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Introduction to the special issue: Tracing geographies of extinction

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Introduction

According to the IUCN, we are living through a *sixth* mass-extinction event in the earth's history – a period of biological annihilation.[1] In contrast to the previous five mass extinction events recorded as notable breaks in the fossil record, the contemporary sixth extinction is unique in that it has been instigated by the activities of single species: namely, humans. As several scholars have argued in recent years, the Anthropocene – or Capitalocene – entangles dual processes of fossilation: we have become increasingly reliant across the nineteenth- and twentieth-centuries upon the energy supplied by burning buried hydrocarbons, at the same time as human activities serve to relegate vast numbers of life forms to a new stratigraphic layer of fossils.[2]

In the context of the contemporary attention given over to debates concerning the Anthropocene – as bonafide geological epoch, or perhaps a 'boundary' through which we must pass before entering into something better (or worse)[3] – theorizing extinction, its processes, drivers and affects, in a manner that rejects the figure of the autonomous species so as to better reckon with the entangled nature-cultures of the present, has become a central objective of environmental scholarship across the humanities. In this special issue, we explore the ways in which engaging with geographic scholarship enhances understandings of, and responses to, species extinction.

[1] Ceballosa, Ehrlich and Dirzo, 'Biological annihilation'.
[2] See for example the work of geographer Katherine Yusoff and her conceptualising of 'being as geological' in the Anthropocene: Yusoff, 'Geologic life', 780.
[3] Haraway, 'Anthropocene, Capitalocene, Chthulucene'.

Objectives of the Special Issue

This special issue explores, defines, and elaborates on the spatial character of species extinction and its affects. The importance of extinction studies in environmental humanities is well-established, and there have been significant and valuable contributions which problematize the scientific and atomized definition of the 'death of a species' and move us towards a richer understanding of the social, cultural and affective aspects of the slow loss of whole ways of being. However, there has been relatively little debate on how these rich and specific understandings of extinctions are grounded in geographic insights into historic, social, political, ecological, and economic transformations at different scales, and how a geographic lens that foregrounds the contingencies of place (and time) might help bring these relationships into focus. The aim of this special issue, then, is to bring extinction studies into closer conversation with approaches in traditions such as human geography and political ecology to shed light on *geographies of extinction*. By this, we mean the *place-specific nature of extinction, including spaces and places which are deemed to be extinct; the geographies through which extinction processes unfold; and the geographies which are left after extinction*.[4]

Writing about animals on the edge of extinction involves making claims about what matters, where the violence occurs, and how we might respond to it. This special issue advances that such claims are also inherently about, and grounded in, different kinds of places. We are particularly interested in the relationship between *where* extinctions happen, and our conceptualizing and understanding of when, how, why extinction occurs. We think this matters as much in considering processes of extinction as when we consider human-animal relations of liveliness or flourishing[5]. As Donna Haraway, and more recently Audra Mitchell and Bruce Erickson have argued[6], it matters which stories we tell, as they frame the nature of the challenges faced, and the possible routes for response. It is the contention of this special issue that *where* such stories come from, and the places they concern, matters too. Crucially,

[4] See Garlick and Symons, this issue.
[5] For example, Steve Hinchliffe's familiar argument for the need to attend to *where* as well as when species meet: Hinchliffe, 'Where species meet'.
[6] Erickson, 'Athropocene futures'; Haraway, Staying with the trouble; Mitchell, 'Revitalizing laws, (re)-making treaties'.

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a foregrounding of geographical contingency – as the collected papers demonstrate – enables us to appreciate the liveliness and politics of ecologies in their specificity. Attending to environmental loss by way of situated 'extinction stories' offers a 'way into [the] complexity' of ecological crisis on the ground.[7]

Extinction Studies and Geography

Over the past half-decade, the interdisciplinary field of extinction studies has flourished. Blossoming out of an initial, focused interest, in the subject amongst a subset of Australia-based scholars (many of whom were also instrumental in establishing this journal); a framework for addressing extinction also reflects the coalescing of extant literatures and approaches, as scholars in different fields, from history, to geography, to literature and anthropology, become more aware of a shared intellectual desire to reckon with environmental loss. The resulting cross-disciplinary approach of extinction studies therefore seeks to focus upon 'understanding and responding to processes of collective death, where not just individual organisms, but entire ways and forms of life are at threat'.[8] Extinction is figured less as a singular event, than a distributed, often *slow*, process of severing connections.[9] These are the connections that bind a particular form of living – and the beings who embody it – to sites of dwelling, migration, breeding, inheritance and flourishing. Extinction in the Anthropocene cuts with a dull edge – the intergenerational knitting together of beings that comprises what a species *is*, as a collection of beings, behaviors, shared genetic material, places and relations with (significant) others.[10]

Extinction involves the loss not only of a single creature, but whole ways of living, inherited pasts, and suites of possible futures. Indeed, central to the work of extinction studies has been the rejection of notions of the species as a bounded biological unit, towards a more relational ontology of multispecies ecologies, entangled in ever-unfolding life ways.

[7] van Dooren, *Flight ways,* 8.
[8] Rose, van Dooren and Chrulew, 'Telling extinction stories', 5.
[9] In particular, the work of Rob Nixon and his conception of 'slow violence' as violence that often exceeds generations and involves subtle, yet chronic processes of disruption to the relations that make life liveable, accumulating over time, has been hugely influential in recent theorising on extinction in the Anthropocene: Nixon, *Slow violence.*
[10] van Dooren, *Flight ways.*

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Mainstream conservation narratives miss something vital in their adherence to a 'species-bound perception of reality'.[11] Extinction studies has critiqued the conventional understanding of extinction as the loss of a biologically distinct species, perniciously figured as discrete units of biological life that exist in reproductive and (/or) geographical isolation.[12] This manner of thinking evidences the legacies of nineteenth-century colonial science in contemporary biology and conservation discourse. Charles Darwin, for example, proposes extinction within his theory of natural selection as occurring 'when a species ceases to exist'[13] – as though such an event is singular, and involves that species' absence alone. As Cary Wolfe suggests, however, such accounts – offered both historically, by Darwin, and contemporaneously, by institutions like the IUCN –render extinction in terms of 'brute physical presence or absence', enacting a reduction of the animal to flesh, bone and genetic material.[14] These accounts lose a sense of a being's liveliness, its entanglements with others, and its modes of relating that its existence makes possible.

Today, extinction studies, worked through a compound theoretical lens of posthumanism, relational and political ecologies, neovitalism, ecocriticism, ecofeminism, and multispecies studies seeks to challenge the prevailing biopolitical logics of neoliberal capitalism, development and conservation to trace, in myriad forms, innumerable environmental losses. Such losses paradoxically assert the magnitude of an extensive contemporary environmental crisis that is truly global in reach; whilst also emphasizing the irreducible specificity, locality and contextual nature of how multiple, intensive events of loss unfold, are felt to matter, and are responded to. Extinction studies challenges the notion of 'species' as atomized and isolated, to turn our attention towards the imbrications of human and non-human worlds. Thus, extinctions become understood as affecting "the abrupt termination of a whole way of life, a mode of being that will never again be born or hatched into the world.'[15]

[11] Sodikoff, 'Accumulating absence', 4.
[12] The kind of definition offered by the likes of biologist Ernst Mayr – see Mayr, 'Population, species and evolution'.
[13] Darwin, Origin of Species, 97.
[14] Wolfe, 'Foreword', xii.
[15] Rose et al, 'Introduction', 9.

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Stories of geography

Central to the work of extinction studies is a valorization of the work that particular stories can do when seeking to theorize the experience of wordly loss as both profoundly localized, yet also necessarily defying containment within any single locality, embroiled as it is in wider processes of economics, governance, and violence. 'Good stories are generative', and they force us to bear witness.[16] The power of such stories, as Donna Haraway, Anna Tsing and many others assert, is that they make matter the deaths of others, forcing us to bear witness, become uncomfortable with, to *stay with*, even *embrace*, the *trouble(s) of capitalist living.* The histories and geographies of extinction are therefore also histories and geographies of capitalism.

Petr Sloterdijk wryly characterizes the history of colonialism and globalization with the slogan 'I exterminate, therefore I am'.[17] The loss of more-than-human lives on a grand scale is, argues Jason Moore, a consequence of the world history of 'cheap nature'.[18] It is clear that any understanding of extinction – either historically or presently, in the context of the Anthropocene – cannot be separated from the histories, geographies and epistemologies of imperialism and capitalist expansionism. As such, the need to reckon with the situation of extinctions, amidst the ecologically degrading activities of colonial capitalism – aptly characterized by Anna Tsing's labelling of the 'Plantationocene'[19] – brings us to a consideration of extinction amidst a more-than-human 'politics of location' attentive to the plurality of beings involved in, and affected by, the destruction unfolding.[20]

It is these explicitly geographical aspects of extinction stories that we seek to surface and expand upon in this special issue. As geographers and others have been discussing in recent decades – the power of stories about places is their ability to navigate the tensions between the particular and the general; the apparent smallness of specific events, and their relation

[16] van Dooren and Rose, 'Lively Ethography', 91.
[17] Sloterdijk, (2013) 109.
[18] Moore, *Capitalism in the web of life.*
[19] Tsing, *The mushroom at the end of the world*.
[20] Braidotti, *The Posthuman*, 88.

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to, or emergence from, more extensive shifts or transformations.[21] As van Dooren and Rose articulate, arguing the importance of well-worked stories for facilitating the complex, interwoven and (sometimes) contradictory relations between humans and other beings and environments, 'a story can allow multiple meanings to travel alongside one another', and can contribute to the unfolding of ethics and worlds.[22]

We draw out a place-specific attention to extinction processes, how they are shaped by geographical forces and how these processes in turn shape geographies. In particular, the papers in this collection foreground the ways in which an explicitly geographical approach to extinction draws attention to the political, economic and cultural forces which structure environmental crises. In turn, we hope this sharpens our response to questions which have been raised by extinction studies: What kinds of loss; what kinds of crisis? Who is responsible? What kinds of responses are demanded? Why, and to whom, do extinction events matter? This special issue focusses on geographers' take on these questions, which we hope will add to the range of responses to unfolding extinction crises.

Geographies of Extinction

The papers collected in this special issue of *Environmental Humanities* attempt to explore the relationship between geography and extinction – conceptually, epistemologically, empirically, affectively and politically. This collection unites scholars exploring variously the geographies of extinction, working across disciplinary boundaries to add a new perspective to this emerging corpus of writing. The subfield of extinction studies champions interdisciplinary response in the need to tell the contingent stories of loss in order to both stay with the trouble and 'make thinkable' the scope and consequence of human activity upon the world.[23] The issue considers how the processes, effects and responses to extinction are fundamentally geographical – that is, contingent and place-specific. Each of the contributors, whether considering wildcats, genomes, ospreys or indigenous languages, directs the insights

[21] See in particular Lorimer, 'Telling small stories'; and a more recent review by Cameron, 'New geographies of story and storytelling'.
[22] van Dooren and Rose, 'Lively Ethography', 85.
[23] Arendt, *On violence.* See also: Haraway, *Staying with the trouble.*

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of geographical and wider humanities scholarship towards questions of species death and loss, bringing specific extinction stories into conversation with spatial theorizing about the long and variegated history of conservation, colonialism and extractive capitalist expansion.

In the first paper, Ben Garlick and Kate Symons argue that extinctions must be 'placed'. Through two examples – one concerning trans-frontier marine conservation in Mozambique, the other examining the 'local' extinction and return of the osprey (*Pandion haliaetus*) in Scotland – the authors articulate three registers for addressing the 'geographies of extinction'. The first of these, 'extinct geographies', concerns the spatio-temporal contingency of that which is rendered extinct. The second, 'extinction's geographies', traces the social, political, cultural and economic relations by which extinctions are both wrought at resisted. The final register, 'geographies after extinction', proposes that extinction stories consider the sites, places and landscapes left *in the wake of* extinction.

Many of the papers that follow Garlick and Symons' opening discussion do indeed explore geographies via these registers, and others. Adam Searle, in his conceptualizing of attempts to genetically sequence the bucardo (an extinct subspecies of Pyrenean ibex whose genome was preserved in the late 20th Century), and the woolly mammoth (whose genetic sequence is still being worked on), explores the liminality of categories of 'extinct' and 'non-extinct' to argue that the contemporary extinction crisis should be understood through a relational ontology of human/ non-human, and a complexity of different states of de/extinction. This paper tells us that the science fiction fantasy of *restoring* a species is often a simplifying distraction from the ways in which we could, now, if we chose, explore radically different ways of organizing socio-natural relations.

Subsequently, Charlotte Wrigley considers the haunted and mournful qualities of the Scottish Wildcat (*Felis silvestris silvestris*). Arguing that conservationists are too concerned with the wildcat as an ideal or icon to the detriment of the new forms of wild (cat) life that proliferate via hybridization, she proposes that we must 'let the wildcat die'. Echoing Searle's arguments, Wrigley posits that only once the extinction of the wildcat is accepted, can we begin to explore a means of living in the ruins.

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The penultimate paper of the collection considers a rather unusual example – the potential presence and threatened extinction of the Loch Ness monster ('Nessie'). Yet, despite its status as a rather fantastical example, the attempts of naturalist Peter Scott to authenticate Nessie's existence during the second half of the 20th century reveal much. As author Zac Baynam-Herd demonstrates, Scott's fascination for Loch Ness is illustrative of how species presence, and the threat of extinction, are discursively constructed and enacted. Extinction and endangerment do not simply occur, rather they are *presented.* The geographical setting of Nessie, and the spaces across and through which a network of scientists and their ideas circulated, enable us to understand the way extinction, as an idea, has force in conservation.

In closing the special issue, Owain Jones, Kate Rigby and Linda Williams provide something of a thematic reflection on the questions that an attention to geography might raise for the study of extinction. Via their articulation of 'everyday ecocide', wrought through a lived process of 'toxic dwelling', Jones, Rigby and Williams argue that a deep time perspective brings the significance of the anthropogenic extinction process into focus – emotionally, affectively and politically - while also considering why current responses seem to be so inadequate. Even from within what they characterize as the 'toxic globalized consumer capitalist culture', the authors find local ways to resist extinctions, and close the issue by illustrating how to live with mourning.

Conclusion

In sum, the papers in this issue respond to the call from Mick Smith, van Dooren, Rose, Tsing and many others, to understand extinction as being a spatial, ethical and political *process* which does not begin or end with the death of a species. Writing in 2013, Smith characterized extinction as both a particular 'species of death', and 'a death that concerns […] a species of

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beings'.[24] For extinction to occur, evidently, there must be death – the death of a species. Yet, the death of the 'last of a kind' is marked by a profound affective jolt that echoes through the rhizomatic connections and communities within which that species was enmeshed. The papers collected here present insights into how extinctions occur in time and space, and foreground three key themes: How extinctions can provide lenses onto more productive and ethical ways of cultivating socio-natural relations in specific contexts; how extinctions are discursively and spatially enacted through distributed social relations; and, finally, how extinction stories might underscore the *political* nature of extinction processes in relation to wider economic and epistemic geographies and structures of violence. In this sense, they present a call to researchers, urging them to engage with past, present and future extinctions as a way of profoundly reflecting on life in place.

Dr Kate Symons is a Career Development Fellow in the Centre for African Studies, University of Edinburgh. Her research has explored the political ecologies of transfrontier marine conservation in Mozambique. More recently, she has been involved in considering the role of blockchain in international development and environmental governance.

Dr Ben Garlick is a Lecturer in Geography at York St John University. His research interests include exploring the geographies of 'animal cultures'; extinction; and theories of landscape. He has worked on the conservation history of the osprey (Pandion haliaetus) in Scotland, UK, and is currently researching peatbogs as Anthropocene landscapes.

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