2004, p. 89).

THE SIGNIFICANCE OF USING ARCHIVAL INFORMATION AND IMAGES

Documenting A Changing Landscape - Joel Sternfeld: Oxbow Archive:

In a similar way to Mark Klett's Rephotographic Survey Project (2004), Joel Sternfeld's *Oxbow Archive* photographic project (2008) reconsiders an ancient American landscape to determine the character of the place and to document the impacts of climate change. Gretel Ehrlich writes, 'He battles feelings of powerlessness as he contemplates the extinctions and the radically altered landscapes we face with the changing climate' (Ehrlich, 2008, p. 76). Her essay reveals that Sternfeld's work takes place in one field throughout a year, where minute changes in the landscape are photographed. There is no specific narrative, except for the recording of the character of the field, 'Ripples of change cast spells on its surface. Tides of snow and light wash up and retreat. Ice thickens and melts. A passing deer leaves tracks. The pastoral ideal is dead...There is only this place and its moods' (Ehrlich, 2008, p. 76). Sternfeld represents a landscape in Northampton, Massachusetts; it was painted in 1833 by Thomas Cole, called *View from Mount Holyoke, Northampton, Massachusetts, After a Thunderstorm (The Oxbow)*. Although we are constantly reminded of the terrain in the panoramic view painted by Thomas Cole, Sternfeld's gaze, from ground level, reconsiders the landscape in the light of the potential annihilation of the earth by humans (Figure 40). Luhring Augustine Gallery comments that, 'When Thomas Cole painted the Oxbow, he meant it to be a warning about "progress" in the form of clearing of wilderness for farms and factories. Two hundred years later climate change may prove Cole's concerns valid – and the seasons may never manifest themselves the same way in this field again' (Luhring Augustine, 2008). An image of the painting by Cole appears in the book and this contextualizes the idea of change through time, as well as the similarities and differences between a nineteenth century view of the landscape compared to a 21st century one, where

details of the landscape morphology are specifically revealed and fill the frame of the photograph. The map at the back of this book locates the areas.

The atmospheric conditions in the painting by Cole, with its reference to the weather in its title, are echoed in Sternfeld's work. Clouds and mists convey the climate of this specific environment, and evoke the interrelation of land with the water cycle. It is within the activism of the earlier photographic project, *When it Changed* (Sternfeld, 2008) that Sternfeld joins his political activism with a poetic response to landscape in the *Oxbow Archive* project. Comparable to my photographic landscape photographs, 'Each of Joel's images gives us a single taste of a threatened whole' (Ehrlich, 2008, p. 78). He also searches for the visible and the invisible in his landscapes. Ehrlich points out that Sternfeld asks, "What are we seeing when we look at a photograph? What aren't we seeing?" (Ehrlich, 2008, p. 78). In Sternfeld's work, and also in Jem Southam's landscape photographs, there is an allusion to mists, and vegetation, weather and human interventions that establish the visibility of climate change, as well as a suggestion about what is not visible. Sternfeld's photograph, *The East Meadows, Northampton, Massachusetts, November 17, 2007* (Figure 40), could be compared to my photograph of an area of Pevensey Levels, *Sluice Gates, Rickney, after Snowstorm, 15 March 2013* (Figure 69), as a record of a place which will be rephotographed to identify changes. In my work, short-term change can be seen in the similar image taken over a year later on 19 November 2014 (Bream, 2015, Plate 34). Within Sternfeld's work, the landscape grafts itself into the psyche of the photographer. He comments that, "This field is taking over my life" (Sternfeld, 2008, p. 79). In a similar way, the presence of the Pevensey Levels landscape has grafted itself into my own psyche, so that all other landscapes are compared to that one. In this way, archival work takes on a different significance. It is the supplementary images, notes and recordings, collected at the time at which the main photograph was taken, that inform the project, and it is also the layers of previous and future works, which can inform and contextualize each other.



Figure 40.
Photograph: Joel Sternfeld
November 17, 2007, The East Meadow, Northampton, Massachusetts.
Negative: 2007; Print: 2008
Digital C-print: Edition of 3 and 2 artist's proofs, 72 x 88 ½ inches (182.88 x 224.79 cm).
© Joel Sternfeld; Courtesy of the artist and Luhring Augustine, New York.

Jem Southam, *The Painter's Pool* (2007)

I have used several artifacts, such as copies of paintings, in my search for images of the vistas across Pevensey Levels. One of these is a drawing by J.M.W. Turner (See Figure 17, *Herstmonceux and Pevensey Sketchbook, Landscape with Trees*). In this sketch, the white chalk seems to imitate mist, which in turn stimulated the idea of including a photograph in the project, around the idea of polluted air (see Bream, Plate 51). When returning to Pevensey Levels in the future, I envisage widening my area of investigation to search for and include parts of the landscape portrayed by paintings made at Pevensey Levels (Appendix 7).

Jem Southam has used painting as a starting point in his work, in *The Painter's Pool*. (2007). The work seems to show the pool within the woodland, in a 360 degree turn, as Southam moves the camera to photograph the landscape. The pool is central to the subject of the images, even though the woodland appears to dominate. The skyline is barely visible and this creates a space which focuses on the tangle of trees, branches and leaves. The photographs suggest the life of the woods dramatically unfolding, as the seasons are shown exposing this space to dampness, rain and mist. The images rarely show the area as a dry and parched place. The images sit in a luxurious world of browns, greens and misty blues, reminiscent of the colour palette of John Constable. There is precision and care in the way that the tangle of the branches has been framed, and this is matched by a coolness of observation, which is situated in the detail of the photographs. The photographs are a memoriam, a continuum of the paintings of this wood started by Mike Garton. Southam weaves a narrative through his photographic and written work, and stories appear to be the most important part of his observational journey. Garton had an aesthetic approach to his painting that seems to have influenced Southam's decision to take photographs there. Southam writes. 'The series of pictures grew initially from an attempt to see how the photographic medium might be used to deal with a similar set of concerns to those he had pursued through painting' (Southam, 2007, p.1). At the end of the book, there is a

dedication to the painter, whose woodland working place is described as a cloister, as he had worked alone. This evokes a sense that the woods act as a sanctuary for quiet meditation and repetitive work as if marking time through an almost religious observance of returning again and again, year after year.

Alternatively, my photographic work has not fixed on one small area of land, but has focused on different parts of one landscape, which is 50 square kilometers in size, in order to connect them in a matrix of associations with climate change. Whereas the narrative of Southam's work appears as a journey across or in a circle, my journey appears as a carefully distributed range of images, which are held together by an identification of the impact of climate change. However, each point at which I have taken a photograph can act as a catalyst for a deeper study of the same area over a longer period of time, to show the changing of the seasons. Searching for marks of climate change in the landscape of Pevensey Levels may have been constrained by the subtlety of visual evidence, but in the final project of the book, the textual headings hold this arrangement of images together as a whole project.

THE PHOTOGRAPHIC LANDSCAPE AND SPECTACULAR IMAGES, GRAND NARRATIVES AND GRAND EXPANSIVE VIEWS.

Stephen Vaughan, *Ultima Thule*, (2004-2007)

The work of Stephen Vaughan (2008; 2015a) bears a relation to the idea of the photographic spectacle and its role in conveying the notion of climate change as a catastrophic event. The contemporary effect of climate on the arctic and Icelandic regions is the focus of Stephen Vaughan's work *Ultima Thule*, 'Untitled' 2004-2007' (Figure 41). The photograph indicates the processes of glaciation, melting ice and fragmentation of the landscape in this volcanic area of Iceland in the winter. The project, *Ultima Thule* is inspired by an ancient voyage by Pytheas, who set out to discover the outer regions of the earth, and the human need to continue such explorations. When I first saw this image in Vaughan's MA Degree show exhibition at Brighton University, the large scale of the printed work made it difficult to comprehend whether the object was man-made or natural, digitally manipulated contrivance or found object. The ambiguity of this work rests on its large-scale presentation, which allows the image to become part of a grand narrative about climate change. The photograph was made with a large format camera, and therefore reveals details within the geological materials of volcanic sand and beached ice shard. The photograph adheres to an aesthetic of the beautiful and the mythical story behind the journey to Iceland, and the thorough planning beforehand. Vaughan writes that, 'My photographs depict some of the rawest and youngest surfaces on Earth, allowing the viewer to imagine the prehistoric beginnings of the landscape, void of any human presence or history' (Vaughan, cited in Photofusion, 2016). Photofusion Gallery comments that, 'It is difficult to look at these images without being conscious of the recent predictions of global warming, which have heightened our awareness and fear of the Earth's volatility and fragility. Vaughan's images draw directly upon these anxieties, echoing concerns that have arisen in art practices since the

19th century, about the end of nature and the end of history' (Photofusion, 2016). But perhaps what is most astonishing about the photograph of the shard of ice is its relation to the notion of photographic hyperreality, which David Chandler indicates in his essay when he writes, 'But what appears in Vaughan's photograph barely coheres as a natural phenomenon or even as a material object; rather it remains something miraculous, an apparition from beyond conventional sight...a measure of the distance between us and the conditions under which it was formed' (Chandler, 2011). The scale, detail, colours and subject matter of the photograph create ambiguity about the subject's relation to reality. Also, the image advances the debate about the visibility of climate change where, 'climate change is invisible to sheltered, ecologically naïve urban Westerners but visible to ecologically savvy indigenous people, nature workers, and frontline communities' (Rudiak-Gould, 2013, p. 121). Climate change might appear in this way to be distanced from urban dweller's experiences about climate change. However, the photographer, as active observer and recorder constructs a personal authority to speak about climate change as visible photographic evidence.



Figure 41.
Photograph: Stephen Vaughan
Untitled, from the series *Ultima Thule 2004-2007*
Source: Stephen Vaughan Website:
<http://www.stephenvaughan.co.uk/>. (Accessed 2 July 2015).
© Stephen Vaughan

Edward Burtynsky: Manufactured Landscapes: Aerial Viewpoints

My photographic work shows an ordinary landscape in the south of England. I chose this landscape specifically because it stands in contrast to other photographic work carried out on a large scale. It could be said that landscapes such as those depicted by Mitch Epstein (2009) or Edward Burtynsky, are dominant the field of landscape photography. Their photographs show landscapes that are inaccessible to the average person. The spectacular pictorial subject matter and large scale, seems to eclipse other landscape images that reflect less dramatic yet equally insidious signs of climate change. An example of a grand narrative in climate change photography can be found in the work of Edward Burtynsky (Burtynsky, 2003; 2005 and Baichwal, 2006), in his representations of spectacular raised viewpoints that aim to reveal the landscape as a manufactured place. *Rock of Ages No. 17, Abandoned Granite Section, E.L. Smith Quarry, Barre, Vermont* (Burtynsky, 2003, Plate 20, p. 85) is photographed from a raised viewpoint and this transforms the fabric of the landscape into a construction of abstract shapes, which overrides the political message of the photograph, by emphasising the inaccessibility of the subject matter, in terms of its connection to the real place. In 2003 Lori Pauli wrote that, 'Although Burtynsky insists that it is not his intention to make political images, his work is frequently interpreted as an indictment to industry' (Pauli in Burtynsky, 2003, p. 21). The surface beauty, composition and grand scale with which he portrays subject matter, overshadows the ecological catastrophes that he presents. Mark Kingwell asks, 'Is he a crusader for sustainability or an unwitting purveyor of eco-porn?' (Kingwell cited in Burtynsky, 2005, p. 17). Although his projects are reflections on the human desire to exploit the earth's resources, he does not preclude this by intentionally influencing the reader with his personal views. However, by the time he made the photographs for the project *China* (Burtynsky, 2005), his tone is one of concern for the environment. In an artist's statement he writes, 'I have become anxiously aware of the consequences our actions are having upon the world...I feel an

urgency to make people aware of important things that are at stake...I no longer see my world delineated by countries, with borders, or language, but as 6.5 billion humans living off a precariously balanced, finite planet' (Burtynsky, 2005, p. 7). The images have become harsher. Bright colors are used and repetitive shapes reflect the repetition of manufacturing intensity. Burtynsky demonstrates through this statement that his personal status as a human being, not just a photographer, has merged with the landscape and the vital problem of climate change. In this way, the images come closer to letting us know that there is something wrong with the environment. This is reinforced by his collaboration with the filmmaker Jennifer Baichwal (2006), who has filmed the repetitive manufacturing factory processes, which reinforce the message of the peopled and unpeopled landscapes in Burtynsky's photographs, creating a connection between the human figure and landscape images. The aesthetic beauty of the photographs has the potential to ignite a connection with the viewer of the images when the photographer claims to be personally affected by the landscape catastrophe that is represented. He connects his photographic work to his personal and public activism against the causes of climate change in his 'Artist's Statement' in *China* (Burtynsky, 2005a, p.7), and also in a *Ted Talk*, under the title of, 'My wish: manufactured landscapes and green education' (2005b). In this way, Burtynsky has constructed political and social commentary by using his photographs as a platform for discussion about climate change, although, ironically, his projects continue to rely on the cooperation of corporate bodies that are involved in intense manufacturing industries. His work sits on a knife's-edge between endorsing and critiquing intensified industrialization, one of the causes of climate change. As Joshua Schuster points out, 'Burtynsky's photographs of commodity extractions...risk looking like advertisements for the glamor of the commodity that fits the corporation's heroic self-image of providing for the world (2013, p. 200).

LANDSCAPE PHOTOGRAPHY AND TEXTUAL READINGS OF CLIMATE CHANGE

Jem Southam and Text: *The River Winter*

Text can impact on a photographic image to construct different meanings. I reflect on the essay by Stuart Hamblyn (2014) on photographic images in Jem Southam's book, *The River Winter* (2014), in terms of Roland Barthes's ideas connected to mythologizing the subject, which he believes is as a de-politicizing strategy. I consider how text attaches itself to and contextualises a photograph. For Barthes, the meaning of a photograph can be changed by any accompanying text. This has implications for my prototype book in which text plays a major role in contextualising the project. In an essay in Jem Southam's monograph *The River Winter* (2012), Hamblyn contextualizes Southam's project in terms of the great climatic cycles of the topography of the northern hemisphere in prehistoric times. Writing in the context of European culture he suggests that Dante Alighieri's depictions of hell in the *Inferno* (Musa, 1971), inspired by the Little Ice Age that took place between c.1300-1850, are still deep within the European subconscious and brought to the surface in severe weather conditions. Southam's winter photographs have the same effect of association with climate change. Hamblyn proposes that we have an embedded code about another time in history that is sparked off by a talisman, in this case, the photograph. His essay *mythologizes* and *historicizes* Southam's winter photographs of the river, in the context of other representations of past weather events. Southam's photographs depicting an area along the River Exe in Devon were compiled over a period of one year, and some feature snow and ice. Although the snow in the photographs does not seem to convey the idea of an ice age, newspaper articles about snowfall in the UK, reported at the same time that the photographs were taken, do refer to the idea

of catastrophe and reminiscence of snowfalls earlier in the century: the Mail Online newspaper headline read, 'The Mini Ice Age Starts Here' (Rose, 2010).

In his book, *Mythologies*, Roland Barthes has described the mythologizing of the subject as a depoliticizing strategy. He explains that 'myth has the task of giving an historical intention a natural justification, and making contingency appear eternal', and he views this effect as belonging to a bourgeois ideology (1972: 142). The predictability of the myth feeds into capitalist society's concerns and changes nothing. Barthes's describes text that accompanies the photographic image as 'parasitic' (*Image, Music, Text*, 1977: 25). Just as the photograph is filled with connotations, so is the text that accompanies it. The text cannot replicate the message of the photograph, but can only amplify the message. Hamblyn's (2012) essay attaches Southam's photographs to ideas about climate extremes, which have become embedded in the human psyche. Hamblyn's sincere definition of the photographs in the context of an ice age, give them extra seriousness as part of a tentative dialogue towards representing climate change in the landscape. Whereas Southam's own text describes the geographical place and time of the landscape, Hamblyn's essay associates the photographs with weather extremes that are connected to Dutch seventeenth century landscape painting. There are mythologies that are inescapable and seep out from the photograph, despite efforts to conceal their appearance. In Southam's work, it is his personal history and extreme sensitivity to the landscape and the memories it holds for him, as well as the landscape's own worn changes that are encased in its fabric. Jules Pretty (2007) notes that in our warming climate fresh water, oxygenated air and fertile soil are now so polluted and increasingly depleted that we are in danger of forgetting what landscape is. Our connection with the land is increasingly distanced by our destructive interactions with the environment and he believes that this affects our memories, because our involvement with the ecosystem is now disconnected from our everyday lives.

THE CONTEXT OF SHOWING WORK IN AN EXHIBITION SPACE: REPRESENTING DESPOLIATION OF THE EARTH

The Earth Only Endures Exhibition (2011)

If the slick photographic representation of cataclysm is viewed as a spectacle, then the context of where work is shown is also an important consideration in terms of the way in which the photograph is interpreted. Skepticism about climate change is possibly triggered by an exhibition space, which increases the dramatic spectacle of the cataclysmic references in the photographs, by offering an alternative context to which the cataclysm is related. This alternative is the power of economic dominance over landscape. Such an example is The Festival of Britain exhibitions; in which the idea of a changing landscape was advanced, by relating future planning to past geological and historical characteristics of landscape, and its impact on national character (Jolivette, 2009).

In the 2011 exhibition *The Earth Only Endures* (See Appendix 8) held at The Stone Theatre Gallery in London, the curator and exhibiting photographer Mike Perry states that there is a shared idea about how we inscribe meaning on the landscape, as place and as photographic image, and that this meaning is derived from shared culture and idealisations. He comments, 'The work in this exhibition questions how projecting our own idealisations and cultural knowledge onto natural landscapes has changed our understanding of nature as a concept' (Perry, 2011). Despite the rhetoric of romanticism and painterly approaches within his work, 'The *Wet Desert* landscapes taken in the Scottish and Welsh uplands seem to hover uneasily between recording the effects of human intervention in nature and seductive, painterly surfaces' (Perry, 2011). *In Search of White Gold*, 2010, was commissioned by the Stone Theatre Gallery, 'to photograph Lasa Marmo, a marble quarry buried half way up a mountain in the Southern Tirol region of Northern Italy' (Perry, 2011). The work might be viewed as a celebration of carving up the earth for human extravagancy, and to satisfy the egos of corporate organisations that desire their

commodity to be perceived within an art historical context. This echoes the approach of Edward Burtynsky, who collaborates with corporations in order to reveal the nature of manufacturing. A review by Skye Sherwin (2011) demonstrates the impossibility for a photographer, of being at once an activist for climate change, by revealing the rape of the earth on the one hand, while producing beautiful photographs of the demise of a landscape on the other. Writing about Mike Perry's work, *Wet Deserts*, she states, 'In spite of their melancholy ambience though, it would be hard to see these photographs as fatalistic.'

The venue for the exhibition is a sales outlet for quarried stone, and the photographs in the exhibition are concerned with how some landscapes have been destroyed by industrial, technological and farming developments. Furthermore, the curator, Perry, suggests that our understanding of the natural landscape has undergone some kind of transformation or change in recent times, and that this awareness involves the realisation that the earth's resources are not finite. The exhibition leaflet states that moments of crisis bring about change – in our relationship with nature, animals and places. The crisis suggested in the exhibition is an ecological one and the title of the exhibition is taken from the book by Jules Pretty, the subtitle of which is, 'On Reconnecting with Nature and our Place in it' (Pretty, 2007). The photographs in the exhibition *The Earth Only Endures* are aesthetically beautiful in that they incorporate great detail and are large-scale photographs about vast landscapes. The theatrical space of the gallery inside the showroom, with side offices and huge slabs of quarried marble at one end of the business premises, competes with the political message in the photographs, or possibly suggests an ironic turn on the part of the exhibition's objective. Perry's statement regarding the photographers becoming aware of nature as evidenced in the photographs, is undermined by the context of the exhibition space, where the carving up of earth's resources on a large scale is undertaken by powerful corporations, who benefit economically from utilizing earth's natural resources. The exhibition, *The Earth Only Endures* underlines the difficulty of photography to deal with issues such as pollution, industrial manufacturing and climate change, because photography seems always to be connected to the idea of beauty.

THE LANDSCAPE AESTHETIC OF BEAUTIFUL AND PICTURESQUE

Roger Scruton points out that in the eighteenth century philosophers and writers began to turn their attention to the subject of beauty and, 'it was not art or people but nature and landscape that dominated their thinking' (2009, p. 58). In the introduction to the book *Beauty* Liz Wells sums up the idea of beauty as 'a category [that] continues to resonate within contemporary art and to inform artistic research and practices' (Wells and Standing, 2011, p. 7). I have mentioned beauty a few times in this thesis, as it seems to be a quality that is aligned to the land itself as well as to the photographic image. This is significant because it poses the question of how a message of disaster, namely climate change, can be related through a photographic image when beauty is both a distinction and distraction. This is a question that has preoccupied me during my practice research. I am attracted visually to the beauty of the rural landscape; while at the same time being aware of signs of climate change that disturb beauty. As Ivan Illich has pointed out, to 'question the natural beauty' of an object, even water, is to interrogate its underlying sinister qualities (1985, p.3). Kenneth Clarke has pointed out that the word beauty awakens our 'memories' and 'instincts', and he aligns nature and beauty as inseparable attributes within landscapes (1949, p. 142). However, Liz Wells points out that Clarke has posited nature as something other than culture (Wells, 2011: 25). Even the banal imagery of some New Topographics works (Adams et al, 1975) has been noted as having a 'beautiful' quality (O'Hagan, 2010). Ann Wilkes Tucker points out that there is a 'problem' with the presence of beauty in the *Desert Cantos* work of Richard Misrach. She writes, 'How can one combine formal beauty with subjects and issues considered too grave to associate with pleasure?' (1996, p. 15). Roger Scruton also wonders if a thing can be beautiful precisely in respect of its immorality (2009, p. ix). He writes, 'And is it the case, as so many writers and artists since Baudelaire and Nietzsche have

suggested, that beauty and goodness may diverge, so that a thing can be beautiful precisely in respect of its immorality?' (2009, p.ix). Richard Misrach believes that, 'Beauty, irony, humor are all means to communicate and explore complex political, social, and psychological ideas' (Wilkes Tucker, 1996, p 15). For Robert Adams, however, there is no problem, as beauty allows the spectator to enter into a dialogue about the subject matter (1996).

In Edward Burtynsky's photographs about *China* (2005), Marc Mayer believes that it is photography's 'evidentiary powers', that can 'have a more useful purpose, one that can indeed trouble our received ideas...about ourselves, about the world and about beauty...' (Mayer, 2005, p.10). It is in the *details* of the photograph of the landscape, which contains the 'hard evidence', that can hold the key to overriding the power of beauty in photography, which can conceal the underlying disaster, if not challenged (Mayer, 2005, p. 11). It would seem that beauty is a complex idea and one that is not only associated with pleasure. It is an idea that can be engaged with political discussion in photographic images. Dutch photographers are described as having a positive attitude towards photographing climate change (Aarsman, v d Heuvel, and Metz: 2008; v d Heuvel and Metz, 2012). In the book *Sweet and Salt: Water and the Dutch*, the government is portrayed as being in control of rising sea levels, and photographers reflect this confidence in work that emphasizes the simplicity of the landscape (v d Heuvel and Metz, 2012, p. 16).

The aspect of beauty within my photographs is situated in the details of the soils and plants and reflections of the water, the colour of green vegetation and the stillness of the scene that is devoid of people. In *Rickney Pumping Station, 11 March 2012* (Bream, 2015, Plate 1), foam has formed into shapes on the surface of the still water suggesting that there has been some previous movement to create this texture. The water is deep blue and its surface reflects the sky and the surrounding plants as well as the pumping station. In all of my photographs it could be said that my gaze is one of silent pondering of the

scene and the structures that give it shape. Underneath these innocent still photographs, however, there is an intertwining of an ongoing struggle between the environment and its human inhabitants.

THE CLOSE-UP PHOTOGRAPH

In my photograph *Bur Reeds, Pondweeds, Waterlilies and Floating Pennywort, Chilley Stream, 9 August 2012*, (Figure 42) the camera was angled downwards to show the waterway and reeds in a diagonal composition. Although the sky is not included, the reflection of the sky can be seen on the surface reflection of the water. The intense green colours of the plants contrast with the deep blue-black of the water, which frames the lower part of the image. The act of looking downwards is intensified in photographs like this and concentrates our attention on the details of the objects in the picture. The image can be compared to the wider vista photograph of *Floating Pennywort, Chilley Stream, from Bridge, 12 August 2012* (Bream, 2015, Plate 39) in that it extracts from the wider landscape view an area in which the details can be considered more carefully. Indigenous water plants are growing here during the summer, although they are marginalised, at the edges of the waterway and minimal in quality rather than burgeoning, which also indicates the flows of the water and also a certain amount of landscaping, as the area is owned by the Environment Agency and is monitored regularly to keep the waterways clear (Frost, 2006). Our connection with the landscape is at stake in this photograph. As I began to identify some of the plants in this image, I realised that I cannot recognise most of the natural world that surround me, I do not know how most plants function, or even understand the intricate interdependence of the ecology. It occurred to me that I have become de-skilled about the

wider environment by living most of the time in the city. It is as if I expect the experts in botany or biology or hydrology to be concerned with how the landscape works as a combined organism.

This photograph has a similar visual quality when compared with Susan Derges's collection photographs *Alder Brook*. She does not use a camera, but instead exposes photographic paper directly to nature, using available light to expose the features of the land such as riverbeds, water ripples and the shadows of trees and leaves. The colours consist of intense greens and blues, often deepening to almost black in some images, such as the photogram *Tide Pool 18, 2015* (Purdy Hicks Gallery, 2016). My image, *Bur Reeds, Pondweeds, Waterlilies and Floating Pennywort, Chilley Stream, 9 August 2012* (Figure 42), when compared with Derges's photogram *Water Drop Wort Bridge* (Figure 43), was photographed from an oblique angle. The image indicates layers that are situated between the reflections on the water and the leaves and plants that are growing in the stream. The greater detail and variance of colour in my work is a result of having used a film camera, yet the aesthetics are similar, in terms of creating a more personal, reflective and intimate representation of space, as well as showing landscape features close-up. Derges's *Alder Brook* images are also separated from the wider vista, allowing imagination to construct meaning in the image. She uses water, as a reflective substance, both as a medium, and also in terms of the effect that this gently flowing water can have on the senses. My research images have dealt with a watery marshland landscape with waterways and rivers that pass through it. Susan Derges's photogram *Water Drop Wort Bridge, 2013* (Figure 43) expresses the fragility of the landscape when seen at close quarters and also reveals the different layers of water, plants and mud, suggested by the brown colours, which constitute the waterway area. The quality of the close-up reminds one of abstract painting with the shapes and colour separated from the wider context of the landscape. The close-up reveals ways in which the land has been managed and handled, and how it has been considered as part of the structuring of nature. Susan Derges's photograms, *Alder Brook* (2012), capture reflections and shadows above and below the water's surface. They are

dreamlike images of the brook at night. Her work also shows nearby structures interwoven with branches, leaves, detritus, sky and surface water ripples. There is an ambiguity about where the observer is situated. The photographs seem as if they are upside down and that the viewer hovers above the water, at an angle. The deep browns and hint of sky blue in the cibachrome images situate the image both on the earth and in the air, simultaneously. Osborne Samuel remarks that her work is based on capturing external natural realities, but also takes on a metaphorical dimension that is reminiscent of the unconscious and imagination (Osborne Samuel, 2015). Derges's cibachrome photograms *Red Brook*, 2012 and *Crossing*, 2012 record the close-up region of the brook, revealing the character of this specific piece of land, showing the layers which make up this area.

Wout Berger's *Ditch* (2005) close-up photograph similarly reveals the structure of the landscape (Figure 44). Galerie Witteveen writes that, 'Most of these photographs look like idyllic landscapes – until you realize that carcinogenic materials are to be found under these innocent looking sites. They are landscapes of extremities' (2005). In his close up images of flowers and plants, Berger engages with the details of the landscape. In the exhibition, *Na pele de Terra*, 'On the Skin of the Earth', the camera is directed down to the surface of the earth, 'affording the viewer an unequalled richness of nature, structure and colour' (Van Kranendonk Gallery, 2011). In my photograph, *Clay Soil with Debris, Manxey Level, 24 January 2014* (Bream, 2015, Plate 20), the camera is pointed down towards the muddy soil in the winter. It is an area where vans and small trucks stop. It is a dumping ground at times where beds, shoes and rubbish are fly-tipped. The aim was to look at the constitution of the soil to create a photograph to show in what material the reeds grow in, to decipher if the soils are impoverished. It is a detail of the wider vista of *Manxey Sewer, Manxey Level, 24 January 2014* (Bream, 2015, Plate 19). The colours are muted and the textures of the ossified reeds are beautiful. The area is below sea level and will possibly one day be flooded if the sea barrier on the beach in Pevensey Bay is breached by high tides.

Eliot Porter (Amon Carter Museum, 2016) was making photographs at the same time as Ansel Adams and created close up photographs of the landscape. Although he was engaging with details of the landscape connected to the idea of beauty and purity, his photographs might be re-read now in terms of a vision of the landscape that can no longer be sustained as an idea of purity. His photograph, *Lichen and Pine Needles on Boulder, Madison, New Hampshire, October 12, 1953*, is a close-up study that reveals his personal affection for landscapes and is a more positive view of the redemptive power of nature. When compared with my photograph of a grass verge, (Bream, 2015, Plate 48), the two images resonate through time as a testimony to what has happened in the decades in between. Porter's innocent photograph can now be considered, as my own image can, in the context of Rachel Carson's *Silent Spring* (1962).

Luce Choules creates explorative excursions to landscapes to photograph their geomorphological features. Her project, *Face of the Earth* is 'a series of interconnected research projects, involving: environmental mapping and curated landscapes, geographical ecosystems and cultural tourism, artist expeditions and experimental fieldwork. My research investigates the collapsing of distance between subject and object; and my interest in events and situations that cause a shift in our physical and emotional bodies explores our relationship to natural landscape and the built environment' (Choules, 2016). In her photographs *Rock Map: Green Cliff (6m), Devon, England, 2015* (Choules, 2016) she maps the interior of the landscape rock formations by a grid of photographs that build up a bigger picture of the geology of the area. Because I use a large format camera, my photographs record the detail of soils, pebbles, water and plants in the landscape. I have taken photographs of close-up areas as well as the wider vista in order to identify the structure of different parts of the landscape in a similar way to Edward Burtynsky's early photograph of grasses. In Burtynsky's *Grasses, Bruce Peninsula, Ontario, Canada, 1981* (Figure 46), the view is from above and shows grasses and small trees. This close-up image has a similar aesthetic to my close-up photographic images of Pevensey Levels. They are landscape views without a horizon or skyline and therefore the images

direct the viewer's attention to the details of a small area of the landscape. This technique emphasises areas in the landscape that would otherwise be overlooked.



Fig 41.
Photograph: Sally Bream, *Bur Reeds, Pondweeds, Waterlilies and Floating Pennywort, Chilley Stream, 9 August 2012*
(Bream, 2015: Plate: 47) © Sally Bream



Figure 43.
Photograph: Susan Derges, *Water Drop Wort Bridge*, 2013
42 x 60 inch Digital C-Print. Photo: © Susan Derges, courtesy of Danziger Gallery.
Image Source: Danziger Gallery [Online] Available at:
<http://www.danzigergallery.com/artists/susan-derges/9>
(Accessed 18 September 2015).



Figure 44.

Photograph: Wout Berger

Ditch, 2005

© Wout Berger

Source: *Wout Berger* Website, Personal Work, [Online] Available at: <http://www.woutberger.nl/personalwork.html> (Accessed 18 September 2015).



Figure 45.

Photograph: Eliot Porter

Lichen and Pine Needles on Boulder, Madison, New Hampshire, October 12, 1953

'Eliot Porter Color Photographs - In Wildness', Ref: P1990-60-53

© Amon Carter Museum and Eliot Porter.

Amon Carter Museum website [Online] Available at: <<http://www.cartermuseum.org/collections/porter/collection.php?asn=P1990-60-53&mcat=3&scat=11>> (Accessed 15 July 2016).



Figure 46.
Photograph: Edward Burtynsky
Grasses, Bruce Peninsula, Ontario, Canada, 1981.
© Edward Burtynsky, courtesy Flowers Gallery, London.

Conclusion

My photographic work excludes the human figure, although it is a man-altered landscape where topographical features are portrayed in detail. This emphasises organic and man-made objects associated with climate change. The ideal of beauty persists both in the landscape and within photographic representations (Adams, 1996; Scruton, 2009), although beauty is inevitably invaded and destroyed (Cosgrove, 2008). Agricultural representations in western art have proved to be a recurrent theme (Langdon, 1996). Corporeal presence in the landscape is central in understanding cultural ideas and changes (Mitchell, 2002a; Cosgrove, 1998; Wells, 2011). Although the human body is not seen in my photographs, traces of human activities are nevertheless evident by the way in which the land has been managed and used. Archival materials such as paintings, drawings, photographs and written material can be utilized when contextualising human interventions within the landscape (Ware, 2011; Mazel, 2000). I have used archival material to inform my decisions about the photographs that I have taken. The landscape when re-photographed can reveal insights into changes that have occurred there (Klett and Manchester, 1984; Klett et al, 2004). *The Re-Photographic Survey Project* has significance for my work, as I will be returning in the future to re-photograph areas in Pevensey Levels and will possibly use archival material and the original photographs to search for new connotations in relation to climate change. Within this work, field notes, digital photographs and short videos form important background information for my large format photographs.

There is a substantial range of work by photographers that engages with issues about the environment and involves the photographer in activism and raising public awareness. Photographers' interactions with the landscapes are integral to their final project (Berger, 1976) and this can involve taking journeys, using the idea of past memories, as well as close observations of a familiar landscape (Southam, 2014; Kander, cited in Flowers Gallery, 2012). Photographic work can also be

framed by texts as well as the context in which the work is seen. This might achieve some mythological significance (Southam, 2014); whereas an activist's viewpoint (Burtynsky, 2009; Epstein, 2009; Sarjeant, 2016a; de Keyzer, 2009) can raise public awareness. Activism can also take the form of direct action to save a landscape from ruin (Read, 2011; Scott, 2016). My own photographic work contextualises climate change by including written material about climate change, and I have given some talks to explain some signs of visible climate change at Pevensey Levels.

New Topographics (Adams et al, 1975, 2011) has influenced my photographic work in terms of an emphasis on an unpeopled landscape. Some contemporary landscape photographs have also been important in helping me to define the composition of subject matter, decisions about colour and saturation, and choice of lighting conditions, as well as determining a specific place on which to focus the project (Southam, 200, 2005, 2007, 2014; Adams, 2014; Franklin, 2008; Sternfeld, 2008). The use of maps has been essential in my work and Joel Sternfeld's *Oxbow Archive* (2008) has informed the cross-referencing of photographs and the image of a map as part of displaying this information in my prototype book (Bream, 2015). The landscape I have chosen to photograph is an unspectacular one in the English countryside. Some spectacular representations of the landscape and ecological disasters, such as Edward Burtynsky *Manufactured Landscapes* (2003), Mitch Epstein, *American Power* (2009) and Stephen Vaughan, *Ultima Thule* (2004-2007), which relate to climate change, are important to consider alongside my photographs of an ordinary landscape. This is because my photographs support the idea that climate change is visible in the moderate climate of the south of England and not only in distant locations. The close-up photographs in my research reveal landscape details such as waterways, plants and soils, which are affected by pollution and pesticides. There is also a more positive impact where plants are being re-introduced into waterways. Close-up photographs by Susan Derges (2012), Wout Berger (2005), Eliot Porter (Amon Carter Museum, 2016) and Edward Burtynsky's *Grasses* (2003) share a similar visual aesthetic with my work.

CHAPTER FOUR

APPROACHES TO UNDERSTANDING LANDSCAPE

Introduction

This chapter deals with certain theoretical ideas and approaches to understanding the landscape that I have considered when representing climate change. These ideas have assisted me in understanding some visible signs of climate change at Pevensey Levels. I argue that the relationship between the spectator and the gaze in searching for climate change phenomena is central to an understanding of my observational approach and therefore, my photographic representations. This is because I see Cartesian perspectivalism as a prevailing mode within observations and representations of the landscape. One of the expectations of this masculinised Cartesian perspectivalism is that beauty is an idea embedded within the landscape.

I therefore, discuss how landscape and beauty are connected in our perceptions of the land, but also examine how this idea can inhibit an observation of climate change. However, the idea of beauty in the landscape can also be a useful device by which the observer can enter into a dialogue with a place and its representation. I discuss how the appreciation of nature seems to be an important concept by which people attach themselves to landscapes. I also discuss how an embodied approach to perceiving the landscape, with the spectator in the role of an idler, might reconnect the observer with the landscape and opens up ways of re-interpreting the landscape by slowing down time. Finally, I suggest that a phenomenological approach to observing the landscape and treating it as a dynamic entity enhances the way in which signs

of climate change can be perceived in the landscape. This is crucial for my approach in looking for signs of climate change in the landscape, as my observation requires that my body is not only the spectator of the scene, but is intrinsically part of the landscape.

Maurice Merleau-Ponty describes observation of the world as if it were the 'rags of the dream' (1968: 5-6). He describes the barely perceptible phenomena of the world as a vague sense on the part of the observer that something is there to be seen; yet it is still obscured by waking consciousness. This experience of only barely seeing visible fragments of climate change has become one of the important aspects in my photographic research, as I have had to look beyond beauty and nature in the landscape in order to try to find where climate change might be situated.

While taking photographs of the landscape at Pevensey Levels, I experienced what Merleau-Ponty describes as 'a reversibility of the seeing and the visible, of the touching and the touched' (1968: 147). I sensed that the landscape and my vision were connected through their mutual confrontation. John Wylie describes this reversibility as an, 'intimacy' between the observed and the observer. He writes that, 'the self is not simply 'in' the world – it is *of* it' Wylie, 2007: 151). This acceptance by myself, as being an attached observer with the landscape, seemed to begin a process by which, having been possessed by the land, I needed to reassess my reaction, because this intimacy also seemed to create a 'blind spot' in my search for climate change. I recognised that this intimacy between the self and the landscape creates a type of veil, which obscures the perception of climate change.

Furthermore, physically pointing to the landscape has become a way of awakening my visual perception when searching for visible signs of climate change. A challenge during the practice research, for me, has been to identify places in the landscape at Pevensey Levels, that I could authoritatively point to and say 'here is climate change'. This pointing has not been a straightforward exercise. In trying to understand what I was seeing in the landscape, I revisited the same locations

repeatedly, and eventually realised that I was taking a photograph of the landscape for its qualities as an idyllic, picturesque or beautiful place. Therefore, pointing to the landscape helped reveal to me that something was obscuring my observation. This something is the expectation that the landscape is beautiful.

1. The Spectator and the Gaze, and Cartesian Perspectivalism

In this section, I discuss the spectator and gaze relationship towards the landscape as one that involves a perceptual interrogation, an inquisitive searching for what seems, at first, to be hidden from view. I consider how the idea of the spectator and the gaze impact on landscape representation in terms of a gendered gaze. This gaze includes both my own as well as the spectator of the photographic image. I outline what is meant by a gendered gaze in relation to what Martin Jay terms, 'Cartesian perspectivalism', a dominant masculinized view of the way in which the world is represented (1988: 2-23). It is a way of seeing the world that is rooted in westernized models of looking, which narrows down the field of vision and therefore, possibilities for perceiving the landscape.

Historically, the investigator of the landscape has been male. Therefore, I have used the metaphor of a 'veil' to describe various kinds of looking at the landscape, not to feminise the landscape, but to draw attention to the tradition of a masculinised way of looking at the landscape and defining it. This viewpoint is still a dominant force that is present at the moment of taking a photograph, as well as at the moment of the spectatorial reception of the photographic image. It is therefore important to understand how Cartesian perspectivalism can obscure the search for and representation of climate change in the landscape.

John Wylie points out the significance of the way in which a cultural landscape is closely identified with landscape art and therefore has been, in the past, dominated by Cartesian perspectivalism, in that the 'New Cultural Geographies' of the 1980s

and early 1990s considered the landscape as a visual and cultural form of information, and therefore holding views that were based on Cartesian perspectivalism, and limiting the way in which landscape could be perceived (2007: 55-57). Gendered theories of the spectator and gaze have increasingly dismantled and disrupted the dominant disembodied view of understanding representations. Marxist readings of power relations in landscape images were generally related to a masculine perspective and considered from a male point of view.¹⁷ The male figure was not questioned to the same extent.

The idea of the spectator and gaze relationship in photography, took its lead from Laura Mulvey's *Visual and Other Pleasures* (1989). The spectator/gaze dynamic has been the subject of visual discourse that has widened the field of view to include diverse ways of seeing. Second wave feminist writers and photographers contested traditional male perspectives by placing the female body firmly into the arena of landscape and its representations (Nead, 1992; Spence, 1973-5). The effect of this, however, was to make landscape the *backdrop* to the foregrounded issues of feminist corporeality, rather than landscape being the main subject matter of its visual representation.

The problem then, is that without a female body in the picture is the work gender neutral, or does it become part of the established male view of the landscape? This is an important consideration for my photographic work, as I have decided not to include people within my landscape representations. The dominance and limitations of a masculinised view of representing the world have been outlined and challenged by various feminist scholars.¹⁸ In terms of landscape and its representation, some writers have discussed the notion of the spectator and the gaze (Jay, 1992; Rose, 1993; Wylie, 2007; Wells, 2011). To these has been added the idea of the limitations of Cartesian perspectivalism when representing the landscape (Wells, 2011).

¹⁷ John Berger, *Ways of Seeing*, (London: Harmondsworth: BBC and Penguin, 1972); Griselda Pollock, 'What's wrong with images of women?' (*Screen Education*, no. 24, 1977, pp. 25-33); Lynda Nead, *The Female Nude: Art, Obscenity and Sexuality*, (London and New York: Routledge, 1992).

¹⁸ Linda Nochlin, 1971, 1989a, 1989b; Deborah Bright, 1985; Griselda Pollock, 1988.

Wells (2011) reflects on landscape images where the Cartesian dualist model of visual representation, places the spectator outside of that viewed. She writes that, 'One effect of Cartesian perspectivalism is that "man" becomes centred as the spectator of a scene organised around a single point of view' (Crary, 1990, cited in Wells, 2011: 40). This dominant angle of view is therefore connected to issues regarding gender and power in landscape representations and their reception. Considering this, a phenomenological response to representing the landscape, might offer a synthesis between what is there, what is observed, how it is signified and by what means the image is decoded by the spectator (Ingold, 1993). It might provide the means by which a traditional Cartesian perspectivalism and its representation might be challenged.

2. Landscape, Photography and the Idea of Beauty

Landscape has been traditionally associated with ideas of beauty and femininity. If human activity is revealed in the landscape through the representation, then how is the idea of beauty negotiated if the representation is intended to be gender neutral? Furthermore, is beauty connected with negative or positive ideals? This is important, because when I am representing climate change, it is necessary to place the significance of this in terms not only of landscape and beauty, but also in terms of photography and its relation as a medium, to ideas about beauty, in that the photograph is an aesthetically pleasing object, with an inherent beauty.

Kenneth Clark argues that although faith in nature is no longer accepted so readily by critical minds, it still contributes a large part of that complex of memories and instincts, which are awakened in the average man by the word 'beauty' (1949: 142). Clark points to a loss of faith and a loss of innocence in the twentieth century mind towards landscape appreciation and beauty. Although Clark is charged with offering a 'binary notion of nature and the "natural" as something other to culture'

(Wells, 2011: 25), he also points out that through their memories, people can access cultural meanings. Landscape remains the contested space in which gender identity is still interrogated.

Clark's suggestion is that an appreciation of nature in the landscape is an embarrassment to twentieth century intelligentsia, but still has significance for the average person. He aligns nature and beauty as if they were both the same, and therefore reduces the meanings through which landscape can be thought. The reductive aspect of his idea aligns the spectator with an instinctual response – situating intuition with innocence and a child-like attitude to understanding the land, as if these were not intellectual qualities.

However, it is just this type of poetic, gut-feeling that photographers use when taking a photograph. The Romantic Movement in literature still continues to influence perceptions of the English landscape and this can be seen by the ways in which those traditional ideas are conveyed through objects in the landscape. An example of this is the image of the pumping station, which could be perceived as a rural dwelling situated next to a river, *Rickney Pumping Station, 11 March 2012* (Figure 47). This motif occurs in idyllic representations of the English landscape, and references to those themes are difficult to circumvent.

The idea of nature, the medium of photography, and beauty, are caught up in the same mode of visual construction. Even though the subject matter is the aftermath of war, Sophie Ristelheuber's work, *W(est) B(ank)* (2005), nevertheless conveys an impression of beauty. The surface of her photographic images and compositional detail, colour and surface texture of represented objects creates a visually attractive image, which is at odds with the theme. In my photograph, *Mist Rising at Down Level, New Bridge Road, 16 July 2014* (Figure 48), the representation of mist also signifies carbon dioxide and other gases, which rise into the atmosphere. When the spectator regards the photograph in this way, the scene becomes more focussed on climate change.

In considering that the project is about climate change, the spectator is reminded of the vapours of vehicle emissions, and this inference is intended to encourage the idea that climate change surrounds us in the polluted air that we breathe, even in the visual splendour of the landscape. The headings within my book are important in setting up the idea that my images are not about a picturesque landscape, but about the issue of climate change. The image appears under the main heading, 'Regeneration', which suggests the regenerative aspects of air replenishment within the environment. In the section, *Air*, the images remind us that our lives depend on the clean air that we breathe.



Figure 47.
Photograph: Sally Bream, *Rickney Pumping Station*, 11 March 2012.
(Bream, 2015: Plate 1) © Sally Bream



Figure 48.
Photograph: Sally Bream, *Mist Rising at Down Level, New Bridge Road, 16 July 2014*.
(Bream, 2015: Plate 51) © Sally Bream

3. Landscape And Nature

When I am taking photographs in the landscape, I do feel drawn towards what I would describe as 'Nature'. The perception of the landscape as beautiful and natural has, at times, diverted my attention away from looking for evidence of climate change, presenting difficulties for me, when interpreting the landscape for such evidence. Consequently, it is important to define what this *thing* nature is, for me, in order to discern how to recognise it within the landscape, in terms of an analysis of landscape representation. What is at stake is the visual aesthetic of the rural idyll?

Although the idea of nature is diverse (Sorvig, 2002), it could be said that interpretations about what nature is, can be understood by cultural idealisations of the land. However, Kate Soper suggests that nature is 'everything that is not human', and therefore it is not connected to culture (1995: 15). She believes that ideas about what nature is define human culture (1995:34). As Liz Wells states, 'our perception of nature is filtered through cultural understandings' (2011: 19). From this, we can see that the idea of nature is open to interpretative modes of thinking, in some way connected to notions of culture.

Nature is connected to memory, whereby individuals imagine landscapes as spaces that belong to them, even though they do not own the land. One female respondent, to the Mass Observation Archive Directive, *The Countryside* (1995), writes about rare wild flowers, which she 'discovers' on Twyford Down. She comments, 'There under the ancient hedgerow there are still specimens that the library books say are extinct' (Mass Observation Archive, 1995: 1). She describes the countryside as a secretive place, where the individual makes their identity. She continues, 'If you penetrate further you come to a copse. Bluebells grow there and a brook runs by. It's like a fairy glade... The local ramblers go there, but they don't know about "our" bit' (Mass Observation Archive, 1995: 1).

Notwithstanding her recognition, earlier in her correspondence, that there is a sense of losing areas of the countryside to housing development and road building, she still manages to find her small enclave of the landscape to possess. From her window, she can see the green landscape being replaced with concrete. She writes that an, 'idyllic picture' has become a city of cement: 'I wept when the cement went in to Twyford Down' (Mass Observation Archive, 1995: 2). The Countryside Directive responses show that people are aware of the development of green spaces. They are connected to the countryside, and therefore the landscape, through the cultural meanings that they attach to those places. Nevertheless, the edges of the countryside are the places where power relations between the rural and the urban drive cultural change, and also where memory and attachment, both individual and collective, to landscape, are important for beginning an exploration of climate change.

Doreen Massey outlines how the dominant view of nature as feminine might be challenged through an understanding of culture as a multi-faceted idea (Massey, 1994; 2005). She outlines how ideas concerned with what nature signifies are determined by a multiplicity of influences, because power relations are at the centre of changes in the environment (Massey, 1994). She explains this in terms of the concept of *space-time*, which she defines as, 'a configuration of social relations within which the specifically spatial may be conceived of as an inherently dynamic simultaneity. Moreover, since social relations are inevitably and everywhere imbued with power and meaning and symbolism, this view of the spatial is as an ever-shifting social geometry of power and signification' (1994: 3). Nature, she believes is a dynamic idiom. This has relevance for landscape photography, in that images can be continually re-interpreted in terms of the role of nature in the representation. Nature and landscape are not just connected to grand narratives, such as the 'inevitability of globalisation' (Massey 2005: 4).

Liz Wells writes that in *For Space* (2005), Massey 'conceptualises 'space' as produced through intersections of stories, attitudes, power struggles...' (2011: 12). Therefore, the idea of what nature *is*, takes place in cultural constructions that are

built from shared narratives and actions. Nature and culture reveal their values within narratives that are re-made over and over again as changes occur within the landscape. These narratives are valuable to geographical investigations of the landscape. Furthermore, in my photographic work, these narratives help to understand what is meant by climate change, since landscapes and their representations rely on symbolic references to decode their meaning. For this reason, I have introduced headings in my book, *Unveiling Climate Change at Pevensey Levels* (2015), to define how the representations of the landscape can be contextualised. Although my work states the idea of climate change as a present phenomenon, the project also acts as a discursive tool about the presence of climate change.

4. An Embodied Observation of the Landscape

When taking photographs of the landscape, I realised that my body was as much involved in my perceptions, as were my eyes. John Berger wrote that, 'Seeing comes before words. The child looks before it can speak' (1972: 7). This statement overlooks the fact that the human subject moves, hears and feels before it can see. Therefore, I decided that a perceptual construction of understanding the world, as suggested by Gaston Bachelard (1958), or a phenomenological approach, as in Maurice Merleau-Ponty's *Phenomenology of Perception* (2002) seemed more appropriate for my photographic research, in analysing cultural constructions of landscape environments, when searching for visible signs of climate change. Walking is one way of experiencing the landscape and becoming more intimately acquainted with its environment (Edensor, 2000).

The practice of walking and observing within the landscape has recently regained popularity in literature and walking projects, such as Richard Long (1968), Robert Macfarlane (2007, 2008, 2012), Jules Pretty (2014), Roger Deakin (2007) and

Still and Whistler (2015a, 2015b). In addition, I have been influenced by photographic and observational methodologies in the work of Jem Southam (1989; 2005), and Fay Godwin (1983), for whom, walking and photographing are part of the observation of the landscape in the search for a picture (Badger, 2005). In my photographic project, I have walked through the landscape of Pevensey Levels, in order to understand its features. Becoming familiar with the landscape through walking brings the body, and therefore vision, into alignment, in that movement across the landscape reveals what is or what is not accessible and therefore, what is available to be seen.

Edmund Husserl was the first phenomenologist who considered the body's kinetic response to its environment (Moran, 2005). The American psychologist James J. Gibson (1985) also pointed out that the eye and the rest of the body are inseparable, because visual perception is an embodied experience. He wrote, "We human observers take it for granted that one sees the environment with one's eyes...But the truth is that each eye is positioned in a head that is in turn positioned on a trunk that is positioned on legs that maintain the posture of the trunk, head, and eyes relative to the surface of support... One sees the environment not with eyes but with the eyes-in-the-head-on-the-body-resting- on-the-ground" (Gibson, 1986: 205, cited in Forlè, 2013). Gibson's remarks have served to remind me that vision is an embodied experience. In taking photographs at Pevensey Levels, I have become aware of how one's physical state has an all-encompassing affect on one's ability to perceive what is there in the landscape.

The cultural geographer, John Wylie (2002, 2005; 2006), has defined walking as a phenomenological and experiential method of understanding the self and landscape, in relation to a mutual impact and conjoining of physical existence between earth and body. Wylie points out that changes to the landscape, imposed from the outside, are just as crucial as our everyday perceptions about the landscape. He writes that, 'Landscape is tension between proximity and distance, body and mind, sensuous immersion and detached observation' (2007: 1).

Wylie states that a phenomenological approach to landscape offers, in the context of writing, 'a faithful description of everyday "lived experience"', and notions of 'being-in-the-world and embodiment' (2007: 140), as well as an understanding of an ongoing 'intertwining' of the specific landscape locations and the body (2007: 152). This approach is in opposition to a Cartesian 'perspectivalism', where the body and mind are separate, and visual perception is detached from the world; an approach, which Wylie believes, is situated in Western Art, and has been endorsed in the past, by writers such as John Berger (1972) and Denis Cosgrove (1985).

5. Idling and Observing

I next discuss the idea of Idling and observing, as an act, which enables me to interact with the landscape, thereby taking time for the landscape to unravel and then to reveal itself. When taking photographs at Pevensey Levels, there was a feeling of being in a place, which, as a visitor, is associated with outings or holidays. While I was there to 'work' and to take photographs, however, the combination of having to wait and watch the landscape has a resonance with wasting time and of not working, creating a feeling of both delight but also of anxiety. The landscape is the site of both idling as well as a working environment, or 'taskscape' (Ingold, 1993, p.157) in which economic order is constituted.

Bissell and Fuller comment that,

There is something disquieting about a stillness that lacks direction. At work, the perils of daydreaming, idling, lounging and drifting and their antithetical relation to capital are discernible in matrix-technologies of incessant performance review and activity accountancy. Where post-industrial, neo-liberal capitalism assures pride in the achievement of doing harder, better, stronger, faster, stillness is toxic: a failure of self-management, a resistance, a dragging of one's heels, a choking sullenness that flies in the face of the infectious pull of the world.
(2011, p. 7)

The act of standing still and noticing is encapsulated in Tim Ingold's notion about the 'taskscape' and about how a representation of a landscape can reveal the *actual* landscape through the imagination (Ingold, 1993). It could then be said, that the notion of a taskscape could be applied to the idea of anthropocentric climate change. It is here that Ingold's idea of the transformation of the landscape, which changes our actions upon it, is useful. He writes: 'This means that in dwelling in the world, we do not act *upon* it, or do things *to* it; rather we move along *with* it. Our actions do not transform the world; they are part and parcel of the world's transforming itself. And that is just another way of saying that they belong to time... For in the final analysis, everything is suspended in movement' (Ingold, 1993, p. 164). Nature, and therefore the landscape moves. Ingold reiterates that a representation of the landscape reveals the taskscape, and he also claims that within a landscape representation, sounds and movements can be perceived because of the landscape's connection with temporality.

Ingold writes, 'The scene does not unfold in silence' (1993, p.165). His ideas resonate with Massey's (1994) notion of space-time configurations as being dynamic rather than static. When I stand still in the landscape at Pevensey Levels, and observe for a long sustained period of time, does this then affect the way in which my photographs convey the idea of the landscape unfolding or unravelling before me? Or does it convey my own unfolding and unravelling? Blurred objects in the photographs, caused by the winds movement of plants, show the point of connectivity between my embodied observation and the landscape.

The idea of taskscapes (Ingold, 1993) as 'memory scapes' seemed to make sense to me as I became more connected to the landscape of Pevensey Levels. I began to build up a store of memories by returning to the same places. I was not only looking for signs of climate change, but I was also becoming connected emotionally to areas of the landscape. A representation of the landscape, according to Ingold (1993), reveals to us our experiences of past landscapes, and when this fact is combined with our imagination, we can perceive to a certain extent, therein, movements and sounds.

Ingold extends this further, in that due to muscle memory, we can *feel* what the real and represented landscape is like. The representation of the landscape is from a vantage point. This is the first stage of the body, the eye, entering into the representation of the taskscape. We stand at a place in the interior of the landscape that was constructed through the making of the image. Our eyes, head and body move in order to understand and to *feel* the undulations of the represented landscape, and we enter imaginatively into the zone of the real landscape, which is now revealed before us. Narratives and memory are important to an understanding of landscape as a culturally and geographically constructed space (Cosgrove, 1989; 2012, and Massey, 2005). Gaston Bachelard writes of memory and the role of the imagination in bringing the landscape back into the present moment of existence:

Each of us, then, should speak of his roads, his crossroads, his roadside benches; each of us should make a surveyor's map of his lost fields and meadows. Thoreau said that he had the map of his fields engraved on his soul. And Jean Wahl once wrote:

Le moutonnement des haies
C'est en moi que je l'ai
(*Poème*, p.46)
(The frothing of the hedges
I keep deep inside me.)

Thus we cover the universe with drawings we have lived
(1958, pp.11-12).

Tim Ingold suggests that Denis Cosgrove reinstates this idea about the landscape connected with personal aspects of human life. He writes:

Cosgrove regrets the tendency in human geography to regard the landscape in narrowly utilitarian and functional terms, as "an impersonal expression of demographic and economic forces", and thus to ignore the multiple layers of symbolic meaning or cultural representation that are deposited upon it. The task of decoding the 'many-layered

meanings of symbolic landscapes', Cosgrove argues, will require a geography that is not just human but properly *humanistic* (Cosgrove 1989, Cited in Ingold, 1993, p.171).

Furthermore, John Wylie's (2006) post-structural and post-phenomenological account aims to gain a renewed understanding of the actions of the 'figure' that 'gazes upon landscape' (Wylie, 2006: 519). He combines Ingold's phenomenological definition of landscape theory in *The Perception of the Environment* (2001), replacing Merleau-Ponty's phenomenological stance on 'depth' in *The Visible and the Invisible* (1968), with Gilles Deleuze's idea encapsulated in *The Fold* (1993), a 'treatise on Leibniz and baroque aesthetics' (Wylie, 2006: 529). Deleuze (1993) believes that the spectator and the landscape are involved in an ever-unfolding scenario of movement, both of the land and of the visual perception of the gazing subject. In the experience of gazing upon the landscape scene, the spectator is understood as unfolding in time along with the changing landscape.

The ultimate goal of Wylie's initiative is to try to escape 'the mainline perspectival, Cartesian visual narrative' (2006: 519). Wylie gives no practical evidence that his theory of 'geopoetics', as he calls it, can work in practice and so it remains a hypothesis, in the Kantian sense of 'reasoning only in order to use one's reason...' (Foucault cited in Rabinow, 1991, pp. 36-7). However, what Wylie hints at is the introduction of the use of poetic texts in order, 'creatively and critically to knit biographies, events, visions, and topographies into landscape.' In my photographic research project, within the context of the book, *Unveiling Climate Change at Pevensey Levels* (Bream, 2015), I have used my own 'geopoetic' approach, as part of my expression of what I perceive to be signs of climate change in the landscape at Pevensey Levels; and this is defined in the textual headings.

Deleuze (1993) proposes an understanding of the way in which the landscape seems to fold and unfold as part of the experience of body and mind. There is a sense of unease within the landscape each time I visit it, after being absent. The reason for my anxiety might be due to the realisation that the landscape is being constantly changed and managed in my absence. Although it looks roughly the same each time I go there, I sense an uncanny feeling that objects have been moved around, and that I have also changed. Yet, still, the landscape imprints its landmarks on my memory and thereby situates and connects my body to it. I see the image of the tall willow tree being blown by the wind, and I expect it to be there when I return, as if it is waiting for me. A sense of anticipated loss accompanies each visit to the landscape. It is as if we live in an era where memory cannot keep up with the changes that occur. The fast-moving characteristic of the landscape requires a counter-balanced slowing down, in order to perceive its minute changes.

Conclusion

I have argued that a way of re-defining the perception of the landscape might be in recognizing, as Ingold (1993) suggests, that viewing the actual land and the representation might require an embodied involvement, which involves not just the eyes, but also a consideration of other senses, such as hearing and movement. As a photographer, I am caught up within the landscape in what Merleau-Ponty terms, 'reversibility', a feeling that situates me, the photographer, as part of the landscape, rather than as an outsider. I am looked at by the landscape as much as I look at the landscape. This reversibility can also be extended to the spectator of the photograph, who is not simply a consumer and observer, but becomes part of the landscape representation by imagining the sounds, smells, textures and sights within the representation, thus making the representation not just an object, but a re-lived experience of a real landscape.

Pointing towards the landscape creates a dynamic in which the land can be connected to memory, culture and ideas beyond its reference as land, including the idea of climate change, which is at once both an abstract idea, similar to what Morton describes as a 'hyperobject' (2013), as well as demonstrable through the way in which the land responds to the effects of climate change, and the means by which landscape is managed.

In this chapter, I have also argued that idling and observation, as a slow process, might be a means by which the landscape can be understood in more depth. This slow reflection counteracts the effects of a landscape, which has been predominantly managed for its economic value, which in turn, has caused sudden changes to its ecosystem. Slowing down the observation also establishes a close relationship between the spectator and the landscape, and can provide a space in which the subtle impacts of climate change might be comprehended.

CHAPTER FIVE

'UNVEILING' CLIMATE CHANGE AT PEVENSEY LEVELS

Introduction

This chapter considers my photographic images in terms of their narratives, and the ways in which they identify signs of climate change in the landscape at Pevensy Levels. My images show some of the human and environmental responses to the impacts of climate change in the landscape. I discuss those responses within the context of a selection of photographs, from my book, *Unveiling Climate Change at Pevensy Levels* (Bream, 2015). I then consider some key ideas within the narrative of the photographic research. These include: The significance of human responses to climate change within the land, and the importance of an imaginative response within a geographical exploration of the landscape, when looking for climate change. Furthermore, I examine the ways in which the text headings in my book further define the presence of climate change in the landscape.

Ideas about the index have informed my visual research. The combination of these modes of visualising the landscape, when used together, has assisted me in developing the creative aesthetic of my photographic work: similar to destinations on a map, and like my father's *Route by Car from London to Devon* (See Figure 1), the words that I have chosen for the headings in the book are significant in that they describe the core ideas about how climate change is interacting in those parts of the

landscape. The headings indicate where climate change can be found, and in turn, the photographs contextualise what the headings refer to.

My photographic images present a twofold approach in determining the observable presence of climate change at Pevensey Levels. They show visible signs of landscape management, which aim to reduce the effects of climate change. The photographs also show indications of climate change, in relation to plants. Pevensey Levels marshland over centuries has provided a livelihood for its inhabitants, and now has a new layer of organization, which is in direct response to climate change.

My visual documentation and exploration of climate change in the landscape is defined under the following main headings in the book: *Mechanism, Flux, Damage, and Regeneration*. Sub-headings further signal where climate change is situated in the landscape (see Appendix 1: *Book Headings*). Although the headings contextualize specific photographs, it becomes apparent, when looking at the images in succession, that the headings can add further layers of meaning to all of the photographs. In this way, the photographs show the interconnectivity of the landscape of Pevensey Levels marshland, including the seafront area, in relation to the impact of climate change, and leads to a consideration of specific places in the landscape where climate change becomes evident.

Furthermore, a hypothetical approach to identifying climate change in my fieldwork has been valuable for my research, since those speculative enquiries have animated my imaginative reactions to different climate change phenomena. For instance, the photograph *Broken Tree, New Bridge Road, Rickney Sewer, 24 January 2014* (Figure 57), is an example of this imaginary approach. The utilisation of imagination as an alternative to scientific proof, what Denis Cosgrove describes as, 'Geographical Imagination' (2012: 122). The relevance of Cosgrove's (1985) reflection that landscapes provide a backdrop to which narratives can attach themselves is relevant for my research. Imagination takes over when a direct response to the

landscape takes place creating the possibility for a narrative to be formed. Also, this is an approach that might be useful to empower other individuals to search for this evidence of climate change in the landscape.

Imagining a scenario is the first stage in a scientific enquiry. However, although my project is not about collecting *scientific* proof of climate change per se, it does involve to some extent, a mixture of information as well as imagination about the presence of climate change in the landscape. I believe that this enables a connection with the landscape environment, especially as flooding, hurricanes or extreme temperatures do not immediately threaten the landscape. Therefore, the photograph of a fallen tree characterises evidence of my intuitive working process whereby I have noticed a phenomenon and connected this with a prospective enquiry about the effects of the over-saturation of heartwood, which could be linked to climate change. I began to look at some research after I had taken the photograph; and I found a study that connected climate change to pests and diseases in urban trees (Tubby and Webber, 2010). Using my imagination within the environment is an important approach for me, in order to think about climate change in a way that gives me some authority when I investigate the environment, because this approach stimulates my enquiry of the landscape.

However, the exploration and documentation of climate change in this research, has also been a complex task, due to my perceptions of the landscape as picturesque, and visually attractive - its charm being connected to my idealized memories of past landscapes. This seemed to introduce a screen or a veil in front of my search for visual evidence. In order to pin down my perceptions about climate change in the landscape, I identified particular words that I believed emphasized and reflected my findings. The texts in the prototype book (Bream, 2015) indicate and reveal, the functions of landscape in relation to the impact of climate change.

In order to try to cut through the picturesque appearance of the landscape, I formulated three questions, which I repeated to myself, as I took the photographs. These were: How is the land being *managed* or administrated to prevent

changes, which are caused by climate change? How is the land responding to climate change? And, how is climate change visible, or capable of being *unveiled*, in this part of the landscape? These questions helped me to focus on identifying climate change, and steered me away from viewing the landscape merely as a site of the picturesque. This approach forced me to look at the functions of the landscape, and the ways in which humans are shaping the land, as well as the ways in which plants and soils are responding.

In the next section I discuss my prototype book, *Unveiling Climate Change at Pevensey Levels* (Bream, 2015), in relation to the ways in which I believe I have identified and unveiled climate change in the landscape, and defined those discoveries through the texts of the headings.

The Book: *Unveiling Climate Change At Pevensey Levels*

In this part of the chapter, I will discuss some of the images from my book in relation to the main headings, where I have identified the definitions that connect the idea of climate change to the landscape and the photographs.

MECHANISM

The title for this section of the book aims to define the ways in which the landscape is both a natural mechanism, which controls water within the landscape, as well as a mechanism deliberately constructed through human intervention in the land, in order to control the environment. The landscape is a mechanism in itself, because within its microclimate, albeit approximately 50 square kilometres, the wind and sun evaporates water in vast quantities. The soils are heavy and clayey,

and water runs into it from the South Downs. The land is maintained as grassy grazing land and drained marshland, which has a significant impact within the environment. I have found that the idea of flow, dredging, outfall pipes and barriers describe the ways in which the land and the sea are kept distinctly separate. Climate change is specifically affecting sea levels, which are rising, but also, rainfall and higher precipitation, another result of climate change causes the inland marshland to potentially become inundated by rainfall.

I have identified four sub-heading texts, which I believe describe the ways in which the landscape is controlled in order to keep it as drained marshland. These are: Flow, Dredge, Outfall, and Barrier. I next discuss these in relation to some of the photographs that relate to these headings.

Flow

Rickney Pumping Station, 11 March 2012 (Figure 47) is an example of the way in which the picturesque framing of the subject matter can obscure the idea of the drained marshland as a highly mechanised landscape, which relies on continual drainage by using pumping stations. The sub-text here, *Flow*, expresses the drawing away of excess water from the marshland. In the future, and there are signs that this is already happening, precipitation will increase and the land will be more susceptible to flooding. The mechanism, referred to in this photograph, looks like a small house, yet computers, at the Environment Agency headquarters, control this pumping station. The pumping station lifts excess water from lower ground, situated in fields to the north and west of Pevensey Levels. Water is lifted by means of an Archimedean pump (Environment Agency, 2006).

Pevensey Haven, Rickney, 11 March 2012 (Figure 49) shows one of the main rivers, which carry water out to sea. This river, which has many settlements adjacent to it, is lined with trees and hedgerows, and widens as it gets nearer to the coast. This photograph indicates that the sluice gates are closed, which means that water is being held back, possibly due to high tide at sea. The photograph creates the impression that the landscape has an effortless calm. However, the land here is maintained to ensure that the river does not become clogged up, and the image shows some debris at the edges of the river, which is cleared away regularly by the Environment Agency to prevent the river from being blocked, and therefore, to increase the flow of water out to sea.

Likewise, *Chilley Bridge Sluice Gate, 31 January 2015* (Figure 50) shows how the edges of another waterway, Chilley Stream, which flows into Pevensey Haven, is kept tidy at the edges in order for the water to flow out to sea. Floating Pennywort can be seen at the edges of the waterway, and also, remnants of its stalks can be seen in the water, which indicates that the river has recently been dredged. *Waller's Haven, near Middle Bridge, 4 October 2013* (Figure 51) shows another waterway, leading to Pevensey Bay, which is wider and deeper, in order to carry excess water from Pevensey Levels out to sea. Plants and trees are not encouraged to grow along the embankments, in order to minimise plant debris in the water. There are no raised embankments beside the main waterways, and this is one of the ways in which the character of Pevensey Levels is kept constant, despite seasonal changes in weather and increased rainfall.



Figure 49.
Photograph: Sally Bream, *Pevensey Haven, Rickney*, 11 March 2012.
(Bream, 2015: Plate 2) © Sally Bream



Figure 50.
Photograph: Sally Bream, *Chilley Bridge Sluice Gate*, 31 January 2015.
(Bream, 2015: Plate 8) © Sally Bream



Figure 51.
Photograph: Sally Bream, *Waller's Haven, near Middle Bridge*, 4 October 2013.
(Bream, 2015: Plate 13) © Sally Bream

Dredge

The photograph, *Dredged Pennywort, Down Level, 9 November 2013* (Figure 52) shows a field which has been consciously flooded during the winter, to encourage migrating birds. Due to climate change, different species of birds are now migrating further north in the summer and the winter. Farmers are paid a government subsidy to manage their grazing land in this way. At the edges of the waterway, Pennywort has been left to decompose after dredging. The Pennywort is not taken away and burnt, however, it decomposes quickly, which could be due to chemicals being used. At the edges of the waterway, the clay soil has been scraped away, and some marshland plants continue to grow at the fringes of the water and bankside.



Figure 52.
Photograph: Sally Bream, *Dredged Pennywort, Down Level*, 9 November 2013.
(Bream, 2015: Plate 16) © Sally Bream

Manxey Sewer, Manxey Level, 24 January 2014 (Figure 53), shows the way in which the reeds are cut back and the land cut back and maintained to reduce excess debris. The clay soil is exposed, and it is an area where traffic stops regularly. A track nearby leads to a farm. To the right, out of the photograph, is a road. It can be seen that the land, in between the reedbed areas of marshland, is kept grassed over, for grazing livestock in the spring and summer. Rainwater runs off from the nearby paths and roads into Manxey sewer, which connects to larger waterways, which lead out to sea. The smaller waterways act as maintained landscape areas, and therefore become mechanisms by which excess water is carried out to sea. A small marker indicates the level of the water.



Figure 53.
Photograph: Sally Bream, *Manxey Sewer, Manxey Level*, 24 January 2014.
(Bream, 2015: Plate 19) © Sally Bream

Outfall

Another mechanism by which water is controlled at Pevensey Levels is situated at the seafront. There are a number of water outfall pipes, which connect to channels near the beach. *Waller's Haven Outfall, High Tide, Normans' Bay, 12 September 2013* (Figure 54), shows the top of the largest outfall pipe at Pevensey Bay. The red post indicates the edge of the concrete structure, at high tide, when the sea hides the pipe. Other smaller outfall tunnels at Pevensey Haven and East Stream, also release water out sea from the inland areas of Pevensey Levels, at low tide. These outfall pipes signify the boundary between inland water and seawater. As sea levels rise, due to climate change, the balance between holding the sea back from inland areas and releasing water out to sea at low tide becomes more difficult.



Figure 54.
Photograph: Sally Bream, *Waller's Haven Outfall, High Tide, Normans' Bay, 12 September 2013*.
(Bream, 2015: Plate 22) © Sally Bream

Barrier

The photograph, *East Stream Sluice Gate, Tidal Flap and Channel to Outlet Pipe, Normans' Bay, 26 September 2013* (Figure 55) shows the mechanism by which water is held back at high tide, or released into the sea, at low tide. Tidal flaps function with inertia and close, as the sea comes inland through the outlet pipes. This prevents the sea inundating the land. There is an area in which seawater can be contained if the sea overtops the beach. This is more likely to happen in the winter, during a spring tide occurring during a storm.



Figure 55.
Photograph: Sally Bream, *East Stream Sluice Gate, Tidal Flap and Channel to Outlet Pipe, Normans' Bay*, 26 September 2013
(Bream, 2015: Plate 25) © Sally Bream

Another type of barrier, which prevents the sea from eroding the inland area are the houses that are situated along the edge of the beach, in an area called Beachlands. The photograph, *Commissioners Cottages, Beach Area, Normans' Bay Village, 12 September 2013* (Figure 25) shows one of the older houses at Normans' Bay. The sea can erode land in-between houses, but not in front of the houses. They therefore act like barriers, which physically keep the seawater from eroding the beach. They are also barriers in terms of policies that are made to protect the local economy and housing. The area of pebbles in front of the buildings is maintained by the Environment Agency, as part of a sea defence strategy. The Commissioners Cottages are local landmarks, because they have been in the area for over a century.

The image, *Pevensey Bay Beach Sunrise, 27 July 2014* (Figure 56) shows the beach, which has been maintained by Coastal Defences to a depth of 30 meters at the high tide water level. This shingle barrier protects the shoreline houses, infrastructure and road systems, from winter springtide storms, and flooding from the sea. The width of the beach area above high tide is a defence against flooding by the sea. Although the photograph's aesthetic presents a picturesque view of the seafront at Pevensey Bay, the image aims to reveal the way in which the seafront beach shingle area, prevents the sea from overtopping the beach.



Figure 56.
Photograph: Sally Bream, *Pevensey Bay Beach, Sunrise*, 27 July 2014
(Bream, 2015: Plate 28) © Sally Bream

FLUX

Flux refers to the idea of a changing climate, increased precipitation and rain, and the way in which these processes are concealed by the continual drainage of the marshland. This is revealed at the point of the breakage in trees that have become oversaturated with water. Flux also defines the way in which the landscape environment is depleted by human waste. Flux is about the fluidity, which modifies this environment in relation to climate change. These changes take place at the boundaries of structures, such as trees or waterways.

Saturation

An example of climate change might be shown in terms of wind and rain damage to plants. The photograph, *Broken Tree, New Bridge Road, Rickney Sewer, 24 January 2014* (Figure 57), demonstrates my speculative approach to looking for signs of climate change. I have not found any research showing the effects of climate on tree growth and susceptibility to water damage. However, I believe that, after reading information about the effects of climate change, it could be assumed that these tree breakages might be in part, due to climate change. These breaks in the heartwood of the tree, where the sap is stored, may be an indication of climate change not only due to the heavy rainfall in autumn and winter 2013- 2014, but also due to warmer weather, which when combined with high winds and the flat, open nature of the landscape, could cause this phenomenon to happen.



Figure 57.
Photograph: Sally Bream, *Broken Tree*, New Bridge Road, Rickney Sewer, 24 January 2014.
(Bream, 2015: Plate 31) © Sally Bream

Depletion

In this section, the work represents signs in the landscape where depletion of the earth's resources is visible. In a newly sown field, I noticed that the maize seeds were covered with a red shiny coating that contain neonicotinoids that are lethal to bees (Daily Mail, 2012; Carson, 1962). This in turn, affects pollination, and with the risk of flooding or drought, due to climate change, this puts more stress on the environment. In the summer months, the dry soils supporting the crops appear to be broken up and dusty. The depletion of the nutrients in the soils used for growing crops such as wheat and maize, leads to the use of fertilisers in the soil. See, *Close-Up of Soil, Ploughed Field, Sown with Red-Coated Seeds, Herstmonceux, 2 May 2015* (Figure 58).



Figure 58.
Photograph: Sally Bream, *Close-Up of Soil, Ploughed Field, Sown with Red-Coated Seeds*,
Herstmonceux, 2 May 2015.
(Bream, 2015: Plate 38) © Sally Bream

The photograph *Close-up of Foam and Brown Sediment with Floating Pennywort, Watersmeet, Rickney, 19 November 2014* (Figure 59), shows an area at Pevensey Levels where water is pumped up from a lower level of land, to higher ground, by the action of the pumping station. The area was tidied up in October 2014 because the bridge needed repairing. This meant that trees were cut back, and dead or fallen tree trunks were removed from the area. The waterway was also dredged to remove dead plants and objects that had accumulated since the bridge was last repaired, in 1945. The main subject of the photograph is the foam, which accumulates on the surface of the water. It is white with large bubbles at the center of the image, and there are smaller brown bubbles at the edges. The water has travelled through sluice gates which originated at one of the sewage treatment plants in Hailsham, to the north of this area.

The waterway is the site of the original river, which now carries treated sewage from water treatment utilities near Hailsham. The foaming water shows that there is pollution present, in the form of detergents from domestic wastewater. The photograph indicates the way in which human intervention in the landscape combines with the landscape's own regenerative capacity. The photograph shows a highly maintained and controlled environment, although it also appears to be under stress because of overpopulation in the nearby towns. As in Edward Burtynsky's *Manufactured Landscapes* (2003), the photograph shows humanity's desire to utilise Earth's resources. In this example, water is used for diluting and flushing away hazardous waste. The photograph conveys the idea of the gradual encroachment of climate change within this landscape. The visual impact of the photograph lies in the juxtaposition between the natural outline of trees and plants, and the unnatural appearance of the foam, indicating something awry in the environment. There is a sharp contrast between the boundary of the foamy water and the soils and plants at the river's edge: a communication and exchange, between human and natural environments. Manufactured human waste has seeped into the river, thereby affecting the quality of the water, creating an environment for plants and animal life that is not fully life supporting. Although the landscape in the photograph is managed to

process pollution, it also shows a watery environment, which is at the tipping point of dilapidation. The idea of the countryside as a place of recreation and regeneration is contested when evidence of pollution is visible. Policy booklets on climate change often mention the regenerative benefits of green open spaces. These spaces are likely to be disrupted eventually because of the vulnerability of water resources to climate change and consequently, the distribution of wastewater and other pollutants in the landscape will need to be more carefully controlled.



Figure 59.
Photograph: Sally Bream, *Close-up of Foam and Brown Sediment with Floating Pennywort*,
Watersmeet, Rickney, 19 November 2014.
(Bream, 2015: Plate 35) © Sally Bream

DAMAGE

I have found that climate change is also visible by the way in which the landscape is maintained to prevent damage caused by plants. The Floating Pennywort plant can grow rapidly in the summer, causing damage to man-made structures, such as sluice gates and pumping stations, by blocking the mechanisms that convey water through the channels. Damage is also evident in minute, and not immediately recognised ways in relation to the man-made infrastructure. Although this might be put down to wear and tear, vehicles, fuelled by fossil fuels, slowly break down the built environment. These breakages not only show an increasing volume of traffic, but also display evidence that the vehicles involved, in causing this material damage, were also the means by which fossil fuels have been burned and carbon dioxide then released into the air.

Plant

The photograph *Floating Pennywort, Pevensey Haven, Rickney, 8 September 2012* (Figure 60), shows the invasive Pennywort plant on the surface of the river, which thrives in warmer conditions. Visually, the scene appears tranquil, and has a picturesque quality. It is the site of an ancient waterway, which runs alongside farm buildings. Trees overhang the river, and the Ordnance Survey map shows that this river runs past the Norman ruins of Pevensey Castle, the site of Anderida, a Roman Fort. This lyrical and pictorial view of the river is counterbalanced by the presence of the Floating Pennywort plant. With its vibrant green leaves, that appear above the surface of the water, it would appear to be evocative of harmony within the watery environment.

This plant, however, has long vertical stems and roots below the water, which can clog up the waterways and sluice gates, thereby preventing the flow of water out to sea. Consequently, as temperatures begin to rise because of climate

change, the plant will grow for a longer period of time during summer and will grow faster. The dredging of this plant from the waterways by the Environment Agency is expensive. The presence of the plants denotes the balance between economic value of maintaining the land and the climate change.



Figure 60.
Photograph: Sally Bream, *Floating Pennywort, Pevensey Haven, Rickney, 8 September 2012*
(Bream, 2015: Plate 40) © Sally Bream

Material

Material damage refers to the built infrastructure and in particular in the photograph of the repairs to Rickney Bridge. This should also be seen in relation to the burgeoning effect of road use, which also reflects the extent to which we rely on fossil fuels to drive the economy. The landscape viewed as a *hyperobject* (Morton, 2013) has been an essential concept in my practice research, when identifying areas of the landscape at Pevensey Levels, which show signs of climate change. Consequently, for example, a ruined bridge becomes a hyperobject, which reveals the deterioration of the road infrastructure. In the photograph, *Water Bridge Repairs, Rickney, 27 July 2014* (Figure 61), the loose bricks signify the volume of traffic on roads, and exposes the economic connection between fossil fuels and the built environment. The deteriorating wooden structures under the bridge were replaced by stronger material.

The upheaval and effort involved in lowering the water level, bring in sandbags and syphoning water overland, to drain the area, indicates the prioritising and importance of this road for the general infrastructure. Cutting down trees and organizing the undergrowth obliterated the idyllic and tranquil beauty of this area. At the same time, the pumping station stopped pumping water away from Down Level. Water from Hurst Haven was dammed off by raised sluice gates in *Rickney Sluice Gates Raised, Water Bridge Repairs, 12 July 2014* (Figure 62).

Both images above show that, in times of crisis, the landscape's connections with the picturesque begin to disintegrate. Modern materials, such as plastic, and aluminium appear as signs of corporate intervention. In terms of searching for climate change, the material damage of the brick bridge, becomes not a picturesque ruin, but the point at which a fissure reveals the effects of modernity in the form of the volumes of traffic that eventually break down the infrastructure and air quality.



Figure 61.
Photograph: Sally Bream, *Water Bridge Repairs, Rickney*, 27 July 2014.
(Bream, 2015: Plate 42) © Sally Bream



Figure 62.
Photograph: Sally Bream, *Rickney Sluice Gates Raised, Water Bridge Repairs*, 12 July 2014.
(Bream, 2015: Plate 41) © Sally Bream

REGENERATION

Climate change is not only connected to catastrophic events, but also to landscape regeneration, in terms of the rejuvenation of soil, water and air, even though the causes of climate change continue undiminished. I identified three types of regenerative impacts within the landscape at Pevensey Levels, which are there to mitigate against climate change, even though these areas are quite small. These are, reedbeds, under the heading, *Reeds*, which are planted by farmers as part of the Higher Level Stewardship scheme run by the government. There are also marshland plants, which are encouraged to grow, albeit at the margins of the water, by farmers and the Environment Agency. Then, I included the idea of the air, which in photography is as invisible as Morton's idea of hyperobjects, but with imagination, can render the idea of air as a regenerative material that carries greenhouse gases into the atmosphere. Although this is an optimistic view of air, especially when it becomes polluted in summer months across the south of England, it is also an important consideration, in that one of the signs of climate change is that we will experience more precipitation in the form of rain and the volume of air to water.

Reeds

My work shows the ways in which adaptations have been made in the landscape in relation to modern farming practice. The photograph *Wind-Powered Water Pump, Hankham Level, 18 March 2014* (Figure 63), shows a water pump, run by ecological means, on organic farmland. The wind pump pulls water from Pevensey Haven at the area near the hedgerows, into the marshland area that has been planted by the farmer. The photograph shows how mitigation for climate change is taking place by creating environments for biodiversity to flourish, by encouraging indigenous plants and animals to the area.



Figure 63.
Photograph: Sally Bream, *Wind-Powered Water Pump, Hankham Level*, 18 March 2014.
(Bream, 2015: Plate 46) © Sally Bream

I have returned intermittently, at different times of the year, to record how the landscape is changing, and in some places there is a marked difference, such as at Chilley Farm land, where the farmer has started to design, irrigate and plant a reedbed. The decision was made in order to replenish the soil, which had been grazing land, but which had become depleted of nutrients. Again this has been supported by a government grant for farmers. In the photograph, *Chilley Farm Land, New Reed Bed, 15 October 2015* (Figure 64), the foreground shows that the grass has been taken away, revealing the soil underneath, which is dry and crumbly. This area will be planted with clover and wildflower plants. Water is drained off from a nearby ditch in order to fill the reed beds, which have been dug out.



Figure 64.
Photograph: Sally Bream, *Chilley Farm Land, New Reed Bed*, 15 October 2014.
(Bream, 2015: Plate 45) © Sally Bream

Organic farming promotes the growth of wild flowers, which become a signifier of a healthy landscape environment, and *Court Lodge Farm Reed Bed, 13 July 2014* (Figure 65), shows how plants such as clover enrich the soil and grow alongside a diversity of other wildflowers. The overall approach of the farmer is to cultivate organically and in harmony with the environment, by minimising the impacts of dairy farming within the land, and by increasing the conditions for biodiversity. Although the farmer is not directly doing these things because of climate change, the effects of organic farming does benefit the landscape environment, in that farmers are aware of the importance of increasing the diversity of plants and animals that can thrive in the marshland areas.



Figure 65.
Photograph: Sally Bream, *Court Lodge Farm Reed Bed*, 13 July 2014.
(Bream, 2015: Plate 43) © Sally Bream

Margins

Indigenous plants are mostly situated at the edges of the landscape, either because the Environment Agency and farmers leave them there, or because of deliberate planting. Close-up images reveal the diversity of plants in an area of land in *Drainage Ditch with Duckweed, Sedge, Fossilised Common Reed and Cyperus. Hankham Level, 19 November 2014* (Figure 66). The small ditches in which these plants thrive are situated next to grassland, where the biodiversity of plants is minimized.

When compared with a grassy bank, which has been cut back, in the photograph *Grass Verge, Pevensey Haven Riverbank, 12 March 2015* (Figure 67) it can be perceived that approaches to enhancing the landscape for biodiversity are not generally applied. The photograph of the grassy area appears to be insignificant until it is remembered that government policies on climate change demonstrate the need for green areas, as a way of combatting the affects of climate change, yet in practice, their plans are not implemented widely.



Figure 66.
Photograph: Sally Bream, *Drainage Ditch with Duckweed, Sedge, Fossilised Common Reed and Cyperus.*
Hankham Level, 19 November 2014.
(Bream, 2015: Plate 49) © Sally Bream



Figure 67.
Photograph: Sally Bream, *Grass Verge, Pevensey Haven Riverbank*, 12 March 2015.
(Bream, 2015: Plate 48) © Sally Bream

Air

In the photograph, *Mist Rising at Down Level, New Bridge Road, 16 July 2014* (Figure 48), the area before sunrise at 6:30 am was thick with fog, and as the sun came up, the cattle began to make their usual mooing noises. I then realised that they might have been reacting to the way in which the mist was being dragged up into the air by the heat of the sun. The vapour took about half an hour to rise, and then disappeared high into the sky without a trace, leaving the scene bright, sunny and hot. The cattle stopped mooing when the process had finished. The scene that I had experienced looked primordial and mystical. It looked as if the veil of fog had been magically lifted from the landscape, leaving a scene that was once again a working landscape.

Carbon dioxide, and chlorofluorocarbons (CFCs) in the atmosphere are the gases, which cause anthropocentric climate change. The process I had witnessed, part of the water cycle, was the means by which these greenhouse gases rise into the atmosphere with water vapour. Greenhouse gases then fall back down onto the land and sea in the form of acidified rain, one of the consequences of anthropocentric climate change. The photograph is an imaginative representation of climate change, as suggested by scientific research, which states that these processes take place. We cannot see these gases, yet we are also aware that they must be there.

Conclusion

What is the Overall Narrative and how do the Photographs, as a whole, Index Climate Change?

The deadpan form of the headings in the book suggests the way in which the landscape is managed in mundane ways, in order to counter-balance the effects of climate change. While the images themselves appear to look lyrical and evocative of the picturesque landscape, their deeper meanings are about the distorting impact that climate change and human actions have on the landscape. When I look closely at the grass verge (Figure 67) I can see delicate flowers that are not valued as much as other more common varieties, such as those that are bought in garden centres. Although I know that garden flowers are more voluptuous and enticing than ‘weeds’, I can’t help but wonder why we are steered towards the economic value of some plants and not others.

Attitudes towards these small wild plants are redolent of the wider care that we have for the environment, and for me, these seemingly insignificant and boring looking plants, which after all are sturdier than garden blooms, suggest to my imagination that they somehow hold the solution to climate change. It is we humans who are diminishing the earth’s resources, and can’t stop ourselves from utilizing fossil fuels, plastics, or poisonous substances.

The photographs show the counterbalances that take place within the landscape, that trade off against the harm that is done elsewhere. The images in the section *Regeneration* do not offer any hope for the landscape as green space. Marshland plants are marginalised and held in discrete parts of the landscape, as it suits humans. Even the morning mist, that I once would have considered to be revitalising and magical, seems to give way to the miasma and grit that seeps into its area.

CONCLUDING CHAPTER

In this concluding chapter, I consider the series of questions that initially facilitated my research, and in taking photographs at Pevensey Levels for evidence of climate change. These were:

1. Is it possible to show or 'unveil' climate change in a temperate climate in southern England, and specifically in the drained marshland area of Pevensey Levels?
2. What role does photography take in helping to document signs of climate change?
3. What stance do I as a photographer need to take, in order to be receptive to visible signs of climate change in this landscape?

In the process of answering these questions, I realized that a phenomenological approach would assist me in achieving my aim of becoming an embodied subject connected with the landscape, rather than merely an observer within the tradition of Cartesian Perspectivalism. I arrived at this conclusion during my initial field trips, as I came to recognize that it was not enough to simply perceive the landscape, I needed to imagine as if I were physically and intimately a part of it, in order to locate evidence of its changes. To this end, I walked the length and breadth of Pevensey Levels, at different times of the day and at different times of the year, in order to increase the perception that I belonged to this place. At first, it was difficult to succeed in this, as I was really only a visitor. The terrain was difficult to navigate, and I was unsure of the geographical nuances of the land. Nevertheless, the process of its discovery became an important aspect of the photographic project itself.

1. Is it Possible to 'Unveil' Climate Change at Pevensey Levels?

Phenomenology and Awareness of Climate Change

I have increasingly used a phenomenological approach in my photographic investigation of the landscape. The concept of phenomenology provides a means by which to connect the body with the land, the land to the representation, and the representation to the spectator. Furthermore, Merleau-Ponty's *The Visible and the Invisible* (1968) has assisted me with representing some of the more subtle signs and significations of climate change in the moderate weather system of Pevensey Levels. Still more, a phenomenological and cultural-geographical reading of the landscape, and its representation, has helped me in defining ways of envisioning climate change in the landscape (Wiley, 2007, Ingold, 1993, Inwood, 1997).

I initially became aware of the impression of the landscape observing me, after I had read the article by Tim Ingold, *The Temporality of the Landscape* (1993), who states that we perceive the temporality of the landscape, or what he terms the 'taskscape', as participants and not spectators. He writes, 'Reaching out into the taskscape, I perceive, at this moment, a particular vista of past and future; but it is a vista that is available from this moment and no other' (Ingold, 1993, p.159). This notion helped to situate me in relation to the unfolding narrative of the landscape, and therefore, place my photographs within that same narrative.

He develops this idea further by giving an example of a painting, *The Harvesters* (1565) by Pieter Bruegel the Elder, asking us to imagine that we have entered the originally depicted scene. He asks us to feel, smell and even walk along paths in the painted landscape. This phenomenological approach to understanding landscape representations, reminds us of the

correlation between thought and muscle memory. If we can see ourselves not as outsiders, but as participants of a representation, then it is possible to envisage a way in which we can bring credibility to our memories about landscape and to our imaginations where landscapes are concerned. Instead of relying on scientific evidence for climate change, we might be able to go out and see for ourselves what is happening in the landscape, in order to discern what the genuine effects of climate change are. Therefore, I believe, in taking this phenomenological approach it is possible to more greatly enhance one's understanding of, and ability to reveal signs of climate change in the landscape.

Another idea that has informed my perceptions of the landscape is Timothy Morton's concept of the 'Hyperobject' (2013). In his book he outlines how the viscosity of climate change is in our cells and that even a raindrop, with impurities contained within it, are harbingers of the effects of climate change. Morton's idea about the invisible made visible makes it possible to perceive the presence of climate change in every part of our environment. It is the imaginative possibility of this idea, which allows me to point to a place in the landscape and indicate the event of climate change. Therefore, the Sospan Dau sea dredger (See Figure 68) is not just replenishing the shoreline with shingle from the seabed. It represents our wider concerns regarding rising sea levels, and also reminds us that these issues are presented to us as part of commonplace environmental maintenance, rather than as cause for greater anxiety. The photograph is set within the section of the book heading Mechanism and its subsection *Barrier*, which show how the shoreline protects the inland area from inundation by the sea, and the method by which shingle beach is maintained as an effective barrier.



Figure 68.
Photograph: Sally Bream, *Sospan Dau Sea Dredger, Sovereign Harbour, Sunset, 31 October 2014*.
(Bream, 2015: Plate 29) © Sally Bream

2. What is the Role of Photography in Documenting Signs of Climate Change?

Beauty

I noticed that during the process of taking a photograph, the landscape seemed to become a seductive force, an entity surrounding me and willing me to represent it purely for its surface attraction. It was difficult to resist this urge, and I examined why I was drawn to the notion of wanting to represent the landscape in this way, even when I tried to consciously avoid it. It became a painful experience for me to avoid representing the landscape as anything other than beautiful. I realised that this was in part, due to my expectations and past experiences of other landscapes. Yet, the experience of photographing the landscape could not fully be explained by learned expectations alone.

I began to understand this drive to represent the landscape in terms of picturesque beauty, as a type of obstruction that prevented me from perceiving climate change. In addition, my idealisation of this landscape forced me to enquire what might be the source of this urge to represent the landscape as beautiful and picturesque. I considered whether the landscape, as a picturesque construct, was in some way concealing signs of climate change. I began to ask myself what ideas might be useful in eliminating this obscuring of vision. Ultimately, I discovered that the concept of aesthetic beauty is difficult to escape in representations of the landscape. However, although this can restrict the way the way in which the photograph is read by the spectator, causing a reading of the image that is taken at surface level, the idea of beauty is useful in order to create initial interest in the photograph, allowing the spectator to form a relationship with the image, after which the image can be read for other meanings, if intended. Gerry Badger, writing about the work of Richard Misrach, states that 'the camera has a disconcerting tendency to beautify the most nominally unprepossessing of subjects' (Badger, 1988). Misrach himself believes

that 'beauty can be a very powerful conveyor of difficult ideas. It engages people when they might otherwise look away' (Badger, 1988).

Memory

Photographs act as mnemonic devices, reminding us what we saw in the landscape. They also allow us to take a closer and longer look at what was seen in the land. In this way, photographs contain information and act as aide memoires. The photograph of the broken tree can be taken and shown to an expert on trees in order to find out the causes of the damage, for instance. This does not mean that I was wrong to assume that the tree was broken because of climate change. On the contrary, my hypothetical stance has connected me with the idea of climate change and its identification within the landscape. In this way, memory and investigation are combined through the photographic image. When I take another look of my photograph of the grass verge (Figure 67) I can begin to identify certain plants: Red Deadnettle, Cow Parsley and White Stonecrop. By identifying their names, I begin to develop a familiarity with the land. This small patch becomes the place where these small plants thrive, rather than a neglected, worn piece of grass verge. By knowing their names, we can find out about the soils, and the image can help with an exploration that considers geological formations.

3. What Stance do I take as a Photographer, in order to be Receptive to Visible Signs of Climate Change in the Landscape?

The idea of the connectedness between the observer of the landscape and the landscape itself is an important consideration for an embodied approach to understanding and identifying visible signs of climate change in the landscape. Consequently, I have found that the notion, and activity of idling through the landscape, intrinsic to its investigation. It is a standpoint that is in opposition to the pace of rapid economic activity that makes the necessarily slow and careful observation of our changing environment so difficult. Idling enables us to lengthen time and allow the landscape to reveal itself, and a better way to connect the body with the landscape. It is also a crucial activity in affording us the time, to point to objects, and phenomenon within the landscape that reveal the signs of climate change.

I have also found that the indexical nature of the photographic image, that says 'here it is', is valuable in terms of locating signs of climate change. For instance, *Sluice Gates, Rickney, after Snowstorm, 15 March 2013* (Figure 69) is an image that might be considered picturesque, in its suggestion of a sense of calm. However, It also shows that the landscape is controlled to ensure that the flow of water is constant in order to maintain the landscape, and that the plants on the waters edge, are collapsing into the waterway itself. I know that when I leave the area, and return some time later, the area will be tidied. This can be disconcerting, as I expect the landscape to continue to grow unfettered, and this cleaning up of the area communicates a feeling of loss – that one feels that one will never see the landscape as it really is, or what it could become. However, ironically, it is in the very action of this management, of the landscape at Pevensey levels and elsewhere that the consequences of climate change can also be made visible.

The visibility of climate change is situated within three characteristics: in the management of the land, in the intensive utilization of the area, which causes water and air pollution, and in the way that plants are responding within the environment. The research shows that photography's ability to index and act as a mnemonic device aids the search for phenomena of climate change. Subsequently, documenting these phenomena photographically can intensify the observer's perceptions of the landscape.



Figure 69.
Photograph: Sally Bream, *Sluice Gates, Rickney, after Snowstorm, 15 March 2013*.
(Bream, 2015: Plate 4) © Sally Bream

CONTRIBUTION

My photographic work and the book, are original research that I hope will be of interest for other photographers working within the landscape genre. Furthermore, it is my hope that my written research will be of use to those artists and writers whose work is concerned with the connections between image and text, and the possibilities that text has for re-defining the image. It is also my intention, that my particular creative and critical approach to photographing the landscape in order to search for evidence of climate change in the landscape can be used for the purposes of education on these issues. Indeed, it is my wish that government organizations and scientists could develop a more exploratory approach to local landscapes by using photographic images that demonstrate the localized, gradual encroachment of climate change, rather than simply illustrating the sudden, dramatic events that seem far-removed from most people's experience.

During the course of my research, I have found that government policy documents are largely unhelpful in assisting the general public to become aware of the visibility of climate change in their local environments. Therefore, my photographic research might encourage individuals to assess the impact of climate change in their immediate vicinity, through a photographic investigation. Accordingly, my research method has developed a strategy that might also be useful to visual education: the notion of imaginatively searching for climate change in the landscape and questioning the evidence of various phenomena; the idea of the using the close-up photograph to reveal significant minutiae within the ecosystem, and the idea of devising questions that direct an overall visual investigation of the landscape.

I frequently returned to the landscape in order to clarify my approach to revealing climate change, and to see beyond the merely picturesque. My method of taking a photograph was an act of exploration. Other individuals could use this approach if they wanted to explore their own landscape to search for climate change. Still more, research involving groups of

individuals, might clarify whether the methods that I have used in this research, are relevant to the needs of society, in increasing people's visual connectivity with their local environment and acting as a catalyst for further discussions about the visibility of climate change. I have discovered that people often possess a vast store of knowledge related to their landscape, and that this knowledge needs to be shared more effectively, in order for the population in general to appreciate the way that the landscape is maintained.

I think that I have dared to combine an informed approach about climate change facts, which are underpinned by scientific research, with an imaginative, creative approach. The idea of scientific proof is just as creative as artistic vision, and visual creativity can uncover fact and truth if it dares to. I also believe that during my research, I have developed a stronger conviction about the place of the imagination as an important vehicle for discovery within landscape photography.

I have contributed to research design, in that I have developed a body of photographic work, which has been defined by the fieldwork practice. My research questions allowed me to explore further than the picturesque landscape, and helped me structure and define the presence of climate change at Pevensy Levels, in relation to the photographs. My contribution to knowledge is the recognition that one of the 'veils' that has consistently obscured the discovery of climate change, in a landscape terrain where the signs of climate change are not immediately apparent, is the idea of an established connection with beauty, which is perpetuated by a traditional Cartesian Perspectivalism. Within this, the connection of pointing towards objects in the landscape and devising a set of questions in order to clarify visible signs of climate change, which are obscured by landscape's picturesque beauty. This involves a personal response wherein the body and the landscape are accepted as being intertwined, and as one, instead of separate.

I have shown that concepts such as the index, Cartesian Perspectivalism, taskscapes, geopoetics, and the ideas of Solnetsev (1948) and Berg (1915), the urotshistshes and facies, as well as cutting edge, have relevance in an artistic

exploration of the landscape. I believe that I have brought the idea of *idling* further into photographic practice, as a way of counterbalancing the economic value of continual activity. Idling is not only a way of slowing down the economy and therefore of slowing down the causes of climate change, but also has the effect of stretching out time and allowing the landscape to unfold (Deleuze, 2006) as well as permitting the observer to unfold with the landscape.

My approach to photographing the landscape was not only exploratory, but also instinctual, and I believe that this has allowed for a more interpretative method when looking for signs of climate change. Finally, during my research over six years, I have not found any other extensive body of research, where a photographer has worked in an unremarkable landscape, where there is no immediate and dramatic ecological disaster, in order to document the gradual and minute signs of climate change.

Finally, I wish to state that my photographic and written research should be considered as ultimately part of a wider creative and critical dialogue within the art world, and more specifically in relation to the developing discourses about climate change within contemporary landscape photography. In addition, my book *Unveiling Climate Change at Pevensey Levels* (Bream, 2015) establishes a conceptual model for an exhibition of my photographic work within the context of a gallery space, through defining areas within the landscape of Pevensey Levels in terms of textual and visual concepts that present a structure by which the images can be displayed and viewed.

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APPENDICES

Appendix 1

Book Headings

Mechanism

Flow

Dredge

Outfall

Barrier

Flux

Saturation

Depletion

Damage

Plant

Material

Regeneration

Reeds

Margins

Air

APPENDIX 2

Book: Camera Viewpoints on Map (Bream, 2015: xvi)

Rickney, Watersmeet

2.4 m above sea level

Grid Ref: TQ 62588 06918

Chilley Stream Bridge

2.1 m above sea level

Grid Ref: TQ 64168 05973

Waller's Haven, Hooe Level

Boreham Bridge

5 m above sea level

Grid Ref: TQ 67628 11995

Hogtrough Bridge

4 m above sea level

Grid Ref: TQ 67381 10247

Horse Bridge

4 m above sea level

Grid Ref: TQ 66905 09020

Middle Bridge, Landing Stage

3 m above sea level

Grid Ref: TQ 66761 06854

Down Level

1 m above sea level

Grid Ref: TQ 62525 07572

Manxey Level

2 m above sea level

Grid Ref: TQ 63705 06864

Pevensey Bay Beach

6 m above sea level

Grid Ref: TQ 66080 04152

Normans' Bay Beach*Waller's Haven Outfall*

6 m above sea level

Grid Ref: TQ 68956 05648

East Stream Outfall

6 m above sea level

Grid Ref: TQ 69476 05938

Sovereign Harbour, Pevensey Bay

6 m above sea level

Grid Ref: TQ 64515 01790

Herstmonceux, Field

17 m above sea level

Grid Ref: TQ 64180 10231

Court Lodge Farm, Wartling

2.6 m above sea level

Grid Ref: TQ 66287 09084

Hankham Level

3 m above sea level

Grid Ref: TQ 62601 06307

APPENDIX 3

Gissing, G. (1927) *Thyrza*, Excerpts from Chapter XLI "The Living"

"The plain of Pevensey lay like a vision of fairyland, the colouring indescribably delicate, unreal; bands of dark green alternated with the palest and most translucent emeralds. The long stretch of the coast was a faint outline, yet so clear that every tongue of sand, every smallest headland was distinguishable. The sky that rested on the eastern semicircle of horizon was rather neutral tint than blue, and in it hung long clouds of the colour of faded daffodils. A glance overhead gave the reason of this wondrous effect of light; there, and away to the west, brooded a vast black storm-cloud, ragged at the edge, yet seeming motionless; the western sea was very night, its gloom intensified by one slip of silver shimmer, wherein a sail was revealed. The hillside immediately in front of those who stood here was so deeply shadowed that its contrast threw the vision of unearthly light into distance immeasurable. A wind was rising, but, though its low whistling sound was very audible, it seemed to be in the upper air; here scarcely a breath was felt"

(98% Location 7757, Kindle).

"They were silent. And as they stood thus the sky was again transformed. A steady yet soft wind from the northwest was propelling the great black cloud seaward, over to France; it moved in a solid mass, its ragged edges little by little broken off, its bulk detached from the night which lay behind it. And in the sky which it disclosed rose as it were a pale dawn, the restored twilight. There amid glimmered the pole-star. Eastward on the coast, at the far end of Pevensey Bay, the lights of Hastings began to twinkle; out at sea was visible a single gleam, appearing and disappearing, the lightship on the Sovereign Shoals."

(99%, Location 7783, Kindle)

APPENDIX 4**Interview Transcripts****a. Interviewee 3 (I 3)**

Interview Date: 9/10/2014

Speaker Key:

SB Interviewer
I 3 Interviewee

SB in what ways, if any, do you think that the weather is changing?

I 3 That's quite a difficult question, because even though we've (the company) been here 15 years, in meteorological terms, 15 years is insignificant. So, in terms of purely the weather, it's very difficult to say. Yes, last winter was particularly bad, but there's no reason to suppose that that wasn't a one off. The one area that we do know things are changing is that, the way our contract is set up, we were expected, or we were told to expect, sea level to rise, on average, 6mm per year. And that would be reviewed every five years. So the expectation was that, every five years, there'd be a 3cm sea level rise. There's a company called Hydraulics Research Wallingford, who are recognised in the contract as being an independent or impartial expert. So, ourselves and the Environment Agency, every five years, we'd get HR Wallingford to provide a review of sea level rise. And, so, that's been done twice, and rather than 30mm, the sea level rise has been approximately 18mm a year. So sea level rise has been a little bit less.

Now, that is specific to this part of the Sussex coast. That's not necessarily true of the whole of the UK. For instance, Scotland is still rising as an effect of the end of the last ice age, and the south east of England is sinking, so part of that 3mm... Sorry, part of that 17 or 18mm over five years is normal land movement, and some of it is sea level... is actually physically water getting higher. But the net effect is 18mm, or there about, every five years. So, you know, that is a measurable change. In terms of more severe storms and more frequent, it's difficult to say. Plus, it's not quite as straightforward as that. For the storm to be particularly notable, it has to coincide with the spring tide so you'll have a statistical variation. You can have lots and lots of storms, but if they come on neap tides, they're going to have less impact than a storm does on spring tides. So it's actually more complicated than just becoming more stormy.

SB What change, at the seafront, might be a direct cause of a changing climate? So, we talked about the shingle.

I 3 The main thing that happens is that, over time, a shingle fringing beach like Pevensey Bay, with rising sea levels, is trying to roll landwards. Now, in locations where there is space for the beach to roll landwards, it will quite happily do that. The problem is, in the areas where people have built towns... Sorry, individual houses, estates, villages, towns, right on the coast, then it can no longer do that. Eastbourne would be a good example of that. Eastbourne was a fishing village until the industrial revolution. It grew to be a town. The town elders, or the people in charge, noticed that the beach was eroding, so they built a huge concrete promenade to actually fix it from eroding further. In Pevensey Bay, which is primarily agricultural, all the old properties, which tend to be, if you go back to look at the 1870 OS maps... It's about 1870s, anyway.

Most of the properties you'll see are coastguard cottages, and they were always built behind the defences rather than on top of them, so that there was some room allowed for the beach to move landward. It's only more comparatively recently that properties have been built actually on the top of the beach. In fact, even if you go into Pevensey Bay village, the Victorian houses, if you walk along, you'll see that there's a beach, garden, road, then house. They deliberately built them further back. The more modern stuff, by that, I mean, sort of, from the Environment Agency depot along Coast Road, they're actually right on top and right at the front of the beach. Now, those were never actually designed to be houses. They were built in 1938, and they were basically upmarket beach huts. They were on timber stilts so that the sea would go underneath. Nobody lived in them. People used them in the summer, locked them up for the winter, came back in the spring to open them, aired them out, and carried on again.

And it was only World War II, the baby boomer, sort of, time, there was a lack of places to live, people were buying them and converting them into houses. So they were never intended to be lived in. So, essentially, their use was changed.

Plus, in those days, you didn't require planning consent the same as you would do now, so it was largely uncontrolled. And that's why there was more of a problem today, because there was a lack of control in the past, in allowing... In some cases, large developments, but in most cases, just small developments. So the major effect that you would expect to see to the seafront, from changing climate, is the property will start to get damaged.

Yes, whilst we have a contract to maintain the sea defences, if a storm's big enough, there's not an awful lot we can do. All we can do... Essentially, what we do is reactive. Beach is what it is. As soon as it gets damaged, we try and repair it. Now, the storms we've had this week, they're just about finished now, so we can put it back again. The problem we had last winter was one storm followed another storm, which followed another storm, so you just didn't sufficient time to get the beach back into its proper condition before the next storm came along. So, ultimately, there will be a really big storm that will start causing damage to property, so that will be the major... That, in the short term, that will be the major issue. In the longer term, as we've said, sea level rise at 18, 20mm every five years. In another 100 years, suddenly water levels are going to get to a point that it's going to be unsustainable.

SB Yes. Has anybody thought up what would happen in that scenario? I haven't seen anything projected anywhere, but would things have to be moved back, like the railway track and things like this?

I 3 Well, possibly. But, basically, what happens at the moment is that properties get redeveloped individually. Some of those properties are still pretty much as they were in 1938. Others have been turned into complete brick-built structures, two storeys and all the rest of it, so they will be redeveloped. Now, as far as planning's concerned, the level that they would like you to put your new floor level at changes every few years, as sea level rises, and is re-examined and so forth. So anybody who's looking at redeveloping one now will be given a set of conditions or recommendations to build to. In ten, 15 years time, there will be another set.

SB I see.

I 3 So you could foresee a situation, if somebody built a particularly robust property, which... The whole beach could, sort of, get washed away, but it could still be there. What happens then? Again, my personal view is that nothing much will change until such times there's a really big storm, lots of properties get damaged, then the insurance companies say, here you are, here's your money, we're not going to insure anybody there again. Now, at that point, somebody then decides, well, what do

we do? Do we just say, well, nobody lives there? Or do we move everything back and develop further inland? Now, there is evidence to show, on the east coast, at Happisburgh, where it's on clay cliffs which recede at several metres per year, that they are trying to make land available for people who then lose property actually on the cliff top, that they can develop several hundred metres inland. Now, whether that's an option everywhere, who knows? It all depends who owns the land and what it's being used for. But if you want to go to the ultimate, consider London. You know, London is... Lots of London is below sea level. Now, are we just going to keep building defences higher and higher and higher? In 200, 300 years time, what's going to happen? I don't know the answer.

SB So you haven't seen any imaginative, kind of, studies or anything that would...

I 3 No, but there is a property called White Horses, which is right on the edge of Sovereign Harbour, which... It was damaged in 2006, and the owners rebuilt it. They had quite a small plot, but they moved it from being right on the sea to as far back to the track as they can. And that is built on massive concrete piles, with a huge concrete pad, cast on the top. So that would be an instance where a series of storms could wash all the beach away, and it would still sit there like a lighthouse.

SB Right. Isolated.

I 3 Because it's so well constructed. So that is a possibility of things that could happen.

SB Yes. Because, in the Netherlands, they're... And I think Germany, I haven't looked at that, but in the Netherlands, they're already planning houses on... Floating houses on the sea.

I 3 Yes.

SB I haven't seen...

I 3 If water level comes in, the house will float up?

SB Yes. I mean...

I 3 Yes. But that's quite... I mean, that's not on the sea, that'll be in the water behind.

SB Right. Behind...

I 3 On the sea wouldn't work because the waves and so forth. But, I mean...

SB I see.

I 3 But their sea defences are 100s of metres wide. I mean, their whole sand dune systems, they're completely on a different scale to anything we do. But then they're protecting a third of the country, which is, which is obviously a lot more.

SB Yes. And I guess it's a different soil system, so that might change things as well, and if it's sand or clay...

I 3 Well, it's all sand. All the sea defences are pretty much all sand. They have something of a more straightforward system, in that their coastline is a lot straighter than ours. So therefore, it's more manageable. That's not, that's not true everywhere. They've got similar problems to us, in that they've got major town and city development right on the coast that they're having to protect. But where they have got space, they've got these huge... You know, you wouldn't even know it was a sea defence. You'd just think it was a sand dune system. I mean, they're enormous. But they're protecting against a one in ten thousand year storm, so... Which is significantly higher than anything we protect against.

SB Right. So, while they're protecting against... Because they're really flat land, aren't they?

I 3 Yes.

SB The one in... What is it? One in ten...

I 3 Yes, the one in ten thousand year storm.

SB Thousand year storm.

I 3 Because, you know, we said that if a storm here was to break through our defences, the railways line would act as a, sort of, buffer. In Holland, that wouldn't happen, because everything is so low it could potentially flood everything. So to protect against the one in ten thousand year storm makes a lot more sense.

SB So, third question. What parts of the landscape, in and around Pevensey Bay, seem to be staying the same? So it's the opposite question, in a way. What can you see that is not being affected? You've almost answered it in the last question, really, so...

I 3 Well, I mean, to some degree, the coastal strip, just 30m wide, isn't changing much, because we're physically managing it, if you see what I mean. On a day to day basis, yes, you'll see changes, but then, we're contracted to put it back again. So, artificially, it's staying the same... There are some... Because we're... Because we do have to replenish the beach every year... And that wasn't being done through the late 80s and 1990s. Because we're doing it every year, there's more material being added to the system. So there are some places where you can see that the beach has changed a little bit. We're not talking significantly, but locally, people will, rather than having 15m of shingle in front of their house to the beach, they've now got 25m, something like that. So, for the individual, they would say that that might be a significant change, but if you're looking at Sussex or Pevensey Bay as a whole, they're not really significant changes. So there are one or two places that are, sort of, gaining a little bit, but overall, nothing much is going to change until at least 2025, because we are contracted to maintain it as it is.

SB So is that... Ideally, the beach, the shingle on the beach, should be... Is it, at high tide, 30m? Or...

I 3 Well, it depends. I mean, where we're sitting now, we're 100m from the sea, but we're still on the back of the defences. So, here, it's 100m wide. So, historically, this is wider for some reason. If you go around towards Sovereign Harbour before they built all the properties there, that was really quite wide. If you... You know, okay, this doesn't work very well on the tape, but if you look at the... At this area on the photograph, you can see that, some places, it was getting really quite narrow. And in others, it was much wider. So, in theory, we're trying to maintain it at about 30m, as a minimum. But that's not... You know, as I say, here, it's 100m wide.

SB And that's regardless of high or low tide?

I 3 No. Well, it's at the top, at about 30m wide, at the top.

SB In the wider area of Pevensey Levels, are there changes that you've seen since you've been working with Pevensey Coastal Defence Ltd that might be due to a change in climate? You work with the seafront, but have you noticed anything changing more inland?

I 3 Not really, no. The only thing that would change would be, had there been a big enough storm that suddenly introduced salt water to an area of fresh water, or something like that, which hasn't happened, so... We've not really had any... We haven't had any interaction with the fresh water, really. So, in that sense, the scheme has been working, in that has been providing protection to the Levels.

SB How do you imagine the weather might change in the future? And how might this eventually have an effect on sea defences at Pevensey Bay? So, you said a bit about that earlier, I think.

I 3 Yes. I mean, just the sea level rise alone will mean that, in time, smaller and smaller storms would be able to overtop the defences. And that's without looking at increased storminess. You know, the effect of increased storminess would be... Potentially, the beach would erode more quickly, or more on a single tide, than it would have done in the past. Another aspect is that, because water levels are getting progressively deeper, the waves actually get closer to the beach before they break, and therefore they've lost less energy, when they hit the beach, than they would have done previously. So sea level rise could mean that you're actually getting more wave energy on the beach, from the same storm. So, I mean, the long term outlook, really, is if... Where the coast can roll back, then in some places it may well do. Where it's right next to the railway line, there's not a lot you can do about that unless you're going to start moving the railway line.

Where there are properties, then it may be that, at some point in the future, there is a big storm and the seafront properties get damaged, and they get removed. In which case, you could realign the beach by 10, 15m, and in the short to medium term, you've solved your problem. But in 100 years, you're still going to have the same problem or a worse problem. But, more often than not, you are looking at something like a one in 100 or a one in 200 year storm for that kind of thing to happen. Now, you don't expect them to happen necessarily every 100 years. They might happen next week, or they might not happen for 200 years, we just don't know. We're only looking at statistical probability.

SB And is there anything else that you'd like to say about the sea defences?

I 3 I think one of the things that you might like to do is to look at some of the old photographs, just to see how the beach has changed. Whether that counts in terms of your project, because you haven't taken the photographs... But I suppose it's part of research, isn't it?

SB Yes. So, I mean, do you know where I might find old photographs?

I 3 Well, I've got, I've got quite a few of them... At some point, you might... You just have a look at them at some time.

SB Yes, it'd be great to.

I 3 And see, you know, property damage that happened in specific storms, what the beach looked like.

SB Oh, that would be really good to see.

I 3 You know, there are some old postcards which just show Martello Towers dotted round and... So you can, kind of, you can, kind of, guess from them, you know, what things used to look like. But that'll take a bit to set up, so you'd have to do that another time.

End of Interview

b. Interviewee 4 (I 4)

Interview Date: 15th October 2014

Speaker key:

SB Interviewer
I4 Interviewee

I4 As I was saying, the weather, in which way do I think it's changing? I just think the seasons are shifting slightly and we possibly have slightly more extremes, but very marginal I would have said.

SB Yes, okay, and what changes are there within your farmland that might be a direct cause of a change in climate that you might be able to see?

I4 I don't think so, I don't think so, I don't think we've got any... I haven't noticed anything in the last 30 years.

SB What about the channels, digging them deeper, is that to allow for more flooding in the winter?

I4 I think they've been trying to raise the water levels here for a few years for lots of reasons, mainly for [unclear] wildfowl and things like that. And also it's flood defence. If we can have bigger channels holding more water and things back then we can hold a lot more water before they let it out to sea. I think a lot of it is to do with flood defence and things, it's part of the big picture.

SB So which is the deepest channel that you've dug?

I4 Oh some of ours are about eight foot deep, but they've been there... generations ago they were dug to drain this marsh to make it better farmland, and they've only just been made sort of bigger and just cleaned out really and made a bit bigger and deeper just to hold a bit more and the water to flow round a bit better.

SB So that's always been going on for farmland, but perhaps the reason has changed for flooding?

I4 I think now their aiming... what they're aiming is to encourage these wintering wildfowl and make this a bit more of an environmentally sort of friendly area. But in the old days it was done purely so that they could grow some crops to feed everybody and feed the animals

SB Yes, and third question, what parts of the landscape in and around your land seem to be staying the same? So if you could think of something that hasn't changed perhaps for 50 to 100 years.

I4 I don't think... I think predominantly down here it's always been grassland, and I think it's pretty much the same. And we... a few years ago when we were milking our dairy herd and we were far more intensive than we are now, we planted different grasses, Italian rye grasses and these sorts of things, to get better crops, better yields, better quality forage. But gradually these fields have gone back to their old pastures as the grasses... all the native grasses have crept back in and whatever and they're fine. They're absolutely fine, we very extensive now so we don't push our grassland at all and it's fine.

SB Great, in a way it's gone back to native grasses?

I4 It's reverted back to its native grasses, yes.

SB Okay. So in the wider area of Pevensey levels are there changes that you've seen since you've been farming in the landscape that might be due to a climate change?

I4 I don't think so. As I said the water levels have been raised, but I don't think that's anything to do with climate change, I think that's just as I said for the environment. These ditches and things obviously all help with flood defences, which may be a

bigger picture, the environment agency looking further in front for flood defence. But generally the marsh down here looks after itself, and even with all the rains we have we don't have a problem with flooding. It's all these concrete areas and they funnel all these acres of water down to one pipe, that's when you get flooding.

SB More the building works that go on and the one at Hailsham that's projected to start now, they're going to build housing at the top there. So I think on the edge of the marshes.

I4 But the trouble is there's acres and acres and acres of ground covered with concrete, the water runs off just as quick as a flash, it all gets fired down one tube and it all has to go somewhere. And it's so concentrated, whereas here you've got acres and acres and the rain falls and it slowly just precipitates away and wanders its way away and we don't have issues.

SB Right.

I4 That's my view.

SB Okay, and the last question, how do you imagine the weather might change in the future, and how might this affect your farming practices?

I4 I don't think in my lifetime we're going to see enough of any change to make any difference at all to what I do. And yes, no, it's not going to change anything I'm sure, I'm sure. I think the weather is in cycles and patterns and, you know, I don't think climate change... I think quite a bit of it is propaganda and that's my view.

SB Yes, there's always a question mark about why it's talked about so much, and there are books written about why it has become the defining thing about the environment and the weather. Whereas when you look back at history we've always had big storms that's devastated stuff and changes... the whole thing about the English weather is that it's changeable.

I4 Changeable, exactly, yes. No I don't think... I mean we haven't... 1976 we had that blazing hot summer, we've not had a summer like that since.

SB Oh true, I remember that, I was 16.

I4 We've not had a summer like that since.

SB In London it was really hot.

I4 And then we had one of the wettest winters that followed it.

SB Yes, oh I don't remember that.

I4 I do.

SB Oh yes there was a big thunderstorm at the end of it.

I4 Yes, we had a really, really, really wet winter, but you know, we get these storms it's weather, that's what it is. The planet's been warming up since the Ice Age so I think it's nonsense myself.

Every year is so different, we've had a fantastic growing year this year, the grass has grown like mad all through the year. The fruit on the trees has all grown tremendously. Some people say that's because we've got a cold winter coming, but I don't believe in that, I don't believe in that because I just think it's... what we've had it's not what we've got to come if you see what I mean... but it will change. Next spring, you know, could be cold, could be warm, we don't know, it's changeable. And it changes over... if you look at the weather over a ten year pattern it's fairly even, it evens itself out.

SB You know you talked about the lambing season and you've changed your practice because of the weather might kind of get people's fear at that time of the year, do you think next spring you'll do that?

I4 As I say I just feel as if the seasons have shifted slightly, and I just think we're about a month out of kilter it seems. They don't seem to be more severe either way, but I just think they just seem to be a bit later. So I've changed my lambing from February to April because I've been caught two or three times now with having to get the animals back in, the young

lambs back in because of the snow and bits and pieces. I mean as a kid we used to get snow December/January time, and of late it's been February/March.

SB Yes, that's true.

I4 The last few years that we've had snow it's been after Christmas, January, February, March, that sort of time. So I just think it's slightly shifted, I don't think... but that could be anything to do... I mean do we truly understand how all these seasons work and everything and whatever? There we go, records haven't been going long enough.

...And I think, you know, as I say, I just think things have shifted a bit, but I don't think it's any worse or whatever. The planet's been warming up for all those years so it's not noticeable in a generation I don't think.

SB I think you're probably right. [Showing the farmer an Ordnance Survey map]
So your farm...where is your land?

I4 Right, I'm sort of here [pointing to map]

SB Yes.

I4 Sorry to draw all over your map.

SB That's ok, they all have a meaning, all these marks.

I4 There's my field there.

SB I did get it right, did I? Is it that one?

I4 Yes, you were spot on...And then that one there...That's my land, and then I also have these bits here right up here which belong to XXX...But that's all part of their estate and I have all the land and that sort of runs from here, up there and down to there I think, and that's all that lump there.

SB Could I just ask you, because I haven't asked anyone else, about... I can see there's a footpath along some of this...[Pointing to map].

I4 Yes, along the Haven.

SB Yes Pevensey Haven, but things like Chilley stream and Waller's Haven haven't got a path. Have you ever walked along them?

I4 Canoodled along them. There's quite a nice footpath that runs along the Chilley, back along here [**points to map**].

SB Oh right, yes.

I4 There's quite a nice footpath along there, I'm not sure about the bit running the other way.

SB Do you know, is it possible to walk along Chilley stream to the top?

I4 You can't get... there's gate here at the top of the track, and there's a couple of gates, you can get most of the way along there. You sort of end up at XXX's farm here then. But you can get most of the way up along there on this side. Not sure about the other side, but this side you can get a long way up.

SB So there's not a law against walking along there, is there?

I4 I wouldn't have thought so, I wouldn't have thought so. Walk up through there and then straight across, you were pointing in the right direction. And then yes you can take that along... And this is quite interesting, what they call the Raven's Ditch here and this all feeds back to the Waller's as well...It's quite an intricate sort of network that they look after.

SB Do you understand the lie of the land, having lived here all this time?

I4 I understand all of my bits and pieces of land, we've all got different sluices, there's a big sluice here [pointing to map]. This is quite a main ditch that runs through here, which they look after, and that controls all the sort of ditch levels on the ground that I farm, so I sort of understand that bit.

SB But it is complicated, isn't it? Some waterways are stopped, and diverted to go somewhere else.

I4 Yes, very much, but they've got sluices everywhere. Up here on the main [unclear] there's some big sluices at the top, there's some big sluices up here and they govern lots of things, there's some big pumps here, which do a lot of work. But a lot of it comes from here, a lot of it works its way down. There's a sewage works here. A lot of this is sort of trickle fed from there.

SB Right, right, so it's treated sewage and it comes down.

I4 It...comes in through different ditches and things.

SB Yes.

I4 That's the sort of source of a lot of it. Obviously, it's high land up here as well so the water all runs off the higher ground and just seeps down into the marsh.

End of Interview

c. Interviewee 5 (I5)

Interview Date: 27th October 2014

Speaker Key:

SB Interviewer

I5: Interviewee

SB In your experience, have you noticed the weather changing, or any changes in terms of the trees? For instance, this year, the leaves seem to be on for longer.

I5: Yes, well, that's right. Yes. We seem to have longer spells of extreme weather, to me. It seems that it, yes, will absolutely chuck it down for two or three months, and then you'll go two or three months without any rain, so that's something in that sort of sense. You know, October... Even this October, we had all of October's rainfall in half... Within the first half of October, after two months of no rain. That seems to be the new pattern. You have two or three months of either extremely wet or extremely dry weather, and then it reverses. It's not like that all the time, but you seem to have these long periods of one or the other, now, which either results in, of course, the water pipe ban, or flood alerts. I'm sure there seem to be more of those, more regularly, than there used to be. Whether or not people are more conscious of those sorts of extreme weathers than they used to be... Newspapers seem to certainly exaggerate what's coming in the next week. They seem to love the weather. So, I'll come back to your original question, have I noticed changes in the weather? Yes, I'd say...yes. We have these extreme weathers, or more intense weathers, for a longer period of time. Yes. You know, we still get the occasional very cold snap. Normally, a week, or two weeks, in the winter, when the temperature goes down to about minus 10°. But, last winter... I think we only had one day that was a minus.

It only went down to about minus 1°, one night, then, and that was it. It was a very mild winter, an exceptionally mild winter, last winter. But how much these are changes that we see due to climate change, or how much it's part of an ongoing, longer-term weather pattern, I really don't know. When you look back through... Even in recent history, the last 200 years... The winters were very, very cold in Victorian times. Yes. Who knows how cyclical our weather patterns really are, over the centuries? You know, we've only really been recording the weather properly in the last 150 years. So...

SB What alterations are you making in your farming practices, because of variations caused by climate change?

I5: Changing climate. Yes. Well, we're organic. We've been organic since 2000, which...that's probably had the biggest impact in the way that we farm. And as a result, I would say that you have to farm with nature instead of against it, which means, for example, I can't put manmade fertiliser... you can't use manmade fertiliser, so we use clover far more than we used to. Now, clover's interesting, because grass will grow at 8°C, clover will only start growing at 11°C. So, in the spring, there's always a bit of a lag with the clover kicking in. But if we are getting warmer weather, warmer springs, that's good news for me in terms of clover growth, because it's... I'm getting maybe an extra month's growth with clover, which is fantastic because it fixes nitrogen. It sucks nitrogen out of the atmosphere and puts it into the ground. And if I'm getting that action happening at the end of March instead of the end of April, it gives me quite a bit more grass for the cows. We... Since we've been organic, we've stopped growing maize, which means we are all grass and clover, which means the soil structure, is probably more stable than continually ploughing and growing maize. What changes are there within your farm that might?

SB The soil, is it clay and gault?

I5: The top end of the farm, here, which is up from the Pevensey Levels, is a clay loam on top of a yellow clay, very plasticine, yellow clay, which is only about a foot under the surface. But on the Pevensey Levels, you've got alluvial topsoil, which can be several feet deep, or it might only be eight inches deep. And that is on top of a very, very heavy blue clay. So it's a very different soil type down there. Also, these upper fields are drained by land drains and ditches, so the drainage system on the ground, if you like. Whereas, the marshlands, because the water table's high, you rely purely on surface gullies, called grips, to run the water.

SB What's a grip?

I5: A grip is a surface gully that allows the water to leave the field, into a ditch.

SB Oh. Are they, like, kind of...They're dips in the land.

I5: Yes.

SB And they fill up with water.

I5: Yes, like a...

SB And then they trickle.

I5: Yes.

I5: I don't know what you know about the Pevensey Levels history, how it's formed and...

SB There's a website about Pevensey Levels...

I5: Right. Well, it was formed because a spit formed across the bay at Pevensey and effectively sealed it off. It was a sea inlet, and the sea inlet came right up to here. We were the most... In the most part of the whole marsh...

SB Long ley. It's an... Is it a... It's not really an island, is it?

I5: Long ley... Long leys means long leys of grass. So ley is a... L E Y is another word for grass field or grass, an old-fashioned word.

SB Right.

I5: So when the sea inlet was sealed off by this spit that... This bar that formed across the bay because there was long shore drift... In medieval times, or in the dark ages, people realised that the ground was very fertile and they hand-dug the whole ditch system. So, for example, the population of Pevensey, around 12, 1300, was about 30,000 people, and a lot of them were hand... Were hand-digging the marsh ditch system to drain the marsh. Now, the marsh is deeper as you come inland, and we've got the lowest point on the whole Pevensey Levels.

SB You're the lowest below sea level?

I5: Yes. As you come inland, it gets deeper... But the lowest point is just down here, about... It's not even half a mile. Just over there... And that's 2m below sea level (pointing to the west area of the farmland).

SB 2m? Right, okay.

I5: Our granddad used to tell us a story... I mean, effectively, now, today, there are two pumping stations that lift the water out of the marsh, because it won't drain out. Our granddad used to tell us that, in the 1930s, there was a very big, very severe drought, and all the stock of the marsh came to this end where there was the only water left. And then, when the rains came, all the animals were taken up to the market and they had a big sort out as to who's animals were who's... So the watering hole was here.

SB I see. So that was extreme.

I5: Now, climate... The changes that I've noticed with the marsh, between now and 20 years ago, has been that it's not really climate change, it's more the attitudes towards ecology, and that status that Pevensey Levels has got now, in terms of wildlife and preserving it. If you think back in the 1960s and 70s, grants were being given to farmers to drain their marsh. Now grants are being given to farmers for managing their marsh in an ecologically, or an environmentally sensitive, way. So, to that end, farmers have been encouraged to raise the water levels. So I would say that our water level now, throughout the year, is quite a bit higher, maybe a foot higher, than it was 20 years ago.

Now, whilst that encourages wading birds and so on, because you've got more flooded land and you've got more rushes growing because you've got a high water table, that sort of thing, there is an impact on farming production. You know, I've...

Whilst it's a fantastic habitat down there, I can't grow the quality of grasses that would give more milk production, for example. Now, I don't mind that, because I believe, in terms of the way that I manage my cows, part of their quality of life is that they can choose what they eat instead of me telling them what to eat. So they've got such a diverse... They literally forage down the marsh, where there are hedgerows or the different types of grass, and so on. And that's part of the reason that my milk has... You know, it tastes good, I think. So that has been a change, is that, you know, it is a... It isn't... Well, today, it is teeming with wildlife down there. You know, the surveys that we've had done and so on, and plus, going organic as well over the last 15 years.

But, also, I think the higher level scheme that came in as part of the Common Agricultural Policy, on the environmental side, there's been... Well, the Pevensey Levels was a number one target area in the UK, for this new higher level scheme. And the higher level scheme was all about trying to get groups of farmers to be targeted and enter the scheme, so that you've got a coordinated land mass being managed in a certain way, to encourage wading birds or whatever, instead of one farm here doing it and one farm over there doing it. If you've got to manage the water on a big area like the Pevensey Levels, you've got to have a scheme that encourages all farmers to participate. And then you, and then you get more than the one plus one equals two. You get one plus one equals three, in terms of benefit. It more than doubles what...by individuals doing it...here and there. So it's been a very successful... That's been a very successful project. I don't, I don't know if you've talked with [Interviewee 2a], at all. I don't think he's on your list... He's very strong on the wildlife side.

SB Yes, he is.

I5: He can certainly tell you more about it than I can. But, you know, as you say, the Pevensey Levels is a very special area. It's a... Nobody's... I don't think anybody's farming the Pevensey Levels intensely, and I think everybody's farming it pretty much extensively. There's a lot more going for farmers on the Pevensey Levels. And they're all pretty well... Most of them are signed to the Higher Level Stewardship Scheme (HLS), which restricts certain agricultural practices, so that it... So you haven't got nitrogen running into water qualities, for example. Probably, the biggest in terms of environmental change... Another big one, thinking about it, which is partly due to, maybe, a warming climate, but certainly this shows how urban society does affect something as beautiful as the Pevensey Levels, is the increasing problem of Floating Pennywort. And people buy these plants to put in their garden ponds and so on, and they look pretty, but the seed ends up going into the... Down the drain, into the sewage treatment works, and it's all gone down the Haven. And this weather that we have... It's...

Yes. That is probably the biggest challenge to the... Everything that's being done to encourage wading birds and spiders and so on. Floating Pennywort... is just such an invasive species.

SB Yes. I saw a study, which, kind of, pinned it down to, you know, various, kind of, chemicals in that water.

I5: Yes.

SB But then it grows really well if it's warm.

I5: Yes.

SB It loves warm weather.

I5: I can almost stand there and watch it grow. It's phenomenal, the speed at which it grows.

SB Yes, it does grow fast. Yes.

I5: Yes, so that's the biggest environmental threat to the Pevensey Levels.

SB Yes. So do you know what it does to the water? Does it... It takes away the oxygen, doesn't it? And kills off the fish and algae.

I5: Yes. And it also stops the light from coming into the water, because it literally covers the water and light can't get in. And it makes it... It becomes a very dense plant within the water, so any wading birds that try to swim along, it's pretty well impossible. I don't know how hard it is for fish to... I think that it floats on the surface, so I don't... It tends to be... The roots are in the bank, on the side, and then it spreads across the water. So it's not rooted on the bottom of the stream. It'll be on the side banks. And then it... But it looks like a solid... It's such a mass, it looks like you could walk across it. The cattle have tried to walk...

SB Oh, yes. I can imagine that.

I5: So yes, that's...

SB Yes, it's very thick.

I5: That's phosphorus, I think, which comes from the sewage treatment works. I think there's a lot of phosphorus in the banks, which it really grows on.

SB Does phosphorus... Does that come from the sewage treatment as well?

I5: Yes, because there's lots of phosphates in washing up powder.

SB What parts of the landscape, in and around your land, seem to be staying the same? I mean, you've really answered that, in terms of... Well, yes, you have. The history, I think, unless you want to say more.

I5: Yes. What was I going (to say is) we've been encouraged to put in things like scrapes, which are shallow ponds only about a foot deep, for the wading birds. So if you've got a wet corner of a field, for example, which is a bit boggy, then we've turned that into a watering hole for wading birds. The other thing that we have down there, which is nothing to do with climate change, is... We started growing cricket bat willows by the marsh. We had to get... We talked with... Well, back then, it was English Nature, but it's now Natural England. But we worked with them about... As to where would be the best places to plant them. So that's a nice environment down there. Barn owls like them. Yes, they seem to like hunting along where they are. ...

I haven't totally agreed with everything that the environmental lobby wanted to do. They wanted to take out a lot of the hawthorn bushes and small hedges, and so on, which... To open up the marsh, to make it more open landscape. It is a pretty open landscape anyway, and you won't see many hedges and tress, because it is all... All the fields are separated by ditches. But, on the margins of the Pevensey Levels, such as us, where we've got upland as well as down in the marsh, you've got trees meeting the ditches, basically. You have that marginal area. It just gives you quite a diversity of wildlife. Coming back to the Levels, when the Hailsham North sewage treatment works was built, in 1972-73, they were going to... The clean outfall, that was going to go into the Haven stream, was going to be a nine-fold increase of water into the Haven stream.

So they had to dig out the Haven stream to give it the capacity to take that extra water. Because, up to the sewage treatment works, it's just a stream. Afterwards, it's quite a flow. So when they dug out the Haven, basically they dug out the haven to give it the capacity and built up the banks. So, quite often, Haven River is higher than our land. When you stand on the bank and look at the river, you can see the level of the water is higher than our fields on the other side of the bank, which shows how low the land is. But when they dug it out, the first thing they came across was pebbles and seashells from when it was a sea inlet. And then, underneath that was black bog oak, hard as iron, from when it was all, once upon a time, mainland European oak forest.

SB That's hard to believe, isn't it?

I5: Yes, it is. Yes.

SB So, at one point, it was dry?

I5: It wasn't a sea inlet... You're going back goodness knows how many millions of years, but when Britain was part of mainland Europe, before it broke away from France, it was all part of a big forest oak mass, I think. And then, when it broke away, basically, the... Yes, there was quite a sea inlet into the Pevensey Levels. Yes. I don't really know much more on that. The other thing we used to find as children, down on the farm, quite often, was spitfire shells. There were a lot of dogfights over the Pevensey Levels in the Second World War.

SB Yes, I've heard about this. Unexploded shells and stuff.

I5: Yes.

SB There was one by Rickney Bridge, apparently.

I5: Yes, that's right.

SB They had to... deactivate it.

I5: Well, I think Hitler was aiming... If he had invaded, he would have come up through the Pevensey levels.

SB Really?

I5: Yes. Because it's a very open area that's hard to defend, and they would come quickly up through the marsh... granddad was in the Home Guard at the time. He wouldn't have stood a chance against all those tanks coming in.

SB Yes. Especially with the new tanks they had...

I5: Yes, that's right. Yes.

SB It's interesting how the land has changed and has been used.

I5: Yes.

SB Have you seen changes? I mean, yes, of course. You've mentioned that, really. And then, how do you imagine the weather might change in the future, and how might this affect your farming practices? Do you expect the weather to be getting warmer? Or stormier and flooding more...

I5: Yes. I think... We get these intense periods of weather, whether it's intense rain for a month or two, or a prolonged dry period, or a prolonged very cold period. In terms of cold periods, you know, we've just got to insulate pipes and that sort of thing, so that we can handle the cold without it disrupting us too much. Very hot periods, well, clover's pretty good with warm weather. That'll keep going, whereas grass might stop growing. The Pevensey Levels, normally, because we're at the lowest end of the Pevensey Levels, the very hot period doesn't affect... We've always got green grass down in the marsh. That doesn't burn up. Because we're the lowest end, it'll be the last place to, sort of, go brown with grass getting burned up by the sun. It'll still be green grass down there. Intense rain, really, I've got to... I mean, we've altered the way that... Well, we are altering the way that we handle our slurry. We're putting in a rainwater harvesting system to use water, and we'll be able to store it. So, again, it's trying to work with these potential changes and use them to your advantage, as opposed to...

SB Yes, what do you think about this? I mean, I can't remember a November being this hot and sunny.

I5: I remember one, probably about ten years ago, because farmers were silaging grass in November, and it was about 70°F.

SB Really?

I5: Yes, so...

SB So we have had...

I5: Yes, I do remember one. Yes. But it does seem strange when we're nearly in November and it's a day like this.

SB Yes. And what about your cattle and, you know, extremes of weather? Would they have to be moved across the land somewhere? Or if it got to rainy? Or if it got windy...

I5: If it's too rainy, then I've got to bring them indoors, because otherwise they'll approach the fields and damage the fields. Or if it's too dry, then I might have not so much grass. In either situation, I've got to be able to feed the cows, which means having food for them, that I can give to them if there's a drought. Or if it's very wet and they've got to come indoors, I've got to be able to give them food. So, to that end, to help with the food, I've taken on land further away, about a mile or two away, which I... where I cut the grass and bring it here...

SB Yes. Higher land,

I5: Inland land. Yes. Another interesting one on climate change that I have noticed in the last ten years is the possibility of disease, airborne disease, affecting cattle, coming in from Europe. You look at the blue tongue thing, that came in on a plume of warm air from Belgium, into East Anglia and Kent, and then it spread in the country. So diseases can change with climate. So that's something that will keep us on our toes.

SB Yes. Is there much you can do about that? Because if the air comes over, that's it.

I5: There's nothing you can do about that.

SB Yes, I guess.

I5: If a plume of warm air comes up from Belgium or France, carrying some midges that are carrying a new disease that might affect sheep, or cattle, or whatever, and they happen to land on your land, there's nothing you can do about that, really. If it's a new disease, then vaccines wouldn't have been developed for it yet, so you're probably going to struggle with the disease for a couple of years, until vaccines are developed and people understand the disease. But, initially, it'll... Yes, it catches you out. You can't... You're just going to have stock that suffer, initially.

SB Were you affected by the Saharan... That flurry of...

I5: The dust that came in?

SB Dust that came over, whizzed the pollution from Europe, as well.

I5: Yes.

SB It came over in the Summer, wasn't it? In June/July?

I5: No, I don't... No, we weren't... I don't remember being affected by it. Yes.

SB It was pretty bad in Brighton.

I5: Right.

SB Yes, it was like a smog in Brighton.

I5: Oh, really? Oh, right.

SB Yes, it was pretty bad. But maybe it just... The wind blows through here, so maybe it, sort of, cleared the way.

I5: Yes. Maybe it... Yes.

SB So how many miles inland are you, here?

I5: About nine or ten as a crow flies.

SB Yes. So Pevensey Levels is about ten miles wide, at its widest, by ten miles inland.

I5: Yes, probably.

I5: It's longer... It's not a square shape, I don't think. It might be with the catchment area, but probably, from Pevensey Bay, we're probably, maybe, 15... Between ten and 15 miles. Yes. You can see Pevensey Castle on a clear day, straight across the marsh.

SB And have you planted marshland because of the HLS scheme?

I5: We haven't planted marshland, but the marsh will just regenerate by itself if you give it... You know, if it floods and so on, rushes will just [unclear – regenerate?]. There's one field that we... When we converted to organic, we sowed it with oats and under-sowed it with a white clover layer of grass. We had a fantastic crop. It really was fantastic. But within three years, it was just a field of rushes again, completely reverted back to rushes because of the high water table and flooding. Yes, so if it's naturally marshland, then that's what it will be. You don't have to engineer it to be that, it will just become that. Yes. No, some... It is pretty. It's beautiful down there. Yes. Did you want to see the marsh? Well, I've got to take two cows down the marsh... So we can walk down there, if you've got time.

SB Okay. Yes, that'd be great. Yes.

I5: Yes? It'll be about a 40-minute walk, there and back.

SB Can I take a few photos with my iPad as we go?

I5: Yes, of course. Yes.

SB Oh, that'd be great. That's brilliant. Thank you.

End of Interview

APPENDIX 5**Photographed Areas of Pevensey Levels**

Rickney and Pevensey Haven

Chilley Bridge

Chilley Reed Bed

Down Level

Herstmonceux

Seafront: Pevensey Bay, Normans Bay and Sovereign Harbour

Wallers Haven

Manxey Level

Glynleigh Level

Hankham Level and Montague Farm

Court Lodge Farm Reedbed, Wartling

Horse Eye Level

APPENDIX 6

List of Photographic Research Images: 2012-2015

97 Pevensey Levels All Photographs Taken Between, 11 March 2012 to 2 May 2015, with working titles.

(See CD Rom for jpg Images)

1. Rickney

1. Rickney Pumping Station. Sunday 11 March 2012.
2. Pevensey Haven, Watersmeet Bridge Farm, Rickney. Sunday 11 March 2012.
3. Pevensey Haven, Rickney. Floating Pennywort and Riverbank with Shrubs and Trees. 8 September 2012.
4. Rickney Sewer and Yotham Water near Pumping Station at Rickney Bridge. Floating Pennywort, Beech Tree and Riverbank. 8 September 2012.
5. Pevensey Haven, Rickney, Snowstorm. 11 March 2013.
6. Pevensey Haven, Rickney, Four Days after Snowstorm. 15 March 2013.
7. Sluice At Rickney Pumping Station, Yotham Water, Four Days After Snowstorm. 15 March 2013.
8. Rickney Sluice, From Scaffold, Near Water Bridge Repairs, 2 P.M. 12 July 2014.

9. Rickney Pumping Station, Near Water Bridge Repairs, 3 P.M. 12 July 2014.
10. Rickney, Water Bridge, Sandbags, 10 A.M. 27 July 2014.
11. Rickney Water Bridge 1_Foamy Water, 19 November 2014, 1.25 pm.
12. Rickney Water Bridge 2_Pennywort, 19 November 2014, 2.15 pm.
13. Pevensey Haven, Close-up of Riverbank, 12 March 2015. 7:20 am.

2. Chilley Bridge

1. Chilley Stream, North. Reeds And Water Plants 1. 9 August 2012.
2. Chilley Stream, North. Reeds And Water Plants 2. 9 August 2012.
3. Chilley Stream, North. Reeds And Water Plants 3. 9 August 2012.
4. Chilley Stream South 1. Close Up Of Floating Pennywort, Hawthorn Bushes And Water Surface. 12 August 2012.
5. Chilley Stream South 2. Floating Pennywort, Hawthorn Bushes And Riverbank. 12 August 2012.
6. Chilley Stream South 3, Showing Field On Right, Used For Grazing And Floating Pennywort In River. 8 September 2012.

7. Chilley Stream, South Of Bridge, Snowstorm. 11 March 2013.
8. Chilley Bridge, 18th March 2014, From The Riverside, Looking Towards Road.
9. Chilley Stream facing SW from Bridge, towards Pevensey Haven, 31st January 2015, 12 noon.
10. Chilley Stream, facing NE from Bridge, towards Herstmonceux, 31st January 2015, 12:20 p.m.
11. Chilley Stream, Side of Bridge facing West, Environment Agency Railings, 31st January 2015, 12:35 p.m.
12. Chilley Bridge and sluice gate from field, facing SW, 31st January 2015, 1 p.m.

3. Chilley Reed Bed

1. Chilley Farm Farmland, New Reed Bed 1. 29 July 2014.
2. Chilley Farm Farmland, New Reed Bed 2. 29 July 2014.
3. Chilley Farm New Reed Bed 1_ 2 P.M. 15 October 2014.
4. Chilley Farm New Reed Bed 2_ 2:15 15 October 2014.
5. Chilley Farm New Reed Bed 3_ 2:30, 15 October 2014.

6. Chilley Farm New Reed Bed 4_ 2:45 15 October 2014.
7. Chilley Farm New Reed Bed 5_ 3 Pm 15 October 2014.
8. Chilley Farm New Reed Bed Thursday 19th March 2015.

4. Down Level

1. Rickney Sewer near New Bridge Road and Down Level. Showing Cleared Bank on Right. 28 October 2012.
2. Down Level, Flooded Area, West Towards South Downs 1, 9 November 2013.
3. Down Level, Flooded Area, West Towards South Downs 2, 9 November 2013.
4. Trees Near New Bridge Road, Down Level, Near Rickney, 9 November 2013.
5. Close-Up, Trees Near New Bridge Road, Down Level, Near Rickney, 9 November 2013.
6. Fallen Tree Near New Bridge Road, Down Level, Near Rickney, 24 January 2014.
7. Down Level 5, Flooded Marshland Area, Pennywort On Edge Of Ditch, 31 January 2014.
8. Down Level 4, Flooded Marshland Area, Pennywort On Edge Of Ditch, 31 January 2014.

9. Down Level 2, Flooded Marshland Area, Pennywort On Edge Of Ditch, 31 January 2014.
10. Down Level 1, Flooded Marshland Area, Reed Bed And Drain, 31 January 2014.
11. Down Level, Mist, 16 July 2014.
12. Down Level, Sunrise, 16 July 2014.

5. Herstmonceux

1. Maize Crop in Field below Church Farm, Herstmonceux, on Path at Stile, looking Southwest, Evening, 18 July 2013.
2. Path, Field and Pevensey Levels in the distance, looking Southeast Towards Horse Eye Level And Down Level, Morning, from Stile Near Path in Herstmonceux near All Saints Church, 19 July 2013.
3. Wheat Field on Path near New Bridge Road, between Bowley Sewer and Puckeridge Stream, afternoon, 19 July 2013.
4. Wheat Field 1, Showing Trees at Side of Field and Road Near New Bridge, 19 July 2013.
5. Wheat Field 2, Showing Trees at Side of Field and Road Near New Bridge, 19 July 2013.
6. Wheat Field 3, Showing Trees at Side of Field and Road Near New Bridge, 19 July 2013.
7. Herstmonceux Tilled Field, near Church, Saturday 2nd May 2015.

8. Herstmonceux, Close-Up of Tilled Field, Saturday 2nd May, 2015.

6. Seafront

1. Coastguard's House, Normans' Bay Beach Area, 12 September 2013.
2. Waller's Haven Water Outlet Pipe with New Structure, 12 September 2013.
3. Waller's Haven Water Outlet Pipe, Train in Background, 12 September 2013.
4. Waller's Haven Water Outlet Pipe, No Train in Background, 12 September 2013.
5. Waller's Haven Water Outlet Pipe, High Tide, 12 September 2013.
6. Waller's Haven Water Outlet Pipe, High Tide 1, 12 September 2013.
7. Waller's Haven Water Outlet Pipe, High Tide 2, 12 September 2013.
8. East Stream Water Outlet Pipe Sluice and Aqueduct, 26 September 2013.
9. Water Outlet Pipe, East Stream, Low Tide, South, 26 September 2013.
10. Water Outlet Pipe, East Stream, Low Tide, North, 26 September 2013.

11. Waller's Haven Water Outlet Pipe, High Tide. 12 Sept. 2013.
12. Pevensey Bay Sunrise, East, 05:42 A.M., 27 July 2014.
13. Pevensey Bay Sunrise, South, 06:12 A.M., 27 July 2014.
14. Pevensey Bay Sunrise, West, 06:50 A.M., 27 July 2014.
15. Sospan Dau, Dredger looking West, Man fishing on beach, 31 October 2014.
16. Sospan Dau, Dredger looking East, 31 October 2014.

7. Waller's Haven: from North to South

Boreham Bridge

1. Waller's Haven, Pylon, Boreham Bridge, facing North, 3 October 2013, 8 a.m.
2. Waller's Haven, Boreham Bridge, facing southeast, 3 October 2013, 7:00 a.m.
3. Waller's Haven, Boreham Bridge, 3 October 2013, 7:30 a.m.

Hogtrough Bridge

4. Waller's Haven, Hogtrough Bridge, facing north East, 2 October 2013.
5. Waller's Haven, Hogtrough Bridge, facing SSW, 2 October 2013.

Horse Bridge

6. Waller's Haven, Horse Bridge, facing North, 1 October 2013.
7. Waller's Haven, Horse Bridge, facing South, 1 October 2013.

Middle Bridge

8. Waller's Haven Middle Bridge near Rowing Club shed, launch platform. 4 October 2013, 7:25 a.m.
9. Waller's Haven Middle Bridge facing south towards Pevensey Bay, 4 October 2013, 7:20 a.m.

8. Manxey Level

1. Manxey Level 1, 24 January 2014.
2. Manxey Level 2, 24 January 2014.
3. Manxey Level, close-up, 24 January 2014.
4. Fallen Tree in field at Rickney, Manxey level, 27th February 2015, 11:30 a.m.
5. Fallen Tree in field at Rickney, Manxey level, closer shot, 27th February 2015, 11:45 a.m.
6. Fallen Tree in field at Rickney, Manxey level, close-up drainage ditch, in shadows, 27th February 2015, 12:30 p.m.
7. Fallen Tree in field at Rickney, Manxey level, close-up of Tree Trunk, 27th February 2015, 1 p.m.

8. Fallen Tree in field at Rickney, Manxey level, close-up of water channel, plants and debris in water, 27th February 2015, 1:30 p.m.

9. Glynleigh Level

1. Glynleigh Level 1, Hawthorn Tree, 18 February 2014.
2. Glynleigh Level 2, flooded area, 18 February 2014.
3. Glynleigh Level 3, flooded area, 18 February 2014.

10. Hankham Level

1. Hankham Level wind pump and Montague Farm reed bed project 1. 18 March 2014
2. Hankham Level wind pump and Montague Farm reed bed project 2. 18 March 2014
3. Hankham Level, Drainage Ditch, Scrape, 19 November 2014, 3.30 pm.

11. Court Lodge Farm Reed Bed, Wartling

1. Court Lodge Farm Reed bed 1. 13 July 2014.
2. Court Lodge Farm Reed bed 2. 13 July 2014.
3. Court Lodge Farm Reed bed 3. 13 July 2014.
4. Court Lodge Farm Reed bed 4. 13 July 2014

12. Horse Eye Level

1. Rickney Sewer and Horse Eye Sewer on track between New Bridge Road and White Dyke Farm, between Down Level and Horse Eye Level and below Horse Eye Farm. 28 October 2012.

APPENDIX 7

Examples of other Works of Art Made at Pevensey Levels

Samuel Palmer

At Hailsham, Sussex: A Storm Approaching

1821

Watercolor and Graphite on medium, slightly textured, medium wove paper.

Yale Center for British Art, Paul Mellon Collection.

Accession number B1981.25.2656

Collection: Prints and Drawings

Source: <http://collections.britishart.yale.edu/vufind/Record/1667013>

George Vincent

A Distant View of Pevensey Bay, the Landing Place of King William the Conqueror, (1824). Oil on Canvas, 146 x 233.7 cms.

Collection: Norfolk Museums Service. Collection: Norfolk Museums Service. Accession Number NWHCM: 1945.17

BBC and PCF (2015) *Your Paintings*, British Broadcasting Company in partnership with Public Catalogue Foundation (PCF).

Website source: www.bbc.co.uk/arts/yourpaintings/paintings/a-distant-view-of-pevensey-bay-the-landing-place-of-king-wil832
(Accessed 17 September 2015).

Sidney Dennant Moss

Harmony (Cattle Watering, Pevensey, East Sussex)

1935

Oil on Canvas, 50.8 x 61 cm

Hastings Museum and Art Gallery.

William Henry David Birch
On Pevensey Marshes, East Sussex
Date Unknown
Oil on Canvas, 59.5 x 80 cms.
Collection: Towner Art Gallery

Edwin Lawson James Harris
Country Scene with Trees and a Stream
1914
Oil on Canvas, 55 x 75 cms.
Collection: Littlehampton Museum
Accession Number P002.

APPENDIX 8

The Earth Only Endures, Exhibition Leaflet: The Stone Theatre Gallery, London, 2011.

Exhibition Information: 4 Pages.

Exhibition Leaflet. (2011).
Author: Mike Perry

The Earth Only Endures

A collaboration between The Photographers' Gallery and Stone Theatre, *The Earth Only Endures* presents the work of three British photographers, Mike Perry, Jem Southam and Stephen Vaughan. All three examine the impact of human and natural forces in the transformation of the earth's surface and its landscape.

Taken from the title of Jules Pretty's 2007 book, which examines our relationship with nature, animals and places, *The Earth Only Endures* addresses how this relationship has altered in times of climate change and natural disasters. The 21st century marks an era where every inch of our landscape is known, controlled and understood or on its way to being so. The work displayed in this exhibition questions how projecting our own idealisations and cultural knowledge onto natural landscapes has changed our understanding of nature as a concept.

Shot on 8x10" format, these large scale photographs reveal extraordinary detail resulting in an intense and almost super real connection with the surface of the print and the material quality of the landscape itself. On one level these are resolutely objective documents of the landscape void of human interaction or emotional attachment but on closer inspection the works reveal their own stories and space for interpretation.

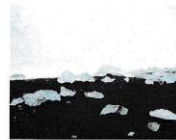
In the series *Wet Deserts*, Mike Perry (b.1960) drove across the Scottish and Welsh uplands. The painterly surfaces of his work reveal nature ravaged by unsustainable farming and industry and the resultant exploitation of our raw materials. In *The Search For White Gold* he records the impact of marble mining in Northern Italy. Jem Southam (b.1950) records the impact of the 'Cornish Alps', the mountainous forms created from china clay mining, on the surrounding landscape and its communities in the poetic series *From a Distance*. The scarred lunar like surfaces of the Icelandic landscape once used for astronaut training in Stephen Vaughan's (b.1968) *Ultima Thule* work suggests an utterly other worldly place. While very different in their approach, all three photographers are united in their documentation of an increasingly industrialised landscape, a far cry from the unaltered and sublime vistas we once knew.

STEPHEN VAUGHAN (born 1968)

In recent years, Stephen has developed a body of photographic work that is made at the edges of the earth's tectonic plates - in Iceland and Japan. His work is widely exhibited in the UK and Internationally, including a recent solo exhibition at Impressions Gallery. In 2010, he was winner of a Pavilion Commissions Award for Contemporary Photography.

The *Ultima Thule* (2004-2008) photographs taken in Iceland retreat in time to the imagined primordial beginnings of landscape and the formation of the Earth itself, void of any human presence or history. This is a study of some of the rawest and youngest surfaces on Earth. He explores the connections between geology, archaeology, history, and memory. In this work, the persistent human urge to explore unknown territory is considered within the context of complex geological processes, over vast periods of time, and the formation of the Earth itself.

Apart from the raw beauty of this work, it's power lies in what it doesn't tell us. Far from being untouched, the red volcanic terrain in *Vikruborgir, Askja* triptych was the training ground for Apollo astronauts prior to the first lunar landing. Similarly, the ice boulders in *Untitled* give us no clue to their origin, they could equally be a natural phenomenon or evidence of a retreating ice cap. By not revealing it's narrative this work can feel confusing or even deceptive, leaving the viewer unsure as how to interpret what on the surface is awe inspiring nature.



Untitled



Ludentborgir



Vikruborgir, Askja, triptych



Hverir Namafjall



Hverir



Hverir White



Grimsvotn

JEM SOUTHAM (born 1950)

Jem Southam is one of the most respected British photographers of the last twenty-five years. Inspired partly by the colour work of William Eggleston, Southam began in the 1970s to document the British countryside particularly the South West where he lives and works. Jem has been the subject of solo shows at numerous institutions including Tate St. Ives (2004) and The Victoria and Albert Museum (2006) and is included in many important collections including Rijksmuseum, Amsterdam, Museum Folkwang, Dusseldorf, and the Yale Centre for British Art, New Haven. He recently exhibited at Tate Britain in the show *British Landscape: Photography after the Picturesque*.

In this exhibition, Jem's landscapes document the physical imprints of a mining community in South West Britain. *From A Distance: An Industrial Landscape Of Cornwall* was commissioned by Tate St Ives (2003) to investigate the Cornish Clay Country mines. The landscape created through the excavation of English China clay by Imerys in St Austell has a dark, mysterious and surreal beauty. Stretching along the moorland area between the A30 and St Austell, the enigmatic qualities of this industrial landscape and its surrounding historic communities have interested Southam for some time. In this series of work the artist's measured gaze penetrates the heartland of the 'Cornish Alps', exploring the spatial potential of this artificial landmass and the consequences of its perpetual flux. This poetic study also introduces the idea of reclamation and reminds us that nature will carry on long after we have gone.



China Clay Pits 2, St Austell, 2003



China Clay Pits 3, St Austell, 2003



China Clay Pits 1, St Austell, 2004

Images: Jem Southam/courtesy James Hyman Gallery

MIKE PERRY (born 1960)

Mike left a career in commercial media to follow his environmental and photographic interests. He had his first public show *Beach* in 2004 at The Photographers Gallery in London. Since then he has shown in Europe and the US and in 2007 represented the West of Britain in the BBC4 TV series *A Picture Of Britain*. Shows include *Inland* and *British Landscape Photography* curated by The Photographers Gallery and in 2009 Mike won 'Best Picture' in the photographic competition commissioned by Christies of London.

The *Wet Desert* landscapes taken in the Scottish and Welsh uplands seem to hover uneasily between recording the effects of human intervention in nature and seductive, painterly surfaces. In *Loch Cluanie*, *Cross* and *Burn't Gorse* the images offer bleak dehumanised vistas of scarred or ravaged nature, prompting musings on unpredictable weather changes or irresponsible depletion of natural resources. *Treeless*, on the other hand suggests a more romantic picturesque vista but on closer inspection reveals a landscape stripped bare by the deforestation of ancient Caledonian pines. In *Green Gorse*, the low minimalist horizon records the dominance of gorse along the Pembrokeshire coastal path, caused by decades of sheep farming.

Perry seems to revel in the painterly and poetic opportunities offered by muted winter light and monochromatic tones, grey mists, waterlogged bogs and austere, treeless moors. Whilst less iconic than melting glaciers, they invite reflection on what these uninhabited, marginal landscapes might signify in an era threatened by ecological disaster.

In Search Of White Gold, 2010, is the result of a commission by Stone Theatre to photograph Lasa Marmo, a marble quarry buried half way up a mountain in the Southern Tirol region of Northern Italy. *Waterfall* and *Rockface* record the impact of the mining on the surrounding landscape.



Cross, Rannoch Moor, 2009



Loch Cluanie, Scotland, 2009



Rockface, Cava di Marmo, 2010



Waterfall, Cava di Marmo, 2010



Burn't Gorse, Wales, 2005



Green Gorse, Wales, 2003



Treeless, Glen Coe, Scotland, 2009

All images courtesy Mike Perry/The Photographers Gallery

Exhibition Leaflet (2011).

Appendix 9**Transcript of notes after fieldtrip to take photographs at Pevensey Levels, 31st January 2015.**

“It is difficult to be spontaneous when taking a photograph of climate change at Pevensey Levels. The aesthetics of taking a photograph are subdued in terms of looking for visible signs of climate change. The source of the subdued action of taking the photograph might be because one is having to think all the time about climate change visibility in a landscape where that is difficult to define, having to keep in mind the idea of climate change and evidence of its visibility in the landscape when taking photographs goes against the grain of thinking aesthetically. If one lets go of the scientific evidence of the visibility of climate change and starts to look instead at the landscape in terms of aesthetics, the landscape offers so many seductive possibilities for visual representation. Looking for signs of climate change becomes a scientific or mathematical exercise. And why is it difficult to combine these two approaches at the same time and maintain a creative approach? Evidence of management in terms of climate change of the landscape in Pevensey Levels is shown in policy documents written by government officials. These policies are considered by farmers, environment agency workers and Natural England officials, who work within the landscape in response to climate change. Livelihoods and families are connected with the landscape directly and it is the human aspect, which makes the landscape more malleable in terms of understanding why climate change is important and visible.”

Appendix 10

Notes and photographs after fieldtrip on 27 July 2014

(Nikon Coolpix Camera images)



The sun rising, Hastings in the east, from Pevensey Bay Beach. The shoreline is topped up with shingle from the lower levels of the beach in the winter months to prevent flooding of inland areas. Houses are situated within 200 yards of the beach. At high tide, the seawater reaches inland by up to 200 meters underground.



Low tide at Pevensey Bay Beach. In the summer Pevensey Bay Beach is a venue for day-trippers. The beach is used for water sports, local fishing and tourism.



Eastbourne and the Sovereign Harbour Marina from Pevensey Bay Beach. The sea wall of the harbour has changed the flow of the shingle onto Pevensey Bay Beach causing the shingle to deplete rapidly throughout the year.

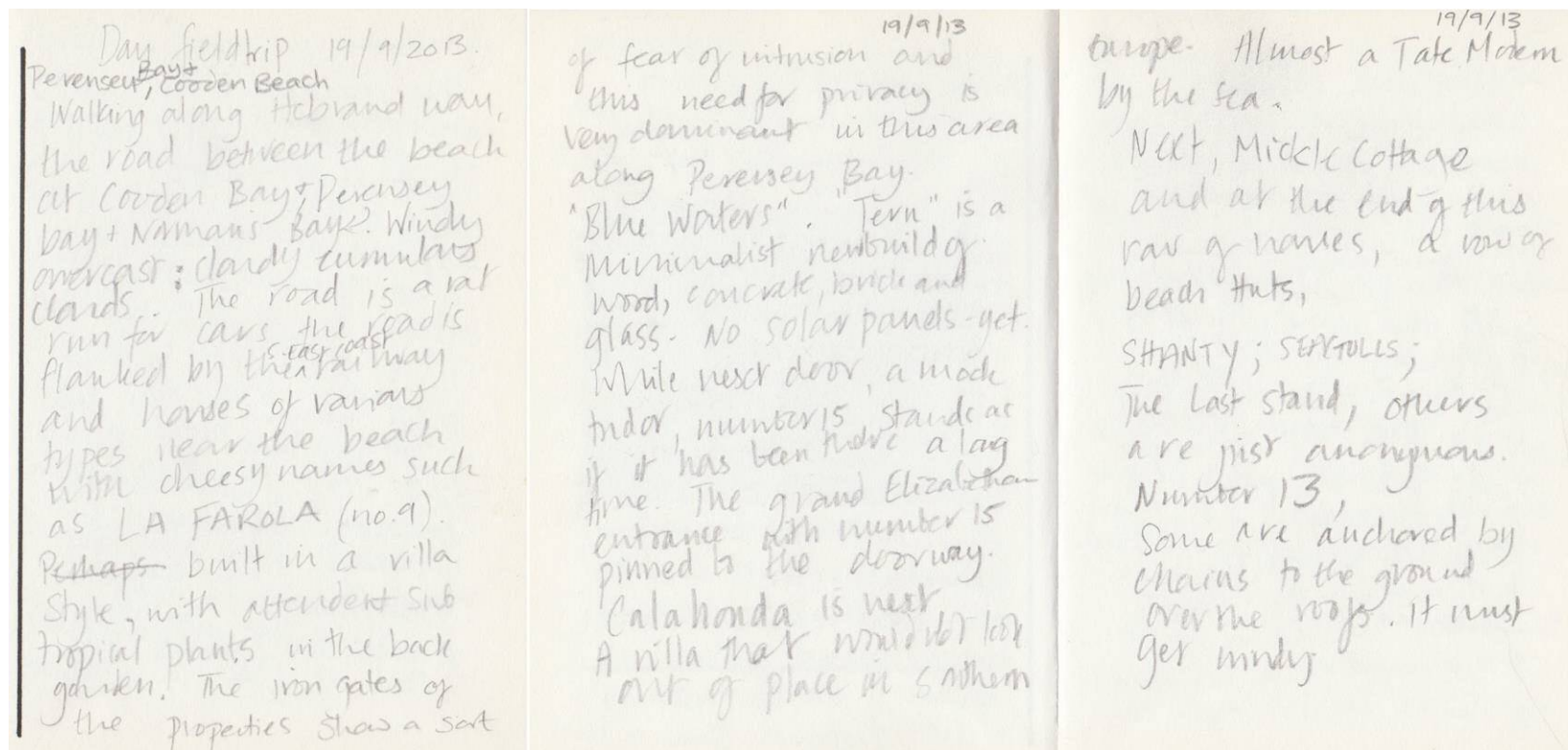
Appendix 11

List of Libraries and other Archives used as part of the Practice Methodology

The sources of my information, such as particular libraries, archives, organisational records, private papers and department files.

- The Keep: Countryside Directive; images of Pevensey Bay and the Pevensey Tithe Map, 1939.
- East Sussex County Archives: Photographs and Maps of Pevensey Levels.
- University of Sussex Library
- Brighton University Library
- Pevensey Bay Museum
- Photographic Archive, belonging to Ian Thomas, Project Manager, Pevensey Levels Coastal Defence Ltd.
- Pevensey Museum, Stuart Murrell Map.
- Ordnance Survey, Digimap, Roam, Online Map Resource.
- Pevensey Bay Library
- Tate Gallery, Turner bequest, online resource, J.M.W. Turner Sketchbooks (Turner, c.1806-10).

British Broadcasting Company and Public Catalogue Foundation, online resource (BBC and PCF, 2015), consulted for paintings made at Pevensey Levels.

Appendix 12Image of Notes taken when walking along Hebrand Way near Cooden Beach on 19 September 2013

Appendix 13**Transcript of Notes from a walk along Hebrand Way near Cooden Beach on 19 September 2013**

Sally Bream

Day Fieldtrip 19/9/2013

Pevensey Bay and Cooden Beach

Walking along Hebrand Way, the road between the beach at Cooden Bay & Pevensey Bay + Norman's Bay. Windy, Overcast: cloudy cumulous clouds. The road is a rat-run for cars the road is flanked by the south east coast railway and houses of various types near the beach with cheesy names such as *LA FAROLA* (no. 9) built in a villa style, with attendant sub-tropical plants in the back garden. The iron gates of the properties show a sort of fear of intrusion and this need for privacy is very dominant in this area along Pevensey Bay. "*Blue Waters*", "*Tern*" is a minimalist new building of wood, concrete, brick and glass. No solar panels – yet. While next door, a mock Tudor, number 15 stands as if it has been there a long time. The grand Elizabethan entrance with 'Number 15' pinned to the doorway. *Calahonda* is next, a villa that would not look out of place in southern Europe. Almost a Tate Modern [St. Ives, I meant] near the sea. Next, *Mickle Cottage* and at the end of this row of houses, a row of beach huts, *SHANTY SEAGULLS*, *THE LAST STAND*, others are just anonymous. *Number 13*, some are anchored by chains to the ground, over the roofs. It must get windy.

Appendix 14

Images of the Portfolio submitted for examination: 15 x C-Type Photographs, 16x20 inches.

MECHANISM

FLOW



[1]

Bream, 2015, Plate 1. Rickney Pumping Station, 11 March 2012



[2]

Bream, 2015, Plate 2. Pevensey Haven, Rickney, 11 March 2012



[3]

Bream, 2015, Plate 8. Chilley Bridge Sluice Gate, 31 January 2015



[4]

Bream, 2015, Plate 13. Waller's Haven, near Middle Bridge, 4 October 2013

MECHANISM

DREDGE



[5]

Bream, 2015, Plate 16. Dredged Pennywort, Down Level, 9 November 2013



[6]

Bream, 2015, Plate 19. Manxey Sewer, Manxey Level, 24 January 2014

MECHANISM

OUTFALL



[7]

Plate 22. Waller's Haven Outfall, High Tide, Normans' Bay, 12 September 2013.

MECHANISM

BARRIER



[8]

Bream, 2015, Plate 25. East Stream Sluice Gate, Tidal Flap and Channel to Outlet Pipe, Normans' Bay,
26 September 2013



[9]

Bream, 2015, Plate 28. Pevensey Bay Beach, Sunrise, 27 July 2014

FLUX

SATURATION



[10]

Bream, 2015, Plate 31. Broken Tree, New Bridge Road, Rickney Sewer, 24 January 2014.

FLUX

DEPLETION



[11]

Bream, 2015, Plate 35. Close-up of Foam and Brown Sediment with Floating Pennywort, Watersmeet, Rickney, 19 November 2014

DAMAGE

PLANT



[12]

Bream, 2015, Plate 40. Floating Pennywort, Pevensey Haven, Rickney, 8 September 2012

REGENERATION

REEDS



[13]

Bream, 2015, Plate 46. Wind-Powered Water Pump, Hankham Level, 18 March 2014

REGENERATION

MARGINS



[14]

Bream, 2015, Plate 47. Bur Reeds, Pondweeds, Waterlilies and Floating Pennywort, Chilley Stream,
9 August 2012

REGENERATION

AIR



[15]

Bream, 2015, Plate 50. Pevensey Levels, from Herstmonceux, 19 July 2013

Appendix 15

Prototype Book, *Unveiling Climate Change At Pevensey Levels*, Sally Bream, 2015.

SALLY BREAM



UNVEILING CLIMATE CHANGE AT PEVENSEY LEVELS



MECHANISM

Flow
Dredge
Outfall
Barrier

FLUX

Saturation
Depletion

DAMAGE

Plant
Material

REGENERATION

Reeds
Margins
Air





Pevensey Tithe Map Circa 1839.
Surveyor Unknown



MECHANISM

Flow



























Dredge















Outfall









Barrier











FLUX

Saturation









Depletion











DAMAGE

Plant





Material





REGENERATION

Reeds













Margins















Air











An Unveiling

Sally Bream

Anthropocentric climate change becomes visible in the landscape where the 'veil' lifts and the crisis is exposed. The disturbance caused by this fracture disrupts traditional readings of the landscape as a site of the picturesque that exists simply to delight the eye. These breaks in the perception of the landscape, which lie beyond the pictorial representation, are evident by the maintenance of the land for human needs. Anticipation of the disorder that climate change promises to deliver is situated in the ways by which the land is controlled.

Four main headings encapsulate the central focus of my photographic research at Pevensey Levels. These are Mechanism, Flux, Damage, and Regeneration. Further subsections define areas of the landscape and their specific functions in relation to climate change.

MECHANISM

This term defines the means by which water in the landscape is mechanically controlled. Within this description, four processes by which water management takes place in the landscape were documented. These are:

Flow: A series of sluice gates and pumping stations enable and control the flow of water in the landscape through the main rivers, ditches, and dykes.

Dredge: Debris is cleared from channels of water by cutting back plants and widening waterways.

Outfall: Water flows out to sea from Pevensey Levels through outfall pipes on the beach at low tide.

Barrier: Sluice gates and tidal flaps adjacent to the beach area control the movement of water. Buildings on the seafront also function as barriers, by protecting inland areas from further erosion in storm conditions. The shingle beach is maintained at 30 metres width, as a front line defence against spring tide winter storm surges from the sea. The sea dredger *Sospan Dau* siphons shingle from the seabed near Eastbourne, and this is distributed along the beach at Pevensey Bay, in order to replenish the shoreline.

FLUX

I have used this heading to define the ways in which the landscape is responding and evolving due to the environmental influences of climate change. Within this designation, two areas in which water, as a conductive process, brings change to the landscape have been recognised. These are:

Saturation: Trees at the edges of waterways take up excess water, which eventually causes the internal structure of the heartwood to weaken. Marshland is flooded annually to create an environment for overwintering birds, increasing biodiversity, which in turn counterbalances the effects of climate change.

Depletion: Fresh water is crucial for a healthy population. Climate change will put this resource under pressure, especially during floods or drought. These images show chemical pollutants, which flow into the waterways and out to sea. These contaminants cause eutrophication in bodies of water and, as a consequence, an increase in temperature. Agricultural land on the raised slopes of the marshland is farmed intensively, and fungicides are used when growing crops, which reduces the overall biodiversity of the environment.

DAMAGE

I have used this term to define the ways in which the drained marshland depends on the integrity of the drainage systems. These systems can be affected by plant growth within the water, or by the deterioration of the built environment. With this in mind, I have found two areas in which damage occurs in the landscape at Pevensy Levels.

Plant: Floating Pennywort grows extensively in slow-running water during warmer summer months. The plant can then block sluice gates, and other mechanisms, which control water flowing out to sea from inland waterways. This plant also affects the habitat of wildfowl by choking rivers, making it difficult for birds to move in the water. Livestock fall into waterways and drown, because the Pennywort looks like solid ground. Warmer temperatures, due to climate change, will mean that these weeds will grow faster and more profusely.

Material: Deterioration of the built infrastructure has negative consequences for the landscape. For seven weeks, a diesel-fuelled generator pumped water overland while bridge repairs were carried out at Water Bridge. This produced a vast quantity of the greenhouse gas carbon dioxide, one of the main causes of climate change.

REGENERATION

I have used this heading to define the positive aspects of the marshland environment, which continue to thrive. Within this definition, I have identified three areas that show the potential to enrich the ecosystem, increase biodiversity, and replenish the earth's resources. These are:

Reeds: The Government's Higher Stewardship Scheme offers economic incentives to farmers to create new reed beds on their farmland. These reed bed environments increase the general health of the marshland, by providing a place for indigenous plants and animals to thrive.

Margins: Although the number of reed beds is growing, at present the biodiversity of the marshland is otherwise restricted to the marginal areas, such as the edges of waterways. When these are maintained, biodiversity flourishes. However, over-management of the land can mean that indigenous plants, such as wildflowers, are constrained.

Air: Airborne greenhouse gases accumulate across the marshland and rise up into the atmosphere. Mists, heated by the sun, accumulate, and are lifted as vapour into the atmosphere. The water cycle is integral in the vaporisation of gases in the environment. The sea and the South Downs affect the climate of this flat area of land, and wind evaporates vast stores of water within the marshland. Climate change will increase precipitation and accelerate the water cycle.

Pevensey Levels Tithe Map

The Pevensey Levels Tithe Map (1839) at the front of the book reveals a landscape that, nearly 200 years ago, was managed for the drainage of the land, to provide prime grazing marshland. The numbered plots of land on the map show that land was subdivided and owned by a number of people. Management for the impacts of climate change are now included in this landscape's organisation.



Plates

MECHANISM

Flow



Plate 1
Rickney Pumping Station, 11 March 2012



Plate 2
Pevensey Haven, Rickney, 11 March 2012



Plate 3
Pevensey Haven, Rickney, Snowstorm,
11 March 2013



Plate 4
Sluice Gates, Rickney, after Snowstorm,
15 March 2013



Plate 5
Pevensey Haven, Rickney, after Snowstorm,
15 March 2013



Plate 6
Chilley Stream, Snowstorm, 11 March 2013



Plate 7
Chilley Stream, 31 January 2015



Plate 8
Chilley Bridge Sluice Gate, 31 January 2015



Plate 9
Chilley Stream, 31 January 2015



Plate 10
Waller's Haven, Boreham Bridge,
3 October 2013



Plate 11
Waller's Haven, Hogtrough Bridge,
2 October 2013



Plate 12
Waller's Haven, Horse Bridge,
1 October 2013



Plate 13
Waller's Haven, near Middle Bridge,
4 October 2013

Dredge



Plate 14
Rickney Sewer, Down Level,
28 October 2012



Plate 15
Drainage Ditch, Down Level,
9 November 2013



Plate 16
Dredged Pennywort, Down Level,
9 November 2013



Plate 17
Dredged Pennywort, Down Level,
28 October 2012



Plate 18
Cleared Water Channel, Manxey Sewer,
Manxey Level, 24 January 2014



Plate 19
Manxey Sewer, Manxey Level,
24 January 2014



Plate 20
Clay Soil with Debris, Manxey Level,
24 January 2014

Outfall



Plate 21
Waller's Haven Outfall, High Tide,
Normans' Bay, 12 September 2013

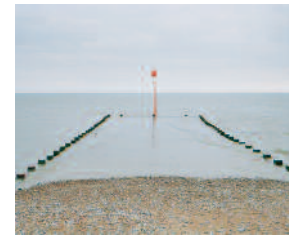


Plate 22
Waller's Haven Outfall, High Tide,
Normans' Bay, 12 September 2013



Plate 23
East Stream Outfall, Low Tide, South,
Normans' Bay, 26 September 2013



Plate 24
East Stream Outfall, Low Tide, North,
Normans' Bay, 26 September 2013

Barrier



Plate 25
East Stream Sluice Gate, Tidal Flap and
Channel to Outfall Pipe, Normans' Bay,
26 September 2013



Plate 26
Waller's Haven Sluice Gate, Tidal Flap and
Channel to Outfall Pipe, Normans' Bay,
12 September 2013



Plate 27
Commissioners Cottages,
Beach Area, Normans' Bay Village,
12 September 2013

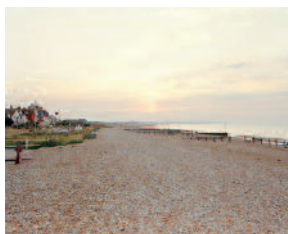


Plate 28
Pevensey Bay Beach, Sunrise,
27 July 2014



Plate 29
Sospan Dau Sea Dredger,
Sovereign Harbour, Sunset,
31 October 2014

FLUX

Saturation



Plate 30
Trees, New Bridge Road, Rickney Sewer,
9 November 2013



Plate 31
Broken Tree, New Bridge Road,
Rickney Sewer, 24 January 2014



Plate 32
Down Level, Flooded Grazing Marshland,
31 January 2014



Plate 33
Down Level, Reed Bed and Drainage Ditch,
31 January 2014

Depletion



Plate 34
Foam and Brown Sediment with Floating
Pennywort, Watersmeet, from Water Bridge,
Rickney, 19 November 2014



Plate 35
Close-up of Foam and Brown Sediment
with Floating Pennywort, Watersmeet,
Rickney, 19 November 2014



Plate 36
Maize Crop, Herstmonceux,
18 July 2013



Plate 37
Ploughed Field, Sown with Red-Coated
Seeds, Herstmonceux, 2 May 2015.



Plate 38
Close-up of Soil, Ploughed Field,
Sown with Red-Coated Seeds,
Herstmonceux, 2 May 2015

DAMAGE

Plant



Plate 39
Floating Pennywort, Chilley Stream,
from Bridge, 12 August 2012



Plate 40
Floating Pennywort, Pevensey Haven,
Rickney, 8 September 2012

Material



Plate 41
Rickney Sluice Gates Raised,
Water Bridge Repairs, 12 July 2014



Plate 42
Water Bridge Repairs, Rickney,
27 July 2014

REGENERATION

Reeds



Plate 43
Court Lodge Farm Reed Bed,
13 July 2014



Plate 44
Chilley Farm Land, New Reed Bed,
29 July 2014



Plate 45
Chilley Farm Land, New Reed Bed,
15 October 2014



Plate 46
Wind-Powered Water Pump,
Hankham Level, 18 March 2014

Margins

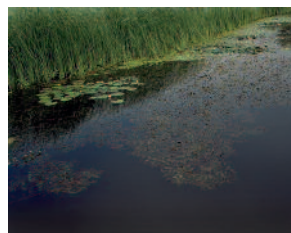


Plate 47
Bur Reeds, Pondweeds, Waterlilies and
Floating Pennywort, Chilley Stream,
9 August 2012



Plate 48
Grass Verge, Pevensey Haven Riverbank,
12 March 2015



Plate 49
Drainage Ditch with Duckweed, Sedge,
Fossilised Common Reed and Cyperus.
Hankham Level, 19 November 2014

Air



Plate 50
Pevensey Levels, from Herstmonceux,
19 July 2013



Plate 51
Mist Rising at Down Level,
New Bridge Road, 16 July 2014

Camera viewpoints

Rickney, Watersmeet

2.4 m above sea level
Grid Ref: TQ 62588 06918

Chilley Stream Bridge

2.1 m above sea level
Grid Ref: TQ 64168 05973

Waller's Haven, Hooe Level

Boreham Bridge
5 m above sea level
Grid Ref: TQ 67628 11995

Hogtrough Bridge

4 m above sea level
Grid Ref: TQ 67381 10247

Horse Bridge

4 m above sea level
Grid Ref: TQ 66905 09020

Middle Bridge, Landing Stage

3 m above sea level
Grid Ref: TQ 66761 06854

Down Level

1 m above sea level
Grid Ref: TQ 62525 07572

Manxey Level

2 m above sea level
Grid Ref: TQ 63705 06864

Pevensey Bay Beach

6 m above sea level
Grid Ref: TQ 66080 04152

Normans' Bay Beach

Waller's Haven Outfall
6 m above sea level
Grid Ref: TQ 68956 05648

East Stream Outfall

6 m above sea level
Grid Ref: TQ 69476 05938

Sovereign Harbour, Pevensey Bay

6 m above sea level
Grid Ref: TQ 64515 01790

Herstmonceux, Field

17 m above sea level
Grid Ref: TQ 64180 10231

Court Lodge Farm, Wartling

2.6 m above sea level
Grid Ref: TQ 66287 09084

Hankham Level

3 m above sea level
Grid Ref: TQ 6260

Opposite

The Ordnance Survey map shows the areas, indicated by a red circle, where the photographs were taken





Sally Bream
2015
PhD Creative and Critical Practice
University of Sussex
School of Media, Film and Music

Supervisors: Melanie Friend and Professor Nicholas Till

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www.richcutler.co.uk

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www.one-digital.com
170gms Colotech Silk paper, typeset in Myriad Pro

Pevensey Tithe Map Circa 1839. Surveyor Unknown. East Sussex Record Office, Ref: TD/E83

OS Map showing Pevensey Levels and surrounding areas. Copyright: Ordnance Survey (2015) Digimap® 1:40000.
Downloaded 6 July 2015

Unveiling Climate Change at Pevensey Levels
Photography and text by Sally Bream. © September 2015. All rights reserved