Holding the Line:
Contemporary Poetry of British Coastal Change

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Abstract

This creative and critical project examines representations of sea level rise and erosion in contemporary British poetry from an ecocritical perspective, focusing on British coastal change and its poetry in the context of global climate crisis. The critical component analyses work by contemporary poets who explore and interrogate coastal change imagery and themes in their work, and whose writing informs my own creative practice: Jo Bell, Gillian Clarke, Justina Hart, Blake Morrison, and Peter Reading. This is then followed by the creative component: a new sequence of original poems, *Side of the Sea*, inspired by my research. Reviewing and building on existing critical debates on writing poetry in and about the Anthropocene (for example: Gifford, 2011; Griffiths, 2017; Solnick, 2015), this thesis argues that coastal change poetics offer particular and distinctive opportunities for poets to engage meaningfully with ecological and climatic change, explores those opportunities and places them in context and dialogue, and supports this research with a body of original poetry informed by it.

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Foreword

'Forms within forms, scales within scales, worlds within worlds'[1]

Rusting static caravans teeter on the edge of a low cliff, which is crumbling a fine spray of dust into the wind. Dead trees, starkly denuded of bark, litter the beach, and have tumbled downhill into the surf. A small agricultural settlement with a ruined church sits a mere and perilous hundred metres from the sea. World War Two pill boxes and immense concrete structures, half-submerged, resemble Brutalist designs or the wreckage of a futuristic civilisation. A tarnished necklace of train track dangles in mid-air.

Searching through images documenting my research visits to the British coast, I halt on this last picture – not one of my own, but drawn from intense media coverage of the notorious winter of 2013 to 2014, when huge waves breached the sea wall at Dawlish in Devon, washing away around forty metres of iconic Riviera Line railway track and ballast. Earlier that winter, the UK's North Sea coast was hit by the worst storm surge since the major flood of 1953. All through December and into January, storms and heavy rain continued, with catastrophic flooding and infrastructure damage across the Midlands, Southern England, Wales and the South West, causing thousands of people to be evacuated from their homes. At Dawlish Warren – an internationally important nature reserve and popular holiday resort – it was estimated that winter storms moved around 100,000 tonnes of sand, and dunes protecting villages in the Exe Estuary receded by at least five metres.[2] The following

[1] 'Introduction', *Coastal Works: Cultures of the Atlantic Edge*, ed. by Nicholas Allen, Nick Groom and Jos Smith (Oxford: Oxford University Press, 2017) p. 5.

[2] As of spring 2020, winter storms have again shifted huge amounts of sand pumped onto the beach as part of a £14 million scheme, while a local campaign is resisting plans to move a section of the threatened railway track on to Holcombe beach. Example reports include: 'Devon beach railway move plan angers residents', *BBC* (14 October 2019) <https://www.bbc.co.uk/news/uk-england-devon-50016322> [accessed 10 November 2019]; and 'Dawlish Warren beach management scheme',

year, a report by Cardiff University (Prifysgol Caerdydd) that surveyed, among others, Dawlish residents, indicated that people associated the flooding and extreme weather with climate change, and, like sea levels, public concern was rising.[3]

On Dawlish Warren beach in Spring 2014, broken groynes and exposed bedrock and gabions brought to mind lines from Wendy Mulford's *East Anglian Sequence* (1998):

> beyond palings, beyond bridges
> where settlement and sea
> contend possession.

And lines from Lavinia Greenlaw's prophetic poem, 'The Recital of Lost Cities' (1992), that speaks towards present and future place-loss:

> the sea rose by inches, unravelled the coastline,
> eased across the lowlands and licked at the hills
> where people gathered to remember names.[4]

These poems precede our present broad societal understanding and scientific consensus on climate change by more than two decades; indeed, poets such as Greenlaw and Mulford – and many more writers discussed in this thesis – are able to collapse time in their poems in order to 'imagine how humans might experience a changed climate' as Matthew Griffiths puts it, and speculate on the likely future impacts of environmental crisis in ways that scientists may not, albeit informed by research into present (anthropogenic) and historic climate change.[5] With climate change increasing the frequency and severity of coastal storms, and sea level rise

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Environment Agency (21 December 2017) <https://www.gov.uk/government/publications/dawlish-warren-beach-management-scheme> [accessed 20 January 2020].

[3] S.B. Capstick and others, 'Public perceptions of climate change in Britain following the winter 2013/2014 flooding', Understanding Risk Research Group, Working Paper 15-01 (Cardiff: Cardiff University, 2015).

[4] Wendy Mulford, *The East Anglia Sequence Norfolk 1984–Suffolk 1994* (Peterborough: Spectacular Diseases, 1998); and Lavinia Greenlaw, 'The Recital of Lost Cities', *Earth Shattering Ecopoems,* ed. by Neil Astley (Tarset: Bloodaxe, 2007) p. 242.

[5] Matthew Griffiths, *The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017) p. 159.

exacerbating coastal erosion and flooding, phenomena experienced at Dawlish and around Britain's coastline are accelerating in frequency and impact, affecting wildlife habitats, coastal communities, transport infrastructure and tourism.[6] Indeed, Fairbourne in North Wales is set to become the first UK settlement to be decommissioned (by 2045) due to climate change, after Gwynedd Council announced that it can no longer protect the village from rising seas: the villagers were labelled 'Britain's first climate refugees' – the 'first' implying that many more will follow.[7] With policy makers slow to act, or even back-peddling on climate agreements, and sea levels set to rise for centuries to come, as both a poet and a reader of poetry, I am bound to ask, 'but what can poetry *do?'*

[6] Tamsin Edwards, 'Current and Future Impacts of Sea Level Rise on the UK', *Future of the Sea Evidence Review* (Foresight: Government Office for Science, 2017) pp. 1–39; and David Dawson, Jon Shaw, W. Roland Gehrels, 'Sea-level rise impacts on transport infrastructure: The notorious case of the coastal railway line at Dawlish, England', *Journal of Transport Geography*, 51 (February 2016), pp. 97–109.

[7] Tom Wall, ''This is a wake-up call': the villagers who could be Britain's first climate refugees', *The Guardian*, 18 May 2019 <https://www.theguardian.com/environment/2019/may/18/this-is-a-wake-up-call-the-villagers-who-could-be-britains-first-climate-refugees> [accessed 12 June 2019].

Introduction: Coastal Change Poetics in the Anthropocene

This creative and critical thesis (60:40) examines representations of British sea level rise and erosion in contemporary Anglophone poetry by poets rooted in Britain, and from an ecocritical perspective, drawing on discourses from the blue humanities.[8] No place in Britain is more than seventy-five miles from the coast and, in the words of Amy Cutler, 'Britain's […] experience of global environmental change [is] particularly visible on her shorelines'.[9] Adopting Jen Hadfield's conviction that 'approaching the global crisis by addressing local specificity [is] one of the things poetry is best at', this project's focus on British coastal change and its poetry in the context of global climate crisis addresses some of the challenges of engaging, as Matthew Griffiths puts it, with 'a range of [climate change] phenomena whose complexity is largely not amenable to sense experience […] the strain of trying to reconcile the local and polar'.[10]

My study focuses on poetry written and / or published since 2005, the year of Hurricane Katrina and The Kyoto Protocol coming into force, global events that entered the public consciousness. As Griffiths notes, the 'increased attention being paid to climate change […] from the middle of the first decade of the twenty-first century onwards' signalled a significant increase in the commissioning and publishing of new climate-related poems, with many using sea-change imagery or

[8] This study is limited to the political entity of Britain as the largest island in the British Isles, consisting of Wales, Scotland and England, but not including Northern Ireland.
[9] Amy Cutler, 'Language Disembarked: The Coast and the Forest in Modern British Poetry' (unpublished doctoral thesis, Royal Holloway University of London, 2014), p. 47.
[10] Matthew Griffiths, *The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017) p. 4; Jen Hadfield, 'Inspired', *Magma*, 72, (2018), 66–68 (p. 68). See also Adeline Johns-Putra's comment that 'there has been a growing trend […] of climate change poetry': 'Climate change in literature and literary studies: From cli-fi, climate change theater and ecopoetry to ecocriticism and climate change criticism', in *Wiley Interdisciplinary Reviews: Climate Change,* 7.2 (2016), 266–282 (p. 9).

addressing coastal change.[11] The term ‘coastal change poetry’ is used specifically here and throughout my thesis as an umbrella term for poems engaging with sea-level rise, coastal flooding, erosion and other marine and shoreline phenomena associated with present-day climate change. While fully acknowledging that coasts are subject to diverse natural processes, including flooding and erosion, the critical and creative elements of this project focus on changes and phenomena associated also or exclusively with anthropogenic climate change.

The critical component of my thesis analyses, through detailed readings, work by contemporary poets who explore and interrogate coastal change imagery and themes in their writing, and whose work informs my own creative practice: Jo Bell, Gillian Clarke, Justina Hart, Blake Morrison, and Peter Reading. This is followed by the creative component: a new sequence of original poems, *Side of the Sea*, inspired by my research. My thesis contends that a distinctive and disruptive poetics of coastal change is emerging from contemporary ecological writing in the twenty-first century. In examining relationships between humans and the natural world through the lens of coastal change, I extend Solnick’s question, ‘how does poetry fit with the concerns of the Anthropocene’ [the proposed new geologic era that reflects the global ecological impact of human activities]?[12] Building on and reviewing existing critical debates on environmental literature, ecological poetry and climate change poetics by Neil Astley, Terry Gifford, Matthew Griffiths, Donna Haraway, Sam Solnick, and others, I argue that engagement with both the phenomenology and scientific study of coastal change offers important opportunities

[11] For example, Tipping Point’s *Realistic Utopias* and *The Guardian’s* ‘Keep it in the Ground’ assembled contemporary writing across a range of climate-related issues including flooding, extreme weather, extinction and social justice. *Realistic Utopias: Writing for Change,* ed. by Peter Gingold (2017) <http://justinahart.com/wp-content/uploads/2017/01/Realistic-Utopias-Writing-for-Change.-Anthology.pdf > [accessed 23 January 2017] (pp. 43–52); see also Griffiths, pp. 157–158.
[12] Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2017) p. 8.

for poets to work across conceptual and disciplinary boundaries to meaningfully probe and articulate key issues of the Anthropocene – biodiversity decline, pollution, social and environmental justice, and climate change.[13] This argument is made both in critical exploration and exegesis, and practically, by means of a collection-length portfolio of new poems.

For reasons explained above, the scope of my research is limited both temporally to the first two decades of the twenty-first century, and geographically, by its focus on British coastal change, dealing principally with Britain's eastern seaboard – historically characterised by inundation, erosion, contact and conflict. The project focuses on the ways contemporary Anglophone poetry in Britain looks at a set of circumstances on the British coast – using local specificity to examine and understand the global issues of coastal change in the Anthropocene – but beyond the scope of this thesis, a broader examination of British or trans-international coastal change poetry, or an equally narrow and focused study in other parts of the world, could expand the diversity of writers and voices under consideration.[14]

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[13] *Earth Shattering Ecopoems,* ed. by Neil Astley (Tarset: Bloodaxe, 2007; Terry Gifford, *Green Voices: Understanding Contemporary Nature Poetry* (Nottingham: Critical, Cultural and Communications Press, 2011); Matthew Griffiths, *The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017)*;* Donna J. Haraway, 'Sympoiesis, Symbiogenesis and the Lively Arts of Staying with the Trouble', *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016); and Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2017).

[14] For example, in the project 'Rise: From One Island to Another', Kathy Jetñil-Kijiner and Aka Niviâna, 'use their poetry to showcase the linkages between their homelands [the Marshall Islands and Kalaallit Nunaat, Greenland], in the face of climate change', connecting across local and global scales to highlight the urgent and present threat of sea-level rise: 'Rise: From One Island to Another', *350.org* <https://350.org/rise-from-one-island-to-another/> [accessed 15 April 2020].

Criticism

The theoretical and critical research underpinning this thesis is rooted within the environmental humanities, mainly through the approaches of the emergent fields of 'ecocriticism' and 'ecopoetics'. Timothy Clark offers what he terms 'a working definition' for ecocriticism as 'a study of the relationship between literature and the physical environment, usually considered from out of the global environmental crisis and its revisionist challenges to given modes of thought and practice'.[15] Ecocriticism – and ecopoetry by extension – is proposed as a tool by which 'to try to conceptualise and engage [with] the multiple factors behind the accelerating degradation of the planet' and as 'one site for this crucial intellectual transformation'.[16] However, Clark notes that while 'of all environmental issues climate change is acknowledged as the most serious', there is a lack of literary criticism addressing the topic.[17] Sam Solnick's *Poetry and the Anthropocene* exemplifies the kind of critical work addressing this gap, and more specifically, through its exploration of what it means to write and read poetry in and about the Anthropocene, Adeline Johns-Putra's observation that 'eco-critical accounts of climate change have tended to focus on fiction to the detriment of [...] poetry'.[18] While pointing out that 'ecocriticism is far from a unified discourse', Solnick locates his critical study within Clarke's definition, opening with a comprehensive account

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[15] Timothy Clark, *The Cambridge Introduction to Literature and the Environment* (Cambridge: Cambridge University, 2011) p. xiii. For history, definitions, key methods, concepts and arguments of ecocriticism, see also: Greg Garrard, *Ecocriticism* (London: Routledge, 2004); Terry Gifford, *Green Voices: Understanding Contemporary Nature Poetry* (Nottingham: Critical, Cultural and Communications Press, 2011); and *The Ecocriticism Reader: Landmarks in Literary Ecology,* ed. by Cheryl Glotfelty and H. Fromm (London: University of Georgia Press, 1996) particularly 'Introduction: Literary Studies in an Age of Environmental Crisis', pp. xv–xxxvii.

[16] Clark, p. xiii.

[17] Clark, p. 10.

[18] Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2017); Adeline Johns-Putra, 'Climate change in literature and literary studies' (p. 9).

of the concept of the Anthropocene – the commonly-used proposed term for 'the present, in many ways human-dominated […] epoch' where human activities profoundly impact earth's 'biological, ecological and geological processes'.[19] Here, global climate change is identified as one of the most significant issues of the Anthropocene, alongside 'biodiversity loss, chemical pollution and ocean acidification' driven by the major expansion in human population, production and technology following the Second World War.[20]

Poetry and the Anthropocene underpins my critical and theoretical framework and informs my methodological approach through its detailed examination of relations between science, technology and poetry, and what Solnick identifies as some of the key theoretical concerns of the Anthropocene: 'non-human agency, the role of technology on shaping humans and their environments, and awareness of scale effects of human behaviour'.[21] My critical and creative study builds on and extends this approach in its examination of twenty-first century coastal change poetry through the lens of the Anthropocene, aiming to address the gap in literary research on the topic, and drawing on Solnick's proposition that

> poetry can explore how, in the Anthropocene, the ways we speak, write, think and act are part of the (unpredictable) interrelated processes that constitute local and global ecosystems. It provides ways of conceiving the relations between (human organisms) and their environments at the level of communication and cognition as well as emissions.[22]

Solnick's evaluation of poetry in this paragraph as a mode and system of cross-disciplinary and inter-textual exchange that is particularly suited to the conceptual challenges of the Anthropocene, informs, in particular, my examination of relations

[19] Solnick, pp. 7–8.
[20] Solnick, p. 6.
[21] Solnick, p. 9.
[22] Solnick, p. 58.

between sea level rise poetry and environmental data science.[23]

While acknowledging that the term 'Anthropocene' risks becoming totalising and also encouraging of a renewed anthropocentricism', in Solnick's words, it remains the most broadly adopted and recognisable operational term, and therefore (like Solnick) I employ it to refer to our transformative era rather than other proposed designations that include (but are not limited to) Plantationocene (for the devastating transformations enacted through slave labour), Capitalocene (focusing on the role of geopolitics and rampant capitalism in planetary disaster), or Donna Haraway's term Chuthulocene for the 'dynamic ongoing sym-chthonic forces and powers of which people are a part, with which ongoingness is at stake' – which are all useful in theoretically conceptualising the Anthropocene, suggesting that no single term is sufficient.[24] For Haraway, 'the Anthropocene is more a boundary event than an epoch, like the K-pg boundary between the Cretaceous and the Paleogene' because it 'marks severe discontinuities; what comes after will not be like what came before'.[25] Haraway draws on Anna Tsing's concept of 'refugia' in identifying the Anthropocene with the 'destruction of places […] of refuge' that might otherwise replenish the world with biodiversity and culture, and argues that 'it is our job to make the Anthropocene as short / thin as possible and to cultivate with each other in every way imaginable epoch's to come that can replenish refuge'.[26] Tentacular

[23] Particularly Solnick's attention to the relations between science, technology and poetry in the book's opening section, 'Poetry and Science', pp. 1–18.
[24] Solnick, p. 6. Donna J. Haraway, 'Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin', *Environmental Humanities*, 6 (2015) pp. 159–165 (p. 160). Donna J. Haraway and others, 'Anthropologists Are Talking – About the Anthropocene', *Journal of Anthropology*, 81.3 (2016) 535–564; and Jason W. Moore, 'Name the System: Anthropocenes and the Capitalocene Alternative', *Jason W. Moore* (9 October 2016) <https://jasonwmoore.wordpress.com/2016/10/09/name-the-system-anthropocenes-the-capitalocene-alternative> [accessed 10 March 2019].
[25] Haraway, p. 160.
[26] Anna Tsing, 'Feral Biologies', paper for *Anthropological Visions of Sustainable Futures*, University College London (February 2015) (n.p); and Haraway, pp. 159–160.

connections, kinship and the principles of 'making-with' and 'ongoingness' are crucial to Haraway's positioning of the Anthropocene as a transition point, allowing a sense of multi-species futurity without refusing 'to deny irreversible destruction […] in presents and futures'.[27] In my thesis, I draw (briefly) on the concept of 'sympoiesis' in the sense of Haraway's refuge building through collaborative story-making, and on Bridey McGreavey's extension of these concepts at the dynamically mobile intertidal edge, where she suggests that 'the shoreline, with its cultural, ecological and multispecies entanglements offers potential sites for making new stories at a time when the old ones are failing us.[28]

In *Coastal Works* (2017), a collection of critical essays that engage with the seaboards of Britain and Ireland, the book's editors Nicholas Allen, Nick Groom and Jos Smith similarly identify coasts and shorelines as 'region[s] of exchange […] where relationships and tensions between geography and culture are felt intensely and are played out dynamically' as well as being 'powerful imaginative spaces'.[29] Yet, despite a 'recent maritime turn in the humanities', as Virginia Richter and Ursula Kluwick (eds) point out in *The Beach in Anglophone Literatures and Cultures* (2015), 'the littoral remains a largely neglected site' in literary and cultural studies. [30] My thesis responds to critical debates and theoretical approaches that adopt a 'littoral perspective' (as exemplified in these works) and discourses that help to contextually position elements of my own study within emerging conversations from the blue

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[27] Donna J. Haraway, 'Sympoiesis, Symbiogenesis and the Lively Arts of Staying with the Trouble', *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016) (pp. 58–98) p. 86.
[28] Bridie McGreavy, 'Intertidal Poetry: Making Our Way Through Change', *Tracing Rhetoric and Material Life* (London: Palgrave, 2018), (pp. 87–115) p. 111.
[29] *Coastal Works: Cultures of the Atlantic Edge*, ed. by Nicholas Allen, Nick Groom and Jos Smith (Oxford: Oxford University Press, 2017) p. 5 and p. 7.
[30] Ursula Kluwick, and Virginia Richter, 'Introduction –Twixt Land and Sea: Approaches to Littoral Studies' in *The Beach in Anglophone Literatures and Cultures: Reading Littoral Space*, ed. by Ursula Kluwick and Virginia Richter (Farnham: Ashgate, 2015) p. 4–5.

humanities – defined in *Coastal Works* as ‘a movement towards an historical understanding of water and its effects on human society’.[31] Allen and others propose that archipelagic thinking towards coastlines as fluid sites of cultural exchange challenges Anglocentric ‘entrenchments of national identity’, such as the ‘insular turn’ associated with Brexit – the UK’s vote in 2016 to leave the European Union.[32] Coastal erosion and sea level rise similarly disrupt notions of static borders, boundaries and topographies, and contextualising the effects of coastal processes as both disruptive and culture-forming across long timeframes underpins my examination of how poetry can, to borrow Matthew Griffiths’ phrasing, locate ‘the present in the context of history’ and situate ‘the local within the global’.[33]

Focusing on conceptualisations of the littoral (shoreline) as a polyvalent site that is both part of and distinct from the broader marine space, *The Beach in Anglophone Literatures and Cultures* sets out ‘to analyse the generative role littoral space plays for cultural production […] conceptualising the beach as a creative trope and socio-cultural site, as well as an aesthetically productive topography.’[34] Kluwick and Richter outline a comprehensive set of ‘possible approaches to littoral space in scholarly studies as well as in creative representations’ that – in addition to a useful chapter conceptualising coastal erosion in fiction – help to inform the thematic approaches in this thesis, including, among others, the beach ‘as an ecotone (a transitional zone where different ecosystems overlap and that is shared by their various characteristic species)’; as ‘an historical site of contact and conflict’; as ‘a vacationscape’; and as ‘both a setting and subject for literature’.[35] Their brief

[31] *Coastal Works*, pp. 4–5.
[32] *Coastal Works,* p. 10.
[33] Griffiths p. 7.
[34] *Coastal Works*, p. 2.
[35] Kluwick and Richter, p. 2; Zwierlein, ‘‘Gripping to a wet rock’: Coastal Erosion and the Land-Sea divide as Existentialist / Ecocritical Tropes in Contemporary British and Irish Fiction’ (pp. 53–70).

overview of 'scientific perspectives on littoral space' also positions the contemporary beach as 'a site of scientific uncertainty' in its discussion of the complex interplay of anthropogenic and natural processes.[36] Quoting directly from the 2007 Intergovernmental Panel on Climate Change (IPCC) Assessment Report, Kluwick and Richter state that

> given the complexity of littoral change, the IPCC assessment report denies any easily discernible correlation, even between changing sea levels and beach erosion: 'there is not a simple relationship between sea-level rise and horizontal movement on the shoreline'.[37]

This passage illustrates some of the difficulties surrounding scholarly work in the humanities that cites and directly draws upon environmental scientific discourse, research and data to underpin its theoretical and conceptual approaches. These challenges, which I attempt to navigate in this thesis, include the challenges of keeping pace with the rapidly progressing science of climate change through peer reviewed and evidence-based reports, and representing the science accurately across different disciplines – for example, in ecocriticism and creative production, as well as the risks of selective quoting in different contexts. Griffiths, drawing on Richard Kerridge's analysis of the subject, points out that literary engagements with climate science are 'necessarily contingent on the network of critical and scientific understandings contemporary to [their] writing […], and these will change with time'.[38] However, in a world where climate change denial is still aired, it is important to contextualise Richter and Kluwick's account of 'scientific uncertainties' within the IPCC's confident broader assessment that links anthropogenic climate change

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[36] Kluwick and Richter p. 3 and p. 6.
[37] Kluwick and Richter p. 7; and R.J. Nicholls and others, 'Coastal Systems and Low-Lying Areas, Climate Change 2007: Impacts, Adaptation and Vulnerability. *Contribution of Working Group II to the Fourth Assessment Panel of the Intergovernmental Panel on Climate Change*, ed. M.L Parry and others (Cambridge: Cambridge University, 2007) 315–356 (p. 324).
[38] Griffiths, p. 178.

with accelerating coastal change – for example, to quote from the IPCC AR4 Synthesis report that details the working group's key findings: 'coasts are projected to be exposed to increasing risks, including coastal erosion, due to climate change and sea level rise'.[39]

I ascribe to Kerridge's opinion in 'Ecocriticism' (2013) that 'the existence of a large expert majority for a view constitutes a form of probability that the view is correct – the only form of probability a non-scientist can scrupulously acknowledge'.[40] While my thesis builds on Terry Gifford's argument in 'Green Voices' (2011) around the importance of scientific literacy and interdisciplinary working in the humanities, and more specifically, ethical and aesthetic considerations around the inclusion of environmental data and research in poems, I position my research approach within Kerridge's analysis of the role and responsibility of the eco-critic in accepting that, as a non-scientist engaged in literary research, I do not have the 'capacity to make expert judgements upon the data'.[41] However, my thesis pays close attention to the developing scientific, ecological and social understanding of the impacts of coastal and climate change on human and non-human creatures and their habitats. These materials include IPCC, Committee for Climate Change and Defra reports such as 'Managing the Coast in a Changing Climate' (2018), studies on coastal processes and geodiversity such as *Beaches and Coasts* by Cuchlaine A.M.

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[39] Lenny Bernstein and others, 'AR4 Synthesis Report: Impacts on Systems and Sectors, 3.3 Impacts of Future Climate Changes Coasts, *An Assessment of the Intergovernmental Panel on Climate Change* (2007) 1–74 (p. 48) <https://www.ipcc.ch/report/ar4/syr/> [accessed 10 March 2019]. On climate change denial, see also: Relating also to the issue of climate change denial in a post-truth society: Christopher Groves, 'Post-truth and anthropogenic climate change: Asking the right questions', WIREs Climate Change, 10.6, (2019), 1–8, in *WIREs* <https://onlinelibrary.wiley.com/doi/epdf/10.1002/wcc.620> [accessed 10 May 2020].

[40] Matthew Griffiths, *'The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017) pp 177–8; Richard Kerridge, 'Ecocriticism', *The Year's Work in Critical and Cultural Theory*, 21.1 (2013) 345–74 (p. 349).

[41] Gifford, Terry, ed., *Green Voices: Understanding Contemporary Nature Poetry*, 2nd edn. (Nottingham: Critical, Cultural and Communications Press, 2011); Kerridge, 'Ecocriticism', p. 349.

King (1959) and *Tides of Change: Two Million Years on the Suffolk Coast* (2015) by Tim Holt-Wilson (2015), social reports including 'Impacts of Climate Change on Disadvantaged Coastal Communities' (2011), the State of Nature report that focuses on British wildlife (2019), and Elizabeth Kolbert's investigation of species decline and cascading system collapse in *The Sixth Extinction*, which all support and provide a basis and context for my analysis and discussion of poems considered in this thesis.[42]

Other critical work that supports my research includes Sarah Dillon's study, *The Palimpsest: Literature, Criticism, Theory* (2007).[43] The term palimpsest is used across many different fields, including in physical geography to describe geological layering, and in archaeology to refer to archaeological deposits from different points in time. I extend the concept of the palimpsest – in textual studies, a page where earlier text has been overwritten, then re-discovered – to the Anthropocene beach, to offer ways of thinking about the imperfect erasure of the past on shorelines, where buried objects – from prehistoric tree stumps (preserved by salt water under

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[42] 'Managing the Coast in a Changing Climate', Committee on Climate Change (2018) p. 11 (para. 1); for an example of terminology used in SMP's: 'Shoreline Management Plan', *National Resources Wales* (2020) <https://naturalresources.wales/flooding/managing-flood-risk/flood-risk-map-guidance/shoreline-management-plan/?lang=en> [accessed 10 April 2020];
Rachel Carson, *The Sea Around Us,* new edn. (Oxford: Oxford University Press, 2018); Tamsin Edwards, 'Current and Future Impacts of Sea Level Rise on the UK', *Future of the Sea Evidence Review*, (Foresight, Government Office For Science, 2017) pp. 1–39; Hayhow, D. B. and others, 'State of Nature 2019' (2019) <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf> [accessed 12 December 2019]; Tim Holt-Wilson, *Tides of Change: 2 Million Years on the Suffolk Coast* (Woodbridge: Touching The Tide Landscape Partnership, 2015); Cuchlaine A.M. King, *Beaches and Coasts* (London: Edward Arnold, 1959); Elizabeth Kolbert, *Sixth Extinction: An Unnatural History* (London: Bloomsbury, 2014; Erik Mackie and Jonathan Wentworth, 'Rising Sea Levels', Houses of Parliament Parliamentary Office of Science and Technology, Postnote No.555, (2017); *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* ed. by R.K. Pachauri and L.A. Meyer (Geneva: IPCC, 2014), pp. 1–151; S. Díaz and others 'Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services', Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), (2019) <https://ipbes.net/news/Media-Release-Global-Assessment> [accessed 12 December 2019] (pp. 1–56).
[43] Sarah Dillon, *The Palimpsest: Literature, Criticism, Theory* (London: Continuum, 2007).

sediment) to ancient footprints, defensive structures and graveyards – are exhumed and revealed by storms and coastal processes, reappearing as ‘uncanny harbingers’ of change, impermanence and future ruin.[44] The recycled palimpsest operates as a metaphor for physical layers of sediment on the shore, representing both the geologic and conceptual layering of deep time, and the ways in which liminal littoral places – inscribed with intertextual and historical meaning, scraped and washed by tidal processes – operate as transitory manuscripts where the past is revealed and upon which modern environmental concerns are increasingly superimposed.

In contrast to excavations through storms and erosion, archaeology deliberately uncovers the past. Building on the concept of the palimpsestic beach, I draw on Christina A. Finn’s exploration of the relationship between archaeology and the arts in ‘Poetry and Archaeology: The Transformative Process’ (2003) – which compares the kindred excavatory processes of archaeological and poetic processes in ‘bringing things to light and to the surface of the page’ – to make detailed readings of poetry that engages with submerged lands through an imaginative formal collapsing of temporal layers to analogise the impacts of past and present climate and sea level change.[45] My discussion of the relationship between archaeology and coastal change in relation to the poets of interest within my literary thesis is likewise informed by geo-myth scholar and archaeologist Erin K. Kavanagh’s work outlined in ‘Layers in the Landscape’ (2018) on understanding and communicating sea-level change through long timeframes using ‘poetry as an archaeological method’ and through the interdisciplinary practice of deep mapping, that interweaves different approaches

[44] Dillon, pp. 12–13.

[45] Christina A. Finn, ‘Poetry and Archaeology: The Transformative Process’, in *Ancient Muses: Archaeology and the Arts*, ed. by Christine A. Finn, John H. Jameson, Jr., and John E. Ehrenhard (Tuscaloosa: Alabama University Press, 2003), pp. 72–81 (p. 73).

such as archaeology, arts practice, stories, science and more to build a complex and multi-layered understanding of a place.[46]

Extending these ideas using some of the key themes and concepts raised in 'Unexpected Encounters with Deep Time' (2018), my thesis looks at the shoreline through the lens of deep time as a space that may 'mediate' between 'temporal frames' in literature.[47] Franklin Ginn, Michelle Bastian, David Farrier, and Jeremy Kidwell explain how scholarship in the environmental humanities theorises time through the 'fractured timespace of the Anthropocene [which] brings distant pasts and futures into the present.'[48] Confronted by deep geologic timeframes stretching over millennia, human concerns are decentred. However, as Ginn and others point out, 'The Anthropocene's shock was to reveal humans as planetary agents on a deep spatial and temporal scale' due to 'the very long-term effects of climate change, nuclear radiation, plastic' revealed by modern science.[49] In my discussion of representations of human and non-human relationships on the eroding coast in poetry, I draw on Ginn and others' proposition that while 'anticipating [future] ruin and confronting vast timescales [can lead to a sense of despair and alienation] it can also prompt a renewed sense of hope for transformation or at least for recuperation and collaborative survival in a damaged but not yet dead world'.[50] This connects with Haraway's 'making-with', 'ongoingness' and 'refuges', and Ginn and others point to 'Haraway's kainos: the lumpy, thick temporality of a present animated by its

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[46] Erin K. Kavanagh, 'Writing Wonders: Poetry as Archaeological Method?' in *A Necessary Fiction*, ed. by R. Witcher, and D. P. Van Helden (London and New York: Routledge, 2020); Erin K. Kavanagh 'Re-thinking the Conversation: a Geomythological Deep Map' in *Re-Mapping Archaeology*, ed. by M. Gillings and P. Hacıgüzeller, and G. Lock (London and New York: Routledge, 2018); Erin K. Kavanagh, 'Layers in the Landscape' <https://www.geomythkavanagh.com/layers-in-the-landscape> [accessed 20 November 2019].
[47] Franklin Ginn, Michelle Bastian, David Farrier, and Jeremy Kidwell, 'Introduction: Unexpected Encounters with Deep Time', *Environmental Humanities,* 10.1 (2018), 213–25 (p. 214).
[48] Franklin Ginn and others, p. 213.
[49] Ginn, 'Introduction: Unexpected Encounters with Deep Time', p. 214.
[50] Ginn, p. 216.

immanent pasts but also thrumming with possible futures'.[51] My work builds on this sense of futurity, and on Ginn and others' aspirations for 'deep time stories [that will] place current concerns into a much larger flow of planetary history and futures, but through multiple types of encounters in which deep time reveals itself'.[52] These proposed 'types of encounter' or modes of engagement through story-telling include: 'enchantment', drawing on Jane Bennet's scholarship in *Vibrant Matter* (2010), leading to 'a sense of wonder, recalibration of possibility, or even regret' that 'draws the visitor, unbidden, into sensing the deep future beneath their feet'; the understanding that 'The Anthropocene also brings the prospect of human extinction into the present' (as I discuss in relation to Kolbert's *The Sixth Extinction*); and 'haunting' that encompasses 'our toxic legacies', past and future harbingers of ruin (through scientific projections, for example), and our collective feelings of 'guilt, shame, foreboding, fear' – leading to ecological grief.[53]

My thesis extends these modes of engagement to the poetry of the eroding coast, building on critical and theoretical work by Glenn Albrecht, Liam Bell, Cheryl Lousley, Susie O'Brien and Elaine Pollard to open up questions around sense of loss, the ecological uncanny, deep time and futurity in coastal change poetics.

In 'Climate Change and Uncanny Environments' (2020), Liam Bell offers a definition of the ecological uncanny as a state where 'the standards of what is normal have shifted to include the extreme', including weather events and temperatures.[54] Notions of stability are destabilised (for example, the transformation of normally dry

[51] Ginn, p. 217.
[52] Ginn, p. 217.
[53] Ginn pp. 218–222; Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010).
[54] Liam Bell, 'Climate Change and Uncanny Environments', *Wales Arts Review* (2020) <https://www.walesartsreview.org/climate-change-uncanny-environments> [accessed 20 November 2020] para. 1.

land into water during a storm surge or flash flood).[55] Applying the idea to my research, storms uncovering prehistoric tree stumps on beaches, for instance, signal both the loss of past forests to coastal change, and the threat to present homes and landscapes.[56] Reading the *oikos* as both 'ecosystem' and 'home', Bell notes the 'unhomely and unhoming' effects of climate change on both human and non-human creatures, leading to biodiversity decline and increasing numbers of displaced climate refugees.[57]

Pollard's examination of 'the drowned village' in 'When The Reservoir Comes' (2017) foregrounds the ways in which, through displacement, 'nostalgia, ritual and ruin impact upon notions of community and place', where the palimpsestic flooded settlement may reveal what lies beneath the surface psychologically and metaphorically as well as physically.[58] This provides a useful framework for my analysis of poetic representations of Doggerland, inundated by rising seas at the end of the last Ice Age (through natural processes), and its 'uncanny' resurrection in recent years through marine archaeological research.[59] Just as a village submerged under a reservoir may partially reappear during times of drought, so once-inhabited submerged landscapes revealed again through archaeology or coastal processes offer a similar 'uncanny twist', since they have been artificially preserved under water and 'present the familiar returning in an unfamiliar form'.[60] Ginn and others note the

[55] Liam Bell, para. 2.
[56] Liam Bell, para. 4.
[57] Bell explains that 'the root word for eco, as in ecosystem and ecology, is taken from the Ancient Greek word oikos. One definition of oikos describes homes and houses'. Bell, paras. 9–10.
[58] Elaine Pollard, "When the Reservoir Comes': Drowned Villages, Community and Nostalgia in Contemporary British Fiction', *C21 Literature Journal of 21st-century Writings*, 5.3, (2017), 1–21 (p. 4 and p. 20).
[59] *Europe's Lost Frontiers* <https://lostfrontiers.teamapp.com/?_webpage=v1> [accessed 20 June 2020]; Vince Gaffney, 'Global Warming and Lost Lands: Understanding the Effects of Sea Level Rise', *Center For A Better Life* (2008) <http://livebettermagazine.com/article/global-warming-and-lost-lands-understanding-the-effects-of-sea-level-rise> [accessed 20 November 2016] (para. 9).
[60] Pollard, p. 19.

‘potential for the uncanny time of the Anthropocene to bear witness to harbingers of future ruin’; Doggerland offers not only a warning about the impacts of climate and coastal change to the present and future, but has also been brought to light again by modern technology including under-sea seismic surveys. These are gathered mostly by oil companies prospecting under the North Sea, and, given that burning fossil fuels contributes significantly to global warming, this excavatory methodology could be said to give Doggerland’s reappearance through technology a further ‘uncanny twist’. As I go on to explore in my thesis, the concept of the ‘lost land’ (exemplified in writing about Atlantis, Lyonesse, and more) provides culturally-embedded layers of metaphor and intertextuality, and operates, in the words of Pollard, as ‘a space […] upon which to inscribe irresolvable questions of grief, loss, melancholy and nostalgia’.[61] Yet, as Pollard points out, it is the destruction of a place and the impossibility of return that creates its imaginative power: my thesis examines how the concept of the ‘lost land’ continues to capture the popular imagination. [62]

Glenn Albrecht’s neologism ‘solostalgia’ – a portmanteau of ‘solace’ (‘comfort’ or ‘consolation’) and ‘nostalgia’ (‘acute longing for familiar surroundings’) – provides a useful conceptual framework for talking and thinking about the psychological sense of loss and bereavement caused by rapid place-loss due to climate change.[63] Solostalgia describes the complete severing of a person’s connection both to their home place and the solace home offers as a human-and-place focused sub-set of the broader sense of ecological or climate grief stemming from the loss of entire ecosystems in the Anthropocene, encapsulating feelings of anxiety, hopelessness, futility and despair. McGreavey turns to poetry to help

[61] Pollard, p. 4.
[62] Pollard, p. 8 and p. 10.
[63] Glenn Albrecht, ‘Solostalgia’, *Alternatives Journal*, Vol. 32, 4/5, Creative Communities (2006), pp. 34–36. ‘Solace’ and ‘Nostalgia’: *OED.*

‘[make] our way with cycles of grief and hope through these troubled times’, but cautions that ‘making refuge through poetry is not about feeling better or, as resilience thinking would have it, finding ways to cope, bounce back, and otherwise return to normal’.[64] Likewise, Ginn and others advocate for the psychological importance of grieving to process the losses of the Anthropocene, suggesting that ‘in order to pursue meaningful change, we need to contemplate in full and at length the Anthropocene’s losses and disturbances’. [65] This raises the question, however, of how long we have for contemplation in a world poised at the tipping point? My thesis will draw on and consider these ideas in its consideration of the poetics of coastal change as a mode for writing through ecological loss and grief towards a sense of futurity.[66]

In ‘A History of Environmental Futurity’, Susie O'Brien and Cheryl Lousley conceptualise futurity through the lens of cultural identity, and its role in helping us to understand and inhabit the present, as well as imagine the past, and move towards potential futures.[67] This is an important touchstone for my examination of poems that take inspiration from inherited culture in the form of myths and artefacts. However, O’Brien and Lousley caution against climate reductionism and ‘viewing the world as a place in which the future of societies and environments is seen in terms of climate alone’ and likewise reducing ‘those who have already begun to suffer the effects of climate change […] to a spectacle of the disastrous future [we are] headed for (or may yet avert if bold steps are taken)’ – a warning I try to adhere to in this thesis.[68]

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[64] McGreavey, p. 110.
[65] Ginn and others, p. 222.
[66] Poet Dom Bury suggests, ‘using poetry to work through ecological grief towards [a] place of acceptance’. Dom Bury and Karen McCarthy Woolf, ‘Grievous Bodily Harm’, *Magma,* 72 (2018), 20–23 (p. 22).
[67] Susie O'Brien and Cheryl Lousley, ‘A History of Environmental Futurity: Special Issue Introduction’, *Resilience: A Journal of the Environmental Humanities*, 4.2-3, (2017), 1–20.
[68] Susie O'Brien and Cheryl Lousley, pp. 13–14, drawing on Mike Hulme, ‘Reducing the Future to Climate: A Story of Climate Determinism and Reductionism’, *Osiris*, 26 (2011) 245–266.

Coastal Change Poetics

This introduction has covered, so far, the broader critical and theoretical literature I refer to in my thesis, and I will now move on to the poetry and poetics of coastal change. Beginning with a consideration of some of the discussions that bridge between my critical and creative writing and a review of relevant publications and poetry, I will then introduce the poets of interest, explain my creative and critical methodological approach, and provide a brief chapter outline.

Astley and Solnick, among others, offer comprehensive and current introductions to the history and development of ecopoetry and ecopoetics. Astley explains that ecopoetics rose in parallel with ecocriticism out of the late 20th-century awareness of ecology and concerns over environmental disaster', and that ecopoetry goes 'beyond traditional nature writing to take on distinctly contemporary issues' including – but not limited to – the effects of global warming and climate change.[69] However, as Solnick explains, 'one cannot talk about ecocriticism (or indeed ecopoetry) in the singular anymore, especially when considering approaches which deal with related issues without necessarily identifying them as ecocriticism' such as the relations between people and places:[70]

> Even as readers and writers of poetry become more scientifically sophisticated and attuned to some of the critical arguments emerging from within ecocriticism and related fields like cultural geography, the poetics of place remain central to studies of British and Irish poetry that engage with environmental questions.[71]

This reflection is crucial in positioning my study within current environmental scholarship, since my thesis takes a transdisciplinary perspective in its examination of Anglophone coastal change poetics, and pays close attention to relations between

[69] *Earth Shattering Ecopoems*, ed. by Neil Astley (Tarset: Bloodaxe, 2007) p. 15–16.
[70] Solnick, p. 26.
[71] Solnick, p. 26.

people and places as well as ecological, scientific, political and theoretical considerations – an approach I set out in my methodology, which concludes this introductory section.[72]

Tom Bristow's critical conceptualisation of the lyric as an ecological mode of inquiry in *The Anthropocene Lyric* informs, to a certain extent, my discussion and deployment of the lyric mode in my thesis. [73] Bristow proposes that 'from the perspective of the humanities, the metaphor of the Anthropocene asks us to think of the human as one part of the more-than-human world' and examines the role of human perception and emotion in Anthropocene poetics. In debating the 'politics of representation in the lyric', while acknowledging that ecological writing increasingly decentres human concerns and rejects anthropocentric perspectives, Bristow argues for a lyricism that 'counters human exceptionalism and instrumental reason but contextualises human action within the long scale of evolutionary processes'.[74] My study builds on these considerations to propose that the lyric mode is particularly suited to examining the human condition in relation to anthropogenic coastal change, and considers how poets writing on the subject may balance a poetics of place that is grounded in a specific geography and geology – for example, the eroding Suffolk coast – with global ecological awareness.[75]

In *The New Poetics of Climate Change* (2017), Matthew Griffiths argues that innovative poetic works in the Modernist mode are best equipped to articulate the entangled agencies at play and challenge false notions of (natural) stability – 'if not to participate in the "fight" against climate change then at least to help us develop a

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[72] Solnick, p. 27 drawing on Neal Alexander and David Cooper, 'Introduction' in *Poetry and Geography: Space and Place in Post-War Poetry*, ed. by Neal Alexander and David Cooper (Liverpool: Liverpool University Press) 1–19 (p. 5).
[73] Tom Bristow, *The Anthropocene Lyric: An Affective Geography of Poetry, Person, Place* (Basingstoke: Palgrave Macmillan, 2015); and Solnick, p. 31.
[74] Bristow, p. 13.
[75] Bristow, p. 13.

more sophisticated imagination of the phenomena and not to confirm us in our existing positions and politics'.[76] For example, Griffiths proposes that we can trace the interrelatedness of the human and non-human through the Modernist layering of time and 'haunting of the present by practices of the past, which anthropogenic warming demands we understand' – such as we find in T. S. Eliot's *The Waste Land*.[77] These conceptual and formal discussions intersect with my examination of representations of human and more-than-human scales and timeframes in the poetics of coastal change. However, while my thesis departs from Griffith's study to consider poetic engagement with coastal change through the broader lens of the Anthropocene, Griffith's brief survey of climate change poems helps to create a framework of reference for my own survey of contemporary coastal change poetry that follows.[78]

Griffiths notes that 'poems began to take up climate change as a distinctive topic in the late 1980's and early 1990's' including early appearances of coastal change imagery, but 'increased attention being paid to climate change, beginning in the middle of the first decade of the twenty-first century' has led to a corresponding upsurge in the writing and publishing of poetry exploring the subject and its varied and complex phenomena.[79] This poetry has developed in parallel –and sometimes in conversation – with the rich body of ecocriticism discussed in this introduction. In my survey of contemporary Anglophone poetry that follows, five anthologies emerge – published post-2005 – through which it is possible to construct a broad picture of emerging trends in coastal change poetics: *Earth Shattering Ecopoems* (2007); *Feeling The Pressure: Poetry And Science Of Climate Change* (2008); *The Ground*

[76] Griffiths, *The New Poetics of Climate Change,* p. 51.
[77] Griffiths, p. 51; T. S. Eliot, *The Waste Land* (London: Faber and Faber, 1999).
[78] Survey of poetry, pp. 153–173.
[79] Griffiths, p. 154 and p. 157.

Aslant: An Anthology Of Radical Landscape Poetry (2011); Keep It In The Ground: A Poem A Day (*The Guardian*, 2015); and *Realistic Utopias: Writing for Change* (Weatherfronts conference, 2017).[80] Following a brief look at these anthologies and how they relate to my research project, I will move on to survey single collections and poems that illustrate key tendencies and themes in coastal change writing that I outline and draw upon in my critical study and creative writing.

Earth Shattering Ecopoems, edited by Neil Astley, is a wide-ranging anthology of ecologically-orientated poems by past and contemporary Anglophone or translated poets from around the world, particularly from Britain, Ireland and North America. It has been described as 'the most comprehensive anthology of its kind' and, in Astley's words, the 'first anthology to show the full range of ecopoetry', although Solnick notes that ecologically-engaged poems from within the 'innovative tradition', such as those featured in *The Ground Aslant,* have been consciously excluded from the publication – a move that he describes as 'a critical and imaginative failure'.[81] As I explained a little earlier in this introduction, Astley's overview of the theoretical and creative development of ecopoetry provides an important touchstone and reference for my research. The book's concluding sections focus thematically on 'Force of Nature' and 'Natural Disasters' (the latter being a contentious term in sections of the academic community) 'showing the effects of global warming and climate change on nature and people's lives' and

[80] *Earth Shattering Ecopoems,* ed. by Neil Astley (Tarset: Bloodaxe, 2007); *Feeling the Pressure: Poetry and Science of Climate Change*, ed. by Paul Munden (Berne: British Council, 2008); Tarlo, Harriet, ed., *The Ground Aslant* (Exeter: Shearsman, 2011); 'Keep it in the ground: a poem a day,' *The Guardian* (2015) <https://www.theguardian.com/environment/series/keep-it-in-the-ground-a-poem-a-day> [accessed 10 October 2016]; *Realistic Utopias: Writing for Change,* ed. by Peter Gingold (2017) <http://justinahart.com/wp-content/uploads/2017/01/Realistic-Utopias-Writing-for-Change.-Anthology.pdf > [accessed 23 January 2017].
[81] David Hawkins, 'Review: Earth Shattering: Ecopoems edited by Neil Astley', *Ecologist* (June 2008) <https://theecologist.org/2008/jun/01/earth-shattering-ecopoems-edited-neil-astley> [accessed 20 March 2020]; Astley, p. 15; Solnick, p. 29.

citing ‘clear links between human-caused global warming of the oceans and increased storm strength’.[82] These include early examples of poems covering sea level rise, such as Lavinia Greenlaw’s ‘The Recital of Lost Cities’ (1993), and George Szirtes’ ‘Death by Deluge’ (2001), which imagines England’s destruction by sea flood.[83]

In contrast to the international and historical scope of *Earth Shattering Ecopoems*, Paul Munden’s *Feeling The Pressure: Poetry and Science of Climate Change* (2008) has a British focus, and takes a cross-disciplinary approach, juxtaposing poems with science writing by scientists from Newcastle University and Tyndall Centre for Climate Change, who provide an overview of sea level rise and its global impacts (among other subjects).[84] The science writing explores the context for each section and underpins the volume as a whole, but this results in a project that feels compartmentalised rather than collaborative, and the scientific writing prefaces the poems in every instance.[85] However, Munden comments that ‘the science of climate change has clearly entered the language [of poetry] and permeated the way we think’, highlighting a developing tendency in climate-concerned writing. This is explored in my third chapter, in which I interrogate relations between poetry and environmental science, referencing, among other viewpoints, Munden’s positioning of the science writing in *Feeling The Pressure* as ‘acting as touchstones

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[82] For example, ‘It is generally accepted among environmental geographers that there is no such thing as a natural disaster. In every phase and aspect of a disaster – causes, vulnerability, preparedness, results and response, and reconstruction – the contours of disaster and the difference between who lives and who dies is to a greater or lesser extent a social calculus. Hurricane Katrina provides the most startling confirmation of that axiom.’ Neil Smith, ‘There’s No Such Thing as a Natural Disaster’, *SSRC* (11 June 2006) < http://blogs.ubc.ca/naturalhazards/files/2016/03/Smith-There’s-No-Such-Thing-as-a-Natural-Disaster.pdf> [accessed 10 January 2021] and see also K. Chmutina and J. A. Von Meding, ‘Dilemma of Language: “Natural Disasters” in Academic Literature’, International Journal of Disaster Risk Science, 10 (2019) 283–292. Astley, 2007, p. 190 and p. 216.

[83] George Szirtes p. 224 and Lavinia Greenlaw p. 242 in *Earth Shattering Ecopoems.*

[84] Munden, *Feeling The Pressure: Poetry and Science of Climate Change* (2008), p. 3.

[85] Munden, p. 37.

of research – the closest we have to fact – to balance the poets' more personal reflections and imaginings'.[86] Poems published in the volume include Maggie Butt's, 'Meltwater', Michael Symmonds Roberts', 'The Kingdom of Water is Coming' and David Morley's, 'The Waves', which all dissolve notions of stable land / water boundaries.[87] These poems engage thematically – and somewhat obliquely, to paraphrase Munden – with the science preceding them in the anthology; for example, Butt's liquid-centric poem links intertextually with a science writing section 'Beyond Climate Change' positing the projected future displacement of millions of people and loss of agricultural land due to sea level rise.[88]

Like Munden, Harriet Tarlo ostensibly rejects the label 'ecopoetry' for work featured in *The Ground Aslant: An Anthology of Radical Landscape Poetry* (2011), in this case to focus on formally and technically exploratory and experimental writing and innovative engagements with landscape rather than ecological concerns – including an extract from Wendy Mulford's *East Anglian Sequence*, set on the Suffolk and Norfolk coasts.[89] While acknowledging that poems in the anthology 'may also be motivated by environmentalism', Tarlo points out that some writers 'are uncomfortable with the ecopoetry label, perhaps because of the emphasis of subject matter over form'.[90] This is important to my discussion in serving as a reminder that poems may not be easily defined or fit neatly into limiting categories such as 'ecopoetry' 'radical landscape' or Gifford's 'post-pastoral' – or even more

[86] Munden, pp. 3–4; Poems are grouped under five headline issues: Trends (trends in observed and future climate change); Extremes (extreme weather); Impacts (Impacts on human health, ecosystems, urban and agricultural areas); Actions (Adaptation and Mitigation); and Complicities (beyond climate change).
[87] Maggie Butt, p. 78, Michael Symonds Roberts p. 30 and David Morley p. 44 in *Feeling the Pressure.*
[88] Munden, pp. 3, 71–2.
[89] *The Ground Aslant: An Anthology of Radical Landscape Poetry*, ed. by Harriet Tarlo (Exeter: Shearsman, 2011); Tarlo, p. 16 and Mulford, pp. 54–62.
[90] Tarlo, p. 11.

divisively, into 'mainstream' or innovative', although, Solnick notes, a shared interest in ecological concerns may provide 'potential common ground' between them.[91] However, ecopoetry in its broadest sense is a poetry that engages with contemporary ecological thought, and as Solnick points out, 'it is increasingly difficult to write about landscape without some dimension of ecological engagement', any more, it could be said, than it is possible to talk about coastal change without thinking about climate change, and vice-versa.[92]

Keep It In The Ground: A Poem A Day (2015) and *Weatherfronts: Realistic Utopias: Writing For Change* (2016) were both published exclusively online.[93] *Keep It In The Ground* was curated by the UK's poet Laureate Carol Ann Duffy for *The Guardian* and featured twenty poems on the theme of climate change, with several focusing on sea level change – for example, Jo Bell's 'Doggerland' and Gillian Clarke's 'Cantre'r Gwaelod,' use historical and mythical drowned land narratives to address anthropogenic flooding.[94] *Realistic Utopias* was an outcome of the Weatherfronts Conference, 'Climate Change and the Stories We Tell', organised by Tipping Point in collaboration with Durham University and Free Word Centre in 2017. This built on previous interactions between scientific research and poetry, such as *Feeling the Pressure*, by explicitly bringing together writers and climate scientists. Some of these cross-disciplinary encounters resulted in commissioned work, including Justina Hart's long six-part poem, 'Doggerland Rising'. The poem considers coastal change in the context of deep layered geologic time and sea level

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[91] Solnick, p. 28–29.
[92] Solnick, p. 30.
[93] 'Keep it in the ground: a poem a day' (2015); *Realistic Utopias: Writing for Change'* (2017); 'Weatherfronts: Climate Change and the Stories We Tell' (2016).
[94] Jo Bell, 'Doggerland', *The Guardian* (2015); and Gillian Clarke, 'Cantre'r Gwaelod' in 'Keep it in the ground: a poem a day', *The Guardian* (2015) <https://www.theguardian.com/environment/2015/may/19/a-climate-poem-for-today-cantrer-gwaelod-by-gillian-clarke> [accessed 10 October 2016].

change following the last Ice Age, and was developed from collaborative working with paleo-scientists from Durham University.[95] It is to these kinds of cross-disciplinary research and writing that my creative practice in this thesis owes a particular debt, particularly where it is the product of direct engagement or collaboration with scientists, archaeologists, conservationists and ecologists. Bell's, Clarke's and Hart's poems are examined through detailed readings in chapter two of this thesis.

Individual poems and essays engaging with Anthropocene issues and coastal change appear in journals such as Magma's *The Climate Change Issue* (2018), which includes a dialogue between poets Karen McCarthy Woolf and Dominic Bury examining ecological grief, and Ben Smith's poem sequence 'Poems for the Earth System Model' (from a project bringing together writers and marine scientists), which I bring into my discussion of solostalgia (Bury) and cross-disciplinary writing (Smith).[96] *Liquidscapes*, a book produced by art.earth following the Liquidscapes international symposium in Dartington (2018) features a range of creative writing, visual work and essays exploring 'watery worlds, boundaries and edgelands, and the state of being liquid', many of which adopt an ecological approach.[97]

However, despite the growing number of single poems responding to coastal change or using coastal change imagery, few collections by contemporary British poets explore these concerns exclusively or extensively – throughout a slim volume, for example. Publications (from within the timeframe of my study) that do – to some

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[95] Hart, 'Doggerland Rising', *Realistic Utopias: Writing for Change* (pp. 43-52).
[96] 'The Climate Change Issue', ed. by Matt Howard, Fiona Moore, and Eileen Pun, *Magma*, 72 (2018); Ben Smith, 'Poems for the Earth System Model', *Magma*, 72 (pp. 16–19) and Karen McCarthy and Dominic Bury, 'Grievous Bodily Harm – Karen McCarthy and Dominic Bury talk climate change, grief and decolonising ecopoetics' (pp. 20–23).
[97] *Liquidscapes*, ed. by Richard Povall (Dartington: art.earth, 2019), pp. 12–13. The book includes an earlier version of a poem from this thesis: Alison (Aly) Stoneman, 'Sea Level Rise on an Interactive Map', *Liquidscapes,* pp. 33–34.

extent, at least – engage with coastal change themes include Jake Campbell's pamphlet *The Coast Will Wait Behind You* (2015), which, in the words of Mike Collier, 'imaginatively collapses past and present' in his poems set on the coastal areas of Sefton and South Shields; Peter Reading's *-273.15* (2005), a species extinction dialogue with 'Noye', survivor of the biblical flood; and Blake Morrison's *Shingle Street* (2015), which analogises corporeal decline and coastal erosion.[98] These are examined through detailed reading in the first and third chapters of my thesis.

Drawn from the burgeoning field of contemporary environmental writing, these examples exemplify some of the emergent preoccupations and approaches synonymous with coastal change poetry, such as cross-disciplinary dialogues and scientific underpinning, formally and technically innovative and cross-genre explorations, layering and collapsing of time, metaphorical employment of myths and folklore, and analogies between bodily, socio-economic and coastal decline, engaging both with anthropogenic climate change and the long tradition of British coastal writing. Taken together, these works demonstrate a flourishing aspect of twenty-first century poetic culture engaged with environmental crisis and coastal change.

My creative and critical project additionally draws on a range of publications that include individual poems or sections of prose conversant with the thematic concerns of my research and writing, including: the conservatory role of language (for example, in Robert Macfarlane's *The Lost Words),* fluid entanglements of human and non-human (explored in Alice Oswald's *Dart* and *Sleepwalk on the*

[98] Jake Campbell, *The Coast Will Wait Behind You* (Sunderland: University of Sunderland, 2015); Blake Morrison, *Shingle Street* (London: Chatto and Windus, 2015); Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005).

Severn), deep time landscapes (examined in Robert Macfarlane's *The Old Ways* and *Underland: A Deep Time Journey*); close observation of coastal places and processes (for example, in poetry volumes such as Kevin Crossley-Holland's *Norfolk Poems*, Jean Sprackland's *Tilt*, and Jamie's *The Bonniest Companie,* and in the non-fiction writing of Jean Sprackland – *Strands: A Year of Discoveries on The Beach* – and the poet and essayist Kathleen Jamie in *Findings, Sightlines*, and *Surfacing);* and cross genre explorations of mythmaking and shoreline entanglements in Macfarlane's *Ness,* and submergences and excavations in Julia Blackburn's *Timesong: Searching For Doggerland* that combines memoir, history, prose and poetry in its study of deep layered geologic time and memory.[99] While my study focuses on British poetry, Jorie Graham's *Sea Change* and Carrie Etter's *The Weather in Normal* particularly influenced my thinking around relations between technology, climate and poetry alongside personal and environmental loss, as well as explorations of shifting forms and perspectives in the creative component of my project.[100]

Additionally, a wide range of cultural, political, and scientific actions have influenced the underlying ethical concerns of my work, and underscore why this study is relevant now. These include national and global events such as the Brexit

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[99] Julia Blackburn, *Timesong: Searching For Doggerland* (London: Jonathan Cape, 2019); Kevin Crossley-Holland, *Norfolk Poems* (London: Academy Editions, 1970); Kathleen Jamie, *Findings* (London: Sort of Books, 2005), *Sightlines* (London: Sort of Books, 2012), *Surfacing* (London: Sort of Books, 2019), *The Bonniest Companie* (London: Picador, 2015); Robert Macfarlane and Jackie Morris, *The Lost Words* (London: Hamish Hamilton, 2017); Robert Macfarlane, *The Old Ways* (London: Penguin, 2013) pp. 359–364 and *Underland: A Deep Time Journey* (London: Hamish Hamilton, 2019); Alice Oswald, *Dart* (London: Faber, 2010) and *Sleepwalk On The Severn* (London: Faber, 2010); Jean Sprackland, *Strands: A Year Of Discoveries On The Beach* (London: Vintage, 2013) and *Tilt* (London: Jonathan Cape, 2007). Poems specifically exploring sea change and climate change within these books include, for example, Sprackland's title poem 'Tilt' pp. 7–12 in *Tilt* and 'Fianuis' in *The Bonniest Companie*, referring to a place on Rona in the Western Isles, the word also means 'witness' or 'testimony' in Gaelic (p. 38). For the Gaelic translation of "Fianuis" I referred to *Learn Gaelic* <https://learngaelic.scot/dictionary/index.jsp?abairt=fianuis&slang=both&wholeword=false> [accessed 2 April 2020].

[100] Carrie Etter, *The Weather in Normal* (Bridgend: Seren, 2018); Jorie Graham, *Sea Change* (New York: Harper Collins, 2009).

Referendum (2016), President Trump's decision to withdraw the USA from the Paris climate agreement (2017) and President Biden's move to reinstate America in the accord (2021); the rise of new environmental protest movements demanding radical behavioural and policy change, including Extinction Rebellion and Youth Strike for Climate (the latter originating in Swedish youth activist Greta Thunberg's School Strike for Climate in 2018 that led to global protests); and broadly popular and influential productions such as the *Blue Planet* series and *Climate Change: The Facts* (2019) presented by Sir David Attenborough, drawing attention to world-wide plastic pollution and biodiversity collapse, which exemplify (and lead) a recent shift in wildlife and nature programmes towards a more political and activist approach.[101] Additionally, at the time of writing in 2020, the global Coronavirus pandemic has drawn attention not only to the kind of fragility of human society and its systems explored in Reading's work, for example, but also to a re-examination of the human / non-human interface in terms of the virus's leap across species, profoundly underscoring the point that humans are part of the natural world. Repeated lockdowns have prompted important conversations around the relationship between access to the natural world and human mental and physical health and wellbeing.[102]

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[101] Sir David Attenborough's compelling and painstakingly researched nature programmes have profoundly influenced public interest in the oceans and awareness of climate change. *The Blue Planet* (2001), *Blue Planet 2* (2017) and *Our Planet* (2019) series included episodes on the high seas, coastal seas, and rapidly changing Arctic and Antarctic. *Climate Change – The Facts* (2019), which highlighted statistics including the loss of one foot of Louisiana every forty-five minutes due to rising sea levels, reportedly fuelled the Extinction Rebellion protests in April 2019. *Climate Change – The Facts,* BBC (2019) <https://www.bbc.co.uk/iplayer/episode/m00049b1/climate-change-the-facts> [accessed 21 June 2019]; *Extinction Rebellion* <https://rebellion.earth> [accessed 10 March 2019]; *Global Climate Strike* <https://globalclimatestrike.net> [accessed 10 September 2019];'School Strike for Climate: Protests Staged Around the World', *BBC* (24 May 2019) <https://www.bbc.co.uk/news/world-48392551> [accessed 26 May 2019]; Independent news site report: Chloé Farand, 'Trump begins formal US withdrawal from Paris Agreement', *Climate Home News* (4 November 2019) <https://www.climatechangenews.com/2019/11/04/trump-begins-formal-us-withdrawal-paris-agreement> [accessed 10 November 2019]; a scholarly examination of the Brexit referendum and its outcomes: Sara B. Hobolt, 'The Brexit vote: a divided nation, a divided continent', *Journal of European Public Policy,* 23.9 (2016), pp. 1259–1277.

[102] For example, in the media: Lucy Jones, 'In times of uncertainty, let nature be your refuge', *The Guardian*, 20 March 2020 <https://www.theguardian.com/commentisfree/2020/mar/20/coronavirus-anxiety-nature> [accessed 30 March 2020]; Mind also promotes the relationship between mental

Meanwhile, CO_2 emissions dropped significantly in 2020 due to reduced energy demand during international lockdown, underlining human socio-economically driven impacts on the planetary biosphere but also offering one positive note in an unprecedented crisis, inviting people to consider what kind of society they want to re-build in a post-pandemic world that will still be threatened by climate change.[103]

In line with the marine turn in environmental humanities discussed in this thesis, two doctoral research projects have recently been completed in a comparable area to my research: *Becoming-Ocean: theories towards a marine lyric* by Sarah Elizabeth Hymas (2019) and *Rewriting the Atlantic archipelago: modern British poetry at the coast* by Philip Jones (2018). However, both of these works have a different focus to my project. Jones's fully critical thesis examines how modern British poets respond to and represent the coastline in their work, with a particular focus on notions of place, literary geography and scale in the poetry of Peter Riley, Wendy Mulford, Robert Hampson, Matt Simpson and Robert Minhinnick. Hymas's research explores the entanglements of philosophical theory and practice, and 'the Deleuzian concept of "the fold" to decentralise a humanist perspective and illustrate how multiple subjectivities can unfold across a marine lyric', speculating 'on how the intimacy of the lyric can incorporate the vastness of the ocean'. Hymas's thesis adopts an interdisciplinary approach that includes an eco-critical and posthuman exploration of Jorie Graham's marine-sited poems (Graham's work is also a point of focus in Griffith's and Solnick's books), the production of a portfolio of original

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health and wellbeing: 'Nature and Mental Health', *Mind* (2018) <https://www.mind.org.uk/media-a/2931/nature-and-mental-health-2018.pdf> [accessed 10 April 2020].

[103] Josh Gabbatiss, 'IEA: Coronavirus impact on CO2 emissions six times larger than 2008 financial crisis', *Carbon Brief: Clear on Climate* (2020) <https://www.carbonbrief.org/analysis-coronavirus-set-to-cause-largest-ever-annual-fall-in-co2-emissions> [accessed 2 May 2020]; an example of detailed examination in the media of long-term impacts of Coronavirus: Simon Mair, 'How will coronavirus change the world?', Future, *BBC,* 31 March 2020 <https://www.bbc.com/future/article/20200331-covid-19-how-will-the-coronavirus-change-the-world> [accessed 31 March 2020].

poetry, and the making of artist's books as a core element of her methodology.[104]

My creative and critical thesis takes a different approach, examining representations of sea level rise and erosion in contemporary poetry to make a case for an emergent poetics of coastal change that meaningfully probes and articulates key issues of the Anthropocene, focusing on conceptions of loss, deep time, and the relationship between scientific data and poetic imagination in the work of Jo Bell, Gillian Clarke, Justina Hart, Blake Morrison, and Peter Reading. The poetry and poetics of contemporary British coastal change has received limited critical attention, but after decades of neglect there has been a recent surge of interest – evidenced by the theoretical, critical and creative work surveyed in this introduction. However, while coastal change poetry increasingly features in anthologies, pamphlets and commissions engaging with climate change, it remains the case that no longer work combining the critical and creative focuses exclusively on sea level rise and poetry. My research aims to address this gap and contribute to this developing field of study.

The Poets

The poets selected for this thesis – Blake Morrison (in chapter 1), Jo Bell, Gillian Clarke, Justina Hart (in chapter 2), and Peter Reading (in chapter 3) – have not, at the time of writing, received much critical attention for their coastal poems, but, as I will argue, their work makes a significant contribution to defining, examining and exploring British coastal change and environmental crisis in the Anthropocene, and the ways in which human and more-than-human agencies and timescales interact.

[104] Sarah Elizabeth Hymas, 'Becoming-Ocean: Theories Towards a Marine Lyric' (unpublished doctoral thesis, University of Liverpool, 2019); and Philip Jones, 'Rewriting the Atlantic Archipelago: Modern British Poetry at the Coast' (unpublished doctoral thesis, University of Nottingham, 2018). See also: Solnick pp. 205–11 and Griffiths pp. 160–73.

Blake Morrison writes across genres, including poetry, on themes including the past, memory and loss, as seen, for example, in his memoir *And When Did You Last See Your Father?*.[105] These ongoing concerns from across his oeuvre frame a personal, human-centred, and lyric approach to coastal erosion in the opening sequence of poems in *Shingle Street*, Morrison's first poetry collection since *The Ballad of the Yorkshire Ripper* in 1987.[106] He expresses his interest in east coast erosion, and the ways in which language and literature may respond, in an article for *The Guardian*, 'Drowned in a Sea of Salt' (2015).[107] In my detailed reading of *Shingle Street* in this thesis, I consider Morrison's use of poetry and poetic form to address the book's central metaphor of coastal erosion for the transience of life and human endeavour.

Jo Bell's poems often draw on her former work as an archaeologist and experiences living onboard a narrowboat – including her time as the inaugural Canal Laureate from 2013 to 2015 – imbricating human and non-human activity in the ex-industrial space of the canal, as well as reflecting on the element of water, personal relationships, and the past. Bell employs the device of "voicing" material culture in both her full-length collections, *Navigation* (2008) and *Kith* (2015).[108] In 'Next Door', she imagines the people of the past as noisy neighbours on the other side of 'a wall you wish was thicker', intimating the intrusive legacy of history.[109] In

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[105] Blake Morrison, *And When Did You Last See Your Father?* (London: Granta, 2007), which won the J. R. Ackerley Prize for Autobiography. Morrison began his career as a poet and critic, publishing *The Movement: English Poetry and Fiction of the 1950s* (Oxford: Oxford University Press, 1980), *Dark Glasses* (London: Chatto and Windus, 1984), and co-editing, with Andrew Motion, *The Penguin Book of Contemporary British* Poetry (London: Penguin, 1982), among other works.
[106] Blake Morrison, *Shingle Street* (London: Chatto & Windus, 2015); and *The Ballad of the Yorkshire Ripper* (London: Chatto & Windus, 1987).
[107] Blake Morrison ,'Drowned in a Sea of Salt: Blake Morrison on the Literature of the East Coast', *The Guardian* (31 January 2015) <https://www.theguardian.com/books/2015/jan/31/blake-morrison-literature-imperilled-east-coast-climate-change> [accessed 10 April 2017] (para. 3 of 12).
[108] Jo Bell, *Kith* (Rugby: Nine Arches Press, 2015) and *Navigation* (Macclesfield: Moormaid Press, 2014).
[109] Bell, *Kith,* p. 24.

'Doggerland' (2015), the past makes itself heard through the chance discovery of a prehistoric harpoon point that 'voices' its makers' experiences after being dredged up from the seabed by a fishing trawler. Bell draws on the artefact as both archaeological evidence that people once lived and hunted in Doggerland (now under the North Sea), and as a powerful container of memory to engage with a past time and place.[110] While coastal change potentially offers a wide range of poetic material to discuss, Bell's approach, as both poet and trained archaeologist, opens up important questions around the dialogue between excavatory poetic and archaeological processes – and, more broadly, between poetry and science – in writing about sea level rise.

Justina Hart, who is less established than the other poets I look at in this thesis, similarly adopts Doggerland as a site to investigate the parallels between past and present sea level rise. Hart's 'Doggerland Rising', is a commissioned poem following on from the interdisciplinary Weatherfronts Conference (2016), which brought together writers and scientists to generate new literary responses to climate that coalesce around conceptions of change. She notes that 'Doggerland Rising' was initially inspired by her fascination with the discovery that modern humans lived on what is now the bed of the North Sea during the Holocene, and in response to archaeological research through an arts and science collaboration, rather than an overt environmental agenda: 'I had not thought of myself as writing 'eco' poetry, but realised with a jolt that some of my other work could be seen through this lens'.[111] Like Morrison, Hart writes across genres including journalism, and face-to-face

[110] Jo Bell, 'Doggerland', *The Guardian* (21 May 2015) <https://www.theguardian.com/environment/2015/may/21/a-climate-change-poem-for-today-doggerland-by-jo-bell> [accessed 10 June 2015].
[111] Justina Hart, 'Doggerland', *Justina Hart* (2018) <http://justinahart.com/doggerland/> [accessed January 2018] (para. 3 of 8).

interviews with paleo-scientists at Durham University inform her 'long poem in the voices of our Mesolithic ancestors as their land became more inhospitable', written in the global context of what society is facing now and in the future.[112] This sets up certain thematic, conceptual and formal comparisons and connections between Bell and Hart's coastal change writing, beyond the geographical, that I bring into conversation with Gillian Clarke's poem, 'Cantr'r Gwaelod'.

Clarke is a Welsh English-language poet and former National Poet of Wales (2008 to 2016), who has published thirteen collections of poems including *Ice* (2012), which was shortlisted for the T. S. Eliot Prize, and *Zoology* (2017), which was longlisted for the inaugural Laurel Prize for Ecopoetry (2020).[113] Themes of landscape, water, and memory regularly reoccur in her writing – for example, in *A Recipe for Water* (2009) – and she is particularly associated with the West Wales landscape where she lives and where 'Cantre'r Gwaelod' is set.[114] The poem, also commissioned for *The Guardian's* online series, adopts the Welsh myth of the eponymous lost land said to lie under the sea in Cardigan Bay. Clarke uses the story to draw attention to parallels with contemporary climate change through the emergence of prehistoric tree stumps on Borth beach following a storm. Indeed, the theme of flooding can be deeply political for Clarke: in her earlier poem 'Clywedog', the controversial development of the eponymous reservoir floods habitats and drives people from their homes, while in 'Cantre'r Gwaelod', sea level rise does the same, but both poems point at anthropogenic actions and their desolating consequences.[115]

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[112] Hart (para. 2 of 8).
[113] Gillian Clarke, *Ice* (Manchester: Carcanet, 2012) and *Zoology* (Manchester: Carcanet, 2017). Clarke is also a winner of the Queen's Gold medal for Poetry (2010) and the Wilfred Owen Association Poetry Award (2012).
[114] Gillian Clarke, 'Cantre'r Gwaelod', *Keep it in the ground: a poem a day* (2015) <www.theguardian.com/environment/2015/may/19/a-climate-poem-for-today-cantrer-gwaelod-by-gillian-clarke> [accessed 10 June 2015]; and Gillian Clarke, *A Recipe for Water* (Manchester: Carcanet, 2009).
[115] Gillian Clarke, 'Clywedog', *The Sundial* (Llandysul: Gomer Press,1978) p. 12.

Matthew Jarvis observes that Clarke's work 'cannot be classed as some sort of biocentric eco poetry' because it is as concerned with 'the cultural, political and gender-inscribed battles of Welsh land' as it is with 'nature'. [116] While this may be so, 'Cantre'r Gwaelod' confronts contemporary ecological crisis, probing – in common with Bell, Hart, Morrison and Reading – human relations with the non-human in a changing world.

Peter Reading's (d. 2011) poems are best known for confronting social decline, but his work continually reiterates how social issues are inseparable from environmental degradation and crisis. Reading published twenty-six books between 1974 and 2010, but chose to operate on the fringes of the literary and academic worlds, although he won a number of literary awards and was shortlisted for the T. S. Eliot Prize.[117] As I discuss in this thesis, Reading's individual collections are in continuous intra- and intertextual dialogue with each other within a complex system of his entire body of work. Informed by his lifelong interest in ornithology, conservation and ecology, the author's later books (from *Faunal*, 2002, onwards) focus on environmental concerns, as seen in *-273.15* (2005), which deploys aquatic language and sea level rise metaphors and imagery to call attention to mass species extinction and the impacts of global warming.[118] My detailed textual analysis of *-273.15* builds on and extends Isabel Martin's comprehensive study of Reading's earlier publications, *Reading Peter Reading* (2000).[119]

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[116] Matthew Jarvis, *Welsh Environments in Contemporary Poetry* (Cardiff: University of Wales Press, 2008) pp. 52–53.

[117] Peter Reading won the following awards for his poetry: the Cholmondeley Award (1978), the Dylan Thomas Award (1983) for *Diplopic*, the Whitbread Prize for Poetry (1986) for *Stet* and the Lannan Literary Award for Poetry, 1990 and 2004. *Work in Regress* (1997) was shortlisted for the T.S. Eliot Prize.

[118] Peter Reading, *Faunal* (Tarset: Bloodaxe, 2002) and *-273.15* (Tarset: Bloodaxe, 2005) (not paginated / n.p).

[119] *-273.15* was published after Isabel Martin's comprehensive study of Peter Reading's life and oeuvre, *Reading Peter Reading*, and so not included in her book. Isabel Martin, *Reading Peter Reading* (Tarset: Bloodaxe, 2000).

Methodology

In exploring approaches to creative writing practice as a research method, Graeme Harper and Jeri Kroll ask: 'how do we conceive of research in creative writing, and what is the relationship between creative practice and critical understanding that is integral to that research?' [120] It is a question that underpins the creative and critical methodology of this thesis, which builds on their proposition that practice is

> an active engagement with knowledge producing creative results that embody levels of understanding and modes of communication […] practice, therefore, can be viewed as a mode of investigation.[121]

I contribute to my field of study both as a critic and a poet, and my project uses poetry as a mode of critical and creative investigation, both through ecocritical exploration of contemporary literature, and practically, through the writing of new poems, generating continuous dialogue between critical thinking and creative production. This method has developed from my ongoing interest in exploring practice as research, and poetry as a mode and strategy for engaging with coastal change, in line with Isabel Galleymore's observation in *Teaching Environmental Writing* (2020) that dialogue between ecocritical theory and creative practice 'can develop new understandings of environments and bring to light thought-provoking modes of representation'.[122]

Intervening in current debates around climate change and Anthropocene poetry, and building on and extending critical and theoretical research in environmental literature (for example, Bristow, Haraway, Griffiths, Solnick), I look at how coastal change is instrumentalised in contemporary poetry as a means of

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[120] Graeme Harper and Jeri Kroll, 'Creative Writing in the University', in *Creative Writing Studies: Practice, Research and Pedagogy*, ed. by Graeme Harper and Jeri Kroll (Bristol: Channel View Publications/Multilingual Matters, 2007) pp. 1–9 (p. 2).
[121] Harper and Kroll, p. 4 and p. 6.
[122] Isabel Galleymore, *Teaching Environmental Writing: Ecocritical Pedagogy and Poetics* (London: Bloomsbury, 2020) p. 170.

confronting and discussing climate change. I ask whether there is an emerging poetics of coastal change in modern British poetry, in what ways is it distinctive – for example, is it identifiable through its forms, focus, style, language, themes, motifs, and approaches such as working across conceptual and disciplinary boundaries – and how does it contribute to engaging with key issues of the Anthropocene such as climate change and biodiversity decline?

These questions are examined critically through detailed readings and close analysis of selected texts by Jo Bell, Gillian Clarke, Justina Hart, Blake Morrison, and Peter Reading as case studies, while the creative element of the project, in the form of a new collection of poems, *Side of the Sea*, facilitates a practice-based examination of these questions in dialogue with my research and critical writing.

Side of the Sea emerged from on-site writing undertaken on research visits to areas of Britain that are vulnerable to erosion and sea-level rise, including the Jurassic and Suffolk coasts, as well as a three-month placement in 2019 with Yorkshire Wildlife Trust at Spurn National Nature Reserve in the Humber Estuary, located on one of Europe's fastest eroding coastlines. These interactions supported both the critical and creative components of my thesis, enhancing my understanding of the impacts of coastal processes on landscapes, habitats and communities, and informing and enriching site-responsive writing for the creative element of my study.

My thesis aims to make a robust addition to critical and creative discourses in the emerging field of ecocriticism, and has the potential to catalyse further work by other researchers interested in poetry and coastal change, building an understanding and extending dialogue between creative and critical practices in environmental literature.

Chapter Outline

The following three chapters of critical prose examine contemporary British coastal change poems as case studies through close reading and detailed analysis. These divide coastal change poetics into three strands and each chapter focuses either on the work of a confluence of poems by disparate poets in relation to that theme, or the body of a poet's work in one collection.

Chapter 1 examines Morrison's collection *Shingle Street* through an ecocritical lens, analysing how coastal change disrupts human culture and agency in Morrison's poems, and drawing on the concept of solostalgia to question representations of loss on Britain's east coast.[123] Chapter 2 extends the concepts of deep time and the palimpsest to consider how three poems by Bell, Clarke and Hart use sea level change imagery to speak to and position modern concerns.[124] Chapter 3 builds on critical and theoretical work by Martin and Haraway to explore the relationship between scientific data and poetic imagination in Reading's *-273.15,* which reimagines the story of Noah's Ark in our time of rising seas. This approach is broadened out to include subsequent work by poets Rachel McCarthy, Ben Smith and others, to consider some of the hybrid, formally experimental and innovative ways in which contemporary poetry is interrogating conceptions of British coastal change in a rapidly-warming world.

These chapters implicitly raise creative questions about writing in extenso about coastal change in a poetry collection, a matter I then interrogate practically in the concluding (creative) component of this thesis, *Side of the Sea*. This is prefaced

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[123] Solostagia is a neologism and portmanteau of 'solace' and 'nostalgia', which refers to lived experience of rapid place-loss and, more broadly, the loss, despair and ecological grief caused by environmental and climatic change. Glenn Albrecht, 'Solostalgia', *Alternatives Journal*, 32.4/5 (2006), 34–36.

[124] Gillian Clarke, 'Cantre'r Gwaelod', *The Guardian* (2015); Bell, 'Doggerland' (2015); and Justina Hart, 'Doggerland Rising' (2017) pp. 43–52.

by a note that introduces the poems and their relationship to new critical readings of coastal change and the Anthropocene, acting as a bridge between the critical and creative sections.

Chapter 1: ‘East means loss’: erosion and mortality on the east coast

For the land has two lords that are deathless:
Death's self, and the sea.[125]

Writing from a ‘precarious edge’[126]

Britain’s East Anglian coast is one of Europe’s fastest eroding coastlines, with rising sea levels and the increasing frequency of extreme weather events accelerating natural shoreline processes.[127] The speed with which cliffs and beaches are collapsing and receding means that an increased number of significant topographical changes are taking place within the timeframe of a human lifetime. On this ‘precarious edge’, years can be reckoned by metres lost to erosion – ‘time boiled down to space’, as Jos Smith puts it.[128] The Suffolk coast – including the so-called ‘drowned town’ of Dunwich –[129] has become a locus for writing that imbricates different scales (for example, geological and human timeframes) with ecological and sociological concerns, including Julia Blackburn’s *Timesong*, Robert Macfarlane’s *Ness*, Andrew Motion’s ‘Salt Water’, Wendy Mulford’s *The East Anglian Sequence*,

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[125] ‘By the North Sea’ was written and published in 1880 when Swinburne was forty-three years old. In 1879, aged 42, Swinburne moved in with his friend and literary agent Theodore Watts-Dunton, after becoming seriously ill. The period of time when he was writing ‘By the North Sea’ corresponds to this point of transformation in early middle age from a famously decadent to quieter way of life. ‘Algernon Charles Swinburne’, *The Poetry Foundation* <https://www.poetryfoundation.org/poets/algernon-charles-swinburne> [accessed 25 January 2018]; Algernon Charles Swinburne, ‘Beside the North Sea’ (1880), *The Poems of Algernon Charles Swinburne*, 6 Volumes (London: Chatto & Windus, 1904) pp. 85-110; and Algernon Charles Swinburne, ‘Beside the North Sea’, *Victorian Web* (2010) <http://www.victorianweb.org/authors/swinburne/northsea.html> [accessed 10 December 2017].

[126] Jos Smith and Rose Ferraby, ‘Warp-land, Holderness’, *Archipelago* 12 (Summer 2019) pp. 66–75 (p. 69).

[127] Erik Mackie and Jonathan Wentworth, *Sea Level Rise POST-PN-0555.pdf* (2017) <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0555> [accessed 1 July 2017]; Tim Holt-Wilson, ‘Chapter 6: Covehithe’, *Two Million Years on the Suffolk Coast* (Woodbridge: Tides of Change, n.d.) <http://www.touchingthetide.org.uk/assets/Documents/Tides-of-Change-2-million-years-on-the-Suffolk-coast.pdf> [accessed 10 May 2017] p. 11 and pp. 19–20.

[128] Smith and Ferraby, p. 69.

[129] Dunwich could be described as the poster child for east coast erosion, especially after Time Team investigated the lost medieval port in ‘The Drowned Town’, *Time Team* (Channel 4, 2014) (19.3). Stretches of the Suffolk coast are eroding at a rate of 1 to 6 metres per year, for example, at Dunwich and Benacre Broad, ‘but it has been known for 25m (75ft) of land to disappear overnight’: Tim Holt-Wilson, p. 11 and pp. 19–20.

China Miéville's 'Covehithe', W.G Sebald's *The Rings of Saturn*, and Blake Morrison's *Shingle Street* which, like Charles Algernon Swinburne's long poem 'Beside the North Sea', adopts coastal erosion as a central metaphor for mortality and decline.[130]

This chapter examines *Shingle Street* through an ecocritical lens, focusing on the opening sequence of thirteen poems set on the Suffolk coast, in locations including Shingle Street, Orford, Dunwich and Covehithe.[131] *Shingle Street* explicitly positions British coastal change as a multivalent phenomenon of anthropogenic climate change – 'the icy north's migrated south', as 'The Ballad of Shingle Street' puts it –[132] providing an opportunity to interrogate what can be broadly characterised as a set of recurring motifs in coastal change poetry in the tradition of a broader canon of east coast writing on this theme by, for example, Swinburne and Sebald.[133] These include the portrayal of the East Anglian coast as a defensive frontline, a pervading sense of elegy, nostalgia and decline, and both the reaffirming and problematising of land-sea binaries. Contextualising the collection within a wider conversation around 'the place of humanity in the landscape' in the Anthropocene, I will analyse, through detailed reading, Morrison's embodied rendering of England's eroding east coast as synonymous with corporeal deterioration, probing complex entanglements, linguistic

[130] Julia Blackburn, *Timesong* (London: Jonathan Cape, 2019); Robert Macfarlane, *Ness* (London: Hamish Hamilton, 2019); China Miéville, 'Covehithe' in 'Oil Stories', *The Guardian* (22 April 2011) <https://www.theguardian.com/books/2011/apr/22/china-mieville-covehithe-short-story> [accessed 14 April 2017]; Blake Morrison, *Shingle Street* (London: Chatto & Windus, 2015); Andrew Motion, 'Salt Water' in *Salt Water* (London: Faber, 1997) pp. 46–55; Wendy Mulford, *The East Anglia Sequence* (Peterborough: Spectacular Diseases, 1998); W.G. Sebald, *The Rings of Saturn* (London: Vintage, 1992); Swinburne, 'Beside the North Sea'.

[131] In sequential order: 'The Ballad of Shingle Street', p. 1; 'Flotsam', p. 6; 'Evacuation', p. 11; 'Covehithe', p. 12; 'Dunwich', p. 13; 'Sea Walk', p. 14; 'Carissimo', p. 15; 'Wet', p. 16; 'On The Beach', p. 17; 'Wedding', p. 18; 'The Discipline of Dogs', p. 19; 'Anglers', p. 20; and 'Wave', p. 21.

[132] Morrison, *Shingle Street*, p. 3.

[133] Poets who have written about the Suffolk coast include: Edward Fitzgerald, Edward Thomas, Frances Cornford, George Crabbe, Alun Lewis, Andrew Motion, Anne Beresford, Katrina Porteous, Anthony Thwaite, Michael Hamburger, Julia Blackburn, Thomas Carlyle, Thomas Hardy, and George Gissing.

parallels and blurred distinctions between different kinds of defences and bodies.[134] I will then move on to explore ways in which non-human processes disrupt human agency in Morrison's work, complicating traditional characterisations of the east coast as a place of loss.

'Beware the tricks of Shingle Street'[135]

Shingle Street opens with 'The Ballad of Shingle Street', set in the eponymous former fishing village on the Suffolk coast, now constituting a row of former coastguard cottages, bungalows and other dwellings located on a shingle ridge facing the North Sea.[136] Morrison utilised the ballad form in his previous collection, *The Ballad of the Yorkshire Ripper* (1987), commenting

> I felt I was restoring the form to its [darker] origins, and also creating a challenge for the reader, in that the jaunty rhymes and rhythm were being used to describe something brutal. There was a formal challenge, which I always enjoy, in that form and content were not easily married.[137]

Similarly, in 'The Ballad of Shingle Street', Morrison employs the 'jaunty' ballad form to address the brutality of 'maraud[ing] waves' that 'unbuild homes'. The first six stanzas start with inviting descriptions of 'stones to skim' and 'rolling seals', but each execute a tidal turn around the mid-point to reveal more threatening imagery, such as, in the second stanza, 'the opened trap, the hangman's rope, / the cairns that mark where life gave out / The muddy dark of Shingle Street'.[138] The poem's form underscores the shifting complexities of the location, with the traditional English

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[134] See, for example, Harriet Tarlo on 'the body in and of landscape': 'bodies' in *The Ground Aslant,* pp. 15–16.
[135] Morrison, p. 3.
[136] *Buglife* features a useful introduction to variegated shingle habitat and its ecological importance, with a focus on the east coast: 'Coastal Variegated Shingle', *Buglife* <https://www.buglife.org.uk/resources/habitat-management/coastal-vegetated-shingle> [accessed 10 April 2020].
[137] Nick Turner, 'Self-Revelation, Realism, and Crime: An Interview with Blake Morrison', *Journal of Language, Literature and Culture,* 61:2 (2014), 87–100 (pp. 90–91).
[138] Morrison, *Shingle Street*, p. 1.

ballad form of rhymed abcb quatrains in alternating lines of tetrameter and trimeter subverted into eleven stanzas of between nine to nineteen lines that do not strictly follow this metre, but do ghost it. Half-rhymes and shifts in the stress patterns – for example, from dimeters such as 'To hop and skip / Across the deep' to the tetrameter 'Of burning boats and blistered flesh' – echo the place's 'tricks', 'traps' and ambiguities.[139]

In the fifth stanza, an image of 'burning boats' alludes to the area's military history and idiomatically, perhaps, to humanity's position in the Anthropocene, since even if global warming is limited to two degrees above pre-industrial levels, which is unlikely, seas will continue to rise for centuries to come; there is no way back to firm ground – or nostalgic notions of natural stability and fixed geographic boundaries.[140] Facing mainland Europe and the North Sea, the Suffolk coastline is both strategically important and vulnerable due to its location, soft clay and sandstone geology, and low-lying landscape. Morrison portrays it as a defensive frontline throughout the sequence, conflating military and environmental actions.[141] In the present time, coastal communities and heritage sites are threatened by erosion and flooding, while historic risks have included invasion from Europe.[142] Indeed, Shingle Street is best known for unsubstantiated rumours of 'an attempted Nazi invasion in 1940, thwarted by a wall of fire' protecting the coastline – probably British wartime propaganda, as

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[139] Morrison, p. 1.
[140] Erik Mackie and Jonathan Wentworth, *Sea Level Rise POST-PN-0555.pdf,* (2017) <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0555> [accessed 1 July 2017] (para. 1).
[141] Morrison, *Shingle Street*, p. 2 (stanza 5); p. 5 (stanza 11); 'Evacuation', p. 11. Also, in 'On The Beach', a row of pebbles stuck to a sexual partner's back are 'like medals awarded for bravery' (p. 17).
[142] Discussing the book's themes, Morrison explains 'there's the idea of defence, defending the land from invaders. It's a rich place in its associations and I wanted to explore that'. Suzi Feay, 'Journalist and novelist Blake Morrison interview: As long as I'm writing ... I'm happy', in *the Independent Online* (2015) <http://www.independent.co.uk/arts-entertainment/books/features/journalist-and-novelist-blake-morrison-interview-as-long-as-i-m-writing-i-m-happy-10013430.html> [accessed 10 October 2016] (para. 10).

Morrison explains at the back of the book.[143] Still, the oxymoron of burning water adds to the uncanniness of the place, and Morrison's sensory approach – 'smell the oil and taste the fear / and feel your skin scorch in the heat' – makes the horror tangible.

Expressions such as 'past disasters, past defeats' further analogises military and environmental losses: for example, Dunwich's decline from thriving Medieval port to small village evidences the historicity of tidal incursions and erosion in East Anglia. Indeed, on this stretch of coast, World War II pillboxes, along with Martello towers built in the 1800's to resist Napoleonic forces, are now threatened not by enemy forces but by erosion and storm-surges breaching coastal defences. However, as Anne-Julia Zwierlein points out, 'language used to describe coastal erosion in today's political and cultural discourse is often militaristic'.[144] Or, as Smith puts it, 'war-like terminology is employed: we 'hold', 'advance' and 'retreat the line. […] You will also see flags'.[145] Media headlines likewise frame the impact of erosion in terms of conflict, such as 'This sinking isle: the homeowners battling coastal erosion', 'Should coastal Britain surrender to the tides', and 'Hallsands to "keep fighting for sea defence repairs"'.[146] This militaristic language is duplicated in

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143 Morrison, Notes (n.p.).

144 Anne-Julia Zwierlein, ''Gripping to a wet rock': Coastal Erosion and the Land-Sea Divide as Existentialist/Ecocritical Tropes in Contemporary British and Irish Fiction' in *The Beach in Anglophone Literature and Culture: Reading Littoral Space*, ed. by Ursula Kluwick and Virginia Richter (Farnham: Ashgate Publishing Ltd, 2015) p. 54.

145 Jos Smith, 'Warp Land, Holderness', pp. 68–69; 'Managing the Coast in a Changing Climate', Committee on Climate Change (2018) p.11 (para. 1); for an example of terminology used in SMP's: 'Shoreline Management Plan', *National Resources Wales* (2020) <https://naturalresources.wales/flooding/managing-flood-risk/flood-risk-map-guidance/shoreline-management-plan/?lang=en> [accessed 10 April 2020].
The National Archives hold a folder of released/declassified MOD documents revealing how, in the event of a foreign military invasion of the East Coast, the British army would attack from the sea, retaking the section of coast between Orford and Southwold. Describing these places in military terms, and the different value systems placed upon them in terms of attack and defence, make for disturbing reading: 'Coastal Reconnaissance Report: Thames Estuary. Orfordness to Boathouse Point. Section A' (Combined Operations Headquarters C.O.H.Q. UK, 1958).

146 Patrick Barkham, 'This sinking isle: the homeowners battling coastal erosion', *The Guardian*, (2 April 2015) <https://www.theguardian.com/news/2015/apr/02/sinking-isle-coastal-erosion-east-anglia-environment> [accessed 10 January 2017]; Patrick Barkham, 'Should coastal Britain surrender

Morrison's poetics. The fourth stanza of 'The Ballad of Shingle Street' reconnoitres the shore-scape as though planning an army exercise:[147]

> A row of shacks in stone and wood,
> The sea out front, the marsh out back,
> Just one road in and one road out,
> With no way north except the spit,
> And no way out except on foot,
> A cul-de-sac, a dead-end track,
> A sandbanked strand to sink a fleet […][148]

Morrison's use of monosyllabic, onomatopoeic verbs and nouns including 'thud' and 'clash' evoke a battlefield atmosphere that builds through the last two stanzas, with the action of waves on the shore resembling a violent clash of opposing forces:

> The bass-line thud and cymbal-clash
> As stones are stoned and pebbles dashed.
> Again, again, again, again
> The waves collapse, the flints resound,
> The tide runs in and takes the ground […][149]

Both this near-title poem and *Shingle Street* more broadly adopt a human-centred approach to coastal change, with a focus on anthropocentric losses – houses, fields, churches – serving to highlight self-reflexivity as humanity's default position. One of the main thematic strands through the sequence draws on the repeated motif of listening and mishearing, making a point of our seeming inability to learn, despite our ability to develop innovative listening and communication technologies.[150] When humans do pay attention in 'The Ballad of Shingle Street' and elsewhere (for

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to the tides' <https://www.theguardian.com/environment/2014/feb/07/should-coastal-britain-surrender-to-tide> [accessed 10 October 2016]; and 'Hallsands to "keep fighting for sea defence repairs"', *BBC* <https://www.bbc.co.uk/news/uk-england-devon-30308113 3 Dec 2014> [accessed 10 January 2017].

[147] Accessed in The National Archives, a report detailing plans for a British military exercise to retake an occupied east coast from the sea featured disconcerting lines such as 'once clear of the marshy area immediately behind the beach the country would be suitable for cross-country penetration'. (Beach B, cont.) Anonymous, 'Coastal Reconnaissance Report: Thames Estuary. Orfordness to Boathouse Point. Section A. Introduction', commissioned by Combined Operations Headquarters C.O.H.Q. (1958) p. 1.

[148] Morrison, *Shingle Street*, p. 2.

[149] Morrison, p. 5 (stanza 11) and p. 3 (stanza 4).

[150] This echoes the scratchy sound of a fisherman's transistor radio in *The Rings of Saturn*, which sounds as though 'the pebbles being dragged back by the waves were talking to each other' (p. 52).

example, in ‘Flotsam’ and ‘Wave’) they tend to anthropomorphise animals – for example, seals that ‘duck and bob and stare to land / in hope that we might understand’.[151] However, ‘nothing helps, we fail the test’, both in heeding indications of danger, and, perhaps, in conceiving of the world as little more than a convenient backdrop for our human drama.[152]

In ‘Flotsam’, which seems to be set in Orford Ness nature reserve, a visitor struggles to identify a bird by its call, making a series of inquiries to a passing twitcher who tilts his ear ‘like a satellite dish’ but can’t – or won’t – help. The bird’s call is described as *‘sib’*, which is a codename for rumours generated by the British Underground Propaganda Committee (UPC) during the Second World War, with the intention of disseminating misleading information and morale-boosting stories, such as the “wall of fire” defence story linked to Shingle Street.[153] The word *‘sib’* is derived ‘from the Latin word *“sibilare”,* meaning “to hiss”’.[154] Here, the repetition of ‘sib’ mingles with the ‘hiss in the reeds’ and ‘shush in the surf’; the pebbles ‘stay schtum’ and the ‘sand whispers’. Appropriately enough, for a place used by the Ministry of Defence as a Listening Post and centre for experimental work on radar and, later, as an Atomic Weapons Research Establishment, the poem evokes an atmosphere of cover-ups and secrets.[155] Radio masts and test buildings still dominate the site, but its transformation into a nature reserve managed by the National Trust

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[151] Morrison, ‘medals’ in ‘On The Beach’ p. 17; ‘sentries’ in ‘Flotsam’, 6–10 (p. 7).
[152] This alludes to other poems where animals are augurs of losses-to-come, such as Samuel Taylor Coleridge’s ‘The Rime of the Ancient Mariner’; Ben Smith, for example, gives an Anthropocene twist to Philip Larkin’s question (in ‘An Arundel Tomb’) of ‘what will survive of us’ in his poem ‘Augury with Rubber Ducks’, where the survival of a consignment of bath toys indicates how oceanic plastic waste created by humans will likely outlast humanity. Ben Smith, ‘Augury with Rubber Ducks’, *Sky Burials* (Tonbridge: Worple, 2014) p. 1.
[153] ‘Sibs’ were whispering campaigns created by the WW2 Underground Propaganda Committee about U-boat losses and ingenious Allied defence methods, with the aim of boosting public morale. *Shingle Street*, p. 57.
[154] Lee Richards, ‘Whispers of War – The British World War II rumour campaign’ (26 January 2005) <https://www.psywar.org/sibs.php> [accessed 17 May 2018].
[155] ‘Orford Ness National Nature Reserve’, *The National Trust* <https://www.nationaltrust.org.uk/orford-ness-national-nature-reserve> [accessed 1 May 2017].

contrasts the tenacity of coastal flora and fauna with the temporary nature of human constructs.[156]

Erosive bodies

However, the ‘lessening shore, receding ground’ in ‘The Ballad of Shingle Street’ refers not only to crumbling land, but also to corporeal deterioration, a theme that carries through the rest of the sequence. The tide of the poem turns mid-way through, although not, in the idiomatic sense, for the better, revealing the sea’s destructive power to ‘[take] the ground’, then culminating in Morrison’s central metaphor of coastal erosion for the transience of life:

> A level field that hides its rise
> Through constant ebb and constant flow,
> Unlike the earth, which shifts and shrinks,
> Unlike ourselves, who have to go’.[157]

Morrison signals the collection’s central concerns in an epigraph drawn from John Donne’s ‘Meditation XVII’ (1624): ‘if a clod be washed away by the sea, Europe is the less’.[158] In this metaphor, Europe stands for the whole of humanity and the ‘clod’ represents one human life, but equally, in the framework of Morrison’s collection, it operates literally as a comment on erosion. Donne, writing in the 17th century, makes a case for interrelatedness, arguing that the death of one person affects everyone,

[156] An interest in themes of ‘secrecy and denial’ is evident in his first collection, *Dark Glasses*, which draws on political and military events including the Falklands war, and surfaces again in Shingle Street, piqued by the area’s opaque wartime history. Tim Kendall, ‘Candid Narrative: An Interview with Blake Morrison’, OP, VII.3, (n.d) (para. 11) <http://www.oxfordpoetry.co.uk/interviews.php?int=vii3_blakemorrison> [accessed 10 May 2017]; Blake Morrison, *Dark Glasses* (London: Chatto, 1984).
[157] Morrison, p. 5.
[158] Morrison, p. 1; and John Donne, *Devotions Upon Emergent Occasions* (Oxford: Oxford University Press, 1987); also John Donne ‘‘Devotion. XVII.Meditation’ *Devotions Upon Emergent Occasions Together with Death's Duel* (Michigan: Ann Arbor Paperbacks, 2007), p. 109 <http://www.gutenberg.org/files/23772/23772-h/23772-h.htm> [accessed 10 July 2017]. Donne’s ‘Devotions, Meditation XVII’ gained significance in the early 20th Century when the devastation of two wars saw the world fragmenting and was also quoted in various sources following the Brexit referendum result in 2016.

since God created all. In a time of climate change and political divisiveness, Morrison's use of this metaphor also reminds us that the impacts of erosion in Britain affect all of us – in the sense that we are one nation, where no place is more than seventy-five miles from the sea. Furthermore, changes on Britain's shores are part of a global environmental crisis. This is one of the ways in which *Shingle Street* addresses multiple scales of coastal change – for example, personal, localised, national, and international – within a universal context of our shared mortality.[159]

Morrison credits Victorian poet Algernon Charles Swinburne as 'one of the earliest writers not only to document coastal erosion, but to see it as a metaphor for human mortality', citing lines from 'Beside the North Sea': 'Like ashes the low cliffs crumble, / The banks drop down into dust', drawn from the English Burial Service – 'earth to earth, ashes to ashes, dust to dust'.[160] Similarly, in *Shingle Street*, geologic depletion symbolises 'the inevitable' decay of the ageing human body. Morrison juxtaposes flesh and terrain, using the liminal space of the shoreline to explore interrelatedness between human and non-human 'bodies'. Parallels between erosion and corporeal decline, introduced in 'The Ballad of Shingle Street', are made explicit in the sequence-concluding poem, 'Wave':

> […] wouldn't wipeout in an instant
> be better than this slow deletion', as the sea rises and the cliffs are beaten back,
>
> and you receding in step, your bones thinning, your hair whitening,
> and the thing that will kill you already triggered and on the move

[159] Morrison suggests that 'everyone can connect with loss and bereavement', making it a powerful motif.' Turner, p. 92.

[160] Blake Morrison, 'Drowned in a sea of salt: Blake Morrison on the literature of the east coast' in *The Guardian Online* (2015) <https://www.theguardian.com/books/2015/jan/31/blake-morrison-literature-imperilled-east-coast-climate-change> [accessed 10 February 2015]; The line in the English burial service comes from *KJV* Genesis 3.19: 'for dust thou art, and unto dust shalt thou return'. The uncanniness of bodies exhumed from burial plots as churchyards eroded over cliff-edges triggered a horrified reaction in Swinburne, who perceived that nature rather than God was enacting the 'last judgement' against man, an idea with particular metaphorical resonance in the present day.

> but taking pains to stay hidden inside you like a flood tide hidden in the sea.[161]

Here, Morrison contrasts the impacts of a sudden 'wipe-out' event (ostensibly, a tsunami) with the incremental encroachment and 'slow deletion' of gradual ageing / erosive processes, and considers which is preferable – to devastating effect.[162] However, *Shingle Street* is not only concerned with 'the inevitable', but the question of how to come to terms with it; as Morrison points out, 'you can forget those fancies you had of staying safe / inside the waves' clenched fist, the one miraculous survivor'.[163] Through setting up spiritual, philosophical and physical associations with the 'human condition' in lines such as 'Brief heat. Then death. That is the law', Morrison underscores the point that we are subject, along with all planetary lifeforms, both to climate change and to the universal processes of the natural world of which we are fundamentally a part, and into which we will eventually be subsumed.[164] This recalls Peter Reading's conceptualisation of entropy – the inevitable dissipation of energy in both the universe and individual – in relation to global warming and extinction, which I discuss in the third chapter of this thesis.

Mortality and erosion are underpinning themes in Morrison's collection, and the physical geography of the East Anglian coast is a crucial feature of these poems, offering opportunities for linguistic explorations of inter-relatedness between 'bodies' of water, land and flesh. Shingle Street's location, for example, beside the coastal river mouth of the Alde, corresponds with physical bodily features in the poems: the beach

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[161] Morrison, 'Wave', p. 23. The title 'Wave' inevitably brings to mind Stevie Smith's poem 'Not Waving but Drowning', where desperate signals are misinterpreted to devastating effect, and warning signs are likewise missed in 'Wave': Stevie Smith, 'Not Waving but Drowning', *The New Dragon Book of Verse,* ed. by Michael Harrison and Christopher Stuart-Clark (Oxford: OUP, 1977) p. 235.
[162] Perhaps these thoughts are drawn from Morrison's father's death from bowel cancer, an event he addresses in his memoir: Blake Morrison, *When Did you Last See Your Father?* (London: Granta, 2007).
[163] Morrison, p. 22.
[164] Morrison, 'Harvest', p. 50.

'smiles' and lures', while under heated shingle, 'it's sloppy wet and cold as snow. / The lips are dry but not the mouth' and in 'Flotsam', sand scrunched underfoot whispers 'there's a secret'.[165] There is sensual imagery too in 'Wet' (which turns monstrous in the ambiguous lines, 'I lay in wait for him. / And I was wet for him') and 'On the Beach', while in 'Sea Walk', the sea is depicted as an over-enthusiastic lover: 'the cliffs have backed away, / abashed by the ocean's passion'.[166]

These kinds of uncanny and melancholic conceptions of the coast clash with the popular conception of the beach as a site for tourism and consumption. In 'The Discipline of Dogs' set in a beach café in Dunwich, a woman offers her spaniel 'first lick' of her ice cream before devouring the rest herself.[167] The image of the dog's tongue 'neatly curling to detach / the twirly flourish at the tip' imitates the curl of a wave, reinforced later in the sequence in a more ominous context – 'most waves have a curl to their lip, as if just playing'.[168] This anthropomorphising conflation of mouth and wave imputes hunger to the sea, but there is also elegance in comparison to the human tucking in:

> The woman wouldn't let up
> Till every last mouthful was gone,
> Even the blond hollow butt-end of cone.[169]

Neil Evernden states in his essay 'Beyond Ecology' that a person who perceives the 'world as a set of resources to be utilized' conceives of the world as 'fodder and faeces'. Here, the motif of licking ice cream invokes connections between human consumption and melting polar ice, contemplated in the 'gone' of erosion and

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[165] Morrison, 'The Ballad of Shingle Street', p. 3 and 'Flotsam', p. 9.
[166] Morrison, 'Wet', p. 17: 'The stones were warm until I slipped / my fingers in and felt the wetness'; 'Sea Walk', p. 14.
[167] 'The Discipline of Dogs', p. 19.
[168] 'Wave', p. 21.
[169] 'The Discipline of Dogs', p. 19.

material loss at the end of the poem. [170] The homophone ‘lap’ associates across human physiology, the taking in of liquid by an animal (lapping with its tongue) and gentle sounds of waves against the shore, connecting non-human animal, human and shoreline and reinforcing the poem’s inter-related imagery of consuming waves.[171] This mouth to mouth sharing also suggests a dialogic connection through communicative interaction, collapsing the human-animal divide, since both have the same imperative in the poem – consumption. The use of the sonnet form hints at desire, at least traditionally, and if we are in any doubt, the flagrant double entendre – in keeping with Britain’s saucy seaside tradition – ‘of the serrated chocolate flake / poking sideways from the middle’, makes it explicit. However, the ‘flakiest chocolate’ also evokes the image of crumbling cliffs and extrusions of sewage pipes and other human debris, suggesting the environmental outcome of greed and bodily processes, underscored with a pun that rests on a near homophone – ‘butt’ being both a word for ‘headland’ and slang for bottom.[172]

In other poems in the collection, tidal processes and a long history of exchange and conflict on the coast mean that ‘the past [intrudes] on present events’, human and non-human materials and bodies are inextricably intermingled and even, in places, indistinguishable.[173] In ‘Flotsam’ the poem’s individualistic ‘I’ viewpoint shifts to a ‘we’, then dissolves altogether, leaving a series of miscellaneous field

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[170] Neil Evernden, ‘Beyond Ecology’, in *The Ecocriticism Reader,* ed. by Cheryll Glotfelty and Harold Fromm (Georgia: University of Georgia Press, 1996), pp. 92–103 (p. 99).

[171] Varied line lengths indicate patterns of erosion, the ebb-and-flow rhythm of the sea, and motion of ribs when breathing, echoing the etymology of coast from Latin *costa* meaning “rib”. ‘1a. The side of the body (of people or animals); the part fortified by the ribs […] Obsolete. In late usage perhaps referred immediately to Latin *costa*.’ ‘Coast (n)’, *OED* <https://www.oed.com/view/Entry/35135?rskey=tvxVXO&result=1#eid> [accessed 10 July 2017] and ‘Costa’ meaning ‘rib’: ‘Costa’, *Online Latin Dictionary* <https://www.online-latin-dictionary.com/latin-english-dictionary.php?parola=costa> [accessed 10 July 2017].

[172] ‘Butt’, *OED* <https://www.oed.com/view/Entry/25368?rskey=0lSA7y&result=12&isAdvanced=false#eid> [accessed 1 June 2020].

[173] Nick Turner, ‘Self-Revelation, Realism, and Crime: An Interview with Blake Morrison’*, Journal of Language, Literature and Culture 61:2* (2014) 87–100, (p. 95).

notes observing coastal flora and fauna combined with snippets of historical data and reminiscence. The poem's title suggests these seemingly jumbled and disunited fragments, with multiple shifts in tone and perspective – may be 'floating debris' from a larger wreck or body of work, mimicking the mingling of biological, geological and manufactured materials on eroding shores. In some sections, plants and creatures are personified: bushes 'peer through the sea-fret like sentries', the river is 'under the thumb of a shingle bank' and 'sandpipers run ahead / like thoughts we've not yet had'. This suggests anthropocentrism on one hand and kinship on the other: for example, native coastal plants do, in a sense, sentry the coastline, providing vegetated buffers that absorb stormwater, while their roots bind and secure soils to help reduce erosion.[174] The final stanza overlaps skeletal bones of different creatures blurred together with sand, 'the wind through them like a piccolo', invoking universal imagery of eternity, extinction and loss.[175]

'East means loss'

Morrison writes 'for this is east, and east means loss' in 'The Ballad of Shingle Street', echoing Sebald's lament, 'the east stands for lost causes'.[176] Both works are preoccupied with the brevity of human life and destruction of material culture through 'erosions of time and place', equating the North Sea coast with a sense, in the words of Sebald (p. 181), that 'everything is on the point of decline'.[177] 'Loss' ostensibly relates to eroding land, but is complicated by reflections on other losses

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[174] 'Restoration of Coastal Habitats', *UK Centre for Ecology and Hydrology* <https://www.ceh.ac.uk/our-science/projects/restoration> [accessed 20 June 2018].
[175] Flotsam, p. 10.
[176] Morrison, p. 4 and W.G. Sebald *The Rings of Saturn,* trans. by Michael Hulse (London: Vintage, 2002) p. 159; *The Rings of Saturn* is a late twentieth-century genre-fluid novel, ostensibly a travelogue of the author's hike through coastal East Anglia, which has been described as a 'haunting book on the transience of all things human' (back cover).
[177] Sebald, p. 181. and Sebald's observations of fishermen near Lowestoft, echoed in Morrison's poem 'Anglers', p. 52.

relating to the decay of body, culture and memory, and the trauma and effects of the Second World War, economic decline and loss of place – enacted, for German writer and academic Sebald, through physical separation as he gazes across the North Sea towards his homeland. However, Morrison contends with Sebald's melancholic descriptions of 'wretched' Shingle Street, commenting that the latter paints 'an unduly bleak view of a place I find haunting and beautiful' (Morrison, 2015). 'Haunting' suggests the uncanniness of a place where the past has a tendency to resurface both in the form of uncovered objects and secrets revealed, and both past and present are muddled together in shoreline wreckage, provoking reflections upon the mortal human self in relation to the mechanisms of time and nature.[178] It also captures the idea of this section of coast evoking a persistent and disturbing sense of loss for writers, resulting in a tradition of loss attached to the literature of the east coast.

While writing about Suffolk from an outsider's perspective, Morrison is alert to the sociological impacts of change on its coast. In an article commemorating the sixty-second anniversary of the 1953 North Sea Flood, Morrison compared this historic disaster with current and future environmental issues, warning that:

> huge damage will be done in the east, where rising sea levels and a "soft" coastline have already claimed many a clifftop home. Climate change is part of the problem. But it's no use pretending the problem is new.[179]

[178] It seems reasonable to suppose that these works arose from personal tidal turns in the middle or later lives of Sebald, Swinburne and Morrison. 'By the North Sea' was written and published in 1880 when Swinburne was forty-three, while – as noted above - Sebald undertook his walking tour of the Suffolk Coast a little over a century later in 1992, writing *The Rings of Saturn* in 1994 at the age of fifty. In 1879, aged 42, Swinburne moved in with his friend and literary agent Theodore Watts-Dunton, after becoming seriously ill. The period of time when he was writing 'By The North Sea' corresponds to this point of transformation in early middle age from a famously decadent to quieter way of life.
<https://www.poetryfoundation.org/poets/algernon-charles-swinburne> [accessed 29 May 2020].

[179] Morrison, 'Drowned in a sea of salt' (paras. 3 and 4 of 12); Dunwich's decline from thriving Medieval port to small village evidences the historicity of tidal incursions and erosion in East Anglia: 'Dunwich', *Tides of Change*, p. 16.

Inevitably, though, considering adaptive possibilities raises questions around how coastal erosion in the Anthropocene disrupts human agency – our ability to make decisions and impose them on the world. On the 'precarious edge', human agency is disrupted in materialist terms of dwelling and infrastructure as well as through loss of cultural heritage and identity – for example, the collapse of churches and graveyards at Dunwich. However, Morrison ascribes 'to the idea that the North Sea is destined to wreak havoc periodically and that nothing can be done to prevent it'.[180] When the cataclysm arrives in 'Wave', the authorial narrative perspective switches to the second person, implicating the audience in the narrative, a technique more often used in fiction to achieve a sense of immediacy. This performatively takes a step back from coming to terms with mortality, in the same way that 'Covehithe' ducks the burning question 'what's to be done?' However, while noting the symptoms of the malady, Morrison shies away from speculating on the cause or prescribing a solution, humorously blaming dead sailors and fishermen who long 'to be back at sea' and so 'entice the sea to come to them'. However, in 'Wave', the instinctive reaction to both real and symbolic tidal wave is anger: 'no one had seen this coming; the early warning system must have failed'. Morrison points to natural human instincts of denial and blaming when faced with issues that seem too huge to comprehend – whether climate and coastal change, or a shocking medical prognosis.

It is surprising, given Morrison's awareness of environmental issues and concern with the projected loss of 7,000 homes 'over the next century – 800 in the next 20 years' that his collection doesn't engage more closely with the impact of coastal erosion on local residents – unlike, for example, Wendy Mulford's *'The East Anglia Sequence'* (1998), which highlights the uneasy relationship between notions

[180] Morrison, *The Guardian*, 2015.

of the coast as a destination for leisure and tourism and a place of social deprivation and land-loss, ‘prey to the bureaucratic uncertainty of the coastline’.[181] A block of found text in italics in ‘Salthouse 1099, 1953’ (Mulford, p. 54) calculates that ‘the cost of [coastal] protection would be out of proportion / to the value of the limited land area protected’.[182] Similarly, a report from the UK Committee on Climate Change notes both the nature of the threat to infrastructure and the price tag attached:

> the number and value of assets at risk on the coast has steadily been increasing. Houses, businesses, roads, railways, train stations, power stations, landfill sites and farmland will all be affected by increased coastal flooding or erosion in the future […] we need to decide where to protect and how much we are willing to spend to do so.[183]

Of course, society will not only be affected in ‘the future’ – it’s happening now, evidenced by ‘lopped-off bluffs and crumbling cliffs / and empty air where churches stood’.[184] Coastal defences deployed to halt the sea’s encroachment can be breached in storm surges or cause unforeseen patterns of erosion and inundation further along the coast. Environment Agency strategies and Shoreline Management Plans (SMP’s) outline how stretches of coast, divided into “Management Units”, will be administered to address flood or erosion, terminology that reduces a diverse coastal habitat to an administrative section excluding both the non-human world and the

[181] Wendy Mulford, *The East Anglia Sequence Norfolk 1984–Suffolk 1994* (Peterborough: Spectacular Diseases, 1998).
[182] Mulford’s references to marginalized families and the ‘expropriation’ of land by landlord and sea come from a writer who herself is writing from positions of gender, political and literary marginalization as an avant-garde poet writing outside the mainstream poetry ‘establishment’ championed, for example, in *The Penguin Book of Contemporary British Poetry,* ed. by Andrew Motion and Blake Morrison (London: Penguin, 1982). It is notable Morrison doesn’t mention Mulford in his survey of poets who have written about the Suffolk coast in his article, ‘Drowned in a Sea of Salt’ (para. 11). Solnick notes that poets Tarlo groups as writers of ‘radical landscape poetry’ were excluded from Astley’s *Earth Shattering* anthology, despite ‘significant potential common ground […] between the concerns of the innovative tradition and so-called mainstream that is increasingly interested in questions of ecology as well as landscape’. (Solnick, p. 29). See also Amy Cutler on Mulford in 'Whitby is a statement': Littoral Geographies in British Poetry’, in *Poetry & Geography: Space & Place in Post-war Poetry,* ed. by Neal Alexander and David Cooper (Liverpool: Liverpool University Press, 2013), pp. 120–133.
[183] Committee on Climate Change, ‘Managing the Coast in a Changing Climate’, (2018) p. 3 (para 4)
[184] Morrison, p. 4.

general human population. Likewise, the UK Government Committee on Climate Change revert to militaristic language in discussing 'decommissioning settlements' in order to allow the coast to naturally adapt to sea-level rise, 'set to happen within the lifetimes of some of today's children' (p. 9).[185]

By contrast, Morrison brings a humanised perspective to the discussion, for example, in engaging with place loss as both a deeply personal and shared communal experience in 'Evacuation', and confronting the breakdown of generational continuity, commemoration and human agency in the sea's excavation of churchyard graves in 'Dunwich'. These approaches demonstrate how poetry, by extension, can play a part in seeing coastal change through the lens of social justice – for example, by amplifying unheard voices and taking into account people's feelings about losing their homes.

'Where sea-kale bows its green-grey head'

The neologism 'solostalgia', provides a useful framework for thinking about human responses to rapid transformations linked to coastal change and 'managed retreat', where losses take place in the timeframe of a human lifetime – or even in the course of one storm. The term was coined by environmental philosopher Glenn Albrecht, whose research focuses on the relationship between the ecosystem and human health.[186] A neologism and portmanteau of 'solace' and 'nostalgia', the word refers to feelings of general distress, loss and bereavement caused by rapid place-loss, such as that caused in some places by coastal change. Albrecht describes it as 'the pain or sickness caused by the loss of, or inability to derive solace from home', relating

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[185] Committee on Climate Change, p. 9.
[186] Glenn Albrecht, 'Solostalgia', *Alternatives Journal*, Vol. 32, 4/5, Creative Communities (2006), pp. 34–36.

particularly to situations in which cultural and natural environments have transformed so rapidly and completely that 'adaptation is difficult, if not impossible'.[187]

A later poem in the sequence, 'Evacuation', addresses the requisitioning of Shingle Street by the British army in 1940, early in the Second World War, and the consequent mandatory evacuation of the village's civilian residents – an inevitable instigator of solostalgic experience.[188] The Army laid mines and conducted weapons testing in the area; the civil population were given only three days to find alternative accommodation inland, and were forced to leave most of their belongings behind. This event, and the poem, serve to remind us that sudden dislocations have happened before on the British coast and will happen again, as coastal communities are forced to migrate away from the rising sea to higher ground and settlements are effectively 'decommissioned'.

Morrison's poem details loss of place from the first-person viewpoint of a departing evacuee. The poem commences with a matter-of-fact account of the date, number of residents and movements of the lorry sent to collect them, but develops into a more personal reminiscence with 'a cardboard box of best china in my lap' underpinning the fragility of the narrator's situation, whose ambiguity of feeling – sorrow for their lost home, anticipation of a new beginning – resonates piquantly in the line 'my heart was a nightjar churring with sadness / and hope', the sadness highlighted by its prominence at the end of a line, and the hope then highlighted in turn by virtue of being pushed across the line-break. The simile symbolically presents the evacuee's heart as indistinguishable from the bird, blurring distinctions between human and non-human bodies, and suggesting an embedded emotional

[187] Albrecht, p. 35.
[188] Morrison, 'Evacuation', p. 11.

connection with place. The coast is established as a site of change through both human and natural processes, with the nightjar, a nocturnal migratory bird, providing an additional metaphor for the evacuee's flight at twilight as a shared and necessary movement undertaken by humans and non-human animals.[189] Indeed, in its avian referencing, the poem also anticipates the contemporary biodiversity of this vegetated shingle habitat due to minimal human development.

As Solnick points out,

> the collective impact of humanity may be global, but its effects are not uniform and will affect different communities and populations with varying degrees of severity; no doubt, some will prosper. As those politicians from island nations that risk being submerged by a rise in sea levels know all too well, we may 'all be in the Anthropocene but we're not all in it in the same way'.[190]

The variance of impact underscored here by Solnick will apply to Britain's many economically disadvantaged coastal communities facing broadly comparable losses in the future, places where many people do not have the resources or support to relocate elsewhere and for whom costs will not be covered by insurance: there is, at present, no government support for people made homeless by sea-level change. There is, on the one hand, the situation of people being removed from places which, having been requisitioned or fenced off as unsafe, can no longer be accessed to provide 'solace'. However, on a rapidly eroding coast, places and their associated human material culture may cease physically to exist – for example, churches and gravestones tumbling into the sea in Dunwich.

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[189] Only male nightjars *churr*.

[190] Solnick, p. 7 including a quote from Rob Nixon, 'The Anthropocene: Promise and Pitfalls of an Epochal Idea', *Edge Effects*, (6 November 2014) <http://edgeeffects.net/anthropocene-promise-and-pitfalls/> [accessed 31 March 2016].

Shoring-up: linguistic erosions and disruptions of agency

Morrison's eponymous poem 'Dunwich' (p.13) can be read as a championing of the idea of literature as a tool to linguistically 'shore up' landscape by recording contemporary observations of places before they are lost.[191] Morrison suggests that

> in an age of rising sea levels and climate change, the east coast's vulnerability is ever more apparent, which may be why writers are drawn to it – in a spirit of protection not exploitation. If they can't shore up actual defences, they can, through language, conserve the cliffs and beaches under attack.[192]

In 'Dunwich', this is enacted through a philosophical consideration of the permanency and impermanency of language applied to the physical loss of inscriptions when memorial stones tumble down eroding cliffs to be broken up by temporal and marine processes:

> 'John Brinkley Easey
>
> had a slab to himself once
> in the woods behind the cliff,
> his epitaph facing inland.'

In recording the name on the gravestone, and its location, Morrison's poem at least linguistically preserves the gravestone that was intended as an enduring record 'so passers-by, like us, […] / would read his name and dates / and wonder how he drowned'. Readers of the poem take the place of passers-by – yet this deployment of linguistic defences and act of literary conservation is only effective while the poem is read. Language and meaning are also vulnerable to temporal, environmental and cultural erosion and the poet concedes that the personal details of the man's life, including the manner of his death, are already unknown, lost to time and waves.[193]

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[191] Morrison, *Shingle Street*, p. 13.
[192] Blake Morrison, 'Drowned in a sea of salt, Blake Morrison on the literature of the east coast' in *The Guardian* (2015) <https://www.theguardian.com/books/2015/jan/31/blake-morrison-literature-imperilled-east-coast-climate-change> [accessed 10 April 2017] (para. 3 of 12).
[193] Themes of mortality and loss in Shingle Street also link Morrison's writing with the eighteenth-century 'Graveyard Poets', particularly Thomas Gray's poem 'Elegy Written in a Country Churchyard' (first published in 1751). For example: 'Yet ev'n these bones from insult to protect, /

This challenge of physical and temporal erosion to language, meaning and the immortality of stone echoes the question of 'what will survive of us' posed in the poem 'An Arundel Tomb' by Philip Larkin, a poet Morrison, whose thesis became the first book on the Movement, cites as one of his chief influences as a writer.[194] Linguistic defences may likewise prove to be unreliable: vulnerable to temporal erosions of language, meaning and even modes of reading. In the early twenty-first century, when 'the end of books' is regularly discussed in the media, there is no guarantee of the literary power of conservation, at least in its traditional forms. [195] As I discuss in the third chapter of this thesis, writers such as Peter Reading have addressed the likelihood that, in a time of mass extinctions, humans may also die out, leading to the end of both texts and readers; in this context, writing becomes an exercise in futility. Indeed, Morrison, like Sebald, signals towards the futility of human endeavours such as the military defence of provisional boundaries in the face of temporal and natural processes, including coastal erosion and sea level change. In 'Flotsam' (pp. 6–10), human structures are ultimately subsumed back into the landscape when humans have gone: there is, writes Morrison, 'no known means to stop the rot'. [196]

Some frail memorial still erected nigh, / With uncouth rhymes and shapeless sculpture deck'd, / Implores the passing tribute of a sigh.' Thomas Gray, 'Elegy Written in a Country Churchyard' <https://www.poetryfoundation.org/poems/44299/elegy-written-in-a-country-churchyard> [accessed 12 July 2017].

[194] Nick Turner, p. 96; Philip Larkin, 'An Arundel Tomb', in *Collected Poems* (London: Faber, 2003), pp. 116–117 (p. 117).

[195] The end of literature: see, for example, Robert Coover tackling the subject in the early 1990's in 'The End of Books', *New York Times* (21 June 1992) <https://archive.nytimes.com/www.nytimes.com/books/98/09/27/specials/coover-end.html> [accessed 18 August 2017]; and Sam Leith, 'Is this the end for books', *The Guardian*, (14 August 2011) <https://www.theguardian.com/books/2011/aug/14/kindle-books> [accessed 18 August 2017], among others.

[196] Just as Sebald writes about Swinburne's career with the benefit of hindsight (pp. 159-160), so Morrison must be aware of the inherent irony of Sebald's meditations on mortality in 1994, six years before a car crash in 2001 prematurely ended his life.

The potential for human obliteration and extinction resonates through Sebald's *The Rings of Saturn* in lines such as 'the world behind them, and before them nothing but emptiness' (p. 52), describing beach fishermen on the east coast. Morrison draws on elements of Sebald's imagery to build on this theme – for example, referring to 'the music of eternity' in 'Anglers' (p. 20) – in attempting, it seems, to come to terms with and accept the trauma and transience of human life.

Loss is 'the one sure thing'

Shingle Street coalesces around the question of how to confront and accept the inevitability of mortality and, it is hinted, potential human extinction in the Anthropocene. This is underscored by Morrison's use of morbid language, particularly in the opening poem of the collection, that evokes a bleak and melancholy atmosphere. Yet without underplaying the socio-economic or conservation impacts of coastal erosion, associations between loss and coastal change in Morrison's collection – and more broadly – invite closer examination. Positioning the east coast as a place of irreversible decline that 'stands for lost causes' is complicated by the intricacies of shoreline and deep time geologic processes.[197] As Matthew Griffiths points out, climate change, 'scaled to the timeframe of human existence', is problematic when considered in terms of deep geologic time, where 'statistically warm periods are the characteristic climate of our planet'.[198] Change at the coast occurs on different timescales, from rapid transformations – for example, during one storm or winter, over decades, or within a human lifetime – to deep geological time where the coast is worn away over

[197] For example, in the words of Sebald: 'this decline [of Lowestoft] had been irreversible' (p. 41); and 'the east stands for lost causes' (p. 159).
[198] Griffiths, p. 3.

millennia. The present day Suffolk coastline, for example, was laid down during the early Holocene and has shifted and changed over millennia. On the one hand, it has indeed been eroding since the low-lying area of land now under the North Sea (known as Doggerland) was inundated following the end of the last Ice Age – 'a flooded plain in plain disguise', as Morrison puts it – and as coastal change accelerates, habitats, homes, farmland, and infrastructure will be lost.[199] Yet sediment washed away by the sea is recycled further down the coast as new beach material; marks of the day are wiped by the tide; and archaeological artefacts are (often temporarily) revealed which tell a story of the continuity of human (and non-human) presence in the area and adaptation to change. [200] In fact, the very processes of longshore drift and erosion that contributed to the decline of Dunwich, following the silting up of its harbour in the 14th century, caused its rise in the first place as a large and important town in the Saxon and early Medieval periods, while Orford Ness shingle spit is also formed from material from Dunwich and elsewhere.

Zwierlein problematises the symbolic linking of loss and coastal erosion in literature, pointing out that

> in the light of recent ecocritical studies, the case of coastal erosion opens up other issues: the holistic ecosystems approach which sees humans as part of a changing natural environment deliberately includes instances of loss and destruction as natural and inevitable occurrences.[201]

Zwierlein's discussion focuses on fiction, but the questions it raises around literary conceptualisations of loss equally apply to poetry: if we consider humans to be 'naturally subject to environmental change […] to what extent it is legitimate to

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[199] Morrison, p. 5; 'Between 10,000 and 7,000 BC, global warming raised sea levels and swallowed a vast, inhabited plain that had stretched without break from England to Denmark': Vince Gaffney, 'Global Warming and Lost Lands: Understanding the Effects of Sea Level Rise', *Center For A Better Life* (2008) <http://livebettermagazine.com/article/global-warming-and-lost-lands-understanding-the-effects-of-sea-level-rise> [accessed 20 November 2016] (para. 4).
[200] 'Touching The Tide' outline shoreline processes and management projects on their website: *Touching The Tide* <http://www.touchingthetide.org.uk> [accessed 19 August 2018].
[201] Zwierlein, p. 55.

figure such change as “loss”, particularly in the context of anthropogenic climate change’? This issue, she adds, is rarely addressed by writers who ‘tend, instead, to ‘exploit the symbolic potential of coastal erosion to illustrate the futility of human endeavours rather than recognising the shoreline as a site of survival and tenacity for humans and non-human organisms, places of continual flux between destruction and renewal.[202] This ‘will to grip’ appears in Morrison’s ‘stunted apple tree in the dunes’ in ‘Flotsam’ and in Andrew Motion’s poem ‘Salt Water’, which contrasts Orford’s military history with the story of the Orford Merman, where ‘the marram thinks all it must do / is hold tight and not trouble to grow’.[203]

The characterisation of the east coast as a place of loss may operate as a useful metaphor to engage people emotionally with coastal change, so long as we bear in mind that the action takes place in a shifting and fluid landscape, both geographically and in terms of our developing understanding of the impacts of climate change. Sea-level rise reminds us that, in the Anthropocene, we can influence but not control Earth’s systems, to paraphrase Solnick, which applies also to coastal change.[204] Fortifying ourselves psychologically as well as materially may help us not only to accept and adapt to ‘inevitable’ coastal change, but also balance loss with more positive outcomes such as the creation or restoration of coastal wildlife habitats, such as the nature reserve reclaimed from military use at Orford Ness depicted in ‘Flotsam’. However, such a shift will be dependent on prioritising conservation and supporting vulnerable coastal communities, as well as preventing

[202] Zwierlein, p. 65.
[203] Zwierlein, p. 64; Flotsam, p. 9; In the book’s title poem, Andrew Motion contrasts Orford’s military history with Ralph of Coggeshall’s account in 1200AD of the capture and subsequent torture of the Orford Merman, the narratives inflecting each other with meaning: Andrew Motion, ‘Salt Water’ in *Salt Water* (London: Faber, 1997) 46–55 (p. 53).
[204] Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2017) pp. 3–5 and p. 6.

new housing development in areas at risk of erosion and flooding, and this will be dependent on policy change.[205]

So how, in this time of climate change, might we adapt to deal with the inevitable place-loss of locations to which we are emotionally attached? Albrecht suggests that there are several ways to address solostalgia, first by confronting the issue of loss directly, and, secondly, that 'a commitment to engage in action to support distressed people and heal distressed environments is itself […] profoundly healing […] In all cases, it is clear that good human health, both mental and physical, is intimately tied to ecosystem health.'[206] Similarly, discussing the relationship between ecological grief and poetry, the poet Dom Bury advocates 'using poetry to work through ecological grief towards that place of acceptance'.[207] Just as the inevitability of death can also motivate us to value life and live it 'in the fullest way possible', an effective poetics for our changing world would, he says, allow us to accept and engage with the reality of ecological collapse and, rather than being overwhelmed by the vast scale and complexity of climate change, 'perhaps become more capable of taking action to prevent further catastrophe'.[208] As Solnick puts it, 'the question of how individuals and societies might adapt (or not) to their changing environments is one of the key issues for the environmental humanities'.[209] Solnick

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[205] Adaptation and response decisions are discussed in advisory documents by the UK Committee on Climate Change, for example: Professor Jim Hall, 'Foreword', 'Managing the Coast in a Changing Climate', (2018) pp. 3–4 (p. 3, para. 7).

[206] Albrecht writes that 'many people sense that something is wrong with our relationship with the planet. This unease just might be an expression of deep-seated solastalgia about non-sustainability. The intense desire to be organically connected to living landscapes is, in part, a desire to overcome solastalgia by finding an earthly home in connection with other living things on this Earth. As put simply by Albert Schweitzer, 'ethics is nothing else than reverence for life.' In all aspects of life – social, cultural, psychological, political, scientific and economic – humans need to redirect their energy and intelligence to an ethically inspired, urgent, practical response to overcoming the causes of solastalgia'. Albrecht, 'Solostalgia', p. 36.

[207] Dom Bury and Karen McCarthy Woolf, 'Grievous Bodily Harm', *Magma,* 72 (2018), 20–23 (p. 22).

[208] Dom Bury and Karen McCarthy Woolf, p. 23.

[209] Solnick p. 46.

explains that 'an increasing awareness [in theoretical discourses] of the operations of different objects, materials or processes radically challenges our sense of what constitutes agency […] By distributing agency so that it is not solely the property of the human we might […] start asking "Can a hurricane bring down a president?"'.[210] Or, thinking beyond the agency of poems to influence changes in behaviour, we might instead ask whether coastal erosion and sea level change might re-shape our poems – and what forms might they take. As we have seen in this chapter, coastal change is central to Morrison's first book of poetry for a great many years. On the one hand, it has inspired a return both to writing within the lyric tradition and, in the opening poem of the collection, to an adapted form of the traditional ballad. However, a fragmentary approach in 'Flotsam' interweaves past and present, different voices and a series of field note-like observations that signal the interrelated properties and competing interests of the ecotone. The book's central preoccupation of coastal erosion operates as an extended metaphor to consider other kinds of losses, provoking a response across a broad formal range and register that combines intense personal concerns with environmental ones.

In this chapter I have adopted an ecocritical approach to examining Blake Morrison's collection *Shingle Street*, identifying and interrogating some of the predominant themes and characteristics of coastal change poetry through close textual analysis in order to explore human-non-human entanglements on England's eroding East Anglian coast. I considered how coastal change disrupts human culture and agency in Morrison's poems, opening up questions around the conceptualisation of loss, and the use of poetry as an adaptive response to coastal change. Building on these questions, in the next chapter this thesis considers three poems of coastal

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[210] Solnick, pp. 33 – 34. Solnick is referencing theoretical and critical discourse by Jane Bennett.

change that work across and collapse vast timeframes to speak to and position modern concerns, showing how examining the past is relevant to understanding present issues around coastal change, and possible futures.

Chapter 2: Stolen by the Sea God: Poetry, Archaeology and Drowned Lands

Poets and archaeologists have this in common: they are interested in what lies beneath.[211]

'Deep time lies beneath my feet'[212]

Modern sea level rise speaks to some of the oldest and most enduring preoccupations in literature and myth: cataclysmic floods, drowned lands, and lost civilisations. As Edward Platt points out, from divine punishment wreaked on the antediluvian world of Biblical Noah to the hubris and subsequent destruction of Plato's corrupt and warring Atlantis, deluge stories continue to capture the popular imagination and remain part of our contemporary culture in 'millennial fantasies of drowned worlds [...] such as J. G. Ballard's early novel *The Drowned World* (1962)', and, more recently, Megan Hunter's *The End We Start From (2017)*, and Ben Smith's *Doggerland* (2019), among others.[213] As Astrid Bracke and Katie Ritson observe, 'the current climate crisis adds a new layer of urgency to older and contemporary flood stories. [Flooding] has become a symptom of and synonymous with the global devastation that climate change is effecting'.[214] Jon M. Erlandson proposes that sea-level rise caused by global warming at the end of the last Ice Age may have 'contributed to the nearly universal flood myths of human cultures worldwide', while Erin Kavanagh considers the intriguing possibility that traditions of drowned lands

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[211] Jo Bell, *Belljarblog* <https://belljarblog.wordpress.com/about> [accessed 15 November 2016] (para. 2).
[212] Julia Blackburn, *Timesong* (London: Jonathan Cape, 2019) p. 4.
[213] *The Epic of Gilgamesh*, trans. by Andrew George (London: Penguin, 2003), dating from at least the second millennium BCE; Michael Kempe, 'Noah's flood: the Genesis story and natural disasters in early modern times', *Environment and History* 9.2 (2003) 151–171; Plato, *Timaeus and Critias,* ed. by Thomas Kjeller Johansen (London: Penguin, 2008) dating from 360 BCE; Edward Platt, 'Out Of The Deep', *Aeon* (2013) <https://aeon.co/essays/why-lost-civilisations-under-the-waves-still-fascinate-us> [accessed 30 June 2017] para. 13.; J. G. Ballard *The Drowned World* (New York: Berkley Books, 1962); Megan Hunter, *The End We Start From* (London: Picador, 2017); and Ben Smith, *Doggerland* (London: Fourth Estate, 2019).
[214] Astrid Bracke and Katie Ritson, 'Introduction: Waters Rising', *Green Letters: Studies in Ecocriticism* 24.1 (2020) 1–5 (p. 1).

along the Celtic seaboard in literature, such as Cantre'r Gwaelod (Wales), could originate from folk memories passed down orally in pre-literate cultures, potentially shedding new light on the past as well as informing our adaptive responses to present-day sea level change.[215] Historically serving to warn, instruct, entertain, or provide a setting for a different story, the concept of the drowned or 'lost land' continues to inspire poets, providing culturally-embedded layers of metaphor and intertextuality. In poems by Alfred, Lord Tennyson, Algernon Charles Swinburne, Walter de la Mare, Thomas Hardy, Sylvia Plath and Jack Clemo, among others, Lyonesse (Cornwall), for example, has come to symbolise nostalgia for an enchanted world or moment, the passing of a golden age, forgetting and abandonment.[216]

However, the concept of the 'lost land' serves a similarly admonitory purpose today as in the past, albeit with an ecological rather than religious moral underpinning. Archaeological research projects such as Europe's Lost Frontiers, which focuses on the prehistoric submerged landscape under the North Sea – now commonly known as Doggerland – seem particularly significant in our time of rising sea levels. As Vince Gaffney explains,

> at a time when global warming and sea level rise are now accepted as amongst the greatest threat to our lifestyles, the fate of the landscapes and

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[215] Jon M. Erlandson, 'Racing a Rising Tide: Global Warming, Rising Seas, and the Erosion of Human History', *The Journal of Island and Coastal Archaeology*, 3:2 (2008) 167–169 (p. 1); Erin Kavanagh, *Semantics of the Sea* (2016) <http://www.geomythkavanagh.com/semantics-of-the-sea> [accessed 20 May 2017].

[216] Lyonesse is a country from medieval Arthurian legend that was said to stretch from Land's End to the Isles of Scilley before it was inundated by the sea. It features in Alfred, Lord Tennyson's 'The Passing of Arthur', *Idylls of the King* (first published between 1859-1885: London: Penguin, 1983) and Algernon Charles Swinburne's similarly long epic poem 'Tristram of Lyonesse' (1882) (London: Chatto and Windus, 1903); and inspired poems by Thomas Hardy 'When I Set Out for Lyonnesse', *Satires of Circumstance, Lyrics and Reveries with Miscellaneous Pieces* (London: Macmillan, 1914) p. 20; Walter de la Mare, 'Sunk Lyonesse', *Down-adown-derry: A Book of Fairy Poems* (New York: Henry Holt, 1922) p. 86; Sylvia Plath, 'Lyonnesse', *Collected Poems* (New York: Harper and Row, 1981) p. 233; and Jack Clemo,'Wessex and Lyonesse' *Broad Autumn* (London: Eyre Methuen, 1975), p. 40. However, the legendary lost land between Land's End and the Isles of Scilly has a distinct Cornish name, Lethowstow: A. D. H. Bivar, 'Lyonnesse: The Evolution of a Fable' in *Modern Philology*, 50.3 (1953), pp. 162–170 and 'The Lyonesse Project', *CISMAS* (2010) <http://www.cismas.org.uk/lyonesse.php> [accessed 20 November 2016].

peoples of the North Sea may yet be interpreted not as an academic curiosity but as a significant warning.[217]

Building an understanding of adaptation and re-settlement linked to climate change over millennia can help inform global thinking around present-and-future anthropogenic coastal change and large-scale land loss. Doggerland, once home to thousands of people, flooded due to post glacial sea level rise, with the final loss of the land-bridge with mainland Europe around 8,000 to 10,000 years ago creating the islanded place that we now call Britain (and hence the focus of my thesis). As continuing scientific research brings more information to light, Doggerland is inspiring new stories that speak to our present moment and future concerns.

This chapter will examine as case studies three contemporary poems that use drowned (lost) lands to conceptualise modern British coastal change: Gillian Clarke's 'Cantre'r Gwaelod', which specifically draws parallels between a traditional Welsh flood myth and modern environmental concerns, and Jo Bell's 'Doggerland' and Justina Hart's 'Doggerland Rising', two poems that invite comparison in terms of approach and structure.[218] These are drawn from a growing body of poetry responding to coastal change and deep geologic time, such as Jake Campbell's 'Star of Hope' and Erin Kavanagh's 'Brenin Y Coed Môr' / 'King of the Sea Trees, which

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[217] 'Europe's Lost Frontiers' is an archaeological research project into the submerged prehistoric landscapes of the Southern North Sea, known as Doggerland: *Europe's Lost Frontiers* <https://lostfrontiers.teamapp.com/?_webpage=v1> [accessed 20 June 2020]; Vince Gaffney, 'Global Warming and Lost Lands: Understanding the Effects of Sea Level Rise', *Center For A Better Life* (2008) <http://livebettermagazine.com/article/global-warming-and-lost-lands-understanding-the-effects-of-sea-level-rise> [accessed 20 November 2016] (para. 9).

[218] Jo Bell, 'Doggerland', *Keep it in the ground: a poem a day* (2015) <https://www.theguardian.com/environment/2015/may/21/a-climate-change-poem-for-today-doggerland-by-jo-bell> [accessed 10 June 2015]; Gillian Clarke, 'Cantre'r Gwaelod', *Keep it in the ground: a poem a day* (015) <www.theguardian.com/environment/2015/may/19/a-climate-poem-for-today-cantrer-gwaelod-by-gillian-clarke> [accessed 10 June 2015]; Justina Hart, 'Doggerland Rising', *Realistic Utopias: Writing for Change* (2017) <https://cdn.freewordcentre.com/uploads/2017/02/Realistic-Utopias-Writing-for-Change.-Doggerland-Rising.pdf> [accessed 30 January 2017] (pp. 43–52).

figure briefly in this chapter as counterpoints to my case studies.[219] Drawing on critical thinking by Sarah Dillon on the palimpsest, and by Christine A. Finn and Kavanagh on some of the kindred processes and relations between poetry and archaeology, I will extend the concept and metaphor of the palimpsest to examine the successful failure of erasure on the eroding shore – where artefacts acting as 'uncanny harbingers' are brought, as Finn puts it, 'to light, to mind, and to the surface of the page' – and demonstrate through detailed literary analysis how coastal change poetics can engage across disciplines to articulate the palimpsestic beach as a space that may encompass not only deep time perspectives, but also a sense of futurity.[220]

It is important to point out that, while this chapter primarily examines writing by women, my concerns are not concentrated around gender in this focused chapter (or in my thesis), but rather on how Bell, Clarke and Hart use sea level change imagery in their work to speak to and position modern environmental concerns. However, further work around gender and ecofeminism, particularly in relation to a growing interest in hydrofeminism, could, for example, bring a new feminist perspective to bear on ideas around interrelatedness between human / more-than-human watery bodies in coastal change poetics, and offer significant value as the focus of a different or further study in my field of research.[221]

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[219] Jake Campbell, *The Coast Will Wait Behind You* (Sunderland: University of Sunderland, 2015), pp. 11-15; Erin Kavanagh, 'King of the Sea Trees/ Brenin Y Coed Môr' (2017 <http://www.geomythkavanagh.com/king-of-the-sea-trees> <http://www.geomythkavanagh.com/semantics-of-the-sea> [accessed 20 May 2017].

[220] Sarah Dillon, *The Palimpsest: Literature, Criticism, Theory* (London: Continuum, 2007) pp. 12–13. See also '"palimpsestuous" makes the concept of the palimpsest strange', p. 5; and Christina A. Finn, 'Poetry and Archaeology: The Transformative Process', in *Ancient Muses: Archaeology and the Arts*, ed. by Christine A. Finn, John H. Jameson, Jr., and John E. Ehrenhard (Tuscaloosa: Alabama University Press, 2003), pp. 72–81 (for example, p. 73).

[221] Relevant ecofeminist studies include: *Material Feminisms,* ed. by Stacy Alaimo and Susan Hekman (Bloomington: Indiana University Press, 2008); Greta Gard, 'Ecofeminism Revisited: Rejecting Essentialism and Re-Placing Species in a Material Feminist Environmentalism', *Feminist Formations*, 23.2, (2011), 26–53; Donna J. Haraway, *Staying with the Trouble* (Durham: Duke University Press, 2016); Astrida Neimanis, *Bodies of Water* (London: Bloomsbury, 2017).

Shoreline palimpsests

A palimpsest is 'a parchment or other writing surface on which the original text has been effaced or partially erased, then overwritten by another'.[222] However, due to imperfect erasure, texts inadvertently preserved for posterity under newer writing sometimes re-emerge, either through natural or technological 'resurrections.[223] Sarah Dillon emphasizes

> the enduring significance of palimpsests in the present day in bringing to light lost texts from the past which change the very way we interpret and know that past [and] the persistent fascination with palimpsests in the popular imagination, embodying as they do the mystery of the secret, the miracle of resurrection and the thrill of detective discovery. Palimpsests are not dusty palaeographic objects but uncanny harbingers to the present of the murdered texts of former ages. They are of the utmost palaeographic and historical significance but they also capture the imagination with their spectral power.[224]

This provides a valuable frame for thinking about the palimpsest of the beach in coastal change poetics, as we shall see through the following chapter. The metaphorisation of the term *palimpsest* dates at least from Thomas De Quincey's essay 'The Palimpsest of the Human Brain' (1845)[225] and, Dillon notes, is employed in diverse fields of study, from literature to palaeontology.'[226] In this thesis, the palimpsest operates as a metaphor for physical layers of sediment on the beach, representing both the geologic and conceptual layering of time. Submerged landscapes and eroding shores are akin to imperfectly erased and multi-layered manuscripts: liminal spaces inscribed with intertextual and historical meaning,

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[222] 'Palimpsest, n. and adj', *OED* <www.oed.com/view/Entry/136319> [accessed 15 October 2018]
[223] Dillon, pp. 10–20 (p. 12): The buried text's 'ghostly trace then reappeared in the following centuries as the iron in the remaining ink reacted with the oxygen in the air producing a reddish-brown oxide'. Later, in the 19th Century, chemicals were used to recover texts. The modern use of ultra-violet light 'coaxes words out', undamaged.
[224] Dillon, pp. 12–13.
[225] Thomas De Quincey, 'The palimpsest of the human brain', in *Quotidiana* (2006) <http://essays.quotidiana.org/dequincey/palimpsest_of_the_human_brain/> [accessed 9 Nov 2018]
[226] Dillon, p. 1.

scraped and washed by tidal processes, upon which modern environmental concerns can be over-written.[227]

This approach draws on Robert Macfarlane's use of the metaphor of the beach palimpsest in his non-fiction prose writing about Formby Point on the Sefton Coast where, due to coastal erosion, prehistoric human and animal spoor are periodically exposed, then washed away by the next tide.[228] Macfarlane explains that 'over the course of centuries, thousands of footprint trails were preserved, laid down in the stacked silt strata like a growing pile of pages'.[229] Layers of sediment and time on the foreshore form a physical and metaphorical palimpsest of stories written 'not in print, but in footprint', inviting the kind of embodied perspective-taking and linguistic play which literature engenders.[230] Crucially, in terms of their palimpsestic nature, each record of presence is unrelated, yet 'intricately interwoven' through inhabiting the same geographic space, although at different times, with new narratives and contexts superimposed upon them in the present.[231] The unexpected reappearance of the past, preserved and then excavated by a chance series of processes, evokes a sense of the uncanny, something that 'ought to have remained secret and hidden but has come to light'.[232] Liam Bell describes the ecological

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[227] The terms 'palimpsest' and 'erode' link through the activities and imagery of wearing away, rubbing and washing and devouring, consumption being a common metaphor in literature for coastal erosion, as explored in Chapter 1. The *OED* entry for Palimpsest, 'to rub smooth' (ancient Greek), derives from the same Indo-European base as Sanskrit bhas-, psā- to crush, chew, devour; and the entry for erosion, 'to gnaw, to destroy by slow consumption' (from Latin ērōdĕre:'to gnaw'). 'erode, v', *OED* <www.oed.com/view/Entry/64061> [accessed 15 October 2018]; 'palimpsest, n. and adj', *OED* <www.oed.com/view/Entry/136319> [accessed 15 October 2018].
[228] Robert Macfarlane, *The Old Ways* (London: Penguin, 2013) pp. 359–364.
[229] Macfarlane, p. 363; Macfarlane is referring to a period of time between around 7500–4500 years ago when the area was an intertidal lagoon. Tracks left in the muddy shoreline were baked hard in the sun, then sealed with a thin layer of sand and silt by the incoming tide. These are now periodically revealed by coastal erosion, then washed away. Gordon Roberts, 'The Formby Footprints' (2019) <http://formby-footprints.co.uk> [accessed 20 January 2020] (para. 2).
[230] Macfarlane, p. 363.
[231] Macfarlane, p. 4.
[232] Sigmund Freud cites F. W. J. Schelling's definition of Unheimlich from Philosophie der Mythologie of (1835) in 'The 'Uncanny' (1919)' in 'Vol 17 (1917-1919): An Infantile Neurosis and Other Works', *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (New York: Vintage, 2001) pp. 217–256 (p. 224).

uncanny as an apparently rapid destabilisation of the ‘normal’ where the disorientating ‘sudden appearance of an unexpected feature in a short space of time accentuates the unheimlich effect of climate change’.[233] These emergent features or objects, such as ancient tree stumps uncovered on the shoreline by a storm, can act, in Dillon’s words, as ‘uncanny harbingers to the present’ as well as changing ‘the way we interpret and know [the] past’– for example, in evidencing the prehistoric impacts of a rapidly changing climate.[234]

In this context, Jake Campbell’s description of his writing in *The Coast Will Wait Behind You* – also engaging with Formby – as ‘palimpsest poetics’ is particularly of interest in recognizing that

> we sit, precariously and temporally, at the top layer of history, but to understand our place in it, and to move forward with both purpose and wonderment […] we must look to the visible traces of what has gone before.[235]

Working within an awareness that our present moment at the ‘top layer of [human and non-human] history’ is both precarious and temporary decentres the human, portraying our time as a single fragile sheet atop an immense pile, but also simultaneously reminding us that the global ecological impact of human activities has led to a proposed new geologic era.[236] The Anthropocene shore-scape is viewed through the dizzying lens of deep time, an aperture that encompasses human and more-than-human pasts and futures, and demonstrates how the eroding beach makes

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233 Liam Bell, ‘Climate Change and Uncanny Environments’, *Wales Arts Review* (2020) <https://www.walesartsreview.org/climate-change-uncanny-environments> [accessed 20 November 2020] paras. 1– 2.

234 Dillon, pp. 12–13. See also Gaffney: ‘Uncovering these stories, which are now thousands of years old, could offer some clues about what our own future holds too […] As humans prepare for environmental impacts in the 21st century, [Prof. Gaffney] says that the only place to look into the future is the past.’ Jude Gonzalez, ‘Lessons from a real Atlantis’, *Horizon – The EU Research and Innovation Magazine* (17 July 2018) <https://horizon-magazine.eu/article/lessons-real-atlantis.html> [accessed 30 April 2019] (paras. 27–8).

235 Jake Campbell, ‘The Wild Coast of Sefton’, in *Ghosts of the Restless Shore: Space, Place and Memory in Sefton,* ed. by Mike Collier (Southport: Art Editions North, 2015), pp. 1–149 (p. 76).

236 Campbell, p. 76.

the metaphor of the palimpsest particularly apt in coastal change poetics – as we will see in the following analysis of poems by Gillian Clarke (‘Cantre’r Gwaelod’), Jo Bell (‘Doggerland’) and Justina Hart (‘Doggerland Rising’).

Drowned lands and layered shores in Gillian Clarke’s ‘Cantre’r Gwaelod’

Gillian Clarke adopts a palimpsestic approach to addressing ecological concerns in her poem ‘Cantre'r Gwaelod’, which analogises prehistoric, mythic and present-day sea-level change on the Ceredigion coast.[237] The flooding of Cantre'r Gwaelod (The Lowland Hundred), a fertile and low-lying place now said to lie beneath the sea in Cardigan Bay, first appears in a thirteenth-century Welsh language poem, ‘Boddi Maes Gwyddno’ / ‘The Drowning of the Land of Gwyddno’.[238] In that story and later versions, hubris, excess, selfishness and irresponsible behaviour lead to the disaster, with lines such as ‘usual after presumption is utter loss / […] usual after presumption is repentance’ inviting re-reading through an ecocritical lens in the context of our present-day ecological crisis.[239]

Clarke’s poem opens with a modern awakening to a twenty-first century ecological hangover, a reckoning for humanity’s good times. Just as human culpability is embedded in the medieval myth, anthropogenic climate change is

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[237] Gillian Clarke, ‘Cantre’r Gwaelod’, *Keep it in the ground: a poem a day* (2015) <www.theguardian.com/environment/2015/may/19/a-climate-poem-for-today-cantrer-gwaelod-by-gillian-clarke> [accessed 10 June 2015].

[238] Published in the thirteenth-century *Black Book of Camarthen* (*Llyfr Du Caerfyrddin*), one of the earliest surviving manuscripts written solely in Welsh: ‘The Black Book of Camarthen’, *The National Library of Wales* (2018) <https://www.library.wales/discover/digital-gallery/manuscripts/the-middle-ages/theblackbookofcarmarthen/> [accessed 10 May 2018]. Cantre'r Gwaelod’s destruction is attributed to Mererid, who allows a fairy well to overflow, although later renditions blame Seithenhin for forgetting to secure the kingdom’s sea defences after a night of revelry. Rachel Bromwich, ‘Cantre’r Gawelod and Ker-Is’, in *The Early Cultures of North-West Europe*, ed. by B. Dickens and C. Fox (Cambridge: Cambridge University Press, 1950) pp. 217–241; also: James Doan, ‘The Legend of the Sunken City in Welsh and Breton Tradition’, Folklore, Vol. 92, No. 1 (Oxford: Taylor and Francis on behalf of The Folklore Society, 1981), pp. 77–83. <https://www.jstor.org/stable/1260254> [accessed 18 October 2018]; and Jim Finnis, ‘Boddi Maes Gwyddno’, *Cantre'r Gwaelod* (2017) <http://www.cantrer.pale.org/pages/poem> [accessed 1 June 2018].

[239] Bromwich, p. 217.

implicated in severe storms during the winter of 2013 to 2014 that stripped layers of sand and peat from beaches in Cardigan Bay, revealing the preserved stumps of ancient trees underneath:[240]

> The morning after, the beach at Borth
> is a graveyard, a petrified forest
> thundered out of the sand by the storm,
> drowned by the sea six thousand years ago
> when the Earth was flat,
> the horizon the edge of the world.
>
> Remains of stilted walkways tell their story:
> how they walked over water between trees,
> longing for a lost land when the sea-god stole it,
> how they shouldered their children and fled
> with every creature that could crawl, run, fly,
> till time turned truth to myth.[241]

Like palimpsestic texts, uncovered 'petrified' and 'drowned' trees on the layered shore in Clarke's poem are, to borrow Dillon's terminology, 'uncanny harbingers to the present'.[242] These lungs of the world, paradoxically both suffocated and preserved under water, bring to light past inundation and the fact that we're losing ground to rising sea levels again, despite this temporary revelation of land. 'Remains of stilted walkways' are evidence of the adaptive abilities of Cardigan Bay's prehistoric inhabitants to cope with past coastal change, although, like modern defences, these walkways offered only temporary and limited solutions. Clarke's

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[240] 'Aberystwyth and Borth clear-up after high tides', *BBC* (4 January 2014) <https://www.bbc.co.uk/news/uk-wales-25598167> [accessed 15 May 2018].
[241] Clarke, 'Cantre'r Gwaelod' (n.p).
[242] The discovery of submerged tree stumps may have helped to inspire stories of drowned kingdoms in the past, intermingling factual observations, religious and traditional stories, and real flooding events. Before the advent of modern archaeological study, the remains of ancient stumps around the Welsh coast, for example, 'were believed to be the result of the biblical flood and were referred to as "Noah's Trees"'. 'Submerged Forests', *The Lost Lands of Our Ancestors* (2007) <https://www.dyfedarchaeology.org.uk/lostlandscapes/submergedforests.html> [para 1] [accessed 12 May 2020]; Dillon, p. 13.

poem is imbued with a sense of *hiraeth* in its 'longing for a lost land' – not only in the past, but looking ahead to a flooded future.[243]

In Clarke's imagined tidal inundation of Cantre'r Gwaelod, sea level change threatens both human settlements and wildlife, as the people escape alongside 'every creature that could crawl, run, fly', dissolving, in their shared behaviour and survival instinct, notions of human exceptionalism. However, in the Anthropocene, we know it is mainly human activity driving biodiversity decline. Our treatment of the non-human world, broadly speaking, reflects badly on our species, and while Clarke is writing here about natural impact on human activity, deploying terms such as 'fells' triggers an uncomfortable jolt of self-recognition in evoking our own intensive harvesting of natural resources:

> a cliff-fall takes a bungalow; a monstrous
> tide rips up a coastal train-track;
> storm fells a thousand-year-old oak,
> smashes a graceful seaside promenade.

Indeed, the poem's initial focus on human losses – homes, infrastructure, heritage – shifts around its mid-point to address how growing public concern and awareness about human impact on the natural world is often filtered by anthropocentric ethically-skewed value systems, 'transforming it into some kind of consumerist spectacle', as Timothy Clark puts it.[244] A 'thousand-year old oak' is especially precious, we might infer, because it is ancient in comparison to human lifespans; aesthetically pleasing animals such as 'hares' or 'red kites' are privileged over a prosaic duck 'crushed on the motorway' in the concluding lines of the poem, while

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[243] Hiraeth, n. 'Originally and chiefly in the context of Wales and Welsh culture: deep longing for a person or thing which is absent or lost; yearning; nostalgia; spec. homesickness.' *OED* <https://www.oed.com/view/Entry/85866024?redirectedFrom=hiraeth#eid> [accessed 10 August 2018]; linking to the concept of a repeating motif in coastal change poetics being a sense of distress, loss and bereavement caused by rapid place-loss (for example, the concept of Solostalgia), as discussed in Chapter 1.

[244] Timothy Clark, 'Ethics and the Non-human Animal', *The Cambridge Introduction to Literature and the Environment* (Cambridge: Cambridge University Press, 2011) p. 185.

the rapid decline in British flora and fauna can be attributed in part to intensive farming practices, fulfilling an undiminishing demand for low-cost products from a growing population with an increasing disposable income.[245] In deploying the well-worn anthropomorphic device of a monstrous, greedy ocean – 'sated with meltwater, craving more' – Clarke is also clearly pointing at human nature.[246]

At the end of the second stanza, as in the first section, the speaker engages with a set of explanations our post-enlightenment world knows to distrust, underscoring the point that with knowledge comes responsibility. The horizon is not 'the edge of the world' for modern humans who can so easily travel beyond it on a daily basis, and who live with a growing awareness that the increased power and frequency of storms is part of a global environmental crisis.[247] The final stanza of the poem returns, albeit indirectly, to this issue of culpability, instructing us to 'grieve'

> for Earth's intricate engineering, unpicked
> like the flesh, sinews, bones of the mother duck
> crushed on the motorway, her young
> bewildered in a blizzard of feathers;
> the balance of things undone by money,
> the indifferent hunger of the sea.[248]

Here, Clarke's brutal imagery is reminiscent of John Tripp's sentiments in 'The Diesel to Yesterday' (1966), observing tourists' 'petrol-stenched lust for scenery', where the Welsh environment is treated, in Matthew Jarvis's words, as 'photographic filler'.[249] Clarke's juxtaposition of roadkill with the romanticized roll-call of wildlife

[245] R. S. Thomas joined the Society for the Protection of the Red Kite when there were 70-odd pairs in Wales but none elsewhere in Britain, because the curmudgeonly Welsh nationalist said the red kite had 'chosen to make its home in Wales'. Red Kites, driven to the verge of extinction by the 20th century, were making a come-back in Wales by the time Clarke wrote the poem due to a programme of reintroduction and conservation. However, it underlines the kind of anthropocentrism that Clarke's poem signals towards, that, in essence, we celebrate the return of the kite as a success story of humans nearly wiping them out, then realizing just in time, then helping to bring them back.
[246] Clarke, *Cantre'r Gwaelod.*
[247] Although travel is limited in the current time of the pandemic (2021).
[248] Clarke, *Cantre'r Gwaelod.*
[249] Matthew Jarvis, *Welsh Environments in Contemporary Poetry* (Cardiff: University of Wales Press, 2008) pp. 17–18.

that precedes it – ‘lovesick salmon’, ‘mating hares / in love with the March wind’, ‘a flaunt of kites’ – flags up the hypocrisy and paradox of the situation: we praise and sentimentalise the natural world while continuing to destroy it. Technological advancements that on one hand inform public ecological awareness also underpin the current environmental crisis: developments in engineering conflict with ‘Earth’s intricate engineering’, agricultural progress destroys biodiversity. Clarke’s poem lambasts humanity for damaging the world for economic gain – ‘the growth-fixated economic system’, as Campbell puts it – and because a sense of hubris allows us, for example, to drive our cars through and over a living creature on the motorway with barely a backward glance. The pathos of the duck’s ‘young / bewildered in a blizzard of feathers’ not only echoes the poem’s earlier image of prehistoric refugees grabbing their children as they flee from disaster, but our own bewilderment as change on often incomprehensible scales rapidly overtakes us. By drawing on a myth in which human culpability is so strongly implicated, Clarke’s poem highlights our species’ complicity in environmental crisis. The simile here also suggests Earth is a ‘mother’ and that we are like her chicks immediately after her death, unaware of the full implications of what has happened – perhaps unaware, even, that it has happened at all, for now.

‘Cantre’r Gwaelod’ – like Bell’s poem ‘Doggerland’, which I discuss later in this chapter – was commissioned for *The Guardian* newspaper’s Keep it in the Ground campaign in 2015, aimed at raising public awareness of climate change. Written during Clarke’s tenure as National Poet of Wales (2008 to 2016), it offers a broadly-accessible response both to severe flooding in 2014 and environmental crisis in the Anthropocene. Matthew Griffiths describes it as a poem that ‘depend[s] on simple

oppositions between civilization and nature'.[250] However, Griffiths' brief review misses the poem's mythical and temporal layering, and embedded politicized concerns. An earlier poem by Clarke, 'Clywedog' (1978), laments the controversial drowning of the Clywedog valley to create a reservoir: 'And the mountains, in a head-collar / Of flood, observe a desolation'.[251] This echoes R. S. Thomas's nationalistic poem 'Reservoirs' (1968), written shortly after the creation of Llyn Clywedog and lamenting the use of Welsh valleys to supply English cities with water, using a palimpsestic psychological metaphor: 'There are places in Wales I don't go: / Reservoirs that are the subconscious / Of a people'.[252] In Thomas's poem and Clarke's 'Clywedog', a reservoir erases a farming community and its culture from the land, while in 'Cantre'r Gwaelod', sea level rise threatens a more encompassing and nationally significant desolation, but both types of (now anthropogenic) inundation demonstrate how the local and rural are affected, in different ways, by the larger political, economic and environmental processes of the outside world of which it is nevertheless a part: 'the balance of things undone by money, / the indifferent hunger of the sea'.[253]

Elaine Pollard's examination of 'the drowned village' in 'When The Reservoir Comes' (2017) foregrounds the ways in which, through displacement, 'nostalgia, ritual and ruin impact upon notions of community and place', where the palimpsestic 'lost land' or submerged place becomes 'a space […] upon which to

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[250] Griffiths offers the proviso that his condensed survey, from which this quote is taken, is a 'whirlwind tour' of climate change trends in poetry rather than 'a thoroughgoing examination', highlighting room for further study. Matthew Griffiths, *The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017) p. 158 and p. 159.
[251] Gillian Clarke, 'Clywedog', *The Sundial* (Llandysul: Gomer Press,1978) p. 12.
[252] R. S. Thomas, 'Reservoirs', *Collected Poems 1945-1990* (London: Orion, 2012) p. 165.
[253] Clarke, 'Cantre'r Gwaelod'. Other examples include: Percy Bysshe Shelley, 'The Retrospect' (n.d.) <http://www.abandonedcommunities.co.uk/page76.html> [10 September 2020]; and Rosalind Hudis, 'Elan Reservoir' and 'Llyn Brianne', *Wales Arts Review* (6 November 2014) <https://www.walesartsreview.org/two-reservoir-poems> [10 September 2020].

inscribe irresolvable questions of grief, loss, melancholy and nostalgia', emotions that run through Thomas's and Clarke's 'flood' poems.[254] Yet, as Pollard points out, it is the destruction of a place and the impossibility of return that also creates its imaginative power. In deploying the imaginative, metaphorical and 'spectral' power of the 'Cantre'r Gwaelod' myth to capture the popular imagination, Clarke also and distinctively situates modern sea-level rise and coastal change in Wales within a Welsh eco-cultural context.[255] Encoding a familiar national story as subtext makes explicit not only an element of Welsh cultural tradition that particularly resonates with present day issues, but specifically locates the Welsh biosphere within a developing narrative of global climate crisis.[256]

'Truth turning on a myth'[257]

However, associating deluge myths with submerged forests on the coast of West Wales raises ethical questions for Erin Kavanagh, a geo-myth scholar and archaeologist.[258] Kavanagh interrogates Clarke's use of the Cantre'r Gwaelod myth

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[254] Elaine Pollard, "When the Reservoir Comes': Drowned Villages, Community and Nostalgia in Contemporary British Fiction', *C21 Literature Journal of 21st-century Writings*, 5.3, (2017), 1–21 (p. 4, p. 8, p. 10 and p. 20).
[255] 'Spectral' in the palimpsestic and uncanny sense: Dillon, p. 20.
[256] While 'Cantr'r Gwaelod' is geographically rooted in West Wales, Clarke's poem – through speaking of 'earth' and 'world' – positions Welsh environmental concerns in a global context.
[257] Erin Kavanagh, 'When a Legend is Not a Legend, Legendarily So - The Myth of Cantre'r Gwaelod' (2017) <http://www.geomythkavanagh.com/single-post/2017/08/08/When-a-legend-is-not-a-legend-legendarily-so---the-myth-of-Cantrer-Gwaelod> [accessed 1 February 2018].
[258] Vitaliano coined the term 'geo-mythology' in 1966 as a term for geology applied to appraisals of traditional stories as a scientific discipline: D. B. Vitaliano, 'The impact of geologic events on history and legend with special reference to Atlantis', *Journal of the Folklore Institute,* 5 (1968) 5–30. Laurence Coupe's explanation for the concept of 'myth' is helpful in relation to examining Clarke's 'Cantre'r Gwaelod' in a broader ecocritical context: 'The word 'myth' comes from the ancient Greek mythos, meaning 'story'. A myth is a traditional story that is handed on over the years – sometimes centuries, sometimes millennia – and keeps being retold. It is a narrative that helps human beings to make sense of themselves and their relation to one another, to the natural world and to the spiritual realm. It is a founding narrative, an essential plot, which cannot be credited to any one individual but rather belongs to the whole community. Myths combine together to form a mythology, a body of stories that define a culture. This collective narrative is not to be assessed on grounds of truth or falsity: the point is whether it has power for its community.' Laurence Coupe, 'Hughes and Myth' in *Ted Hughes: New Casebook, ed. by* Terry Gifford (London: Palgrave Macmillan, 2015) pp. 13–24.

in her poetic riposte 'Not Cantre'r Gwaelod', in which she notably tweaks Clarke's line 'time turned truth to myth' to 'truth turning on a myth'.[259] Kavanagh's 'literal' critique of Clarke's poem argues that rather than encoding truth, the use of flood myths such as Cantre'r Gwaelod in relation to archaeological sites and climate change can risk confusing and stifling a more sophisticated, nuanced and scientific understanding of climatic and sea-level change through long timeframes, contributing to a 'tide of misinformation' and a dramatic correlation of coastal change with disaster.[260] As I have discussed in the previous chapter and in the introductory section to this thesis, while sea level rise, erosion and flooding can enact rapid and devastating change on coastal communities, the broad conceptualisation of coastal change as being analogous with disaster and loss is complicated by the intricacies of shoreline and deep time geologic processes. Indeed, Clarke gestures towards this in referencing the existence of prehistoric 'stilted walkways' in her poem, which indicate a more complex pattern of sea change and human adaptation over longer timeframes in that area than the sudden cataclysmic flood of the medieval myth.

Kavanagh advocates for an interdisciplinary approach within science, humanities and the arts to 'form a new understanding regarding the interplay of flooding facts and fictions through the layering of time' using 'deep mapping', where

[259] Kavanagh, 'When a Legend is Not a Legend' (2017).
[260] Kavanagh, 'Not Cantre'r Gwaelod' (n.d) <http://www.geomythkavanagh.com/single-post/2017/02/24/Not-Cantrer-Gwaelod> [accessed 20 March 2017]; this topic is also addressed in Rachel Bromich's earlier study: Bromwich, 1950, p. 231. Kavanagh notes that some myths may be rooted in real events that in turn can provide vital information not only on the development of human culture but on future adaptation to sea level change, rather than automatically pinning such changes to dramatic stories that obscures a more relevant and important truth. However, some prehistoric sea level change was probably rapid, as Vincent Gaffney points out: 'the gentle slope of the seabed beneath some parts of the North Sea also suggests the loss of land at the end of the last ice age may occasionally have been dramatic, with many kilometres of plains vanishing in a single year'. Jude Gonzalez, 'Lessons from a Real Atlantis,' *Horizon: The EU Research and Innovation Magazine* (17 July 2018) <https://horizon-magazine.eu/article/lessons-real-atlantis.html> [accessed 24 September 2018] para. 26.

'disparate narratives are unified within a single platform [building] up layers in and of the landscape into a palimpsest of experiential conversation'.[261] 'Deep Mapping' is a process of enquiry that seems well suited to the study of the unfixed, layered littoral space, focusing as it does on the cross-disciplinary exchange and cooperative sharing of expert information and processes to travel towards a provisional understanding that, in Kavanagh's words, 'is not a destination [but] like the sea, it is constantly coming-into-being'.[262] Still, Kavanagh's somewhat territorial and constraining critique of Clarke's poem links to wider questions around the relationships between ethics and aesthetics, and the ways in which environmental poetry operates in other fields beside the scientific. As Timothy Clark puts it in relation to Gretel Ehrlich's 'hybrid writing' in *The Future of Ice*, which, in common with Clarke's 'Cantre'r Gwaelod', blends 'personal narrative with historical anecdote and snippets of popular science' to address 'scientific consensus on climate change':

> her alternative sensuous modes of interacting with nature are not tantamount to the accusation that those of the sciences have no validity. The issue is that they need not also delegitimise other valuable kinds of engagement with the world, non-dualistic, sensuous and non-hierarchical.[263]

Engaging with these issues presents a complex challenge for creative writers, and Isabel Galleymore points to a 'tension between literalness and literariness [which] could well be articulated as a tension between non-fiction and poetry', or between scientific language, metaphor and sensuousness in environmental writing.[264] Such critiques highlight broader difficulties in the relations between scientific research and

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[261] Kavanagh, 'Layers in the Landscape: Deep Mapping in Cardigan Bay' (n.d) <https://www.geomythkavanagh.com/layers-in-the-landscape> [accessed 24 March 2018] (paras. 2 and 3).
[262] Kavanagh, para. 17.
[263] Gretel Ehrlich, *The Future of Ice* (London: Vintage, 2006); Timothy Clark, 'Ecofeminism', *The Cambridge Introduction to Literature and the Environment* (Cambridge: Cambridge University Press, 2011) 111–119, p. 113.
[264] Isabel Galleymore, 'Introduction', *Teaching Environmental Writing: Ecocritical Pedagogy and Poetics* (London: Bloomsbury, 2020) p. 20.

imaginative scope, and ethical considerations around the extent to which scientific understanding informs the aesthetics or poetics of a poem, as well as the importance placed upon this by the poet and by their readers and collaborators.

These are important contextual considerations in my analysis of poems that draw on the different disciplinary areas of archaeology and climate science in this chapter, and will frame my ecopoetic analysis of the relationship between coastal change poetics and scientific data in chapter 3.

Doggerland: What lies beneath

Christine A. Finn proposes that, like archaeologists, poets operate as mediators between the past and the present, digging down through "layers" to bring 'some "thing" to the light, to mind, and to the surface of the page'.[265] Finn analogises both archaeological and poetic processes as linked transformative acts, whereby objects from the past are transformed into artefacts by the archaeologist, while the poet transforms them into poetic subjects 'through personal reinterpretation', giving 'the objects a new audience, outside archaeology, and in the realm of literature'.[266] Both Clarke and Kavanagh find poetic inspiration in non-human artefacts brought to light along the Ceredigion coastline. For Clarke it is preserved tree stumps revealed on Borth beach, while the discovery of a set of deer antlers in Cardigan Bay, dated to the Bronze Age, are the inspiration for Kavanagh's long poem 'Brenin Y Coed Môr'

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[265] Christina A. Finn, 'Poetry and Archaeology: The Transformative Process', in *Ancient Muses: Archaeology and the Arts*, ed. by Christine A. Finn, John H. Jameson, Jr., and John E. Ehrenhard (Tuscaloosa: The University of Alabama Press, 2003), pp. 72–81 (p. 73).

[266] Finn, p. 73. Numerous poets have drawn on archaeological finds to deliver political commentary, including Shelley's 'Ozymandius', which warns of inevitable decline and against the hubris of leaders; and Seamus Heaney's 'bog body' poems: for example, 'The Tollund Man', 'The Grauballe Man', 'Punishment' in *Wintering Out* (1972) that served as vehicles to address sectarian violence in Northern Ireland: Seamus Heaney, *Wintering Out* (1972; repr. London: Faber & Faber, 1998); Seamus Heaney, *North* (1975; repr. London: Faber & Faber, 1998); *Percy Bysshe Shelley: Selected Poems and Prose*, ed. by Jack Donovan (London: Penguin classics, 2016).

which tells the story of Cardigan Bay across long timeframes through the 'spirit of a place' – the 'King of the Sea Trees'.[267]

This provides a useful frame for examining Jo Bell's poem 'Doggerland', where the 'transformed' artefact is a Palaeolithic harpoon made from red deer antler, constituting a human and non-human entanglement that signals this is not just a human story. The artefact is dredged up in a lump of peat or 'moorlog' in the fishing nets of the *Colinda* in 1931:

> Twelve thousand years had blunted not one barb.
> An antler sharpened to a spike, a bony bread knife
> from a time of glassy uplands and no bread:
> *Greetings from Doggerland*, it said.[268]

Untouched by human hand for thousands of years, the harpoon is 'one of the first archaeological clues to the existence of a vast, lost and once-inhabited landscape', in the words of Robert Macfarlane. [269] Its chance discovery, along with its imperfect erasure by sea and time, allows it to emerge palimpsestically through temporal and geologic layers, 'embodying […] the mystery of the secret, the miracle of resurrection and the thrill of detective discovery', as Dillon puts it. [270] Literally brought 'to light', the object speaks for the Palaeolithic hunter-gatherer inhabitants of Doggerland, and in doing so is transformed from object to poetic subject. It is an approach described by Finn as the process by which the poet 'through the clues [an artefact offers] constructs a biography that goes beyond the pragmatic and knowable,

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[267] The poem explores deep layered time in Cardigan Bay, 'where 'disparate narratives are unified within a single platform, [building] up layers in and of the landscape into a palimpsest of experiential conversation' Erin Kavanagh, *Layers in the Landscape* (n.d) <http://www.geomythkavanagh.com/layers-in-the-landscape> [accessed 20 May 2019] (para. 3) and <https://www.geomythkavanagh.com/borth-s-lost-legends> [accessed 20 May 2019] (para. 3).

[268] Bell, 'Doggerland'; The poem opens with the discovery in 1931 of a Paleolithic harpoon under the North Sea about 25 miles off the Norfolk Coast, near the Leman and Ower Banks: Norfolk Heritage Explorer, *Norfolk County Council*, <http://www.heritage.norfolk.gov.uk/record-details?MNF11171-Mesolithic-harpoon-from-Leman-and-Ower-Bank-Doggerland&Index=10473&RecordCount=56734&SessionID=53b0c8f7-1a35-4192-b9c0-ed79fd5e349b> [accessed 10 November 2016].

[269] Robert Macfarlane, *The Old Ways* (London: Penguin, 2013) p. 69–72.

[270] Dillon, pp. 12–13.

into the imagined and possible'.[271] In 'Doggerland', this tension between 'knowing' and 'imagining' – an example of Galleymore's 'literalness' and 'literariness' – offers a third position or creative working space for a palimpsestic poetics that collapses vast timeframes to 'construct' a narrative through the imaginative power of the artefact.[272]

Bell, a trained archaeologist, notably anchors this poem to the historical discovery of the harpoon. Through the poetic device of voicing a material object, Bell metaphorically points to the importance of what such an object can 'tell' us, both about the past submerged landscapes of Doggerland, and the present and future threat we face from rising seas.[273] Life in Doggerland is depicted using pointedly functional language, in contrast with the enchantment of the harpoon's discovery, demonstrating how traumatic events take place in everyday scenarios, and happen to ordinary people going about their mundane routines, then as now:

> *[…] we hunt and eat and sleep*
> *and then move on, or fall. There are midges*
> *but you can't have everything.*

Yet alongside these prosaic observations of everyday life, Bell deploys formal fluidity and aquatic language, both to slip between overlapping timeframes and evoke a sense of elemental threat. The last two lines of the second stanza are awash with underlying alliterative tidal 's' sounds running on though the poem, that play fugue to the threat of the rising sea: '*We stalk carp-fat lagoons with ivory spears. / Our softened swamps are thick with eels. We sing'*. This vaguely sketched and briefly resurrected vision of a place rapidly decomposes into

> inlands islanded and highlands turned to shipping hazards,

[271] Finn, p. 75.
[272] Galleymore, p. 20.
[273] In her poem 'The archaeologist of rivers', Jo Bell comments, 'My own field is the archaeology of water/[…] I take the measure of the footprint left'. (Jo Bell, *Kith*, (Rugby: Nine Arches Press, 2015) p. 40.

> fellsides lessened to a knuckled string; the sly brine
> loosing peat from longbones, locking snails into the bedrock.[274]

In describing 'sly brine / locking snails into the bedrock', Bell adds the kind of evidence for inundation an archaeologist would seek, such as fossils of molluscs trapped in sediment when an area was flooded by seawater. Past and future events are constructed not only from the evidence of the artefact, but also layered with current knowledge – for example, that sea levels are rising – from climatic and archaeological research and hypotheses.[275] In these ways, Bell combines both 'literalness and literariness', mediating between past and present, and the external material and internal imaginative dimensions of 'Doggerland', drawing on poetic imagination, archaeological and historical research, and popular science, and demonstrating the impact of recovered objects not only on how we interpret the past, but also how we may visualise the future. [276]

In the poem's final stanza, Bell emphasises and inverts the phrase 'Time, he said, was water: / water, time' echoing the popular idiom, 'Time and tide wait for no man', with colon and line break functioning formally as a tidal turn of meaning within the poem, retaining the weight of a maxim through chiasmus. Underscoring the overarching message of the poem – that sea levels have risen dramatically before, displacing entire cultures, and can again – premonitions of a submerged England slide towards myth-making. Imagery drawn from ancient deluge stories of Utnapishtim and Noah that suggest a final watery cataclysm – 'the last dove lifting from the summit of Lose Hill' – illustrates how the poem functions as a palimpsestic

[274] Bell, 'Doggerland'.
[275] Doggerland's inhabitants could not access scientific information, of course, and their awareness of coastal change and its (current and future, for them) impacts would therefore be very different from our own. See also: Finn, p. 75.
[276] Galleymore, p. 20. It is not a new approach, of course. Modernist poetics uses similar techniques to collapse time, as we find in T. S. Eliot's *The Waste Land* and Basil Bunting's *The Spoils*.

narrative layering intertextual, historical and cultural associations to articulate the modern threat of coastal change.[277]

‘Blue is my dwelling place’

Overlapping different timeframes allows Bell ‘to reach back to the last ice age to imagine how humans might experience a changed climate’, as Griffiths puts it.[278] Similarly, Justina Hart employs palimpsestuous or overlapping time-frames in her long six-part poem, ‘Doggerland Rising’, which opens with an invitation to ‘peer through’ the ‘thick skin’ of the North Sea – and back through nine thousand years – to observe a Stone-Age shoreline tribe in the process of permanently migrating from Doggerland. [279] Hart uses prehistoric coastal inundation as a means to consider the current predicament of sea-level rise and climate change, explaining that the poem ‘investigates parallels between what [prehistoric inhabitants of Doggerland] faced and what we’re dealing with today’.[280] In combining deep myth and realism, along with a range of voices and registers within a fluid framework, Hart’s poem borrows stylistically from Alice Oswald’s *Dart*, particularly in its exploration of the emotional connection between people and place, and adoption of a series of individual viewpoints where there is complete interconnection through the element of water, but little direct community between its speakers.[281]

[277] Utnapishtim (Babylonian) and Noah (Old Testament), survivors of the antediluvian world, both released a dove to locate dry land after the Flood, the bird returning because it could not find any land; aptly named Lose Hill is a high point in Derbyshire with an elevation of 476m.
[278] Griffiths, p. 159.
[279] Justina Hart, ‘Doggerland Rising’, 2017, pp. 43–52. (p. 44); The social, cultural and emotional loss, not only of their homes, but of hunting lands and traditional routes to mainland Europe, must have impacted on surviving communities for many generations.
[280] Justina Hart, ‘Doggerland’, *Justina Hart* <http://justinahart.com/doggerland/> [accessed January 2018] (para. 2).
[281] Alice Oswald, *Dart* (London: Faber, 2010).

The poem is divided into six sections, delivered polyvocally 'in the voices of our Mesolithic ancestors', including: a framing omniscient perspective addressing 'you'; a prehistoric fisherman who connects with both the sea and his ancestral past; his female partner, who is linked with the land and future; ancestral voices from the intertidal islands; the whole tribe; and the tribe speaking to 'you' and what has happened after them. [282]

The opening re-animates the tribe both from archaeological traces of their culture and through our imagination and senses:

> On the bed: flint blades, ancient seeds;
> rotted wood carved as a hull.
>
> Imagine voices. Listen for voices.
> Laughter, shouts. A splash!
>
> A man hallooing as if to himself
> paddles through shallow waters.[283]

Unrhymed couplets offer snatched glimpses of this lost place that gradually becomes more palpable as we participate in the imaginative process of passing through physical (ocean, silt) and temporal layers, ascribing 'owners' to artifacts littering the sea bed. While similar to Bell's poem in its invocation of past voices, the opening section of Hart's poem invites participation to 'pull […] alive' a story of the drowned world of Doggerland and its people, using the personal pronoun (second person) 'you' to invite active participation, in contrast with Bell's third-person filtering of events through the voices and experiences of others.

Next, a fisherman – glimpsed earlier in the poem – describes launching his canoe away from encroaching salt marsh, through creek and river to the shallow sea.[284] His marine connection is complex – the sea offers continuity, resources, and

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[282] Hart, para. 2.
[283] Hart, 'Doggerland Rising', p. 44.
[284] Hart, pp. 45–46.

escape from the domestic sphere of the tribe's camp – celebrated in lines such as 'blue is my dwelling place' that simultaneously signals an air of melancholy – but it is also an elemental force of nature that drowns and decomposes land.[285] Mud and stones in the riverbed are 'gristle of the earth'; the 'river's veins' carry the fisherman to 'the sea's body' and over the 'crumbled black ribs' of the 'old world'. Like Bell's corporeal vision of 'fellsides lessened to a knuckled string; the sly brine / loosing peat from longbones', Hart's imagery equates this eroding landscape with human decay, linking people and landscape inextricably through organic processes.[286]

Low tide reveals the tribe's submerged 'ancestral islands', once part of the rich and varied habitats of Doggerland, now an eerie intertidal mudbank of drowned trees and roots:

> Arms reach out
> Bubbled in slime, dead men tall as hazel, ash.
> Tying my bark, I wade in mud flats
> up to my knees, bow to unhook my blood-
> stone pendant. Leave it at their keening feet.[287]

Compelled to retreat by rising seas, the final line's harsh enjambment on a hyphenated word emphasizes the forced disconnection of the tribe from their traditional territory in the split between blood and stone. The bloodstone pendant – a type of green jasper with red spots (inclusions) of haematite, revered in ancient Babylon and Mesopotamia as a protective stone – is an offering to the past of a different, distant culture, connected by a shared humanity. Under our modern gaze, it is also a potential artifact that, like the preserved tree stumps and harpoon, may offer a significant warning to our future if brought to light.

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[285] Hart, p. 45.
[286] Bell, 'Doggerland'.
[287] Hart, 'Doggerland Rising', p. 46.

Hart sets the poem at a time when gradual sea-level rise over millennia rapidly increased due to melting glaciers and geological activity, and remaining freshwater lakes and dry land were turning to salt marsh as the sea pushed inland. Fluctuating conditions, sandbanks, and unfamiliar currents would have made accessing fishing grounds increasingly risky and the poem shifts location to follow the thought processes of the fisherman's wife, who is waiting anxiously on the shore for her husband to return:

> Give me back my husband, sea.
> I wait at the water's edge,
> dotting dusk with my fears
> that turn into biting gnats.
> At home, the children lie like half moons
> drowsing toward sleep.[288]

The family's dwelling place is threatened by the sea, which 'bites and swallows islands', employing the familiar motif of material consumption attributed to the ocean, as we have seen through this thesis so far with poems such as Morrison's 'The Discipline of Dogs' and in Clarke's 'Cantre'r Gwaelod'.[289]

As the poem progresses, the woman envisages the sea as an unpredictable force devouring earth and stars, a predator shaking 'tired sailors' like 'baby seals', and a love rival: 'My husband's more wedded to the sea / than me'. This enjambment suggests not only separation but competition, yet the rhyme implies an instinctive, fluid connection between woman and water. Her worried monologue culminates in a moment of self-doubt as she wonders if she is 'wrong to want to turn him inland / to enfold and hug him in my own fluids?'[290] Her body represents land, inwardness and safety – fluids contained, not potentially engulfing – while the sea signifies loss and

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[288] Hart, 'Doggerland Rising', p. 47.
[289] Blake Morrison, 'The Discipline of Dogs', *Shingle Street* (London: Chatto & Windus, 2015) p. 19; 'seas sated with meltwater, craving more': Clarke, 'Cantre'r Gwaelod'.
[290] Hart, p. 48.

a threat to comfort and even, perhaps, survival. These different perspectives build a layered and contrasting narrative that instrumentalises a range of recognisable motifs, including analogising female bodies both with the earth and with bodies of water, uncanny emergences, the destabilisation of 'normal', and palimpsestic collapsing of timeframes.

'Once we were kings […] who walked across the sea'

In the fourth section of the poem, the tribe's ancestral dead are trapped and forgotten under the weight of water and layers of debris, where they lament their place-loss and lack of agency with a combination of grief and hubris:[291]

> Over time, sand falls on us like water,
> and clay deposits, gravel, tiny sea animals.
> Waves jiggle us apart from each other,
> from the deer and boar we've burnt.
> We're squashed till our bones are as flat
> as our swallowed islands once were.
>
> *Yet once we were kings who strolled through*
> *plains rich as paradise to the uplands beyond.*[292]

Here, four sestets and a repeating couplet form a refrain suggestive of the twice-daily ebb and flow of circadian tidal rhythms, showing how the ancestors, like the (other) animals they hunted, are subject to irresistible erosive processes of time and tide, in a liminal state between loss and potential future rediscovery, buried in a layer of the past on the seabed. Their personal history is erased, but their tools and flattened bones – archaeological evidence of them – transmit a warning in the concluding lines of the poem 'Yet once we were kings […] / who walked across the sea', reminiscent of Shelley's poetic caution on the transitory nature of power: 'My name is

[291] Hart, pp. 49–50.
[292] Hart, part iv, p. 49.

Ozymandias, king of kings: / Look on my works, ye Mighty, and despair!'[293] Nothing remains above the surface, but as with the imperfect erasure of the palimpsest, bones and other artefacts remain buried, and may reappear as ‘uncanny harbingers’ of change, impermanence and future ruin.[294]

While the tribe pre-dates Christianity by many thousands of years, the allusion to the Christian imagery of walking on water in the poem corresponds with the ‘miracle of resurrection’ that Dillon ascribes to the lost palimpsestic text brought to light. Similarly, Finn suggests, ‘the objects and the dead of the past come into the present’ and are ‘kept alive’ through the kindred processes of archaeology and poetry. Placing poetry in dialogue with archaeology, Hart operates in a constructive space between imagining and knowing, where she can, in her words, ‘pull […] alive’ her subject, which is itself is a kindred process to the creative and critical process utilised in my thesis.[295] In addition, Finn proposes that an ability to ‘see’ and interpret what is not obvious links ‘both the poet and trained archaeologist’, and is resonant with the relationship in pre-modern societies between poetry, divination and prophecy.[296] In Bell’s poem, this manifests in the resurrection of voices from a drowned place that augur future flooding (although scientists can be said to be present day augurs), while Hart reanimates not only the ‘tribe’ and their concerns in her poem, but also their Palaeolithic ancestors and lands, resurrecting voices that are not only drowned but drowned out by the passage of time.

The whole tribe speaks in various voices in the fifth section, which comprises lively couplets evoking bustle and shouted instructions as they dismantle their

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[293] Hart, p. 50. Percy Bysshe Shelley, ‘Ozymandius’, *The British Library* (1817) <https://www.bl.uk/learning/timeline/item126940.html> [accessed 10 November 2020].
[294] Dillon, p. 20.
[295] Finn, ‘Poetry and Archaeology’, pp. 77–8; and Hart, ‘Doggerland Rising’, p. 45.
[296] Finn, p. 73.

settlement. Oral traditions of the tribe's relationship with the sea – 'I loved the stories – how we climbed out of the sea / lost our tails' – contrast with a new conviction, that the sea is 'swollen with telling us to leave'. The section's closing couplet highlights the stress caused by unpredictable change that differs from previous experiences and tribal traditions:

> Haven't we always moved? Yes. No. Not like this.
> The weather's right for it. It's a sign we're still blessed.[297]

This foreshadows conversations in the twenty-first century contrasting 'natural' climate change and prehistoric and historic sea-level rise with the effects of anthropogenic climate change and controversial adaptation plans for decommissioning settlements, such as Fairbourne in North Wales, mentioned in the introductory chapter of this thesis.[298] The tribe are looking for natural signs that they should leave and that they are 'still blessed', and are finding what they seek, without fully logical reasoning. [299]

The poem's final section contrasts the Anthropocene and prehistoric 'footprint'. If a community were to migrate in the twenty-first century, it would leave evidence of its existence such as buildings, roads, and plastic. The tribe, by contrast, leaves little else besides reconstituted or repurposed organic materials:

> mollusc middens, hazelnut shells, scraps of animals
> and of human animals.
>   We take mostly our footsteps
> which turn away from salt hoping for forest.

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[297] Hart, p. 51.
[298] Tom Wall, ''This is a wake-up call': the villagers who could be Britain's first climate refugees', *The Guardian*, (Saturday 18 May 2019) <https://www.theguardian.com/environment/2019/may/18/this-is-a-wake-up-call-the-villagers-who-could-be-britains-first-climate-refugees> [accessed 12 June 2019].
[299] Indeed, belief in divine punishment enacted through nature still emerges in twenty-first century Britain. Church of England bishops were reported as saying that the devastating floods in the UK in 2007 were 'God's judgment on the immorality and greed of modern society', 'lack of care for the planet' and (extraordinarily) gay marriage legislation. Jonathan Wynne-Jones, 'Floods are judgment on society, say bishops', *The Telegraph* (1 July 2007) <https://www.telegraph.co.uk/news/uknews/1556131/Floods-are-judgment-on-society-say-bishops.html> [accessed 5 June 2018].

> We're so few you could mistake us for a bunch of deer,
> so sun-struck you could believe our bones see-through.
> Watch our last steps imprint firmly, as if they know
> how rare they're to be.
> Fit your own feet in.[300]

As this semi-nomadic Mesolithic community melts away into the forest of the reader's imagination, their mobility and flexibility contrasts with the likely logistics and impact of climate migration in twenty-first century Britain, for example, where many major cities, towns, villages, and power stations such as Hinckley Point, Lynemouth, Heysham, Sellafield, and Dounreay are sited in coastal areas, reminding us, now, of the sea-stirred ecological disaster at Fukishima in 2011.[301] Unfortunately, we already know the global impacts of mass migration and displacement due to wars, climate change and disasters, which are likely to increase this century.[302]

'Hold those babies safe'

The tribe's 'last steps imprint firmly' in the mud, like the prehistoric footprints periodically emerging in Sefton and at Borth. Hart's invitation to 'fit your own feet in' invokes the powerful instinct of humans to empathise with others, even across vast spans of time. It is a beguiling but also impossible and uncertain idea, in the sense that Hart is seeking to give voice to a pre-literate people who left no consciously recorded history. Yet some of their history, at least, is unconsciously recorded, palimpsestically, in traces of their everyday lives uncovered through

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[300] Hart, p. 52.
[301] The British Mesolithic population is estimated to have numbered around 30,000 people, compared to the UK population of 68 million at the time of writing: Crane, p. 514 and UK Population, *Worldometer* (June 2020) <https://www.worldometers.info/world-population/uk-population> [accessed 23 June 2020].
[302] The UNHCR estimated at the end of 2019 that 'at least 79.5 million people around the world have been forced to flee their homes' and that figure is constantly increasing. 'Figures at a Glance', *UNHCR* (2019) <https://www.unhcr.org/figures-at-a-glance.html> [accessed 20 March 2020] and 'Climate Change and Disaster Displacement, *UNHCR* (2019) <https://www.unhcr.org/climate-change-and-disasters.html> [accessed 20 March 2020].

archaeological work, for example, or by tidal processes. Encountering a patch of small preserved footprints on Formby beach, made by prehistoric children playing in the mud thousands of years before, Macfarlane thinks of his own children and feels a strong protective instinct to keep them 'safe against harm and tide'.[303]

Children symbolise the future, and for many it is the impacts of climate change on young people and future generations that is of greatest concern.[304] As John Shoptaw comments, 'most of us can't experience or feel global warming [yet], but we can imagine what it's like to be dispossessed, to be at a loss to explain to one's children why they must leave home', illustrating the impact of domestic and personal perspectives in environmental narratives.[305] In 'Doggerland Rising', Hart's tribeswoman places herself literally and metaphorically between the sea and her sleeping children, and the instruction 'hold those babies safe' underscores a key motivation for the tribe to migrate away from their remaining territory.[306] Franklin Ginn and others point out that while

> anticipating [future] ruin and confronting vast timescales [can lead to a sense of despair and alienation] it can also prompt a renewed sense of hope for transformation or at least for recuperation and collaborative survival in a damaged but not yet dead world.[307]

For Ginn, this may, in part, manifest through palimpsestic 'deep time stories' that engender a collaborative response to climate change, drawing on '[Donna]

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[303] Macfarlane, p. 363; Macfarlane notes that 'water-filled footprints' on the Sefton shore become 'mirrors reflecting…whoever looks into them', suggesting not only an instinctive sense of co-presence and shared humanity when encountering material traces of these past others, but also, perhaps, that such 'spectral' and reflective encounters inevitably evoke a self-reflexive response. (Macfarlane, p. 364).

[304] Emma Marris, 'Why young climate activists have captured the world's attention,' *Nature* (18 September 2019) <https://www.nature.com/articles/d41586-019-02696-0> [accessed 24 February 2020].

[305] John Shoptaw, 'Why Ecopoetry? There's no Planet B', *Poetry Magazine* (4 January 2016) <https://www.poetryfoundation.org/poetrymagazine/articles/70299/why-ecopoetry> [accessed 10 April 2017].

[306] Hart, p. 51.

[307] Franklin Ginn, Michelle Bastian, David Farrier, and Jeremy Kidwell, 'Introduction: Unexpected Encounters with Deep Time', *Environmental Humanities,* 10.1 (2018), 213–25 (p. 216).

Haraway's *kainos*: the lumpy, thick temporality of a present animated by its immanent pasts but also thrumming with possible futures'.[308] In order to survive unprecedented change and ensure their future, the tribe in 'Doggerland Rising' must rapidly adapt to new conditions. Stories drawn from their collective history – and, inseparably, their cultural identity – help them remember that others have done so in the past. It is a compelling invitation to participate in new cultural production that may, to paraphrase Susie O'Brien and Cheryl Lousley, help us and future generations to understand and inhabit the present, as well as imagine the past, and move towards potential futures.[309]

Haraway's re-positioning of the Anthropocene as a boundary event rather than an era allows us to view our present moment of rapid environmental and societal transformations as a transition point, and to think beyond it.[310] Bridie McGreavey builds on this idea to identifiy the specific potential of the littoral space to help chart a 'path out of the Anthropocene':

> Remembering poetry at the intertidal edge expresses this radical, dynamic becoming, where grief, equanimity, and collective striving for a different future commingle; the shoreline, with its cultural, ecological and multispecies entanglements offers potential sites for making new stories at a time when the old ones are failing us.[311]

These 'new stories' that may help us inhabit our present moment and collective futures with equanimity – rather than hoping for 'a return to normal' – emerge, according to Haraway and McGreavey, from collaborative working and thinking,

[308] Ginn, pp. 216–217.
[309] Susie O'Brien and Cheryl Lousley, 'A History of Environmental Futurity: Special Issue Introduction', *Resilience: A Journal of the Environmental Humanities*, 4.2-3, (2017), 1–20.
[310] Haraway, *Staying with the Trouble* (2016) p. 110, for example. As I noted earlier in this thesis (see p. 76 and footnote 221), the concerns of this chapter and my wider thesis are not focused around gender. However, further work in my field of study around gender and ecofeminism might consider whether feminist-inflected ecocritical writing offers a different approach to thinking about kinship and tentacular connections with other kinds of life and future, particularly in relation to posthumanist and multispecies feminist theory (Haraway) and hydrofeminism (Neimanis).
[311] Bridie McGreavy, 'Intertidal Poetry: Making Our Way Through Change', *Tracing Rhetoric and Material Life* (London: Palgrave, 2018), (pp. 87–115) p. 111.

underpinned by data and research that evidences the complex relationship between humans and the non-human world through long timeframes. These stories, as I highlight throughout this thesis, are particularly brought to light on the eroding coast.[312]

Conclusion

The poems examined in this chapter converse across and collapse vast temporal and spatial frames to speak to and position modern concerns, generating a deeper awareness of environmental issues at different scales. Bell's poem, for example, leaps forward to a time when only the highest parts of England remain. It is a scenario that is unlikely in the near future, which could raise questions both of whether it could serve to confuse rather than enlighten and also whether the current threat facing low-lying areas globally may seem more pressing to address. Still, in implying that imagination works forward and backward in the same way – imagining possible scenarios in the future and in the past – Bell demonstrates what poetry specifically allows – a creative hypothesis which, to return to the metaphor of the palimpsest, can bring past events to the surface, which not only 'change[s] the very way we interpret and know that past' but offers an important warning to our present and future selves, not least in disrupting cherished notions of natural and topographical stability, as Griffiths notes.[313]

As we have seen in this chapter, the imaginative power of the 'lost' or drowned land has catalysed new cross-disciplinary poetic writing that draws on the concept of the palimpsest and archaeological imagery to engage with Anthropocene concerns through the lenses of coastal change and deep geologic time. There is, of

[312] McGreavy, p. 91.
[313] Griffiths, p. 5.

course, an established relationship between the disciplines of poetry and science, exemplified, for example, in the later work of the poet Peter Reading. In the next and final chapter of my thesis, I will build on this discussion to explore the relationship between scientific data and poetic imagination in coastal change poetry through a detailed analysis of Reading's penultimate collection *-273.15*, which reimagines the story of Noah's flood in a modern context.[314]

[314] One crucial point to raise here concerns humanity's troubled relationship with technology in the Anthropocene and the role of such technologies both in allowing us to gain information on past flooding through advanced geo-surveying techniques (technologies ironically developed and shared by oil companies) and also in underpinning our modern climate crisis. However, discoveries such as the Paleolithic harpoon or Neolithic walkways underscore that humans are an inherently technological species, as discussed by Solnick, pp. 37–46. Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) (not paginated/ n.p).

Chapter 3: ‘All Aboard for Ararat’: Extinction, Data and Coastal Change Poetics in Peter Reading’s *-273.15*

‘Demolish the house, and build a boat!’
Flood Tablet (700-600 BC)

Poetry and science are, as Robert Crawford comments, ‘potently aligned modes of discovery – parallel but also fundamentally interconnected ways in which humans seek to understand the world’.[315] In our time of climate and biodiversity crisis, dialogues and collaborations between environmental poets and scientists – and, of course, writing by poet-scientists – can be critically evaluated not only as a continuing tradition of intellectual creativity across disciplines, but also as progressions of ecological writing, ecocriticism and ecopoetry.[316] Such meetings of science and poetry, which have been widely discussed in literary criticism and are broadly represented by organisations such as the Association for Literature and the Environment (ASLE) and Dark Mountain, resulted in the portmanteau ‘SciPo’ at the eponymous annual symposium hosted by St Hilda’s College Oxford, the third iteration of which, organised by poet and scientist Sarah Wilkinson in 2018, focused on climate change.[317] Forays across disciplines respond to a shared need to question,

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[315] Robert Crawford, ‘Introduction’, *Contemporary Poetry and Contemporary Science,* ed. by Robert Crawford (Oxford: Oxford University Press, 2006) pp. 3–4.

[316] See, for instance, the work of poet-scientist Rachel McCarthy, *Element* (Sheffield: Smith Doorstep, 2015). And historical poets who were inspired by the sciences or worked across disciplines, such as Erasmus Darwin, John Donne and Johann Wolfgang von Goethe in the seventeenth and eighteenth centuries, William Wordsworth in the nineteenth and Modernists such as Ezra Pound, William Carlos Williams and W.B. Yeats in the twentieth. See further: Albert Goldbarth, ‘Introduction’ (p. 1), and Alison Hawthorne Deming, ‘Science and Poetry: A View From The Divide’ (p. 183), in *The Measured Word: On Poetry and Science*, ed. Kurt Brown (Athens: University of Georgia, 2001); Robert Crawford (ed.), *Contemporary Poetry and Contemporary Science,* ed. Robert Crawford (Oxford: OUP Oxford, 2006) pp. 3–4; Michael Golston, *Rhythm and Race in Modernist Poetry and Science* (New York: Columbia University Press, 2008); John Holmes (ed), *Science in Modern Poetry: New Directions* (Liverpool: Liverpool University Press, 2012).

[317] See, for example, Neil Astley (ed.) *Earth Shattering* (Tarset: Bloodaxe, 2007) pp. 12–20; J. Scott Bryson, *Ecopoetry: A Critical Introduction* (Salt Lake City: University of Utah, 2002), pp. 1–13; Gifford Terry, ‘Introduction: The Challenge of Ecopoetics’, *Green Voices: Understanding Contemporary Nature Poetry*, 2nd edn. (Nottingham: Critical, Cultural and Communications Press, 2011) pp. 5–22; Matthew Griffiths, *The New Poetics of Climate Change* (London: Bloomsbury, 2017) pp. 1–27; Tom McLeish, *The Poetry and Music of Science: Comparing Creativity in Science and Art* (Oxford: OUP, 2019); Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology*

explore and communicate the complex phenomena and impact of climate change, environmental crisis, and 'global weirding' beyond the boundaries of relatively autonomous disciplinary fields and specialisations: a meeting at what Diane Ackerman calls 'the crossroads of necessity'.[318] Poetry and science have popularly and simplistically been considered opposites, aligned with heart and head, imagination and fact, subjective and objective language and thought, but as Ackerman writes, the 'frontier' between science and poetry 'is much more hospitable than it used to be' – even if our climate is not.[319]

In the previous chapter, I examined how several poems by contemporary British poets Jo Bell, Gillian Clarke, and Justina Hart conceptualise and contextualise present-day sea level rise through long 'layered' timeframes using 'lost land' myths and archaeological imagery. This concluding chapter will explore the relationship between scientific data and poetic writing through a detailed reading of Peter Reading's (d. 2011) penultimate collection *-273.15,* a species extinction-dialogue with Noah that draws extensively on biodiversity data and reports, analysed in the context of his career-spanning oeuvre of socially and ecologically concerned writing.[320] I will examine some of the aesthetic, formal and conceptual challenges for

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in Contemporary British and Irish Poetry (Abingdon: Routledge, 2017), p. 2. Dark Mountain <https://dark-mountain.net> [accessed 12 April 2018]; The Association for the Study of Literature and Environment (ASLE) <https://www.asle.org> [accessed 3 November 2016]; ISLE: Interdisciplinary Studies in Literature and Environment journal: <https://www.asle.org/research-write/isle-journal> [accessed 3 November 2016]. *SciPo 2018: A Meeting of Science and Poetry* (2018) <https://www.st-hildas.ox.ac.uk/content/scipo-2018-meeting-science-and-poetry> [accessed 30 May 2018].

[318] Explaining his preference for using the term 'Global Weirding' rather than 'Global Warming', American political commentator and author Thomas L. Friedman comments: '"global weirding" […] is what actually happens as global temperatures rise and the climate changes. The weather gets weird. The hots are expected to get hotter, the wets wetter, the dries drier and the most violent storms more numerous'. Thomas L. Friedman, 'Global Weirding is Here', *The New York Times* (2010) <https://www.nytimes.com/2010/02/17/opinion/17friedman.html> [accessed 6 December 2019]; Diane Ackerman, 'Metaphors Be with You', *Science*, New Series, 315.5813 (9 February 2007) (767–768), p. 767.

[319] This attitude is exemplified in Walt Whitman's poem 'When I Heard the Learn'd Astronomer' (1865), although Whitman does not reject the science, but rather the formality in science that rejects poetic imagination, and absorbs and translates the astronomer's lecture into a naturalistic poetic truth – see Ackerman, p. 768.

[320] Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) (not paginated/ n.p).

poets working with evidence-based data and show how Reading's poetry goes beyond merely accommodating scientific language and terminology, making it intrinsic to the text. This approach can be broadened out to include subsequent work by contemporary poets such as Rachel McCarthy and Ben Smith, for example, supporting my argument that a distinctive body of climate-focused coastal change 'SciPo' is emerging from interdisciplinary interactions and transgressions between the humanities and sciences, offering fresh opportunities for poets to 'write across the boundaries of difference' and engage meaningfully with the scientific study of British climatic and coastal change.[321]

Data and Extinction in Contemporary Poetry

Contemporary poets engaging with climate change in their work often, and in many cases increasingly, tend to underpin their writing with scientific research, data, and expertise, combining technological and poetic modes of interrogating our human relationship with the natural and elemental world.[322] Indeed, Terry Gifford, writing

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It is worth noting that while the environmental movement is widely acknowledged to have begun in the 1960's, focusing primarily on conservation and pollution, biodiversity is a relatively new term, only in use since the 1980's. Climate change and protecting the oceans are now key campaigns for mainstream environmental groups such as: Greenpeace <https://www.greenpeace.org.uk/what-we-do/climate> [accessed 1 August 2019]; Friends of the Earth <https://friendsoftheearth.uk/climate-change> [accessed 1 August 2019]; and the World Wildlife Fund <https://www.worldwildlife.org> [accessed 1 August 2019].

[321] 'While the two disciplines [of science and poetry] employ language in different ways, they are kindred in their creative process.' Alison Hawthorne Deming, 'Science and Poetry: A View from the Divide', *The Measured Word: On Poetry and Science*, ed. by Kurt Brown (Athens: University of Georgia, 2001) pp. 181–197, p. 189 and p. 193; Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) and KJV Genesis 6–9.

[322] For example: Carrie Etter, *The Weather In Normal*, (Seren: Bridgend, 2018); Richard Carter *RichardACarter* (2019) <http://richardacarter.com/waveform/> [accessed 5 January 2019]; Alec Finlay, *ebban an' flowan* (Dunbar: Morning Star, 2015) and *Minnmouth* (Dunbar: Morning Star, 2016); Jorie Graham, *Sea Change* (New York: Ecco/Harper Collins, 2008); Philip Gross, *The Water Table,* (Hexham: Bloodaxe Books, 2009); Rachel McCarthy, *Element* (Sheffield: Smith Doorstep, 2015); Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) p. 1 (n.p); Ben Smith, 'Poems for the Earth System Model', *Magma*, 72, (2018), 16–19 and *Sky Burials* (Tonbridge: Worple Press, 2014); Kelly Swain, *Darwin's Microscope*, (Newcastle Upon Tyne: Flambard Press, 2009); Sarah Watkinson, *Dung Beetles Navigate by Starlight* (Blaenau Ffestiniog: Cinnamon Press, 2015); and more; Earth's climate is rapidly changing and the rate of species extinctions is accelerating, evidenced by global data collected during multiple studies in recent decades. See, for example: R.K. Pachauri and L.A.

in 2011, asks 'don't we now need poetry that addresses the data-based issues and dilemmas we face around climate change, global warming, the energy crisis, sea-level rises? All these are matters of measurements, of hundredweights and degrees.'[323] It is an approach that inevitably raises aesthetic challenges, and Gifford goes beyond advocating for accurate scientific underpinning and synthesizing of data in ecological poetry to make a case for poets to use the actual (written and numeric) data in their poems to directly evidence humanity's impact on Earth's systems.

There are, of course, numerous precedents to including data in so-called ecological or 'green poetry', as Gifford terms it.[324] A number of twentieth-century poets – writing in a time of growing awareness of society's ecological impact – used data in their poems. Philip Larkin's 'Going, Going',[325] for instance, which was commissioned by the Department of the Environment in 1972, addresses environmental concerns about pollution.[326] In Larkin's poem, the demands of a booming population are driving the loss of England – an England of farms, lanes and

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Meyer (eds.), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC, Geneva, Switzerland, IPCC, 2014), pp. 1–151; S. Díaz and others, 'Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services', Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (2019) pp. 1–56 <https://ipbes.net/news/Media-Release-Global-Assessment> [accessed 12 December 2019]; D. B. Hayhow and others, 'State of Nature 2019' (The State of Nature partnership, 2019) <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf> [accessed 12 December 2019]; and Lost Species Day 'Remembrance Day for lost species' 30 November 2019: <https://www.lostspeciesday.org> [accessed 5 December 2019].

[323] Gifford Terry, *Green Voices: Understanding Contemporary Nature Poetry* (Nottingham: Critical, Cultural and Communications Press, 2010) p. 10.

[324] With regard to the designated term for 'new, environmentally self-aware poetry', Gifford explains that 'I thought that "green poetry" would come to be the established term, being more broadly inclusive […] I was wrong […] "Ecopoetry" is now broadly used for what used to be called "nature poetry", much of which is now included in anthologies of ecopoetry'. Gifford, pp. 7–8.

[325] Philip Larkin, 'Going, Going', *High Windows* (London: Faber and Faber, 2015) (1st Edition published 1974); and Astley, p. 88–89.

[326] This has interesting parallels with Reading's first collection, *For The Municipality's Elderly* Peter Reading, *For the Municipality's Elderly* (London: Secker and Warburg, 1970). In 'Advent' Reading writes 'the world is threatened by its own pollution', while Larkin notes sardonically, 'chuck filth in the sea, if you must: / The tides will be clean beyond. / –But what do I feel now? Doubt?'; Isabel Martin notes that 'Reading's work can be seen in the context of the literary strand of English pessimism, which according to him includes […] "Larkin"' and he shares with Larkin 'a tender love of England' (details, pp. 20–21).

ecologically-rich 'meadows' – due to the rapid development of housing, business premises and leisure sites:

> On the Business Page, a score
> Of bespectacled grins approve
> Some takeover bid that entails
> Five per cent profit (and ten
> Per cent more in the estuaries):
> Move your works to the unspoilt dales [.][327]

Terry Gifford queries whether 'percentages [can] ever be used in poetry successfully', but here, profit margins in the form of percentages looming over '*un*spoilt dales' (my italics) are aptly symbolic not only of the implied spoilage soon to come, but of the commercialisation of the English land-and-waterscape, reduced, the poem's title implies, to a bundle of auctionable assets.[328] Notably, Larkin uses words rather than the numeric form, which fits his (purposefully disruptive *abcabc)* rhyme scheme. There are a number of interesting parallels between Larkin and Reading, and, as Isabel Martin points out, Larkin is a significant influence on Reading's self-identification with "the literary tradition of English pessimism", which he linked with "the national sense of decline".[329] Indeed, Reading draws on the final line in 'Going, Going' in reference to England's 'fall' and a dawning awareness that society is heading for 'big global shit', writing that 'like Larkin, "I just think it will happen, soon"'.[330]

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[327] Astley, p. 88–89; See also Mark Storey, 'Larkin's Going, Going', *The Explicator*, 64:4, (2006) pp. 243–245 for a consideration of inherent ambiguities in Larkin's poem, which provide context, but are not directly relevant to my point about his use of data.

[328] Gifford, p. 8. Paul Munden also uses percentages in his poem 'Half Truths', where 50% starts each line e.g. '50% of science is invaluable / 50% of poems are unread', offering an intriguing perception of the differing relative values commonly ascribed to poetry and science. Paul Munden, 'Half Truths', *Feeling the Pressure: Poetry and Science of Climate Change*, ed. by Paul Munden (Berne: British Council, 2008).

[329] Isabel Martin, *Reading Peter Reading* (Tarset: Bloodaxe, 2000) p. 16 quoting from Peter Reading, 'Going, Going: A View from Contemporary England', *Island,* 42, (Autumn 1990) pp. 33–34.

[330] Reading, *-237.17,* p. 9 (n.p). Peter Reading, 'Going, Going: A View from Contemporary England', *Island,* 42, (Autumn 1990) pp. 33–34; and Martin pp. 16–17.

However, in relation to whether 'artistic quality of writing [has] to be compromised to accommodate urgently needed data such as scientific content',[331] Gifford suggests that we may need to adjust our aesthetics for our times, turning to Ted Hughes' poem '1984 on "The Tarka Trail"', which addresses the polluted state of the River Torridge in Devon, to illustrate why:[332]

> Three hundredweight of 20-10-10 to the acre,
> A hundredweight and a half of Nitram.
> Pesticides, herbicides, fungicides, the grand slam –
> Each time twenty gallons to the acre
> Into your dish with top-ups. And slug pellets
> A bonus, with the rest, into your cup
> (Via the lifeless ditch – meaning your tap).
> Now you are as loaded with the data
> That cultivates his hopes, in this brief gamble
> As this river is –
> as he is too [.][333]

Gifford points out that Hughes employs such unwieldy lines as 'Three hundredweight of 20-10-10 to the acre' and 'a hundredweight and a half straight Nitram' because 'he wants the reader to feel the weight and know the data', evidenced in the lines, 'Now you are as loaded with the data / […] As this river is – / as he is too'.[334] The data performatively weighs the poem down, polluting the poem's aesthetics as the land and river have been polluted. Gifford's argument is that Hughes is well aware of the aesthetic challenges, but ethical imperatives take primacy over aesthetics: if it fails artistically, this is a gallant failure. [335]

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[331] Gifford Terry, *Green Voices: Understanding Contemporary Nature Poetry* (Nottingham: Critical, Cultural and Communications Press, 2011) p. 9.
[332] Ted Hughes, '1984 on 'The Tarka Trail', *Collected Poems*, main edition (London: Faber & Faber, 2005) p. 843; and Astley pp. 65–66.
[333] Neil Astley (ed), *Earth Shattering Ecopoems* (Tarset: Bloodaxe, 2007) pp. 65–66.
[334] Gifford Terry, *Green Voices,* p. 9; This extract must inevitably be considered in the context of the longer poem. The title references 'The Tarka Trail', evoking the romanticized beauty of a Devon riverscape, which Hughes subverts. It links intertextually to representations of man's violence against the natural world, particularly Henry Williamson's novel, *Tarka the Otter: His Joyful Water-Life and Death in the Country of the Two Rivers* (1927).
[335] Gifford, 2011, p. 9.

However, Isabel Galleymore, in her discussion of the pedagogical relationship between environmental creative writing and science, questions 'the belief that scientific modes of language correspond to an ethical relationship with environments' and should be prioritised over metaphor and poetics.[336] In this chapter I will show how Reading addresses this problem in his work, where metaphor and poetic form and techniques are interwoven with scientific information. Galleymore's important question, and Gifford's approach to examining the aesthetics of data in poetry, helps to inform my discussion of Reading's poems within the broader context of ecological poetry, particularly the formally inventive ways in which Reading brings data and environmental research more actively into *-273.15*. However, rather than compromising artistic quality of writing, to paraphrase Gifford, or inhibiting creativity, the ethical imperative to include data may also fuel more innovative and formally experimental writing – as it does, I will argue, in Reading's poems.

Peter Reading: Field Notes from the Anthropocene

Although Reading is best known for interrogating social and political decline, he was also a keen naturalist and ornithologist throughout his life. As Martin writes, he 'grew concerned about environmental damage long before it became a public issue',[337] making 'ecological collapse […] one of his main subjects'.[338] It is notable that a selection of his later poems – 'Thucydidean', 'Endangered', 'Corporate', and 'Fragmentary' – appeared in Neil Astley's anthology of environmental poetry, *Earth Shattering Ecopoems* (2007), as well as an extract from *-273.15*.[339] Astley writes that

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[336] Isabel Galleymore, 'Afterword', *Teaching Environmental Writing: Ecocritical Pedagogy and Poetics* (London: Bloomsbury, 2020) pp. 170–1.
[337] Isabel Martin, 'Introduction', *Peter Reading Collected Poems 1: Poems 1970–1984* (Newcastle: Bloodaxe, 1995) p. 19.
[338] Isabel Martin, *Reading Peter Reading* (Tarset: Bloodaxe, 2000) p. 243.
[339] Neil Astley (ed), *Earth Shattering Ecopoems* (Tarset: Bloodaxe, 2007) p. 104; extract from *-273.15* p. 105-7; 'Endangered', p. 110, 'Corporate', p. 163; 'Thucydidean' p. 237; Fragmentary, p. 238.

> [a]fter mapping national decline over 30 years, [Reading] reinvented himself in his later work. The bitter social critic turned into a millennial prophet of doom, directing his venom and sorrow at the destruction of the world's wildlife and environment […].[340]

This implies a complete shift in approach, but as Astley also acknowledges, 'this was no change of heart'.[341] It might be more accurate to view Reading's work from *Faunal* (2002) onwards as a re-focusing of attention on the environmental strand, informed by the poet's interest in and knowledge of Natural History, paleontology, ornithology and related sciences, which had previously been more tightly interwoven with his broader social concerns.[342]

Though Reading wrote prolifically, publishing 26 books between 1974 and 2010,[343] he chose to operate on the fringes of the literary and academic worlds, and has been considered a difficult poet in terms of his choices of uncomfortable and 'unpoetic' subject matter, his apparently despairing and misanthropic tone, and the technical complexity of his work.[344] Gifford criticizes his 're-workings of historic disasters' as 'opportunistic and portentous',[345] seemingly referring not only to 'Thucydides' in *Earth Shattering Poems* but to Reading's broad oeuvre, a harsh appraisal considering Reading's genuine and lifelong interest in ecology. [346] Indeed, Reading ostensibly prioritises an urgent ecological warning over poetic lyricism in

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[340] Astley, p. 104.
[341] Astley, p. 104.
[342] Indeed, as Martin notes, Reading tackled environmental catastrophe 'to some extent' in *For the Municipality's Elderly* (1974) and in *Nothing for Anyone* (1977), as well as making it the main theme in later works *Evagatory* (1992), *Last Poems* (1994), *Faunal* (2002), *-273.15* (2005) and *Vendange Tardive* (2010).
[343] Reading's first pamphlet of poems was *Water and Waste* (Hull: Outpost Publications, 1970). His first collection, *For the Municipality's Elderly*, includes most of the poems from the earlier pamphlet (barring three, see Martin, p. 21): Peter Reading, *For the Municipality's Elderly* (London: Secker and Warburg, 1970).
[344] Martin, p. 82.
[345] Gifford, p. 9.
[346] 'Fragmentary' refers to 'relicts of defunct civilisations' (Martin, p. 229), which might describe 'the ruins of Bath three centuries after the departure of the Romans' (Astley, p. 237) and the extract from

-273.15 and other works. His style has been criticized as being 'journalism and social criticism rather than poetry', implying the kind of sacrificing of aesthetics in the service of an ethical imperative debated by Gifford.[347] Martin notes, in relation to diction and style in *Nothing For Anyone*, that Reading

> addresses a rationally accessible and morally urgent set of problems according to the principle of verisimilitude, as if – in view of impending global disaster, it was no longer adequate to practice linguistic-aesthetic contemplation […] let alone indulge in 'pure poetry' […].[348]

Blake Morrison, meanwhile, labelled Reading 'the Laureate of Grot' in relation to the stark social-realism of his uncompromising depictions of illness, homelessness and violence.[349] However, as Martin points out, 'Reading neither "enjoys" nor elects to write about his tough subject matter, but feels he is a kind of agent who has been drawn into this area', both by the prevalence of 'gruesome' material, and also due to an imperative to use his artform 'to look our doomed destiny straight in the face'.[350] For Reading, the art that affected him most forcefully faced up to society's thorniest issues.[351] Reading purposefully calls attention to topics he feels are neglected, framing each of his collections around pertinent social issues, and more broadly, English socio-political-economic decline, environmental crisis, and the tragedy of

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-273.15 draws on the Noah myth, but neither these poems included in *Earth Shattering* seem to directly engage with Gifford's 'historic disasters'. However, as Astley explains, 'many of Reading's poems of disaster and foreboding rework old texts relating to earlier periods of upheaval' (p. 237). Martin (p. 238) comments that the poem 'Thucydidean' references natural disasters, plague, and 'the fall of Athens that leads to the downfall of the mighty, democratic Empire, as chronicled by the [Greek] historian Thucydides (*c.*460–*c.*400BC)'. Reading's analogy with social breakdown (current and in the near future) is clear. Peter Reading, 'Fragmentary' and 'Thucydidean' were first published in *Last Poems* (Newcastle: Bloodaxe, 1994), which was re-published in *Collected Poems 2: 1985–1996,* (Newcastle: Bloodaxe, 1996); Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005).

[347] Martin, *Reading Peter Reading*, p. 57.

[348] Martin, p. 57.

[349] Morrison also claimed that 'what [Reading] writes is too learned, ironizing and fatalistic to be protest poetry.' Blake Morrison, 'South Bank shower', *Observer*, 18 June 1989, p. 44; and Isabel Martin (2000) p. 189.

[350] Isabel Martin, 'Introduction', *Peter Reading Collected Poems 1: Poems 1970-1984* (Newcastle: Bloodaxe, 1995) pp. 14–15.

[351] Isabel Martin, 'Introduction', p. 15.

the human condition, extending, as Martin puts it, 'poetry's boundaries in dealing with global issues in a world gone morally, ecologically and politically insane'.[352]

In Reading's debut collection, *For the Municipality's Elderly* (1974), the narrator in 'Advent' declares:

> […] the world is threatened by its own pollution,
> though we care little of it where we grow
> (reading of it in Sunday supplements)
> detached behind the Situations Vacant.[353]

Pollution is just another repetitive story here, with the anthropocentric detachment of a conditioned society from the natural world, and the ecological consequences of our activities, reinforced in the act of reading about it in the 'supplements'. It is notable that this information has been smuggled into the poem in a subordinate clause in parentheses, on a line that could be omitted without doing any harm to the grammatical structure of its containing sentence. With reference to Derrida's 'Logic of Supplementarity', the supplement, seen as secondary, indicates the original is not sufficient in itself. Here, human-interest headlines appearing to offer mainstream news, for which the main body of the paper is reserved, are actually insufficient in fully explaining social issues, which are inseparable from reports in the supplement about pollution and environmental degradation, yet have literally and figuratively become 'detached' from each other. Social decline is underpinned by environmental

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[352] Isabel Martin, 'Introduction', pp. 13-14, particularly since 1981: 'madness (*Tom o'Bedlam's Beauties*), violence and crime (*Diplopic, 5x5x5x5x5, Ukelele Music, Going On*) Terminal illness and dying (*C, Final Demands*) homelessness (*Perduta Gente, Evagatory*), environmental catastrophe (*Evagatory, Last Poems*, and, to some extent, *For the Municipality's Elderly* and *Nothing for Anyone*) – in short, the collapse of nations, notions, and nature – as well as his relentless focus on the foundations of life and society and the barbaric destructiveness of *h.sap*'. A note on publication years: C (1984); *Perduta Gente* (1989). Martin, 'Introduction', p. 14. As Martin points out, 'for Reading, poetic licence was the most important device – and he did not use it only in devising his own tone, style, diction and structure, but also in choosing his subject matter.' Martin, p. 57.

[353] Peter Reading, 'Letter in Winter: 2. Advent', *For The Municipality's Elderly, Collected Poems 1: Poems 1970-1984* (Newcastle Upon Tyne: Bloodaxe, 1995) p. 32.

destruction throughout Reading's work, which continually drives home the point that human and non-human worlds are inextricably interconnected, with the natural world portrayed as being integral rather than supplementary to our existence.[354]

However, 'we' acknowledges that the speaker is complicit, seemingly unable to give the matter sustained attention or enact meaningful change – either in his personal life, or in the wider world. Resulting species extinctions may create a different kind of 'Situations Vacant' than those that the poem's narrator seeks in 'a world fatigued, overweight and weary'. Reading draws attention to the marginalization of environmental issues in the media and elsewhere at the time that he was writing, while acknowledging the danger that people may become desensitized to the news when they hear the same thing repeatedly, rendering the population passive and eliciting only superficial public concern for issues such as pollution, diversity loss, and global warming.[355]

There is a continuing tension, particularly in later works such as *Evagatory (1992)* and *Last Poems (1994)*, between Reading's opposing compulsions: to fall

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[354] Nicholas Royle, 'Chapter 5: Supplement', *Jacques Derrida* (Abingdon: Routledge, 2003). Derrida states that 'the idea of the original is created by the copies, and that the original is always deferred – never to be grasped' meaning that the original, becomes a supplement which will then lead to more supplements needed to help explain it (original)'; and Social decline underpinned by environmental destruction in Reading's work, for example: *Evagatory* – apocalyptic visions, squalid society in a polluted world*; Perduta Gente* – destitution and the contaminated earth*; -273.15* – destabilization of society due to climate change*, etc.;* also*,* as Garrard points out, pollution, 'derives from the Latin "polluere" meaning "to defile", and […] until the seventeenth century it denoted moral contamination of a person or acts […] thought to promote such contamination' before gradually transforming into its modern 'specifically environmental' definition. Reading's poem could be read as aligning with a binary rhetoric of pure nature and toxic humanity, linguistically designating ecological damage caused by these 'immoral emmissions' as a product of social decline: people polluted by their environment create environmental pollution. Garrard, p. 8.

[355] 'Narcotizing dysfunction': Robert King Merton and Paul Félix Lazarsfeld, (1957) [1st pub. in The Communication of Ideas: A Series of Addresses, 1948]. Lazarsfeld, Paul, & Robert K. Merton. 1975. "Mass Communication, Popular Taste, and Organized Social Action" in The Process and Effects of Mass Communication. Revised edition. Urbana, IL: University of Illinois Press. <http://www.irfanerdogan.com/dergiweb2008/24/13.pdf>; and David Shenk, *Data Smog* (London: 1997, Harper Collins) OED: 'data smog *n*. a confusing mass of information, esp. from the internet, in which the erroneous, trivial, or irrelevant cannot be easily or efficiently separated from what is of genuine value or interest (often in figurative context)'. <https://www.oed.com/view/Entry/296948?redirectedFrom=data+smog#eid7472859> [accessed 1 August 2019].

‘into silence, like great Sibelius’ and withdraw from writing,[356] or to continue – even in the face of perceived futility.[357] Nevertheless, his poems operate as an act of resistance, both as acts of conservation in themselves, as I will discuss later, and against society’s inequalities and environmental hypocrisies. ‘The Con Men’, published in *Nothing For Everyone* (1977),[358] confronts anthropocentric environmentalism in the face of species decline:

> It isn’t that we care about the *Hippo*,
> but that we want our children’s children’s children
> to see it for entertainment.
>
> It’s
> our children’s children’s children precisely who
> make the extinction of the hippo (and
> themselves) inevitable.

‘Hippo’ is almost a precise homophone of the first two syllables of hypocrite, subtly underscoring Reading’s accusation that armchair conservation is motivated by self-interest, not least the realization that our own species is also a candidate for extinction.

Although known for addressing complex and contentious social and environmental issues, Reading oscillates between a broadly humanist celebration of scientific knowledge and the desire to advance the human condition, and a bleakly pessimistic view of human nature and humanity’s fate, explored through issues of over-population, pollution, brutality, the careless pursuit of pleasure, and our inability to learn from mistakes or pay attention, which, he suggests, has not only led

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[356] Peter Reading, *Evagatory* (1992) in *Collected Poems 2: Poems 1985-1996* (Newcastle Upon Tyne: Bloodaxe, 1996) p. 240.
[357] Reading consistently rejected any labelling of his poetry as a form of campaign to bring about social and political change in the activist sense, believing his art-form is ‘a futile gesture against transience’ (Martin, p. 22); ‘Reading’s private motivation to turn his back on writing’ (p. 240); and ‘creative [and] personal extinction’ (p. 244).
[358] Peter Reading, ‘The Con Men’, *Nothing For Anyone (1977), Collected Poems 1: Poems 1970-1984,* Hardback Edn. *(*Newcastle Upon Tyne: Bloodaxe, 1995) p. 132.

to social decay, destruction of wildlife, and environmental degradation, but will lead to our annihilation. As Martin points out, Reading not only doubts the veracity of humanity's ecological concerns, he 'challenges the notion that *H. saps'* sense of responsibility is highly developed enough to secure the survival of the [human] species'.[359] The kind of global societal collapse he anticipates, and the extinction of "*H. Sap"* – Reading's preferred ironic term which, in reducing the human species to a disyllable that slips easily off the tongue, simultaneously renders us as scientific artefacts and punctures our self-aggrandizement – consequently implies the end of author, text and future readers.

These poems demonstrate that Reading's concern with environmental matters is not new. In other volumes, he addresses how societal and environmental decline are inextricably interconnected: for example, *Nothing for Anyone* (1977) focuses on extinction (both human and faunal) and a booming population's impact on natural resources (and the oil crisis); *Perduta Gente* (1989) – the title being an Italian epithet for 'lost people' – positions destitution and vagrancy as a product of our contaminated earth; and *Evagatory (1992)* portrays squalid societies subsisting in a polluted world.[360] But although data, measurements, values and scientific language appear early on in Peter Reading's poems, it is not until his later work, such as *-273.15* and *Vendange Tardive*, that they become a defining feature.[361] Martin writes that '[apart] from the language of ornithology, which runs through most [of his] books, Reading uses a whole set of scientific terms for the first time' in *Diplopic* (1983), and increasingly utilises scientific terminology and research in his poems,

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[359] Martin, p. 189.
[360] Particularly in the title poem, 'Nothing For Anyone' pp. 127–129: Peter Reading, *Nothing For Anyone*, Collected Poems 1: 1970-1984, (Newcastle Upon Tyne: Bloodaxe, 1995) pp. 105–133; and Peter Reading, *Perduta Gente, Collected Poems 2: Poems 1985-1996* (London: Bloodaxe, 1996) p. 176 (first published by Secker and Warburg, 1989).
[361] Peter Reading, *Vendange Tardive* (Tarset: Bloodaxe, 2010).

including binomial names, scientific classifications and taxonomies alongside common names. This shift could be linked to contextual developments in the environmental movement in this period such as The Bern Convention in 1982, which was the first international treaty to protect Europe's wild plants and animals.[362] Reading admired poets such as Gerard Manley Hopkins, Robert Frost and Edward Thomas for their precise observations of nature, although he mostly adopted an unsentimental and anti-pastoral approach in his own poems. As Martin explains, 'Reading never allows poetic license to replace the findings of the natural sciences as the basis for his observations of the factual world' and, indeed, his interest in science and Natural History helped 'to maintain a "sensible distance" from the human cause', allowing him to remain objective about his own inevitable subjectivity and ecological grief.[363] Yet inevitably there is a risk, in addition to those discussed earlier in the chapter, that embedding data in environmental poems – as Reading does in *-273.15*, for example – could add to a sense of information overload, rather than making omnipresent data new. This chapter will go on to show how Reading developed his methods, and navigated this risk, in writing about biodiversity loss and species extinctions in the Anthropocene.

The Sixth Extinction

In the 540 million years since the advent of multicellular life on Earth, there have been five mass extinctions (and numerous smaller extinction events) – defined by sudden, widespread and rapid decreases in global biodiversity.[364] These are

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[362] The Bern Convention, *Council of Europe* <https://www.coe.int/en/web/bern-convention> [accessed 12 February 2020]

[363] Martin on scientific language in *For the Municipality's Elderly* (Martin, p. 274) and see also *Diplopic* (Martin, pp. 98–100); Isabel Martin, 'Introduction', *Peter Reading Collected Poems 1*, p. 19.

[364] Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (London: Bloomsbury 2015) pp. 101–104 and pp. 265–266.

evidenced in the geologic and fossil record, and have previously been driven by asteroid strikes, and changes in climate and in ocean chemistry and levels.[365] In 1996, Richard Leakey and Roger Lewin made the case that we are now experiencing a sixth mass extinction in the current Holocene geologic epoch, driven by human activities.[366] Whether or not he read their book, Reading evidently draws on this conception when writing *-273.15,* since he introduces the theory that our 'frail planet [is] undergoing its sixth great extinction' on the second page. Furthermore, key concerns of the Anthropocene underpin his collection, including the impact of humanity on our biosphere through history, and the fact that 'Homo Sapiens might not only be the agent of the sixth extinction, but also risks being one of its victims'.[367]

The inevitable and fated extinction of *'h.sap'* as part of the natural Deep Time evolutionary cycle,[368] 'one of those routine periodic / faunal extinctions [Permian, Holocene…]', is a subject Reading explores and revisits throughout his work.[369] In *Diplopic* (1983), for example, he juxtaposes human, geologic and evolutionary timescales, highlighting humanity's transience on Earth. Geologic Deep Time is present in layers of rock in his poem 'At Marsden Bay', while in 'Ex Lab', a professor of paleontology muses on the 'Great Dying' of the Cretacious period,[370] contrasting that extinction with the rapid diversity loss of the current time, and

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[365] Elizabeth Kolbert, pp. 101–104 and pp. 265–266.
[366] Also known as the Holocene or Anthropocene Extinction; Richard E. Leakey and Roger Lewin, *The Sixth Extinction: Patterns of Life and the Future of Humankind* (New York: Anchor, 1996); see also Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (London: Bloomsbury 2015) pp. 265–269.
[367] Leakey p. 249; in documenting the great extinctions of the past and losses taking place in the present, Kolbert discusses (sometimes disputed) human culpability in extinctions over the last 40,000 years, including that of other archaic humans such as homo floresiensis, and warns that 'when the world changes faster than species can adapt, many fall out'. Kolbert, p. 266.
[368] Reading, 1992.
[369] Peter Reading, *Evagatory, Collected Poems 2: Poems 1985-1996* (London: Bloodaxe, 1996) p. 229.
[370] Apparently referring to the KT or K-Pg boundary extinction approximately 65.5 million years ago, when the majority of the world's Mesozoic species disappeared.

wonders which species will rise after humans die out.[371] Reading suggested it would be 'mutated arthropods'.[372] However, in *-273.15* there is a shift towards focusing specifically on anthropogenic – human-caused – species extinction through climate change, habitat loss and exploitation.

Reading, who chose an eschatological stance on human life early in his career, [373] implies humanity is unable to learn from its past mistakes and change, and is therefore fated to end.[374] In *Evagatory* (1992),[375] where the poet-wanderer mythologizes and 'present[s] vignettes of a doomed world',[376] he writes 'All of this world will be Weird-wreaked, emptied…'[377] Here, 'global weirding' – weather becoming weirder: wetter, hotter, colder, stormier, due to global warming – and 'weird', from Old English *wyrd*, meaning fate or destiny, go hand-in-hand, leading to an apocalyptic emptying of the world, since in the late Holocene, human activities, including our growing human population, have the capacity to impact our entire biosphere.[378] Discussing human overpopulation is charged and controversial terrain,

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[371] Extinction rates in the early 21st century are 100-1000 times higher than normal background rates: Kolbert, pp. 15-17.

[372] Peter Reading, *Diplopic* (1st edition) (London: Martin Secker & Warburg Ltd, 1983); Robert Potts, 'An Interview with Peter Reading', *Oxford Poetry*, 5.3 (December 1990), pp. 94–98. <http://www.oxfordpoetry.co.uk/interviews.php?int=v3_peterreading> [accessed 22 December 2018]

[373] Eschatology is concerned with 'last things' and the ultimate fate of humanity; Martin, p. 25; and *OED*: Eschatology: 'Greek ἔσχατος last + -λογία discourse': The department of theological science concerned with 'the four last things: death, judgement, heaven, and hell'. <https://www.oed.com/view/Entry/64274?redirectedFrom=Eschatology&> [accessed 6 December 2019]

[374] Reading, 1992.

[375] Peter Reading, *Evagatory* (London: Chatto and Windus, 1992).

[376] Martin, p. 217.

[377] Peter Reading, *Evagatory, Collected Poems 2: Poems 1985-1996* (London: Bloodaxe, 1996) p. 233.

[378] Weird (noun) from Old English *wyrd:* 'The principle, power, or agency by which events are predetermined; fate, destiny'. *OED:* <https://www.oed.com/view/Entry/226915?rskey=FemSIX&result=1&isAdvanced=false#eid> [accessed 6 December 2019]; Martin (p. 297) notes that Reading uses the Shakespearian spelling from *Macbeth,* e.g. 'the weird sisters'. Our growing global human population places increasing pressure on the world's resources and, consequently, its biodiversity. The global population has nearly doubled since Reading published *Nothing For Everyone* (1977) from 4 billion in 1975 to 7.7 Billion in 2019, with a projected peak of 11 billion by 2100. Max Roser, Hannah Ritchie and Esteban Ortiz-Ospina, 'World Population Growth', *Our World In Data,* May 2019 <https://ourworldindata.org/world-population-growth> [accessed 20 June 2019].

a problem Reading highlights in his poem ‘Night-Piece’ with characteristic grim humour, juxtaposing the destructive capabilities of a small child covered in sticky dessert with the world-ending capabilities of humans:

> Even our best-friends’ three-year-old daughter,
> an Armaggeddon of pink ice-cream,
> reminds me that there are too many of us.[379]

‘Even’, used as an adverb, and ‘us’ are instrumental in personalizing the issue here: the child herself evidences the problem by simply existing, as do we all, but stating as fact, ‘there *are* too many of us’ (my italics) is inevitably and consciously controversial.[380] It is a topic that Reading returns to repeatedly in later works such as *Evagatory* where, despite shocking statistics – ‘300 000 maimed on their ludicrous / tarmac p.a., 5000 flenched dead’ – the islanders rise up in civil rebellion when their cars are confiscated by the State (echoing Larkin’s lament in ‘Going, Going’ that ‘all that remains / For us will be concrete and tyres’). The stanza concludes with the observation – almost a muttered aside – that it is ‘fortunate, then, that it doesn’t matter / (for they are far too philoprogenitive)’. Ironically layered ambivalence is at play here, since “philoprogenitive” refers both to prolific fecundity and to showing love for one’s children.[381] Reading points to society’s seeming inability to learn enough from past mistakes to act responsibly or effect meaningful change – not even

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[379] Peter Reading, ‘Night-Piece’, *For The Municipality’s Elderly, Collected Poems 1: Poems 1970–1984*, hardback edn. (Newcastle Upon Tyne: Bloodaxe, 1995) p. 62.

[380] However, it is worth noting that pro-choice movements that advocate voluntarily ending human reproduction, such as the Voluntary Human Extinction Movement and Birth Strike, are increasingly becoming part of mainstream environmental discussions. See: Elle Hunt, ‘BirthStrikers: meet the women who refuse to have children until climate change ends’, *The Guardian* (12 March 2019) <https://www.theguardian.com/lifeandstyle/2019/mar/12/birthstrikers-meet-the-women-who-refuse-to-have-children-until-climate-change-ends> [accessed 19 June 2019]; Voluntary Human Extinction Movement: <http://www.vhemt.org> [accessed 19 July 2019]. See also: Adele Clark and Donna J. Haraway, *Making Kin not Population – Reconceiving Generations* (Chicago: Prickly Paradigm Press, 2018) – examining complex and controversial moral and political quandaries around issues of reproduction and environmental justice.

[381] *OED*: <https://www.oed.com/view/Entry/142470?redirectedFrom=philoprogenitive#eid> [accessed 11 September 2019].

to protect the next generation from the horrific results of human and self-destructiveness, as evidenced in the unsparing statistical data.[382]

Such phrasing may seem uncompromising and brutal, but as Martin comments,

> in building up an eschatological vision of contemporary life threatened by extinction, a vision both bleak and deeply humane, Reading's harrowing art aspires to nothing less than a distilled elegiac epic of our time while engaging in a heroic gesture of resistance, of non-aquiescence with the very destruction it predicts.[383]

For Reading, the survival and continuation of human civilization is inextricably interconnected with and dependent upon the biosphere, and vulnerable to the socio-political and economic destabilizing effects of rapid climate change.[384] In *-273.15*, he specifically links climate change and species decline, writing that

> annihilations, taking place for reasons
> of climate change and new disease emergence,
> are indications of climacteric things
> which will affect us and our frailly balanced
> productive economic systems, *soon*.[385]

Here, the interplay between the noun 'climate change' and adjective 'climacteric' preceding the vagueness of the plural noun 'things' elide the critical and far-reaching implications of our changing weather patterns while underscoring the often abstract and unspecified nature of the concept. 'Things' implies, at least performatively, that the speaker doesn't really understand them himself: these 'things' are beyond the grasp of normal comprehension, so easily spun, with the result that we might switch

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[382] There is of course an additional layer to this interpretation, since Reading's childhood friend was killed in a car accident, an event that features in *Stet* (1986).
[383] Martin, *Collected Poems 1*, p. 15.
[384] The UN and IPCC highlight the impact of climate change and pollution on vulnerable and marginalized communities and individuals who often have the least environmental impact and agency to resist it, with less developed countries often worse affected: 'even in the best-case scenario of a 1.5°C temperature increase by 2100, extreme temperatures in many regions will leave disadvantaged populations food insecure, with less incomes and worsening health'. 'World faces 'climate apartheid' risk, 120 more million in poverty: UN expert', *UN News* (25 June 2019) <https://news.un.org/en/story/2019/06/1041261> [accessed 10 August 2019].
[385] Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005).

off. Of course, this won't stop them happening to us 'soon' – echoing the closing phrase of Larkin's 'Going, Going' – and in fact is part of the reason they will.

While mass extinction events have taken place through Earth's history, leading to our own evolution as the dominant force on the planet, in the Anthropocene, our unique position of being aware of the consequences of our actions requires that we address not only our present climate crisis, but also our impact on the future of our world in the context of deep time and post-human evolution. Kolbert argues that although humans are primarily concerned with the survival of our own species, we should be more concerned that our role in the current mass extinction of life will be humanity's 'most enduring legacy, […] determining the course of life long after everything people have written and painted and built has been ground into dust […]'.[386]

In his work, Reading often frames our ecological failure as a failure of close observation. In bellowing, like an irritated teacher, 'you, at the back, should've sat up and fuckingwell paid attention' and 'those in the front seats should have paid attention,'[387] he implies that a lack of sustained scrutiny and decisive action at all levels are to blame, rather than (by and large) deliberate acts of destruction.[388] Alexander Schlutz points out the linguistic play between "Noye" (Noah) and "Oimoi" in *-273.15*, with 'Noye' containing 'the French *noyer*, to drown, signaling both the urgency and the potential failure of this particular rescue mission, and the Spanish *¡oye!* the imperative "listen!"' although, as Schlutz comments, 'heeding that imperative [back] in 2005, never mind [now], is "muckle late" as Reading's Noye

[386] Kolbert, p. 269.
[387] Reading, *-273.15,* p. 27 (n.p).
[388] For example, a scene where yobs attack nesting seabirds in 'At Marsden Bay' examines the kind of society that creates the gang, as much as the group itself. Reading, *Collected Poems 1: Diplopic*, pp. 211–12.

suggests'.[389] Both environmental shirkers and those with an interest or even a stake in decision-making have all dropped the ball, and Reading includes himself to a certain extent in this critique, which is a motivating factor in his writing. The ecological and climatic focus in Reading's later works are informed by his early awareness of environmental issues in the 1950's, when his interest in ornithology was threatened by the dumping of pollutants in waterways such as the River Dee – a watercourse that links with Reading's use of middle-English 'Noye' (rather than Noah) from the 15th Century Chester Mystery Cycle play *Noye's Fludde* in *-273.15*, a connection I will again refer to later in this chapter.[390] Back in the mid-20th century, Reading 'assumed it would come to the attention of the people who could do something about it' and in hindsight, he identifies society's collective failure to act decisively then as a significant link in 'the inevitable chain of events' leading to twenty-first century environmental crisis.

Reading's early misapprehension and later sense of 'absolute impotence' in relation to ecological decline conveyed in an interview with Robert Potts in 1990, recalls the 'detached' emotions expressed by the narrator in 'Advent'.[391] In *-273.15*, a narrative voice (possibly Reading's own) tells us that he is typing 'the science spotlight for tomorrow's / edition of the Global Sentinel', quoting the line on pollution from 'Advent': 'In my same column thirty-eight years back: The earth is threatened by its own pollution…'. Both column and publication are Reading's aptly-named creations. Reading notes that he has been making the same point about the continuing threat of pollution to Earth's biosphere for nearly four decades,

[389] Alexander Schlutz, 'Calls in the Desert: Peter Reading's Climate Change Poetry' *ISLE: Interdisciplinary Studies in Literature and Environment,* 25.4, (2018), 786–808 (p. 803). And *The Chester Mystery Cycle*: *A New Edition with Modernised Spelling*, ed. by David Mills (Colleagues Press, 1992).
[390] Robert Potts, 'An Interview with Peter Reading', 1990.
[391] Potts, 1990.

indicating, once again, not only his frustration with societal and political inaction, but his lifelong interest in ecology and conservation and their relationship to his poetic writing. While this section could read as an alienating 'I told you so', in fact it profoundly expresses a despairing lack of agency, referring not only to the fact that scientists and conservationists have warned about environmental catastrophe for decades and largely gone unheeded, but also acknowledging the limits of poetry as a panacea for environmental crisis.[392]

The ironic and somewhat poignant situation for humanity is that the technological development that signifies our development as the dominant species on Earth is also driving environmental disaster – for example, in our use of fossil fuels – while simultaneously allowing the collection and sharing of data evidencing our impact. As Kolbert points out, 'the history of [past mass extinctions is being] recovered just as people come to realise that they are causing another one.'[393] On the one hand, the second page of *-273.15* highlights the value of citizen science in bringing species decline to public attention: potentially referring to the World Wildlife Fund Living Planet Reports and Living Planet Index, Reading cites surveys that have been conducted 'over forty years, [by] more than 20,000 volunteers'. However, as Reading's poems continually reiterate, despite growing global awareness, the data collected serves to evidence accelerating biodiversity crisis, with

[392] 'The grand challenge for conservation of biodiversity is simple to state, but complex to solve. The Earth supports over seven billion people, with increasing human population, resource consumption, and environmental footprint. Many other species are up to nine orders of magnitude fewer in number, threatened by habitat degradation, hunting and harvesting, pathogens and pollution. There are no longer any safe havens for any species, anywhere. Conservation of biological diversity is thus simultaneously important, urgent, insufficient, underfunded, controversial, and politicized.' Ralf C. Buckley, 'Grand Challenges in Conservation Research', *Frontiers in Ecology and Evolution: Conservation* (2015) <https://www.frontiersin.org/articles/10.3389/fevo.2015.00128/full> [accessed 20 January 2020] (para. 2).

[393] Kolbert, p. 3.

many species 'extirpated completely'.[394] Reading also addresses intellectual divides, highlighting the ways in which people sometimes regurgitate reports and data without paying attention to detail or necessarily comprehending the underlying issues, so that any engagement by media or individuals, for example, becomes superficial:

> and didya read how two surveys of 1200 sumthin plants showed a decrease of 28%? [Yes, fragile planet undergoing its sixth great extinction – Cambrian, Devonian, Permian, Triassic, Cretaceous, Holocene][395]

Contrasting scientific language and colloquialism here, the brackets imply that the well-informed respondent (possibly Reading himself) is too weary to answer aloud and considers it pointless to do so, although the comments in parenthesis could also be interpreted as a subversive response. Indeed, the parenthesized text again indicates the original is not sufficient in itself, with phenomena (extinction) and underlying cause (both climatic and anthropogenic) inextricably linked, but not universally recognized as such, nor acted upon by policymakers.

In *-273.15*, Reading explicitly links anthropogenic Climate Change with species decline, a failure of attention and a lack of decisive action. Humanity's predicted 'extirpation' is unlikely to result from supernatural decrees or natural processes, but from the results of our own activities. Furthermore, we will bear responsibility for the mass extinction of other lifeforms with which we share the Earth. Humans ultimately benefited from the last mass extinction event 65.5 million years ago, when our mammalian ancestors gained an evolutionary opportunity, or, as Biblical myth would have it, human life was reset in the Flood, along with everything else, so that we might get things right this time – which, Reading

[394] Living Planet Index, *World Wildlife Fund* (2016) <https://wwf.panda.org/knowledge_hub/all_publications/living_planet_index2/> [accessed 10 June 2019].
[395] Reading, 2005.

contends, we manifestly have not. This underscores his resistance to the Biblical concept of humankind as divinely special and chosen, which plays out in *-273.15*, and his use of data and the Noah's Ark myth to address and visualize mass extinction and the impacts of climate change in a time when the waters are rising again.[396]

The Conceptual Ark in *-273.15*

Conceptually anchored to the biblical story of Noah and the Great Flood, *-273.15* addresses and catalogues accelerating species and biodiversity loss in the late-twentieth and early-twenty-first centuries. Here, data is the precious freight, formed of dense lists of lifeforms presented as a ship's manifest (cargo list) by the poem's narrator to "Noye" (a middle-English rendering of 'Noah', cast in the role of captain) for conservation onboard this Anthropocene Ark:[397]

> Noye, Noye,
> Could you handle,
> Atop t'others,
> 337 species of Pheidole
> New to Science
> And recently charted
> By Edward O. Wilson?
>
> *
>
> 'Chuck 'em aboard;
> Chuck 'em aboard me bucko mate
> An' let's heave aweigh.' [398]

The book's premise allows Reading to provide extensive taxonomies of Earth's creatures – which ones will Noye accept onboard?– and as such, and unlike Hughes, Reading makes the data intrinsic to the narrative, reinforcing not only the scale of the threat that human activities pose to Earth's biosphere, but the historical and

[396] According to Alan Jenkins, Reading was 'an un-doubting atheist and Darwinian […] Religions were pernicious folly'. Alan Jenkins, 'Remembering Peter Reading' *TLS*, (2011) <https://www.the-tls.co.uk/articles/public/remembering-peter-reading> [accessed 7 October 2018].
[397] Reading, *-273.15,* 2005 (n/p).
[398] Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) first page (n.p).

conceptual anthropocentrism, hubris and patriarchy of our relationship with the natural world and the value systems we project onto it. Indeed, *-273.15* implies that the guiding moral compass of Western thought, the Bible, is woefully inadequate at indicating the breadth and depth of our predicament, since the story of Noah makes no allowance for the wealth of life on Earth, implying it is finite and easily gathered.

-273.15 is a book-length, untitled and unpaginated sequence, reworking Reading's established (non-linear and mainly anti-lyrical) postmodern literary structures and devices including fragmented, metrically varied and interconnected stanzas, field notes, lists, quotations, media reports, collages, and scientific research data, presenting a complex, polyphonic text that invites close reading. In his survey of trends in climate change poetry, Griffiths notes that 'Reading's collage technique [points] to the development of alternative, more self-reflexive modes to engage with the complexity of the phenomena [of climate change]'.[399] This method and format allows Reading to draw on and assemble literary traditions, scientific reports on climate change, extinction and species decline, and ornithological field notes to bear witness to environmental catastrophe in the late Holocene, identifying anthropogenic climate change's global scale and its local effects.[400]

Reading sets the theme in the first pages, juxtaposing the concerns of humans and non-human fauna (people and ants). The opening stanza (quoted above) requests that Noye accommodates '337 species of *Pheidole*' onboard 'atop the rest', inviting us to imagine the logistics of accommodating multitudes of tiny ants onboard the Ark. It is, of course, a consciously ridiculous scenario, but as Schlutz comments, Noye's indifference and 'obvious lack of appreciation for newly-discovered ant

[399] Griffiths, p. 157.

[400] Fieldnotes refer to qualitative notes recorded by scientists or researchers in the course of field research, during or after their observation of a specific phenomena.

species forces us to question our own sense of care for such uncharismatic micro-fauna'.[401] The ants belong to the subfamily myrmicinae, a genus that is widespread and ecologically dominant – somewhat like ourselves, in that respect. These ants were only charted in 2003, two years before the publication of the book, serving as a reminder (to those who notice) that much of earth's flora and fauna is in danger of disappearing due to our actions before we are even aware that it exists.

The naming of myrmecologist 'Edward O Wilson' is also a significant detail here. Wilson's research notably draws connections between evolution, ecology and behaviour, with a particular focus on ants, to explain human development and how humans came to dominate the Earth. Known as 'the father of biodiversity',[402] he advocates for alliances between science, the humanities and religion to save Earth's vanishing species, starting with its smallest inhabitants.[403] Reading's ordering of species to be accommodated onboard the Ark similarly switches scale and inverts accustomed order of importance – ants first, although tellingly, they are chucked 'atop t'others' onboard ship. Our understanding of the complex interconnecting systems that sustain our biosphere is still developing, where the loss of the smallest and most insignificant-seeming organisms in the food chain can lead to the complete collapse of entire ecosystems. Reading notes the linked relationship between bird numbers, the availability of their diet of moth caterpillars, weather and disease, with warm winter weather favouring 'fungal pathogens / which kill them [the moths' larvae, which overwinter]'.[404] These opening stanzas illustrate the dense and

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[401] Schlutz, p. 804.
[402] Michael Becker, 'MSU presents Presidential Medal to famed scientist Edward O. Wilson' (2009) <https://www.montana.edu/news/7071/msu-presents-presidential-medal-to-famed-scientist-edward-o-wilson> [accessed 14 January 2020]; and Edward O. Wilson, Biodiversity'. *National Academy Press* (1988) p. vi. <https://www.nap.edu/read/989/chapter/1> [accessed 14 January 2020].
[403] Edward O. Wilson, *Sociobiology: The New Synthesis* (Cambridge, Massachusetts: United States: Harvard University Press, 1980) and *The Creation: An Appeal to Save Life on Earth* (London: W. W. Norton & Company, 2006).
[404] Reading, (n.p.) (third page).

complex intertextuality Reading utilises in his work, drawing attention to our understanding of Earth's biodiversity and our often anthropomorphic relationship to the natural world – for instance, the different ways in which we study, value and conceptualise ants, and relate their behaviour to our own in religious texts and fables.[405] They also highlight the complex relationships between science, religion, the humanities and the arts that may seem mostly supplemental to our everyday lives and 'human headlines', but are crucial to understanding the social and evolutionary drives of human beings that have led us into the Anthropocene.

Reading contrasts scientific terminology and data with colloquialisms, highlighting the linguistic problems posed by intellectual and educational divides, and challenges of engaging people with complex scientific research and jargon in a world where clichéd characterizations, shallow populism, and easy slogans hold sway. However, colloquial speech is also a type of jargon – the difference being that it is learned naturally as part of living and a product of social conditioning, whereas the scientific language of classifications and taxonomies, and all it represents, have to be actively learned. Early in the poem sequence, creatures are listed by name and biological suborder – 'fissipeds…fissirostrals' – citing the provenance of data on the decline of moth caterpillars as being collected by scientists at Rothamstead Research Centre, one of the oldest agricultural research centres in the world.

This use of data, and citation of its source within the text, differs strikingly from the previous page, where an unidentified voice asks 'didya read' about 'some sorta population decline'.[406] In this way, the poem contrasts and evaluates different

[405] For example, in the Book of Proverbs, ants are held up as a good example for humans for their hard work and cooperation. By contrast, *The Impertinent Insect* is a group of five fables, sometimes ascribed to Aesop, concerning an insect which may be a fly, gnat, or flea, and which puffs itself up to seem important. 'The Impertinent Insect', *Wikipedia* <https://en.wikipedia.org/wiki/Insects_in_literature> [accessed 1 September 2019].

[406] Again, Reading celebrates citizen science here, noting that 'in a series censuses that combed about every square yard of England, Scotland and Wales over 40 years, more than 20,000 volunteers

kinds of knowledge, evidence gathering and dissemination, making a case for the importance of data, facts and precise, accurate naming, in non-science and hybrid writing. As Schlutz puts it, 'words hold cargo as much as ships do, and care for the natural world and its non-human species must go together with close attention to the possibilities contained in human language.'[407] Robert Macfarlane addresses the power of naming the world around us in his book and project *The Lost Words*, raising the question of how we can care about something and conserve it if we cannot name it?[408] The power of naming the world around us and communicating using words is, after all, intrinsic to what it is to be human. Indeed, the scene where Adam names flora and fauna in the Garden of Eden is powerfully symbolic of mankind's role as caretaker of the Earth, as depicted in the Old Testament.[409]

Reading's use of vernacular and characterization of Noye is also intentionally funny. In the Biblical story, Noah is God's caretaker, the one good man assigned to preserve life on Earth, including human life. However, humans have failed the task, and likewise, Reading's Noye hardly seems to be a safe pair of hands for such an important task as preserving Earth's biodiversity, yet he is in charge, and has a job to do. Reading's dark humour extends to the diluvial myth itself, with the list of candidates for preservation on board the Ark stretching to accommodate the long extinct – from dinosaurs to school teachers – along with parasites and ticks. Just as his subversion of Noye's character reflects human failings, so the concept of a single

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managed to count each bird native plant and butterfly they could find', likely referring to the World Wildlife Fund Living Planet Reports and Living Planet Index. Living Planet Index, *World Wildlife Fund* (2016) <https://wwf.panda.org/knowledge_hub/all_publications/living_planet_index2/> [accessed 10 June 2019].

[407] Schlutz, p. 803.

[408] *The Lost Words* (2017) <https://www.thelostwords.org/book> [accessed 10 January 2018] (para 2).

[409] 'And out of the ground the LORD God formed every beast of the field, and every fowl of the air; and brought them unto Adam to see what he would call them: and whatsoever Adam called every living creature, that was the name thereof.' Genesis 2.19, *KJV*.

physical ship hosting all of Earth's lifeforms also becomes increasingly – and performatively – preposterous.

Decisions on what should and should not be saved also relate to embedded notions of fate and faith, issues that lie at the heart of our current climate crisis and 'business as usual' response, not least in terms of humanity's divinely-ascribed dominion over the natural world. This notion is underscored by the Biblical myth that serves as intertext, and is also an underpinning document in terms of Western civilisation.

Coastal Change Imagery

In the Biblical account of the Great Flood and Noah's Ark, a story that has been described as 'part of a global collective consciousness', God instructs Noah to build a vessel to save himself, his family, and one pair of every animal on Earth.[410] They enter the Ark and rain falls for forty days and nights, drowning all terrestrial life. When the waters finally subside, the Ark comes to rest on Mount Ararat, and God makes a covenant with mankind that he will never again destroy all life with a flood.[411] Modern geology and the concept of deep geologic time undermined the historicity of the Ark by the mid-18th century, as did the study of natural history, biology and evolution. Our developing understanding of the effects of global warming disrupts this narrative even further. In 2018, an IPCC Special Report warned that even if society limits global warming to 1.5 degrees above pre-industrial

[410] 'Flood Tablet –The Beginning of Science and Literature', *A History of The World in 100 Objects,* BBC Radio 4*,* 2010*,* online episode transcript <http://www.bbc.co.uk/ahistoryoftheworld/about/transcripts/episode16> [accessed 12 August 2019] (para 1). In the earliest recorded Akkadian versions (circa 18th Century BCE), for example, the god Enlil destroys humankind with a devastating river flood to solve overpopulation: Alan R. Millard, Miguel Civil, and Wilfred G. Lambert, *Atra-Hasis: The Babylonian Story of the Flood, with the Sumerian Flood Story,* Reprint edition (Pennsylvania: Eisenbrauns, 1999). Also Flood Tablet (para 18): The biblical tale was drawn from an older Mesopotamian myth that was woven into the poem *Gilgamesh*, described as 'the first great epic of world literature'.
[411] *Book of Genesis*, 6.1-9.7, KJV.

levels, sea levels will continue to rise, inundating and devastating coastal cities, communities and habitats.[412] The idea of a divine contract between God and humanity is overturned by anthropogenic climate change: indeed, this time we are destroying ourselves, albeit through the more powerful forces of our environment, which, to paraphrase Solnick, we can influence but not control.[413]

In the last chapter, I discussed the imaginative power of the flood myth as a metaphor for present day coastal change. Bracke and Ritson observe that:

> the image of the flood, in the literary and popular imagination, captures the psychological overwhelm of climate crisis and the fear of sudden rather than gradual environmental collapse after the point of no return. The language of flooding permeates popular culture as a metaphor for forces out of control.[414]

In *-273.15,* Reading harnesses the symbolism of the Ark, the metaphor of 'the flood' and the urgent awareness that we are approaching 'a point of no return' (that ship has sailed) to provide a powerful conceptual motif for climate catastrophe and species decline, using the imagery of contemporary sea-level rise.[415] Schlutz suggests that 'rather than repeat the old stories, we might indeed turn to poetic and creative re-makings of existing narratives (for our tales are never entirely new) in an effort to

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[412] IPCC Special Report, 2018.
[413] Solnick, 2017, p. 6.
[414] Astrid Bracke and Katie Ritson, 'Introduction: Waters Rising', *Green Letters: Studies in Ecocriticism* 24.1 (2020) 1–5 (p. 1).
[415] However, just as scientific research has alerted us to climate change, science also potentially offers technological solutions to the issues we face. De-extinction – also termed resurrection biology or species revivalism – is now a realistic possibility that may make it possible in the future to raise extinct species as technological advances in genome editing progress. Worldwide bio-repository's, which preserve DNA and living cells of endangered species, are modern-day Arks, with some assimilating the metaphor into their title, such as The Frozen Ark Project, a joint project between the Zoologocal Society of London, the Natural History Museum and the University of Nottingham Nottingham University.[415] Other projects include the Svalbard Global Seed Vault, which officially opened in 2008 as insurance to protect crop diversity in the event of a large-scale regional or global crisis. Some projects raise ethical considerations, such as the Arch Mission Foundation's attempt to install a lunar library preserving records of human civilisation may have accidentally bio-contaminated the moon with tardigrades, raising ethical considerations. Although these projects post-date Reading's book (although the precursor to The Svalbard Global Seed Bank, The Nordic Gene Bank, stored backup Nordic plant germplasm since 1984), they demonstrate the power of the Ark as metaphor for preserving Earth's biodiversity in a time of crisis, and how scientists are responding to the risk of mass extinction on a global scale. Paul.J. Crutzen, 'Geology of Mankind', *Nature*, Vol. 415 (2002) p. 23; and The Frozen Ark, University of Nottingham <https://www.frozenark.org/university-of-nottingham/> [accessed 10 February 2019].

open up the potential for new thought'.[416] Alongside the biblical reference, using 'the middle-English Noye […] puts Reading's text in direct conversation with *Noye's Fludde,* as previously mentioned – the title of both the Chester Mystery Cycle play and Benjamin Britten's popular opera (1958), allowing it to [contain] 'all these and other incarnations'.[417] Appropriately, the mystery play was produced by the Drawers of Dree – the guild of watercarriers who provided the town with water from the River Dee, the polluting of which, in the 20th century, instigated Reading's interest in conservation. The 15th century playwrights '[adapted] the biblical material to suit their historical needs and circumstances [diverting] from presumed scriptural authority', and Reading's book continues in that literary tradition, since 'the narrative of the flood in which Reading's poems participate has always been a living one, used both to consolidate power and to provoke change'.[418]

In 're-making' a universal diluvial myth that engages with modern concerns, Reading uses sea level rise imagery and language to connect fragmented text together within a unifying concept and narrative. We are now aware that sea levels are rising due to thermal expansion of the oceans and melting ice sheets, increasing flooding and erosion, and adding pressure to the delicate balance of Earth's ecosystems and habitats. Reading weaves this objective knowledge through the poem cycle, including blocks of (seemingly) found text in the form of prose reports explaining some of the science and impacts of climate and coastal change, intermingled with nautical language and dialogue.

A section of prose early on in the book starts mid-sentence, warning that Earth has reached a tipping point where the climate could shift rapidly and

[416] Schlutz, p. 801.
[417] Schlutz, pp. 181–182.
[418] Schlutz, p. 802.

explaining that huge amounts of fresh water from melting Arctic ice is reducing ocean salinity, affecting ocean currents that moderate the climate. This theme continues further on in the book (pp. 16 and 21) with sections of dense prose highlighting that similar melting in the past may have ‘triggered an episode of abrupt climate change’ and that ‘the need to rapidly adapt may overwhelm many societies’, but this later block of text performatively breaks down with lost letters rendering it difficult to read, eroding meaning and showing how we fill in the gaps with what we think we know – or skim through and turn over.

These prose reports and the regurgitation of them in vernacular monologues (for example, p. 30) draw attention to ‘annihilations / taking place for reasons of climate change’ while highlighting why it is difficult to “pay attention” and fully grasp the scale of it. The fact that global warming can conversely cause global cooling shows how appearances can be deceptive and the importance of scientific research: ‘(this sounds crazy) / This Global Warming’ll / Cause a Great Ice Age (p. 30).

Watery expressions are rich in their associations, featuring in established idioms in the English language.[419] A rising tide, for example, often relates to crime or information, a ‘flood’ to overwhelming numbers, while to be in ‘deep water’ implies serious trouble. Nautical and marine language and (consciously clichéd) seafaring expressions colour Reading’s text, with Noye’s instruction on the opening page, ‘Chuck ‘em aboard me bucko mate / An’ let’s heave aweigh’, setting the scene onboard a late-19th century square rigger trading ship, where the ship’s mate would be in charge of cargo and crew. Other examples include references to areas of the ship, such as the ‘gangplank’ and ‘F’c’s’le’– forward of the foremast – where there is

[419] As well as setting the scene and framing his fragmentary text, Reading seems to be enjoying using nautical colloquialisms such as ‘belay, lubber! (p. 15) and ‘scatter some spume’ (p. 33).

standing-room only for the myriad creatures threatened by rising water. Later, Noye draws a direct analogy between myth and present crisis:

> Get over the gunwale yerself,
> Or else stay there and drown
> (Only the Great Algonquian Mugwump
> Could tell us how many cubits up
> The waters will prevail this time).'[420]

Unlike the shorter and defined timeframe of Noah's global flood, present-day sea level rise is unpredictable, save for the assertion that it will continue for centuries to come.[421] Indeed, there is no guarantee that the Ark will prevail this time around. God prophesises that 'destroyed eall thes weorld shall be / e'en eower shippe, gentil Noye, / eower cargo's rich biodiversitye' (p. 8), with Reading smuggling the modern term 'biodiversity' into the middle-English pastiche. As Noye comments, 'Next port o'call's Ararat, / (can't see we'll make it, mind, / Bad bearings, too much of a maelstrom' indicating the violent turmoil to come –climatic, ecological and social. Indeed, Reading implies (via Lucretius) that religion leads people to practice evil and violence, not least through suppressing scientific knowledge in the past and contributing to humanity's hubris, providing 'bad bearings' (direction), which, it is suggested, underpin environmental and social decline.

Human violence (discussed through the book, for example, p. 5) is not only reserved for our own kind, but has driven many other species on Earth towards extinction. Perhaps one of the greatest examples of this is the brutality of the 19th

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[420] Reading, p. 24 (n.p). 'Mugwump' is generally employed to denote a 'bigwig' or boss and may refer humorously either to God or comment on how the public is reliant on scientists – secular 'mugwumps' – for information on climate change, the effects of which are not necessarily apparent in everyday life. Mugwump: OED (2003) <https://www.oed.com/view/Entry/123381?rskey=ooCiyJ&result=1#eid> [accessed 21 June 2019].

[421] J. A. Church and others, 'Sea Level Change' in Climate Change 2013: The Physical Science Basis, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* ed. by T. F Stocker and others (Cambridge, United Kingdom and New York, USA, 2013) <https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter13_FINAL.pdf> [accessed 24 June 2019].

Century whaling industry.[422] In the concluding pages of *-273.15*, the 'Ark' shifts significantly from trading ship to whaler, and from an apparent preserver of fauna to an embodiment of its destruction – highlighting, perhaps, the gap between how humans perceive our culture and our true impact. I will go on to discuss the book's intertextuality in the next section of this chapter, but inter-textual references range from biblical myth and subsequent versions of the Flood to Christopher Smart's 'Magnificat' (*Jubilate Agno*) via the ship's cat (formerly "sacred", who displays a direct line to logic, preferring physics to God) and Samuel Taylor Coleridge's 'The Rime of the Ancient Mariner', with albatrosses snagged in fishing lines providing a potently-symbolic augury of humanity's accursedness. These, among others, demonstrate how Reading's re-making of the Noah's Flood story is enmeshed within a broad literary culture.

As the Ark prepares to 'get the Hell outa this dock' (p.35), extracts from a 19th Century Halyard shanty from the 1956 film *Moby Dick* (based on the novel by Herman Melville (1851)) evokes our impact on the marine world that, being out of sight most of the time, is easily dismissed – 'We got more than enough, more than enough' (p. 26) – juxtaposed with a catalogue of human-caused environmental destruction, from North Atlantic Eels ('down 99% in twenty years […] / Overfishing?' to Amazonian rainforest / systematically razed', concluding with the extinction of an archaic species of human, *H. Florensiensis.*[423]

'Above […] the great Pacific's distant tumble and swash / […] a four-flush of weak iambs' gives voice to a moment of extinction, serving as a reminder that life on

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[422] Flensing is the removing of the blubber or outer integument of whales, separating it from the animal's meat. Processing the blubber (the subcutaneous fat) into whale oil was the key step that transformed a whale carcass into a stable, transportable commodity. See also 'Systems of Ecopoetry', Solnick pp. 56-58 (stripping fat from the carcass).

[423] The shanty was probably invented by writer A. L. Lloyd for *Moby Dick* in 1956, drawn from the 19th Century shanty, 'Santy Ana'.

Earth evolved from the ocean and will be subsumed into 'the vast ineluctable' again. Our brevity and impermanence are juxtaposed with huge temporal and spatial scales, demonstrating the perspective limitations and narrowness of human comprehension. Noye replies 'I endure my fate', to God's cataclysmic pronouncements ('hit be Mi lykinge / Eall lif for to destroy' p. 8) but, rather than religious superstition and divine retribution, Reading (and the once 'sacred' ship's cat) are concerned by logic, empirical evidence and science: humanity's fate governed by the laws of physics.[424]

Resisting Entropy

Alongside Biblical myth, Reading contemplates 'fate' within a scientific discourse that considers the ultimate fate of the Earth and our universe in the context of deep time. The volume opens with an epigraph – '(after the heatwaves: Heat Death, Entropy, Absolute Zero…)' – referring to the concept of 'entropy' (etymologically rooted in the Greek en+tropein, meaning 'transformation'), absolute zero on the Kelvin scale, and to theories that our continually expanding universe will eventually run out of energy, and decay and 'wind down to a cold silent halt'.[425] Two syllables

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[424] According to Alan Jenkins, Reading was 'an un-doubting atheist and Darwinian […] Religions were pernicious folly'. Alan Jenkins, 'Remembering Peter Reading' *TLS*, (2011) <https://www.the-tls.co.uk/articles/public/remembering-peter-reading> [accessed 7 October 2018].

[425] The term 'entropy' was coined by the German physicist Rudolf Julius Emanuel Clausius (January 2, 1822 – August 24, 1888), entering the lexicon of physicists in 1865. 'The word "entropy" finds its roots in the Greek entropia, which means 'a turning toward' or 'transformation'[…] it being a quantity purely mathematical in character, but which is generally found to increase in any process involving heat transfer and the accompanying production of motive power. Clausius chose the word "entropy" because the meaning, from Greek, en+tropein, is "content transformative" or "transformation content".' New World Encyclopedia contributors, 'Rudolf Clausius', New World Encyclopedia, 31 August 2019, 15:43 UTC, <https://www.newworldencyclopedia.org/p/index.php?title=Rudolf_Clausius&oldid=1023815> [accessed 11 January 2021] (part 1.5 Entropy). Absolute zero is an impossible goal according to the third law of themodynamics, since it is currently believed to be impossible for the entropy (or disorder) of a system to hit zero. Scientifically, it has no particular link to climate change, global warming or heat death theory. Hazel Muir, 'What happens at absolute zero', *New Scientist* (17 February 2010) <https://www.newscientist.com/article/dn18541-what-happens-at-absolute-zero> [accessed 15 March 2019] (para 4); The Big Freeze also known as Heat Death 'is one of the possible scenarios predicted by scientists in which the Universe may end'. John Carl Villanueva, 'Big Freeze',

short of a haiku, it subverts normal semantics and is disrupted as a form, being suddenly truncated. Placing the epigraph in parenthesis suggests that it provides supplemental underlying context for this volume and for Reading's approach to the subject. The *OED* defines entropy, in figurative terms, as 'a state of or tendency towards disorder; an irreversible dissipation of energy resulting in stagnation or inactivity', and in addition to physics, the concept is used in diverse fields including ecology and climate change.[426] Thus Reading's epigraph can be read as a metaphor for dissipation and apathy in confronting environmental and climate crisis, suggesting that societal and environmental breakdown and mass extinction is inevitable and irreversible. Furthermore, Reading comments that 'we register our own degeneration when we observe external decay, and view our personal disintegration as a metaphor for universal entropy'.[427] For Reading, entropy and decline operate as a conceptualising system for understanding the world, not only in terms of the brevity of mortal life and depletion of his own poetic energy and resources, but also in terms of waste produced by human activities (pollution, carbon dioxide), deep time, the fall of civilisations, mass faunal extinctions, and even the fate of the universe, positioning the human condition within what he terms 'the vast ineluctable'.[428]

Interwoven in this convergence of fate and physics is an amplification of the idea that knowing is suffering, which resonates through Reading's body of works. His precognition is not esoteric, but based upon what he portrays as the logical outcomes of historic and current human activity and environmental degradation. It

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Universe Today: Space and Astronomy News, (August 8 2009) <https://www.universetoday.com/36917/big-freeze> [accessed 22 June 2019] (paras 1-2).

[426] Entropy: *OED* <https://www.oed.com/view/Entry/63009?redirectedFrom=entropy#eid> [accessed 10 May 2019].

[427] Martin, p. 16; and Reading, 'Going, Going', p. 33–34.

[428] Reading, *-273.15* (p. 9) (n.p).

also draws on evidence and data collected and analysed by experts and scientists, the empiricist seers or secular mugwumps of our modern era. However, the symbolic associations of albatrosses 'gettin all snagged in them / two-mile fish-lines' suggest a curse or burden, linking to the 'auspices headlines' that prophesise the inescapable (ineluctable) curse – indeed, the term auspice originates in the 'observation of birds for the purpose of obtaining omens'.[429] Combining science, data and myths in this way signals our disordered responses to climate change signalled throughout the collaging of text and mélange of different registers in the book. Those 'having precognition', such as poets and scientists, suffer more intensely, since they experience the anticipation of the catastrophe as well as the event itself, yet, in the archetypal mode of Cassandra, are seemingly powerless to avert or change it:

> Nothing can ever be done;
> Things are intractably thus;
> All know the bite of grief, all will be brought to
> destiny's issue;
> those who have precognition suffer
> sorrow beforehand;[430]

Reading reiterates and reworks this stanza from *Perduta Gente*

in *-273.15:*

> Nothing can ever be done,
> Things are intractably thus,
> Those having precognition suffer
> Heat Death beforehand.[431]

The effect of condensing these lines is that Reading delivers a concrete statement, suggesting an end to hand-wringing. The line 'nothing can ever be done' may broadly refer to an acknowledgement of Reading's own lack of agency – either as a

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[429] Auspice: 'an observation of birds for the purpose of obtaining omens; a sign or token given by birds'. *OED:* <https://www.oed.com/view/Entry/13253?redirectedFrom=auspice#eid> [accessed 12 February 2020].
[430] Peter Reading, *Perduta Gente, Collected Poems 2: Poems 1985-1996* (London: Bloodaxe, 1996) p. 176; first published by Secker and Warburg, 1989.
[431] Martin, p. 200.

poet or conservationist – as well as bureaucratic pronouncements, public and political apathy and lack of sustained attention; in the absence of meaningful change and policymaking, all responses across the humanities and sciences may equally be considered to produce lots of talk and no action, as in Maura Dooley's 'hot, still air / of talking, talking'.[432] As Owen wrote, 'all a poet can do today is warn / That is why the true poets must be truthful'.[433] Reading's refined use of metrical form, for example, gestures towards resisting entropy and holding the line 'in the face of encroaching disorder' as suggested by Alan Jenkins, even while believing his artform has no power to affect change. Yet, as Griffiths identifies in Jorie Graham's poem, 'Full Fathom', the climatic and material processes of climate change 'go beyond containment of the line' and Reading signals his awareness of this in blocks of eroding and palimpsestic text in *-273.15,* as I discussed earlier in the chapter.[434] Martin points out that when Reading refers to 'heroic hexameter' in *Ukelele Music*,

> the term heroic instead of dactylic hexameter must not be underestimated in in its significance for Reading's art. The intention to muster a 'heroic' gesture of resistance in view of the 'gathering maelstrom' is the final analysis superior to the other, more specifically literary aim ('all we can do is observe').[435]

Reading observed, warned, and resisted entropy via the metrical line over four decades, even in the face of perceived futility.[436] There is little ambiguity on the point within the text of *-273.15.* In truncating the poem title 'say not the struggle nought availeth' within parenthesis to 'the struggle nought availeth' within a dense

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[432] Maura Dooley, 'Still Life with Sea Pinks' (2015) <https://www.theguardian.com/environment/2015/jun/02/a-climate-change-poem-for-today-still-life-with-sea-pinks-and-high-tide-by-maura-dooley> [accessed 26 June 2019].

[433] 'Above all I am not concerned with Poetry./ My subject is War, and the pity of War./ The Poetry is in the pity./ Yet these elegies are to this generation in no sense consolatory./ They may be to the next./ All a poet can do today is warn. That is why the true Poets must be truthful.' Jon Stallworthy*, Wilfred Owen* (London: Chatto & Windus and OUP, 1974) p. 266.

[434] Martin, p. 251; Peter Reading, *Work in Regress* (London: Secker and Warburg, 1989); and Griffiths p. 164

[435] Martin, p.142.

[436] Martin, p. 22.

prose section on rapid climate change and its causes and implications, Reading implies that however noble the struggle by environmentalists, failure is the likely outcome and the status quo will prevail.[437]

While Reading repeatedly expresses bitter fatalism of the kind rejected by Haraway in *Staying with the Trouble*, it is important to consider that his book also exemplifies the kind of story Haraway advocates telling 'in the teeth of loss': sticking with the realities and challenges of the precarious present, confronting ecological responsibility, challenging hierarchies in considering other species as 'kin', a 'refusal to deny irreversible destruction, and refusal to disengage from living and dying well in presents and futures'.[438] Meanwhile, the hack knocking back Zinfandel stubbornly types 'past midnight' warnings on pollution that featured in his 'same column thirty-eight year back'. They've had no effect and Reading's Domesday clock has passed midnight – to all intents and purposes, we've run out of time.[439]

Indeed, an intense sense of urgency builds through the volume, with Noye keen to 'heave aweigh'. In the Chester Cycle, it is Noye's wife who lingers and delays, but here it is the rest of us who react too slowly to the urgency of the situation and must, symbolically, *get onboard* with the other endangered species or 'else stay there and drown'. Yet in conceptualizing *-273.15* as an Ark and loading it with data, Reading formally resists the eradication of Earth's creatures in the only way that he can, through writing.

437 'Say not the struggle nought availeth' by Arthur Hugh Clough (1849) *Collected Works* (1862).
438 Haraway, p. 86.
439 Set at seven minutes before midnight in 2005, and 100 seconds from midnight fifteen years later. '2020 Doomsday Clock Statement: Science and Security Board', ed. by John Mecklin, *Bulletin of the Atomic Scientists* <https://thebulletin.org/doomsday-clock/current-time/> [accessed 12 February 2020].

Poems as Ecosystems

Moments of lyrical poignancy, beauty and (self-aware) epiphany – ‘out of the blue a Kingfisher / landed’– are brief in *-273.15*, and purposely submerged in dense lists and reports.[440] Reading’s life-long interest in ornithology and natural history, and his sense of wonder at the beauty and variety of the natural world, provide emotional charge and heighten the book’s deep sense of ecological grief. Birdwatching, along with love and wine, offer fleeting moments of ‘clemency’ and consolation for Reading, but as stated in an earlier volume, *Evagatory*, ‘only a troubled idyll [is] now possible’.[441] On a snowy mountain under a blue sky, it is possible to forget the troubled reality of the world for a brief spell, but Reading is caught out by the sudden onset of evening:

> Suddenly,
> evening; descent into shadow
> of the deep valley ahead –
> its dark vermicular flume.[442]

This sudden ‘descent into shadow’ echoes the ‘shadow of the quiet harvester’ in his debut collection’s title poem, ‘For The Municipality’s Elderly’, signalling a profound funereal shift and bringing his work full circle; the end is approaching and, to use the familiar idiom, not only will we be reaped (life is transient) but *H.sap* will also reap what we have sown.[443] For those who are temporarily sheltered by the symbolic mountain of late-capitalist Western civilization from the real and metaphorically rising waters of the Anthropocene, the ‘ineluctable’ end, when it comes, may seem all the more abrupt. Imagery of rapid de-glaciation, desertification, plastic pollution, climate refugees and flooding informs our dawning understanding of the impact of

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[440] Reading, *-273.15* (n.p).
[441] Reading, *Collected Poems 2*, p. 229.
[442] Reading, (p. 19) (n.p).
[443] Reading, ‘Combine’, *Collected Poems 1*, p. 61; and ‘Even though I walk through the valley of the shadow of death’, Psalm 23:4, *KJV.*

Climate Change before it fully reaches our shores, just as Larkin woke up to the social and environmental effects of rapid mid-twentieth-century development in 'Going, Going'.

While many of Reading's works are set in England, as Martin observes, his writing should 'be regarded as a microcosmic suggestion of a more important set of global issues'.[444] In *-273.15*, Reading brings together the complexity of ecological interactions – for example, the vital role of seemingly insignificant biota such as moth larvae in ecosystem function – with the challenges posed by climate change, and demonstrates how these interconnecting causes and effects on a complex and planetary scale will soon impact all our lives. The book works intertextually as part of a unified structure, interconnecting with Reading's previous works and within Western literary traditions. As Martin explains,

> the most distinguishing hallmark of Reading's art is its absolute unity. […] Cohesion is achieved by the continual cross-referencing of narrative, imagery, motifs, voices and verbal echoes, an interweaving more commonly found in novels. […] Even more surprisingly […] [the volumes in his oeuvre] are devised as one complex whole, building up to and complementing one another […]'.

Due to this unique approach, Reading's collections lend themselves to being analogised as sympoietic ecosystems, to borrow Donna Haraway's concept, in terms of the evolving exchanges between its various parts, operating as organisms within the 'complex whole' oeuvre of his lifetime's work, interdependent but also linked to and affecting each other intertextually.[445] For example, in earlier quotes on precognition, the meaning shifts from referring to social decline and homelessness in

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[444] Martin, p. 190.

[445] The notion of a poem itself forming a kind of ecosystem has been promoted by literary critics including John Elder: Glenn Adelson and John Elder, 'Robert Frost's Ecosystem of Meanings in "Spring Pools"', *Interdisciplinary Studies in Literature and Environment*, 13.2 (Oxford: Oxford University Press, 2006) pp. 1–17. Donna J. Haraway, 'Sympoiesis Symbiogenesis and the Lively Arts of Staying with the Trouble', *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016) (pp. 58–98).

Perduta Gente to climate change in *-273.15*. Reading exchanges energy in the form of themes and publications with the outside world, but parts of the productive content generate from what could be termed 'nutrient cycling', the recycling and reworking of material so that it creates both new associations and interconnected meanings, and also, it could be argued, resists the waste production that Griffiths associates with human economies rather than natural ecosystems.[446] Just as the poems, fragments and collages coexist within volumes and, in many of the later works, a lack of pagination allows them to remain open and dynamic, so the books themselves operate within a dynamic and resilient structure that creates its own bubble of life, but also continually communicates with the outside world in the form of literary traditions and scientific research.

Reading's poetry collections, then, can be conceived of as hybrid systems based in part on contingency in a rapidly changing world, part of a complex network or ecosystem of interdependent meanings. Just as the boundaries of hybrid cultures are dynamic and able to absorb diverse cultural influences, so Reading's volumes are active sites of intersection between disciplines, themes, motifs, images and voices. Poems and collections link hypertextually to literary traditions and intertextually between poems and core poems, overlapping and mixing concepts, places and data so that they inform each other within the text. In this way, system feedback can be imagined as the way that interconnections operate between data and ideas as well as collections and poems in Readings body of work, 'inform[ing] and deform[ing] each other in different contexts and re-readings', to use Solnick's terminology. This enables a dynamic, unpredictable process of non-linear re-engagement by readers

[446] Griffiths problematises likening human economies to ecosystemic closed loops: human activity offloads fossil fuel emmissions and greenhouse gasses into the atmosphere while 'vegetation extracts carbon dioxide from the atmosphere and converts it into nutrition as part of its lifestyle'. Griffiths, p. 103.

that changes over time due to internal and external factors, for example, shifts in the population's knowledge of biblical stories or developments in our understanding and awareness of species extinction, ecological decline and climate change due to the publishing of new research and data in the public domain, as well as the order in which we read Reading's volumes and poems.

This approach exemplifies the way in which Reading, through non-linear interrelations and active engagements with data and research, builds a formally-innovative hybrid system of knowledge and interconnections beyond the narrow confines of one poem, one sequence, or even one collection, into a whole body of work – a literary Ark – created over a lifetime, one that catalogues, conserves (through text and data) and advocates for Earth's wondrous, complex biosphere.

Conclusion

In this chapter, I examined some of the ways Peter Reading brings poetry, flood myth, and science into a dialogical interdisciplinary space in his penultimate collection.[447] My detailed analysis of *-273.15* and the other works in this thesis shows, for example, how coastal change poetics can find poetry in the data – working across disciplinary boundaries, and drawing on concepts including deep geologic time, solostalgia and the shoreline palimpsest to engage with key issues of the Anthropocene such as climate change and biodiversity decline.

Building on the work of Peter Reading and others, poets are increasingly drawing on scientific detail and testing fresh perspectives to engage with the 'vast, complex, intangible, politicised' subject of climate change and the diversity of

[447] Haraway, p. 86.

discourses attached to it.[448] The majority of the poems in Magma's *The Climate Change Issue* (2018), for example, are underpinned and informed by scientific research and cross-disciplinary working, although few include numeric data.[449] In the same volume, Ben Smith's interdisciplinary *Crosscurrents* project with Plymouth Marine Laboratory includes poems worked from data sets and Earth system modelling, while elsewhere, Richard Carter's *Waveform* explores engagements between human and non-human agencies, generating poem texts from shoreline data collected by drones; Alec Finlay explores the developing vocabulary of marine renewables in *Ebban an' Flowan* and 'dreams of an alliance of wave*wrights* and speech*wrights*, energy devices and poetry devices' in *minnmouth;* and poet-scientist Rachel McCarthy's meditations on flooded and drowned places in her award-winning debut collection, *Elements*, are linked to transition elements from the periodic table.[450]

Along with the poems I have analysed in this thesis, these examples, drawn from a broader and developing poetic engagement with ecological issues and post-humanist questions demonstrate in particular the hybrid, formally experimental and innovative ways in which contemporary poetry is interrogating conceptions of British coastal change and deploying sea-change imagery and coastal change poetics as a mode for articulating the impacts of climate change, exploring how we may move forward with a sense of ecological responsibility and futurity, and opening up

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[448] Magma, p. 5; and Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (Abingdon: Routledge, 2017) p. 4.

[449] Aside from Roger Bloor's 'Do not turn this page!!!' which synthesizes text and data focusing on rising levels (CO2, temperature and sea) into a comparison table, making a case for net zero carbon emissions and acknowledging, by way of the poem's pithy title, the challenge of engaging readers with both subject and data-form Roger Bloor, 'Do not turn this page!!!' *Magma*, 72, (2018) p. 98.

[450] Richard Carter, *RichardACarter* (2019) <http://richardacarter.com/waveform/> [accessed 5 January 2019]; Alec Finlay, *ebban an' flowan* (Dunbar: Morning Star, 2015) and *minnmouth* (Dunbar: Morning Star, 2016); Rachel McCarthy, *Element* (Sheffield: Smith Doorstep, 2015) pp. 11 and 25 (winner of the inaugural Laureate's Choice Award from Carol Ann Duffy in 2015); Ben Smith, 'Poems for the Earth System Model', *Magma*, 72, (2018), pp. 16–19.

new questions about interactions between literature, technology, science and environmental crisis in a rapidly-warming world.

SIDE OF THE SEA: PREFACE

'Yes. I was at the side of the sea.'
Susanna Clarke, Piranesi[451]

My thesis aims to set up a dialogue between creative and critical practices by addressing my research questions around literary representations of British coastal change, both through critical analysis of selected texts and writing new poems. *Side of the Sea* forms the creative element of my thesis. The poems in this collection are set in areas of Britain that are vulnerable to sea level rise and erosion, engaging with coastal change from a personal and embodied perspective that employs a place-based approach underpinned with current scientific knowledge.

Side of the Sea is intertextually in conversation with other contemporary writing that employs coastal change imagery and themes – for example, through my use of epigraphs – by writers including Jo Bell, Gillian Clarke, Justina Hart, Blake Morrison, and Peter Reading. My approach involves layering different kinds of information and experience, figurative and metaphorical encroachments, temporal and spatial overlaps, and hauntings, both within single poems and through the collection. Bridey McGreavey suggests that 'the shoreline, with its cultural, ecological and multispecies entanglements offers potential sites for making new stories at a time when the old ones are failing us'.[452] My poems respond to this proposition and to the maritime turn in ecological thinking and writing as we become increasingly aware both of the fragility of shoreline ecosystems and habitats, and the impacts of climate change in coastal areas (e.g., 'Danger Signs', 'Sea Dog'). Equally, they aim to confront some of the challenges of writing about vast scales of deep geologic time from the brief perspective of a human lifetime (e.g., 'Dendritic',

[451] Susanna Clarke, *Piranesi* (London: Bloomsbury, 2020) p. 237.
[452] Bridie McGreavy, 'Intertidal Poetry: Making Our Way Through Change', *Tracing Rhetoric and Material Life* (London: Palgrave, 2018), 87–115 (p. 111).

‘Dawlish’, ‘Scale’). In employing a range of modes, including the lyric, I write towards an engaged and embodied poetics that remains in dialogue with other voices within the landscape (e.g., ‘Happisburgh’, ‘Tidal’), examining the ways human activities, climate change phenomena and natural processes enact overlapping impacts on coastal places (e.g., ‘Reconnaissance’, ‘Shift’). I write, of course, in awareness of essays and projects that explore similar concerns, including Jos Smith and Rose Ferraby’s essay, ‘Warp-land, Holderness’ (2019), that considers how language responds to place-loss on England’s rapidly eroding east coast; and Harriet Tarlo and Judith Tucker’s, ‘Poetry, Painting and Change on the Edge of England’ (2019), which discusses their cross-disciplinary socially-engaged research on the Humber Estuary. *Plotlands* demonstrates the potential for disseminating my critical and creative research outside of academia – for example, in my professional field of participatory rural arts and socially engaged practice – in addition to publishing.[453]

Geographically, I live far from the sea, and approach the subject of coastal change in my creative writing and research from an outsider’s perspective, motivated by creative, ecological and sociological concerns: the impacts of coastal change affect us creatures collectively, wherever we call home.[454] While I write as a first-time visitor to Orkney and Suffolk (‘Grand Designs’, ‘Mirage’), for example, poems including ‘Tidal’ and ‘Dawlish’ are set in the South-West, where I was born and

[453] *Plotlands* provides an important reminder of the real-world impacts of research, practice and the language we use. Their description of the area as ‘always liable to flood, to […] return to its former state’ upset some residents and ‘highlighted the sensitivities that artists need to be aware of when working with people in relation to their places and how environmental and social questions cannot be separated’. Harriet Tarlo and Judith Tucker, ‘Poetry, Painting and Change on the Edge of England’, *Sociologia Ruralis*, 59.4 (2019), 636–660. Jos Smith and Rose Ferraby, ‘Warp-land, Holderness’, *Archipelago*, 12 (Summer 2019) pp. 66–75.

[454] However, the global effects are not uniform or equal, as Solnick points out: ‘[people] from island nations that risk being submerged by a rise in sea levels know all too well [that] it is frequently those populations who are the least responsible for pollution and greenhouse gas emissions who are the most likely to suffer […]’. Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (Abingdon: Routledge, 2017) p. 7.

grew up. Witnessing rapid erosion and efforts at mitigating it over many years at Dawlish Warren in Devon instigated my research, setting this project in motion. Poems written during time spent on the Suffolk Coast, for example, engage intertextually with a place that is defensive frontline, habitat, home, and much more ('Regardless', '623 feet into the North Sea'). A site visit with a team of archaeologists to an intertidal dig in Orkney informed my use of archaeological concepts and images, both here and in Chapter 2 of my thesis ('Shift', 'Gift'). A three-month placement in 2019 with Yorkshire Wildlife Trust at Spurn – located between the North Sea and Humber Estuary – helped to inform my tentative understanding of the impacts of erosion and pollution on shoreline habitats, confronted in 'Beach Clean' and elsewhere.

During periods of national lockdown since March 2020, I reflected on time spent in these places, and the indispensable opportunities for concentrated and immersive site-responsive writing and engagement, along with access to expert local knowledge, such research visits provide. However, digital technology offers scope to examine and conceptualise coastal change remotely, as in 'Sea Level Rise on an Interactive Map', where calibrations of time and tide collide with domestic scales and conceptions of 'home'. While the sea encroaches on settlements through natural processes, the increasing frequency of extreme weather events in the twenty-first century is driving rapid erosion in some areas, threatening entire communities ('Happisburgh').

The palimpsestic eroding coast reveals vast timescapes, inviting exploration through historical and personal layered narratives ('Shift'). Alongside losses of houses and infrastructure, archaeological artifacts emerge from eroding shorebanks onto beaches – and into my poems. In 'Gift', for example, the reappearance of a

prehistoric 'Burnt Mound' unites the island's modern community around the task of conserving it, provoking questions not only about its unknown purpose, but our own uncertain future. Likewise, militaristic imagery and language – *hold the line, managed retreat* – provide rich linguistic associations between past wartime and present-day environmental defences, particularly as Britain grapples with the implications of 'Brexit' ('Notes from the National Archives'). We may wonder – and imagine – how we would be politically if the North Sea was still dry land, or challenge provisional boundaries when sea levels will continue to rise for generations ('Canute's Way'). Deep geologic time and coastal processes disrupt human agency and scale, provoking questions not only around how we can meaningfully inhabit our disturbing present moment, but also think forward creatively with a sense of ecological responsibility and futurity, 'making new stories' for our time – debates I address both in my critical writing, and in this collection.[455]

[455] Please note that rather than footnote the poems, I have provided a full list of notes and citations at the back of the typescript. 'Aly Stoneman' is my writing name (Aly being an abbrev. of Alison).

SIDE OF THE SEA

ALY STONEMAN

'Sea level rise will continue beyond 2100 even if global warming is limited to 1.5°C.'
IPCC Special Report, 2018

'Clang, clang, clang: All aboard for Ararat.'
Peter Reading, *-273.15*

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SEA LEVEL RISE ON AN INTERACTIVE MAP

Start at sea level and hit the up arrow –

reckon the tide's surge
metre by metre
over Domesday farmland,

blue outflanking you
click by click
to the threshold of your house,

your tongue slipping
on names sunk in sediment
and brackish water.

Your home means nothing to that future

of eroded cliffs, toppled pylons,
tree stumps at low tide;
decayed roads to no-place.

The sea sends
harbinger gulls inland.
We tread the high paths.

At sixty metres, we're islands of National Park.

DANGER SIGNS

'Fit your own feet in.'
Justina Hart, 'Doggerland Rising'

A family picnics beside the 'Danger
Rockfalls' sign; above their heads
the path swoops like a gull,
its frayed desire-lines terminating
in soft cliff-drops and cloud.
At Seatown, sheep plot new routes
over the boulder-strewn beach,
then up and away on percipient hooves.

And when we slog up Golden Cap
next morning, the mist in spate
debouches over the land-edge
like the apparition of an Ice-Age river –
bearing our world through us, past us –
while, no longer sure-footed, we cling
to each other and the crumbling ground.

CANUTE'S WAY

> *'Then he said to the rising tide, "You are subject to me […] I command you, therefore, not to rise on to my land.'*
> *Henry, Archdeacon of Huntingdon,* Historia Anglorum

You skirt spits, marshes, lagoons; cross
sandy heathland, foggy mudflats, eroding dunes;
traverse a ragged region of hard defences,
battle sites, ruined farms and churches,
tracks truncated by barriers and diversions;
disregard corroded signs – PRIVATE PROPERTY
DO NOT ENTER (who will prevent you?) –
to explore a decommissioned town or coastguard station –
then follow your brimming footprints back to shore.
Lie flat. Peer up at tumbling outcrops.
Lie flat. Peer down at jutting tops.
Graze seepweed and samphire, lick mineral drips.
Your mouth is sunken, salt-rimmed.
Your route spirals inwards like a nautilus shell,
and your postcards embark by bottle or gull
from this so-called quintessentially English
edge of the melting world.

RECONNAISSANCE

'East means loss.'
Blake Morrison, 'The Ballad of Shingle Street'

Anglers pulling on waterproofs augur a bucketing

an unstable cold front
moving in over Shingle Street's houses,
bared teeth in the mouth of the Ore;

bad weather isn't just bad weather anymore.

Being new here, I am attentive
to shifting shores, fortifications;
searching for ways in or out.

A lone Union Flag flutters
between the frontline of bungalows
and Hollesley Bay.

Martello Towers ward shingle habitats:

sea pea, sea kale, sedum,
Mediterranean red valerian,
heads-down, roots resilient.

An elderly man in a window
raises his 'Keep Calm' mug
as I pelt over pebbles in drenching rain,

but there's no cover for me
save a brake of trees,
a leeward wall. My car.

REGARDLESS

'There is no reason why any of this should change.'
Andrew Motion, 'Salt Water'

We board her for the 'river cruise',
bum-shuffle along the bench to let
more sightseers pack on. A family,
crabbing off the quay, wave as we depart
down-stream – past Orford Castle, where
it's said a 'wildman' was hauled from the sea,
tortured for his strangeness, then released.

One man seems glued to his newspaper:
NOW EU SPOIL OUR HOLIDAYS! it claims,
then 'CHANNEL MIGRANT CRISIS'
when he flaps the page. But his kids film the trip –
perhaps they'll show him later what he missed.
Our boat circumnavigates Havergate Island –
dotted with roosting terns – where we can't land,

returning alongside Europe's longest
shingle spit, dividing turbid Ore
from brewing sky. Phones drop, then heads;
the tour guide's commentary trails off
until he points out distant 'pagodas':
concrete monuments to nuclear tests –
national defence-site turned Trust reserve,

and beyond, the soon-to-be dismantled
red-and-white-striped lighthouse, victim
of the hungry North Sea. Then, sun-dazed,
we disembark *Regardless*, needing tea;
the paper lies discarded on the seat,
and the crabbing family are pulling up their lines
with greenish shore crabs fixed on their bait.

MIRAGE

> *'Human civilization has been no more than a strange luminescence […] of which no one can say when it will begin to wane and when it will fade away.'*
> *W.G. Sebald,* The Rings of Saturn

Late afternoon, slack
as the greyish brownish
barely-breathing sea;

Sizewell B's sci-fi citadel
glisters somewhere ahead;
Dunwich beneath, beyond.

We raise streets, roofs
and ships out of heat-haze –
shimmering, unstable variations.

Time stretches and retracts.
A figure spills, blueish,
down the blurred corridor

between low, crumbling cliffs
and lulling cloud-water;
displaced, dwindling.

623 FEET INTO THE NORTH SEA

> *'How has it happened, the modern world?*
> *And how will it end, when the end comes?'*
> *Julia Blackburn,* Timesong

We stroll out to sea along Southwold Pier
past the saucy pisseurs of Hunkin's water clock.

Cup our hands to frame successive views –
the town's sugar-stick lighthouse

and bright painted beach huts strung
like bunting along the promenade.

When I photograph the shore,
sunlight and spray seem to wash it away.

I twirl postcard displays showing Edwardian day-trippers
disembarking paddle steamers, clam-faced and boatered.

Bawdy double entendres. Post-war, post-flood pavilion.
A colour-saturated 70's resort: kids, deckchairs, flower beds.

Today's sparkling-white renovation:
'Hello from Southwold!' Picture this –

our present moment stacked atop
a pile of transparencies.

We eat in fragments: acidic spud-mush
in polystyrene cones; plastic sachets of runny red sauce;

frothy cappuccinos – the best so far, this trip –
then lick '99's on the beach.

Would our selfie's and Insta-pics sell
on a future replica Southwold Pier

far inland from here?

NOTES FROM THE NATIONAL ARCHIVES

> *'The reconnaissance […] was restricted to a 24-hour sortie and only limited detail has been supplied.'*
> *Combined Operations Headquarters UK* (*C.O.H.Q. UK)*

(1)
They wait in a numbered locker, in boxes tied with white ribbon bows.
Plans for a British counter-invasion exercise
to take an occupied English enclave from the sea.

(2)
I wear cotton gloves to handle photographs,
annotated maps, scale drawings;
deactivate my flash.

(3) Synopsis of Report: Section A (fragment)

The following landmarks are conspicuous from seaward: a white light tower; a church spire; a pleasure pier (with pavilion) extending seaward; this is and was a seaside resort. The buildings are old, streets narrow, harbour more or less derelict; pier partly demolished; railway, floating bridge, and steam ferry gone. The ageing Harbour Master perseveres. Periodically, southerly winds uncover a dozen concrete 'dragon's teeth', or so.

(4)
Walking over pebbles and loose shingle is tedious. So tedious, you write it twice.

(5)
Is that your black Riley RM parked in front of a roadside stall, by sunlit whitewashed walls? Does that man surveying distant Southwold, hands on hips, know what you're doing?

(6)
Or – *author unknown* – is that you?

(7)
Drinks are not permitted in the reading room.
Salty eyes and gritty throat.

(8)
Your car again, nearly hidden in the overlap between collaged photos,
where I stood sixty years later on moss-covered concrete, fenced off.

(9)
Homes viewed across sepia waves look *Vulnerable.* Likewise a row of bungalows, labelled *Conspicuous*.

(10)
How do you feel, searching out weak spots in your own defences?

(11)
We look at shorelines and see conflict zones:
egress, fortifications, hold the line,
managed retreat, demolition, ruins.

We are concerned with *best line of approach.*

(12)
Peace is slack water. Once you see it this way,
can you spy any other?

SPLIT, 1999

At the ferryport we drink
to Radio Split's soundtrack of British rock,
Croatian pop, Cutugno's lyrics –
'together, unite, unite Europe' –
toast the town's complimentary colour-scheme
of red roofs and Adriatic blue. Marko
studied photography, but can't afford film.
Now I shoot like this, he says,
lifting his young face to the morning sun,
and shutter-blinks his eyes: like this, like this.

FROM COPENHAGEN

When I call to say
I've arrived safely
on this side of the sea

you're jangling cutlery
in our kitchen
a thousand miles away.

I tell how the mermaid
traded her voice
for legs;

the story doesn't catch you
and our line keeps cutting.
I lean into your silences,

measuring seconds
before you notice
I've stopped speaking:

one little fish, two
little fishes, three – it feels
like walking on shells.

I'm still here, I repeat,
can you hear me?
But I can't connect back.

BETWEEN

'I am most like myself when likened.'
*Isabel Galleymore, '*Say *Heart'*

Your bikes are locked together
against the lamp post outside the bar.

Inside, people twirl between conversations
like the paper Yule hearts in each window
dancing in updrafts of air.

I wait on the pavement, watching snowflakes vanish
on your flushed pink cheeks as you pull on hats
and gloves, wrap scarves, disentangle the bikes.

You are chatting as you glide away up the road
wingtip to wingtip – never quite touching –
like geese in formation, flying south for the winter.

GLAZED

Last seen on the Circle Line, singing
I'm paddling over a glassy edge,
or hitching from slip roads in rain

searching for places stumbled on
by poets, wanderers and drunks –
lands that never were and cannot be;

and your note left on the table read,
Life is double-glazed –
panes with space between

which we sometimes slide into.

IN THE RIFLEMAN’S ARMS

a girl plays percussion with two scallop shells

she has the saddest voice, that girl
rrrkk rrrkk the sea shells go
scraping one-another

tides will turn in the low fields

freezing water runs over my arms
in the fogged-up bogs
scattering chill bubbles

rain slanting ceaselessly over the low fields

he shot a photo of me passed out
so unpresent in my body
it frightened me at last

brief is our time in the low fields

she has a Siren’s voice, that girl
it calls me to stay, but I can’t

ZENNOR MERMAIDS

Did the sea entice the boy
down Pendour Cove,
razor shells raking his sodden shirt,
or a gorse-gold mermaid
with salmon-red flukes
pulsing below the surface as she sang?

Perhaps a mother yarned
her drowned son a better fate –
snug in the seabed,
a merrymaid for wife,
a shoal of blubbery babies.

Yes, two lovers wed and living
marine utopia off Zennor Head:
a pretty romance for old Bottrell
fishing for folklore in the Tinner's Arms
one beery night.

Yet there *is* a mermaid carved on a pew
by skilled hands long gone below
as surely as Mathey Trewhella.

But war lures young men from home
as shark-bodied boats circle the coast,
and Frieda Lawrence appears in Zennor,
flashing her red stockings like signals,
singing German shanties from the cliff tops –
communing with the briny, *or so she says.*

Villagers glancing
between woman and pew
know what to do.

And out on the night-dark sea
a boy gazes towards shore
from the deck of a battleship;
a mermaid newly inked on his arm
flaunts red fins. He closes his eyes,
pictures his village shut tight like a clam,
himself drifting away.

THE #*MeToo* SELKIE

When Selkie folk shucked off their pelts,
took human form to dance on land,
a crafty lad could steal their skins,
abduct seal lassies to scrub and cook and…*well,*
raise snarling pups with gooey eyes
fixed longingly offshore.

But now, Selkie explains *no means no* –
films herself flicking the V's and swimming away
wearing a pre-loved pelt from ebay

https://www.youtube.com/watch?REAL=SELKIE

EMERGING TRENDS

From found text: Flood and Coast Conference 2018.

When The Flood comes, will we cope?
In a world seeking solutions, what is
our UK competitive advantage
and global market opportunity?
Can I persuade you flood resilience
makes good business sense?

HAPPISBURGH, 2019

'I said to her, what will become of us?'
Seamus Heaney, 'Sibyl'

17 metres in 3 months:
It's ironic really,
remarks the bartender
who lives in Eccles (the new Eccles).
The pub and church are Grade II listed
but the sea can do what it likes.

Later, I pick my way between
the remaining statics
a few feet above the beach,
and bald rectangles of sandy soil
with defunct electric hook-ups;
calendula, sea holly and poppies
where caravans were.

A woman walking her dog
stops to check me out
– people take things,
so she's keeping an eye.
Sad, isn't it –
the owner's had to lock the gates,
but he's seeding the site
with wild flowers.
This will be a rainbow
next spring.

SEA DOG

'it's always ourselves we find in the sea'
E. E. Cummings

All night, the storm buffets my van's tall sides,
spattering sea-spray and rain. I watch
amber rivulets stream across the skylight,
remember flooded shops
and houses, smashed benches
and bins along the promenade,

and in the morning I am dog-tired.
But Molly yawns, stretches, scratches the door,
so we burst into washed-up dawn,
hurtle across slippy shingle
on either end of the lead; skid-halt
for Molly to sniff sea-scrat –
tangy dead crabs, sewagey weed,
wrappings, cans, takeaway tubs
tangled with blue net –
while I scoop her poop
into a perfumed purple bag.

The on-shore wind blasts us home
past lifeguards, refuse collectors,
fellow dog walkers starting their day.
It seems we're trailing the lot,
with a beach-worth of sand and salt
stashed in fur, paws and boot-treads –
the squally grey ocean bounding in behind us.

THE CHESIL

It's a tourist's mistake: hiking
Faulkner's 'monstrous great beach'
in sandals. We were warned
not to underestimate
this immense shingle barrier
between lagoon and sea:

> *Stick to the coast path or wear boots*;
> *once you're on, there's no way off*
> *(except by boat) 'til Abbotsbury –*

but unlike me you're not a person
who uses maps or wants advice. Still,
when we halt for the umpteenth time
to brush rough gravels from your feet
I tell you (from my travel guide)
how fishermen identify
their landing point on moonless nights
by pebble size – and we can too:
ovoid and coarse at Ferrybridge,
diminishing, as we hike west,
to frozen peas of chert and flint
that signal our escape route's close.

If you'd worn boots you'd stride ahead –
most of my snaps are of your back –
but today you're limping and slow.
I take your hand as we turn inland.
There's time enough to say,
I told you so.

SCALE

You steer (of course),
I set the pace,

but you can’t – or won’t –
match your strokes to mine;

our paddles clash –
out-of-sync, furious.

We spin, stuck together,
stir a Cormorant to flight

as the Kingswear steamer
rounds the curve ahead

churning brown foam,
its skipper peering down

– maybe not at us.
After all, we are

so small.

AMBER

Trapped in traffic, I contemplate
this glowing reptilian eye
set on my finger,

its pupil
of disarticulated ants
suspended in resin.

My hands stick
to the steering wheel
in the heat.

On the radio,
scientists discuss meteor risks,
agree Chelyabinsk freaked people out.

But imagine a massive asteroid
– like the one that did for the dinosaurs –
striking a modern city, the presenter persists,

as emergency services
streak past me
in violet.

I picture a blinding terminal flash
and miles-high tsunami of debris
moving faster than sound,

viscous tarmac encasing cars and drivers,
preserving us for millennia
in an eye's blink.

BEACH CLEAN

after George Mackay Brown's 'Beachcomber'

Monday, I find a trainer,
still laced. Pressed to my ear,
I hear the trapped sea.

Tuesday, tin foil
barbeque trays; thin metal day.
The beach glitters.

Wednesday, a unicorn pool-float
canters in among crisp packets,
drinks cans, fag-butt confetti.

Thursday, I get nothing –
stuck in the office
dealing with tour bookings.

Friday, corporate volunteers
chase vagrant rubber ducks
along the strand.

Saturday, a seagull's wing
tangled with fishing line
semaphores in the breeze.

Sunday, a bottle without a message.
Micro-plastics swirl inside
this oily snow globe.

SPURN

Bilberries

Whortleberry dusk:
purple stains on finger-tips,
eyes wide, berry lips.

Sea Buckthorn

Soil-binder, cold cure,
harbourer of brown-tail moths;
treasures amid thorns.

Reeds

Reedbeds waver, winnow, shiver,
even breezeless, flow and quiver,
even windless, sway together –

Shush, they breathe, *we'll tell you later.*

ORKNEY

I

SHIFT

'The sea gives and takes.'
George Mackay Brown, Skara Brae

Rising sea covers them but storms reveal
bones elbowing from shore banks;
a cross-section of past lives –
burials, house walls, hearths.

This shoreline can change in one storm,
one tide.

Margins shift and people
blow in, wanting land.

The sea gives
driftwood and seaweed,
sea-fuel and sea-food,
amber, stone, bone;

enters brochs and houses
on *a scuther o wind*, carries off
middens of oyster shells,
shards, sediment, shingle.

The past emerges,
the sea humps it away.

II

GIFT

During the storm, the sea unwrapped
a Bronze Age Burnt Mound from ashen sand,
then roared off, leaving its gift
for a farmer gone down with his dog next day
to see what's moved.

A slab trough for heating water
using baked rocks
– sauna or cooking pot, domestic or ritual? –
built and abandoned millennia ago,

now shifted inland
where visitors encircle fire-cracked hearth,
ponder how its makers fathomed change.

GRAND DESIGNS

You stomp over wet sand
with bucket and knife,
watching for bubbles,

plunge your blade
then dig like a dog.
Your reward: razor clams

steamed over a driftwood fire
– #beatscheesetoasties –
while socks dry.

Perhaps you’ll give it a try.

You’re already thinking
about moving to a small island:
so much peace and space.

Outside *The Reel* last Saturday,
yelling over boy racers
and the Pipe Band parade

you asked what it’s like in winter;
the retired Essex taxi driver talked
about his place in Morocco.

But you’ve seen on TV
how to build a hearth
with a circle of fat stones,

coax warmth from offerings
of dried seaweed, till receipts,
your breath; your hopes.

BEAUTIFICATION

His mid-row bungalow backs onto an ex-pit village,
faces two fields, then the motorway.
Half-drowned out by its white noise
we chat about the community garden
– fruit trees, wildflowers, a veg patch –
the free-flowing stream transformed
from a rubbish-clogged ditch
where he dug out a cannon ball
from the Civil War. There are the usual problems
– plants ripped up, dog shit, litter –
but the council warmed to his idea
in the end, and provided a bin. The noise
doesn't bother him now, he says; he came here
to work from West Cornwall a half-century back
and when he closes his eyes out here
he imagines the M1 as a scouring sea –
which one day it may well be.

DENDRITIC
(in Connaught Gardens)

'I seem to have been with you only an instant here.'
Peter Reading, 'Combine'

Jacob's Ladder gives me vertigo,
but I climb up anyway to see
how water remembers trees,
imprints dendritic patterns
on the sands below.

Blazing desert lithifies,

the Rhynchosaurs
fall silent in a breath,

and my grandparents,
seated on their favourite bench,
enjoy a flask of tea
atop Peak Hill.

TIDE

'its shadow / approaching.'
Peter Reading, 'Combine'

First a turn, easily missed, signposted
Impracticable for cars; then a narrow

stone-walled lane leading downhill
to a farm, now a 'Museum of Farming'.

And we camp there, beside the Fowey
that weaves through slick mudbanks,

our snug pop-up aglow in the dusk.
It sounds far off, at first, but builds fast –

a stampeding herd, a roaring juggernaut,
a thundering combine bearing down on us.

Then we realise, no: the tide has slipped back in
and a heavy rain-front drums up the swelling river.

But between hearing and knowing, we brace.

DAWLISH

'Time glacial; time the click of fingers.'
Jake Campbell, 'Star of Hope'

Three cyclists make a point
on the A379. Cars veer
to overtake, horns blaring.

Mum pedalled here
three abreast with friends
along tranquil '50's lanes

to roam the Warren's
then extensive dunes
all afternoon,

and later, courted Dad
under strung bulbs
sparking to life.

Each visit overlays our last –
picnics, dog walks, winter
inspections of lost ground –

like visitors' graffiti
carved into these
palimpsestic cliffs

of red Permian sandstone.
Today, waves dawdle up the beach
pocketing pebbles and glass,

sand and water rendered
into strands of shining light
dotted with us.

SIDE OF THE SEA: NOTES AND CITATIONS

Opening epigraphs
'Projected Climate Change, Potential Impacts and Associated Risks', B.2, *IPCC Special Report* (2018) <https://www.ipcc.ch/sr15/chapter/spm/> [accessed 22 September 2018].

Peter Reading, *-273.15* (Tarset: Bloodaxe, 2005) n.p.

'Sea Level Change on an Interactive Map' engages with the conceptualization of coastal change through digital technology, referring to online coastal risk screening tools and reports utilising these, such as the National Geographic article that predicted global sea levels could eventually rise over sixty metres if all land ice melts: 'What the World Would Look Like if All the Ice Melted', *National Geographic*, (2013) <https://www.nationalgeographic.com/magazine/2013/09/rising-seas-ice-melt-new-shoreline-maps/> [accessed 20 October 2016]. An earlier version of Sea Level Change on an Interactive Map was first published in *Liquidscapes* ed. by Richard Povall (Dartington: art.earth, 2019) p. 34.

'Danger Signs' is set on the Jurassic Coast, a World Heritage Site that stretches from Exmouth in Devon to Studland Bay in Dorset. The ongoing process of erosion reveals geological history over a period of 185 million years, but landslips and rockfalls interfere with the South West Coastal Path, and occasionally result in human fatalities. Justina Hart, 'Doggerland Rising', *Realistic Utopias: Writing for Change* (2017) <http://justinahart.com/wp-content/uploads/2017/01/Realistic-Utopias-Writing-for-Change.-Anthology.pdf > [accessed 30 January 2017] pp. 43-52.

'Canute's Way' imagines a future national trail that would join a tradition of long-distance walks named after past British rulers and their works, including King Alfred's Way, Glyndwr's Way, Offa's Dyke Path and Hadrian's Wall Path. The story of Canute (d.1035AD) commanding the rising tide to turn is often used as a metaphor for arrogance and futility. Henry, Archdeacon of Huntingdon, *Historia Anglorum The History of the English People*, trans. Diana Greenway (first published circa 1154AD; OUP: Oxford Medieval Texts, 1996) p. 122.

'Reconnaissance' traverses Shingle Street on the Suffolk Coast, a place rich in military history and threatened by coastal erosion. Blake Morrison, 'The Ballad of Shingle Street', *Shingle Street* (London: Chatto and Windus, 2015) p. 4.

'Regardless' describes a river trip around the nature reserve and ex-military site at Orford Ness, Europe's largest vegetated shingle spit and a place of dynamic change. Andrew Motion, 'Salt Water', *Salt Water* (London: Faber & Faber, 1997) p. 48.

'Mirage' responds to the heritage of Dunwich, once an important Anglo-Saxon and Medieval port. Most of the town has been lost to coastal erosion and storm surges, and now lies under the North Sea. W.G. Sebald, *The Rings of Saturn,* trans. by Michael Hulse (London: Vintage, 2002) p. 170.

‘623 Feet into the North Sea’, located in Southwold, considers cultural relationships with the littoral space over long timeframes. Julia Blackburn, ‘Timesong 17’, *Timesong: Searching for Doggerland* (London: Jonathan Cape, 2019) p. 266.

‘Notes from the National Archives’ is compiled from ‘numbered extracts’ that juxtapose, overlap and blend notes detailing a study visit to the National Archives, using found and culled text from a 1958 (declassified) Combined Operations Headquarters reconnaissance report and referencing illustrative documents including diagrams and photographs. ‘Introduction’, ‘Coastal Reconnaissance Report (1958)’, *C.O.H.Q. UK Coastal Reconnaissance Report: Thames Estuary. Orfordness to Boathouse Point,* Section A, (Combined Operations Headquarters C.O.H.Q. UK, 1958) p. 1.

‘Split, 1999’ reflects on legacies of conflict and division, as with The Croatian War of Independence (1991 to 1995), which resulted in economic crisis and the displacement, injuries and deaths of millions of people. It emerged from my visits to Croatia in 1999 and 2019, and written following the EU ‘Brexit’ Referendum.

‘From Copenhagen’ alludes to Hans Christian Andersen’s story *The Little Mermaid* (1837), in which the mermaid leaves the sea to live with a prince on land – but walking on her enchanted human feet is the sharpest agony. (Doggerland, now submerged under the North Sea, once connected Britain and Denmark.)

‘Between’ was published in *Mud Press Christmas Zine,* 2 (2017), p. 19. Cyclists in a group save energy by drafting or slipstreaming (riding close to) others, as do migrating birds. Geese often pair for life. Isabel Galleymore, ‘*Say* Heart’, *Significant Other* (Manchester: Carcanet, 2019) p. 15.

‘Glazed’ has been substantially reworked from an earlier poem ‘Missing’ published in *Lost Lands* (Leicester: Crystal Clear Creators, 2012) p. 20.

‘In The Rifleman’s Arms’ is set in the eponymous pub in Glastonbury on the Somerset Levels, a mainly agricultural area that was covered by the sea in pre-Roman times and is prone to flooding, as in 2014. Inhabitants of this low-lying coastal plain face increased risks in the future due to climate change. In the British Army, Riflemen lead a frontline attack.

‘Zennor Mermaids’ mentions the well-known carving of the Zennor Mermaid on a medieval bench-end in St Senara’s Church. Cornish folklorist William Bottrell (1816-1881) first recorded the tale of the mermaid and villager Mathey Trewhella, who sang together in church before vanishing. D.H. Lawrence and his German wife Frieda were expelled from Zennor in 1917 on suspicion of spying. Like the mermaid and Trewhella, they sang together.

‘The #MeToo Selkie’ responds to the Me Too (or #MeToo) movement, started in 2006 by Tarana Burke, that began to spread virally as a hashtag on social media in 2017. It is a global movement against sexual harassment and sexual assault of women. Times change. So can our stories.

'Emerging Trends' is a poem created from found text at Flood and Coast Conference, 20-22 March 2018.

'Happisburgh, 2019' is set in Happisburgh (pronounced 'Haze-bruh') in north-east Norfolk, an area known for its rapid coastal erosion. Eccles-on-sea is an ancient village now mainly under the North Sea. Seamus Heaney, 'Sibyl', *Field Work* (London: Faber, 2001) p. 13.

'Sea Dog' addresses human relations with the shoreline in our present moment of environmental crisis. Aberystwyth seafront (the poem is set on South Beach), was badly damaged by storm waves during the winter of 2013–2014. E. E. (Edward Estlin) Cummings, 'maggie and milly and molly and may' in *The New Dragon Book of Verse,* ed. by Michael Harrison and Christopher Stuart-Clark (Oxford: OUP, 1977) p. 53.

'The Chesil' refers to Chesil Beach (or Bank), a shingle barrier beach which has formed over six thousand years. It is eighteen miles in length, running from West Bay to the Isle of Portland in Dorset. One of its striking features is that the sea sorts and grades beach material by size as a result of longshore drift, with larger pebbles found at the eastern end of the beach and smaller ones in the west. It is notoriously difficult for walking, since the rounded pebbles slide against each other underfoot. *Encyclopedia of the World's Coastal Landforms*, ed. by Eric Bird (New York: Springer, 2010) pp. 420–425.

'Scale' is set in a kayak on the River Dart estuary in Devon, and considers the problem of adjusting our human sense of perspective to different scales.

'Amber' refers to the Chelyabinsk meteor, which entered Earth's atmosphere over Russia (undetected until impact) on 15 February 2013 at almost sixty times the speed of sound. The incident has been described as 'a wake-up call for Earth' and serves as a reminder that humans may also face extinction. Elizabeth Howell, 'Chelyabinsk Meteor: A Wake-up call for Earth', *Space* (9 January 2019) <https://www.space.com/33623-chelyabinsk-meteor-wake-up-call-for-earth.html> [accessed 15 March 2019].

'Beach Clean' and **'Spurn'** developed from a Midlands4Cities-funded placement with Yorkshire Wildlife Trust at Spurn National Nature Reserve (2019). A beach clean-up involves removing debris and litter deposited on a beach. George Mackay Brown, 'Beachcomber', *The Collected Poems of George Mackay Brown*, ed. by Archie Bevan and Brian Murray (London: John Murray, 2005) p. 123.

'Shift' is informed by an archaeological site visit (2018) to the Bay of Ireland with Dr Scott Timpany (University of Islands and Highlands) and Dr Michelle Farrell (Coventry University), where rising tides and coastal processes have revealed 5,000-year-old tree roots, and layered remains of human habitation over millennia. Mackay Brown, 'Skara Brae', *Orkney Pictures and Poems* Gunnie Moberg and George Mackay Brown (Grantown-on-Spey: Colin Baxter Photography Ltd, 1996) p. 21.

'Gift' makes mention of the Meur Burnt Mound, moved inland to Sanday's new Heritage Centre in 2014 to save it from the effects of coastal erosion. It dates from a

time when Orkney’s climate was deteriorating in the second millennium BC, making living conditions harsher. Sigurd Towrie*,* ‘A Brief History of Orkney: The Bronze Age - 1800-800BC’, *Orkneyjar* <orkneyjar.com/history/bronzeage.htm> [accessed 2 October 2017].

‘Grand Designs’ refers to modern aspirations of moving to a peaceful island – in this case, Mainland, Orkney, a popular cruise destination. ‘Kirkwall named top cruise destination’, Orkney Islands Council (17 July 2019) <https://www.orkney.gov.uk/OIC-News/Kirkwall-named-top-cruise-destination.htm> [accessed 1 August 2020].

‘Beautification’ draws on conversations with local residents in the ex-pit area ofNE Derbyshire, adjacent to the M1.

‘Dendritic’ is set in Sidmouth, Devon, and considers mortality and vast timeframes on the changing coast. Rhynchosaurs were herbivorous archosauromorphs that lived in the Triassic Period (between 251 million and 199 million years ago). Jacob’s Ladder is a set of tall white wooden steps connecting Connaught Gardens with the beach. Reading, ‘Combine’, *Peter Reading Collected Poems 1: Poems 1970-1984* (Hexham: Bloodaxe, 1995) p. 61.

‘Tide’ makes reference to St Winnow Barton Farm Museum and Angie’s Snack Van, located on the banks of the tidal River Fowey in Cornwall. Peter Reading, ‘Combine’, *Peter Reading Collected Poems 1: Poems 1970-1984* (Hexham: Bloodaxe, 1995) p. 61.

‘Dawlish’ considers personal and family relationships with place and place-loss over time. It is set on Dawlish Warren beach, in Devon. Jake Campbell ‘Star of Hope’, *The Coast Will Wait Behind You* (Sunderland: Art Editions North, 2015) p. 14.

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– and Gunnie Moberg, *Orkney Pictures and Poems* (Grantown-on-Spey: Colin Baxter Photography Ltd, 1996)

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