# On the political ontology of making things up in political ecology critique: An engagement with Bormpoudakis (2019) and Knudsen (2023)

Sian Sullivan[1]

Bath Spa University, UK

## Abstract

I engage with two recent articles published in the *Journal of Political Ecology*, both of which critique political ecology engagements with ontological and epistemological complexities. These complexities might be distilled into the idea that how 'the world' is socially known also shapes how the world is known to be. I explore three key issues worked through in these papers, partly with reference to work of mine, namely: 1) conservation struggles around biodiversity offsetting; 2) debates regarding plural and relational ontologies, particularly representations of 'flatness' and 'depth' in ontological considerations; and 3) critical realism, specifically distinctions between perspectives on transitive and intransitive dimensions in qualifying understandings of reality. I highlight a pernicious problem of dismissive approaches towards analysts trying to ask difficult and subtle questions about 'onto-epistemology.' This situation seems surprising given the effort in political ecology towards recognising and respecting plural knowledges, particularly knowledges often overridden by discourses emboldened by structures of power. My overall aim is towards clarity in ongoing political ecology debate on these issues, alongside the pursuit of respectful praxis in this burgeoning area of engagement.

**Keywords:** political ecology, biodiversity offsetting, conservation struggles, ontology, flat ontology, depth ontology, relational ontology, ontological pluralism, critical realism, indigeneity, critique

## Résumé

Je m'intéresse à deux articles récents publiés dans le *Journal of Political Ecology*, qui critiquent tous deux les engagements en faveur de l'écologie politique avec des complexités ontologiques et épistémologiques. Ces complexités pourraient se résumer à l'idée selon laquelle la façon dont le « monde » est socialement connu façonne également la façon dont le monde est connu. J'explore trois questions clés abordées dans ces articles, en partie en référence à mes travaux, à savoir: 1) les luttes de conservation autour de la compensation de la biodiversité; 2) les débats concernant les ontologies plurielles et relationnelles, en particulier les représentations de la « planéité » et de la « profondeur » dans les considérations ontologiques; et 3) le réalisme critique, en particulier les distinctions entre les perspectives sur les dimensions transitives et intransitives dans la compréhension qualificative de la réalité. Je souligne un problème pernicieux d'approches dédaigneuses envers les analystes qui tentent de poser des questions difficiles et subtiles sur l'onto-épistémologie. Cette situation semble surprenante compte tenu des efforts déployés par l'écologie politique pour reconnaître et respecter les savoirs pluriels, en particulier les savoirs souvent éclipsés par des discours enhardis par les structures de pouvoir. Mon objectif global est de clarifier le débat en cours sur l'écologie politique sur ces questions, parallèlement à la poursuite d'une pratique respectueuse dans ce domaine d'engagement en plein essor.

**Mots-clés**: écologie politique, compensation de la biodiversité, luttes de conservation, ontologie, ontologie plate, ontologie de la profondeur, ontologie relationnelle, pluralisme ontologique, réalisme critique, indigénéité, critique

---

[1] Dr. Sian Sullivan, Professor of Environment and Culture, Bath Spa University, UK, and Research Associate, Gobabeb Namib Research Institute, Namibia. Email: s.sullivan "at" bathspa.ac.uk. I am very grateful for supportive and helpful peer reviews by two anonymous reviewers, and particularly for the effort made by one reviewer to read the three articles in *JPE* that gave rise to this article. Thank you too to Mike Hannis and Casey Walsh for comments on drafts of this engagement.

## Resumen

Me relaciono con dos artículos recientes publicados en el *Journal of Political Ecology*, los cuales critican los compromisos de la ecología política con complejidades ontológicas y epistemológicas. Estas complejidades podrían resumirse en la idea de que la forma en que se conoce socialmente "el mundo" también determina cómo se conoce que es el mundo. Exploro tres cuestiones clave analizadas en estos artículos, en parte con referencia a mi trabajo, a saber: 1) las luchas de conservación en torno a la compensación de la biodiversidad; 2) debates sobre ontologías plurales y relacionales, particularmente representaciones de "planicidad" y "profundidad" en consideraciones ontológicas; y 3) realismo crítico, específicamente distinciones entre perspectivas sobre dimensiones transitivas e intransitivas al calificar las comprensiones de la realidad. Destaco un problema pernicioso de enfoques desdeñosos hacia los analistas que intentan plantear preguntas difíciles y sutiles sobre la ontoepistemología. Esta situación parece sorprendente dado el esfuerzo de la ecología política por reconocer y respetar los conocimientos plurales, en particular los conocimientos a menudo anulados por discursos envalentonados por las estructuras de poder. Mi objetivo general es lograr claridad en el actual debate sobre ecología política sobre estos temas, junto con la búsqueda de una praxis respetuosa en esta floreciente área de compromiso.

**Palabras clave:** ecología política, compensación de la biodiversidad, luchas por la conservación, ontología, ontología plana, ontología profunda, ontología relacional, pluralismo ontológico, realismo crítico, indigeneidad, crítica

## 1. Introducing representations

Sometimes it is strange, even surreal, to see how other scholars read and represent your work. Clearly it is neither possible nor desirable to control or contain how one's public domain utterances are taken up by others. What should I do, however, when two recent articles in the same journal appear to make things up about my published work and perspectives?

The two articles I am referring to are these: "[t]hree implications of political ontology for the political ecology of conservation" by Dimitrios Bormpoudakis, and "[c]ritical realism in political ecology: an argument against flat ontology" by Ståle Knudsen, published in the *Journal of Political Ecology* (*JPE*) in 2019 and 2023 respectively. Both articles engage in some detail with an article I published in *JPE* in 2017 with the title "[w]hat's ontology got to do with it? On nature and knowledge in a political ecology of 'the green economy'" (Sullivan, 2017a). I welcome robust, critical and in-depth engagement. Unfortunately, however, both Bormpoudakis and Knudsen make some sweeping and poorly qualified assertions about my work and perspectives that include demonstrable inaccuracies and misrepresentations. Apart from unwarranted reputational damage, the problem with this strategy is that it hinders development of debate and critique in political ecology and in the *Journal of Political Ecology* specifically, a journal I repeatedly share and celebrate with students and colleagues.

As such, this article is both a reply to Bormpoudakis and Knudsen, and an engagement with substantive research concerns and issues of (mis)representation. Specifically, I interact with three themes variously explored in Bormpoudakis (2019)[2] and Knudsen (2023) to clarify perspectives, share uncited material that reveals inaccuracies, and highlight some citation practices that seem problematic for political ecology praxis. These three themes are: 1) conservation struggles around biodiversity offsetting; 2) debates regarding plural and relational ontologies, and representations of 'flatness' and 'depth' in ontological considerations; and 3) critical realism, specifically distinctions between perspectives on transitive and intransitive dimensions in qualifying understandings of reality (on this point, also see Forsyth, 2023). Each of these sections opens into wider issues and concerns which I hope will be useful in relation to broader political ecology debate. I close with a concluding section on how practices of engagement with the work of others also constitute the praxis of political ecology. I ask: what kind of political ecology are 'we' seeking to make, and how?

[2] For readers who may be curious about why I am only responding to this article now, let me clarify that when I first read the article by Bormpoudakis in 2019 (in which I am named 18 times in the body of the text) I immediately wrote to *JPE* stating that the article included demonstrable errors and offered to read the article for accuracy. This offer was not taken up.

## 2. Conservation struggles around biodiversity offsetting

In this section I engage with Bormpoudakis (2019) on representations of conservation struggles around biodiversity offsetting (BDO): a recent and proliferating off-site conservation technology that aims to compensate for – or 'offset' – on-site damage to biodiversity caused by infrastructure development. Bormpoudakis (2019, pp. 554-555) asserts (in a sentence that does not quite make sense) that explicit in my work "is a suspicion towards ecology and 'quantification' in conservation sciences that allow for the assignment of a price to nature 'thereby bringing them forth as new, albeit fictional, commodities' (Sullivan, 2010: 117; Sullivan, 2017[a])." He uses this assertion to claim that I (and others) are "in danger" of being positioned "against many possible forms of environmentalism in general" (Bormpoudakis, 2019, pp. 555). My 2017 article in *JPE* is conveyed rather simplistically as follows: "[i]n the context of conservation, critical scholars have identified neoliberal conservation as a hegemonic discourse that suffuses conservation (Sullivan, 2017[a])" (Bormpoudakis, 2019, p. 554). This representation is made even though I do not use the term hegemonic (or any of its derivatives), or the term 'neoliberal conservation', in the article referred to. The *JPE* article in question (Sullivan, 2017a) is an exploration of different approaches to, and understandings of, natures beyond-the-human. It draws on specific interactions with specific people in particular places and moments in time; considering these interactions alongside specific cited and changing philosophies in 'the west', and specific cited policy texts embodying some assumptions informing market-based approaches to 'green economy' creation and governance.

In introducing his first case-study concerning BDO proposals to offset impacts of the Lodge Hill housing development in England, Bormpoudakis (2019, p. 555) builds on these assertions to open with this statement:

> [i]n Lodge Hill, England, in one of the heartlands and birthplaces of 'contemporary techno-configurations of circulating commodified nature… (Sullivan 2013[a]: 53)', a variety of organizations, *including conservation related* ones (e.g. ENGOs [Environmental Non-Government Organizations]), grouped together with the specific goal to *oppose* biodiversity offsetting… (emphasis in original)

I am not sure why Bormpoudakis chose here to reference a article of mine that has nothing to do with the Lodge Hill development, thereby inaccurately implying I have stated that this development is a heartland and birthplace of circulating commodified nature. What I am more interested in, however, is his inference immediately following this statement that I and others engaging critically with conservation sciences may not know that conservation organizations also contest BDO, with some conservation organizations explicitly critiquing the concept and practice. As he writes:

> [s]everal conservation organizations … not only publicly opposed the use of biodiversity offsetting for mitigating the impacts of the development of 5,000 houses on the local nightingale population, but also spent their own funds for conducting surveys, visiting the closed-off military camp, and preparing for the public inquiry. (Bormpoudakis 2019: 555)

In this context Bormpoudakis specifically identifies the NGO Fern[3] as a key conservation organization positioned against "neoliberal forms of conservation," including BDO (Bormpoudakis, 2019, p. 555). The implication is that I (and others) must somehow be unaware that conservation organizations such as Fern have contested BDO. This is a strange assumption to make, however, because I was personally involved at the time with campaigns by Fern and other conservation organizations that were critical of BDO. I was an invited speaker at one of Fern's main organizing workshops on 'Ecosystems Offsetting and Trading' in Brussels 2013, at which I was present at the consolidation of a widely circulated statement entitled 'No to Biodiversity Offsetting!'[4] I

[3] https://www.fern.org/

[4] See https://corporateeurope.org/en/climate-and-energy/2013/11/no-biodiversity-offsetting

was a panel chair for Fern's 'counter-forum' to the 2014 global conference 'To No Net Loss of Biodiversity and Beyond', the latter event (which I also attended) being organized in London by the Business and Biodiversity Offsets Programme (BBOP) for BDO practitioners and policy-makers. And I sustained multiple communications with Fern and associated organizations and campaigns through these years.

What is stranger still, is that my specific involvement with Fern and other conservation organizations and campaigns contesting BDO is written about in co-authored work published prior to Bormpoudakis' *JPE* article. In a 2015 article in *Ecosystem Services* we explicitly detailed and analysed the spectrum of responses, including those from conservation organizations and campaigns, to a UK Parliament Environmental Audit Committee Inquiry into Biodiversity Offsetting in England, conducted amidst the UK government consultation on BDO discussed by Bormpoudakis (2019, pp. 555-556). As we wrote:

> BDO in England is attracting outspoken proponents and opponents in equal measure, from a wide spectrum of interest groups. Several recent events illustrate the liveliness of the debate. Between September and November 2013 DEFRA held a public consultation on its proposed policy, structured around 38 specific questions relating to its BDO Green Paper (DEFRA, 2013). Workshops were held in various locations as part of this consultation (we participated in one held in London on 27th October 2013), and on 22nd October the Royal Society hosted a policy discussion entitled 'Biodiversity Offsetting: can it work in England?' (which we also attended). Simultaneously, the UK Parliament's Environmental Audit Committee (EAC) conducted its own Inquiry into Biodiversity Offsetting in England, following extensive questioning of the Head of the UK's Natural Capital Committee, Prof. Dieter Helm, on BDO in the context of an earlier Inquiry into Well-being. We contributed submissions to both the DEFRA and EAC consultations, as academics with a research interest in BDO.
>
> Alongside these interventions, October 2013 also saw publication of a strongly worded statement asserting 'No to Biodiversity Offsetting', issued by a range of European social movements and grass-roots organisations. This followed a workshop in Brussels (in which we participated) on 'Ecosystems Offsetting and Trading', and argued that BDO is 'a false solution' to environmental damage, which will in reality weaken environmental protection and facilitate greater global degradation of ecosystems and communities that are already under threat. The debate continued into 2014 with the global conference 'To No Net Loss of Biodiversity and Beyond', organised in London by BBOP for BDO practitioners and policy-makers, tickets for which sold out within two weeks. This June event was accompanied by a counter-forum of academics and activists contesting the legitimacy of offsetting on both ecological and social grounds. We both attended the latter event, and one of us (Sullivan) attended the No Net Loss conference. (Sullivan and Hannis 2015: 163-164)

This published work comprised detailed analysis of some of the same conservation struggles over BDO of which Bormpoudakis writes in his article. I am acutely aware that there is (and has been) a spectrum of perspectives on BDO, with conservation organizations both supporting and contesting this approach to managing environmental harm caused by economic development, drawing on scientific and quantified studies in order to do so. Indeed, in the years prior to the publication of Bormpoudakis' article I had published several other articles on specific struggles over BDO in England and elsewhere (Hannis & Sullivan, 2012; Sullivan, 2013b; Carver & Sullivan, 2017; Sullivan & Hannis, 2017). None of these publications are drawn on in Bormpoudakis' case research on BDO in his *JPE* article, even though at the time contributions by geographers, social scientists and political ecologists to this approach to managing environmental harms were rather sparse.

I am actually quite puzzled as to how Bormpoudakis could not have known about this work in the course of his BDO research and in writing his 2019 *JPE* article, a large part of which focuses on BDO in England. More importantly though: why would he want to portray me as apparently unaware that there is a spectrum of positions amongst conservation organizations and campaigns on BDO when I have conducted and published research demonstrating this very point? For example:

> … the largest group of organisations to submit written evidence were 'conservation charities', i.e. non-governmental and non-profit organisations whose stated aim is some specified aspect of 'nature conservation' and/or environmental education, *although their ways of working towards this, including their embrace or otherwise of MBIs* [Market-Based Instruments], *may be divergent*. … Thirty-four codes were each linked to five or more EAC [Environmental Audit Committee] submissions, and we use these to illustrate areas of agreement in views expressed in the transcripts. … Expressions of concern outnumber positive views of BDO, although a large number of submissions express a view that BDO could have a part to play in biodiversity conservation in England. (Sullivan & Hannis, 2015, pp. 165-166, emphasis added)

I can only conclude that for some reason it was more important to Bormpoudakis to present me as having a limited understanding of diverse perspectives and alignments in conservation, than to read and engage with my published analyses.

Given the choice of case studies by Bormpoudakis in his article – of ultimately resisted use of BDO to mitigate the harms associated with a housing development in south-east England, and of struggles around the development of a gold mine in northern Greece – I am surprised not to see more attempt to connect these two endeavours. It may be the case that the Skouries gold mine in Greece does not deploy BDO for mitigating environmental harms, however, the international development of BDO design principles and policy globally was deeply linked with the extractivism of the mining industry (see, for example: Seagle, 2012; Sullivan, 2013b, 2018; LeBillon, 2021). This development was fostered in large part through the influence of an international collaboration of representatives from companies, financial institutions, governments and NGOs that formed the Business and Biodiversity Offsets Programme (BBOP),[5] although Bormpoudakis does not mention this structuring network in his article. I recall, for example, that in 2011 I found myself at a Chatham House meeting on MBIs for conservation, sitting next to and presenting alongside Rio Tinto's environmental policy lead who was involved with the BBOP network: the focus of his presentation was biodiversity offsetting to mitigate the impacts of mining (Sullivan, 2011). In a subsequent article I documented the development of BDO policy in detail, linking it to this international context, and tracing an interconnected case whereby both development of a nuclear power plant in the UK and new uranium mining in Namibia were connected and legitimized through biodiversity offsetting discourse, policy and calculations (Sullivan, 2013b).

Through such structures and strategies the genealogy of so-called 'green grabbing' via MBIs for environmental governance (including BDO) and 'ungreen grabbing' via extraction, is indelibly entwined, constituting an element of what is coming to be framed as 'green extractivism'. Indeed, *JPE* has published a Special Section of the journal on 'The political ecology of green extractivism', for which I contributed a research article (Sullivan, 2023) as well as peer review. Bormpoudakis (2019, pp. 547-549), however, seems to want to convey 'green' and 'ungreen' land and value grabbing as a dichotomy whose two poles are disconnected and in a relation of antagonism only. This seems inaccurate, given that BDO has often been deployed to provide a green veneer to mining (as well as other forms of environmental change arising through economic development). The mining industry has itself funded international BDO design principles and incorporated BDO in order to 'green' its own activities (as mentioned above). Biodiversity offsetting and mining are often (although obviously not always) two sides of the same coin.

## 3. Plural and relational ontologies: How are 'flatness' and 'depth' understood?

A starting point for Bormpoudakis (2019, p. 547) is to frame me as critiquing "the role of conservation as a science and practice in fomenting green grabbing" from a position of apparent adherence to the so-called Ontological Turn (OT). Thus, "Sian Sullivan is one of the foremost scholars to provide OT-informed critical conservation studies that tackle green grabbing in the neoliberal conservation framework" (Bormpoudakis 2019, p. 554). From Bormpoudakis (2019, p. 547) I learn that I hold "a 'strong ontological position'," which "has been

[5] See, for example, https://www.forest-trends.org/wp-content/uploads/imported/final-revised-bbop-strategy-20-1-16-pdf.pdf

very influential in contemporary political ecology, including critical conservation studies." Elsewhere in the same article, however, he labels my position as 'soft', writing of "Sullivan's soft ontological commitments, i.e. ontology as the way different 'social groupings' understand the world to be" (Bormpoudakis, 2019, p. 560). So which is it? From my own perspective, I would say that an understanding of capitalist social relations and primitive accumulation (cf. Marx, 1974[1867]) led me to see how market-oriented conservation – in which exchange value is *variously and incompletely* created from conservation discourses, policies and calculations – may lead to forms of expropriation, enhanced inequality and the marginalization of different perspectives. This is not a theoretical perspective only, but rather one that draws on empirical research (Sullivan, 2002, 2006, 2023).

Bormpoudakis (2019, p. 557, also p. 547) additionally asserts that I promote a "move to a 'pluriverse', which is populated by essentially different 'worlds'," a view echoed by Knudsen (2023, p. 6). I am not resistant to the term 'pluriverse', although I take this term to refer instead to the ways that diversity amongst people lends itself to diversity in understandings of how the world is made, as well as in practices of inhabiting 'the world' or 'worlding' (on which more below). The fact is, however, that I do not use the term 'pluriverse' in any of my publications. It looks like Bormpoudakis wants to say that I (and others) think each group of people lives in some kind of timeless, enclosed and homogeneous bubble of thought that is incomprehensible or "incommensurable" to others: thus, "ontologies as entirely different realities, that are incompatible with each other;" "the OT-faithful position would be that communication between diverse 'tribes' [*tribes*?] would be nothing but impossible;" and "[m]y gold mining case study reveals the political dangers of accepting a position of incommensurable ontologies between ethnically/culturally/historically essentialized peoples of the world, whether they are Indigenous, Amerindian, Western, Euro-American, Asian or Cretan" (Bormpoudakis, 2019, p. 557). But he also appears to want to say that those such as myself offering engagements with diverse perspectives on ontological understandings essentialize the cross-cultural and intrinsically diverse category of 'Indigeneity' (Bormpoudakis 2019, pp. 551, 557). Since I am conveyed as an adherent to the so-called 'Ontological Turn' and thus as an 'OTer' I am also framed as adhering to an "insistence on the local, Indigenous and homogeneous subject and its corollary, the homogeneous Modern western subject" (Bormpoudakis, 2019, p. 545).

I would like to think that I neither fetishize incommensurability nor essentialize/homogenize socio-cultural groups. It is true that I have theorized conceptions permitting market-based approaches to conservation, contrasting these approaches with 'animist socialist' practices of engagement (Sullivan, 2010, 2013a, 2017b, 2019). In these analyses I have drawn on considerable detail and heterogeneity (from field research and reviewed literatures); clearly this detail is where the devil lies. When writing about contexts and information shared with me by individuals I also make and write *with*,[6] I specify that these are the perspectives I am writing about, and work to situate these perspectives in the geographical and historical contexts of their making. For example, "I was reminded of this fable recently whilst conducting oral history research with two elders in north-west Namibia" (Sullivan 2017a, p. 219; also see Sullivan & Ganuses, 2020, 2021, 2022). And I can only assume that Bormpoudakis must have missed the long literature review in the 2013 article of mine he cites (Sullivan, 2013a), in which my emphasis was precisely to draw attention to cross-cultural resonances between multiple case examples of cultures attributing various kinds of agency to non-humans, from a wide range of contemporary, as well as historical, circumstances (as is also the case in texts such as those by Harvey, 2005; Descola, 2013; and Ghosh, 2021). Neither of these practices can be discarded as essentializing or, conversely, as indicating no possibility for shared resonances and alliance-building across different situations. Why is Bormpoudakis presenting me as doing both these things?

In connection with this point, Bormpoudakis (2019, pp. 551-553) repeatedly mentions the different subject positions held *within* communities and alliances of resistance which can become "within-community conflicts or differences dividing the local societies" (p. 553). 'OTers' are conveyed instead as protagonists of the following framing strategy:

[6] See, for example, the film collaborations *The Music Returns to Kai-as* (https://vimeo.com/565658576) and *Lands That History Forgot: Three Journeys With Nami-Daman Elders in North-west Namibia* (https://vimeo.com/906331479).

> [t]he homogeneous native, usually Indigenous, is pitted against the 'tribe of the moderns' (capital, state and science, including conservation and ecology), and only passing references are made to the internal heterogeneity of both camps. (Bormpoudakis 2019, p. 552, also see p. 553)

The suggestion here is of a lack of understanding of the simultaneous existence of tensions, frictions and faultlines alongside solidarities and resonances within communities, including communities of resistance; thereby iterating the similar representation of a lack of understanding of diversity in conservation organisations in relation to biodiversity offsetting (see Section 2). The fact is, however, that I have also written in detail about exactly this reality of diverse perspectives and "internal heterogeneity" in relation to an array of social movement struggles (for example: Sullivan, 2005, 2008; Sullivan *et al*. 2011; Mueller & Sullivan, 2015).

Knudsen (2023) seems similarly vested in my engagements with ontological considerations. He first cites me as follows:

> Sian Sullivan who, referring to Blaser, argues that "ontologies...are *made* through interactions between human and other-than-human agencies" and that "sensitivity to the ontological politics...may be key to recognizing with more depth the sometimes significantly different 'natures' being struggled over in [environmental] conflict" (Sullivan, 2017[a], pp. 224, 217, emphasis in original). (Knudsen 2023, p. 6)

In this 'quote' Knudsen chooses to awkwardly follow a quote from several pages into my article with a short quote from my abstract, positioned several pages previously. The latter quote is so truncated it does not make sense. These citation practices generate an impression that Knudsen wants to convey my published work in a way that will fit a particular narrative: apparently as a 'multinaturalist' critique "of conventional political ecology" (Knudsen, 2023, p. 6). Immediately following this mashed-up 'quotation', Knudsen implies that I am participating in a "displacement of political economy from the core of political ecology" (Knudsen, 2023, p. 6). This statement left me wondering: did Knudsen not notice that half the article he refers to focuses on an exploration of three primary *political economic* strategies for the enrolment of beyond-human natures in pursuit of a market-based 'green economy'? These strategies are: 1) conceiving of 'natural capital' and carbon in terms of 'aggregate rules'; 2) the offsetting of calculated environmental elements considered to compose these aggregates as a key method for managing environmental harm and health (see Section 2); and 3) the valorization of a discourse of 'decoupling' economic growth from environmental parameters as both possible and necessary in order to create and sustain 'green growth' (see also Fletcher & Rammelt, 2016).

As mentioned previously I am aiming with the present article to clarify conceptual details so that future debate in *JPE* on these issues may be as accurate as possible. In order to do this, let me share the full quotes in the right order to show what I was trying to articulate. In my abstract I wrote:

> [t]his article uses a comparative cross-cultural engagement to problematize ontological assumptions regarding the nature of nature underscoring the rationality of … aggregating and offsetting 'solutions.' Drawing on literatures from environmental anthropology and environmental ethics, combined with ethnographic material from long-term field research in north-west Namibia, the article considers elements of alternative cultural ontologies and the ways these may give rise to a different array of practices with value for conceiving and generating 'sustainability.' *It adheres to a critical political ecology perspective in understanding the ways that power structures the ontologies that become both privileged and occluded in neoliberal strategies for green economy governance*. In doing so, the article argues that sensitivity to the ontological politics *through which spaces and entities are defined and known and which thereby shape environmental conflicts*, may be key to recognising with more depth the sometimes significantly different 'natures' being struggled over in such conflicts. (Sullivan, 2017[a], p. 217, emphasis added)

The first part of the quote, from several pages into the article, reads as follows:

> [o]ntologies (as philosophies of being) are *made* through interactions between human and other-than-human agencies, as well as shared and varied communications regarding these interactions and the dynamic and hybrid assemblages that thereby arise … Ontology as a way of 'worlding' – i.e. of "enacting a reality" (Blaser 2013: 23) – suggests the parallel existence *of different ways of understanding how reality is constructed (ontology), how the world and its entities can be known (epistemology), and what constitutes appropriate and ethical praxes in relation to these entities (ethics)*. This triad might be seen as both significantly mutually-reinforcing for groups of people in specific temporal moments, whilst simultaneously inflected by the ambiguity, ambivalence, internal difference and 'gaps' that make possible creativity, contestation and change (Foucault 1970). (Sullivan, 2017a, p. 224, second emphasis added)

For some reason, but without explanation, Knudsen decided to remove my qualification of ontologies as "philosophies of being" (as well as the rest of the quote). This qualification connects back to a longer exegesis in the article on ontology *as the study of being*:

> [o]ntology means literally the study of being, i.e. of what can be said to exist. It is "that branch of metaphysics dealing with the ultimate nature of reality", that nonetheless is approached differently and concerned with different kinds of existents depending on "culture" (Smith 1981: 1). Scholarly curiosity has long been piqued by the existence of plural ontologies, i.e. *of diverse ways of framing and understanding the nature of reality, and of acting in relation to the assumptions that thus arise*. Herodotus' (1998(ca. 440 BCE)) *Histories* of the fifth century BCE, with its detailed discourses on the understandings and practices of diverse cultures encountered as he travelled through north Africa and the lands of the eastern Mediterranean, clarifies as much.
>
> More recently the philosopher Wittgenstein in his later work suggests that meaning regarding the nature of being is not fixed to a foundational and singular ontology, but instead arises, and is both confirmed and contested, through language games deployed through activities in multiple, overlapping and negotiated social contexts … As such, "a community's values are intimately bound with the capacities the community has for talking about and framing the world" (Johnson 2008: 14). Since "reality has no [necessary] compulsion to restrict itself to being in itself the kind of thing that we can describe" (Johnson 2008: 14), this opens the way for the existence of multiple ontologies (i.e. *multiple ways of understanding and communicating the nature of being*). (Sullivan, 2017a, p. 222, emphasis added)

I later iterate this perspective as follows:

> [i]n this article I (too) write from a perspective that, in a formal sense, *ontology is a mode of enquiry that asks questions regarding the nature of being so as to make assertions regarding the nature of reality and how this can be legitimately known*. At the same time, I affirm that what becomes known ontologically arises through social processes (shared language games, the production of texts, methods of enquiry and associated institutions) that create conditions for how the 'Real' that resists symbolisation … may be known (Foucault 1970). (Sullivan, 2017a, p.224, emphasis added)

As Forsyth (2023, p. 191) similarly articulates, "political ecology does not only ask what is ecologically real but also how, and with what politics, are ideas of reality made and used" (also see Schulz, 2017, p. 129).

Knudsen's article focuses on a particular concern with what he understands to be the 'flat ontology' of new materialisms and a relational ontology perspective. A specific concern is that "[i]t makes little sense to me

to accord in-animate objects, animals, and humans the same kind of agency" (Knudsen, 2023, p. 7). In bringing beyond-human entities 'to life', however, I am not sure that anyone participating in a relational ontology perspective – or even a new materialisms approach – would assume or enact this kind of equivalence. In summarising 'new materialisms' as part of the 'ontological turn', Knudsen (2023, p. 5) writes additionally that,

> reality is what comes to be through the interplay among actants, or enactments, and we cannot expect the reality thus constructed to be layered or structured. It is flat.

Just prior to this statement, however, he speaks of "the distribution of agency across multiple *undifferentiated actants* in *heterogenous networks*" (Knudsen, 2023, p. 5, emphasis added). But *heterogeneity*, as invoked here, surely implies and requires differences and *differentiation*; and thus different kinds of agency invoking different relational and ethical possibilities.

It is difficult to see 'flatness' in this kind of diversity. I would argue instead that 'relational ontologies' are *very far from flat*. They are concerned precisely with relational specificities and ethical possibilities connected with distinctiveness and difference, and thus with diversity, differentiation and *depth* (also see Harvey, 2005; Kimmerer, 2013; Ghosh, 2021). The following statement, for example, attempts to articulate the relational depth implied by perceptions and experiences of diversity:

> [t]he suggestion here is that living in an expanded sphere of moral considerability – wherein nonhuman others are ontologically known as possessing *different capacities* for agency, the will to flourish, and the ability to also see and represent us… – acts as one social check amongst others against the disembedding from, and ruthless instrumentalization of, natures-beyond-the-human that has been so defining of capitalist market economy… (Sullivan, 2017a, p. 226, emphasis added, also p. 225)

Since Actor Network Theory (ANT) and vital materialism are key targets for Knudsen's critique of 'flat ontologies', let me clarify that I (and others) make an explicit distinction between relational ontologies arising in cultural contexts that may warrant the descriptor 'animism', and the 'vital materialism' associated with 'machinic assemblages' and ANT. Thus,

> [t]his perspective on *differentiated agency* and intentionality distinguishes 'animism' from the vital materialism privileged in the 'machinic assemblages' of Deleuze and Guattari (1987(1980)), later reformulated as actor network theory (Latour 2007), and latterly expressed as an invigorated awareness of the organisational and ethical imperatives asserted by specific materialities (Bennett 2010; Hecht 2012; Jackson 2013). (Sullivan, 2017a, p. 221, emphasis added)

Here I appear to be in conceptual alignment with Schulz (2017, p. 131), who states, for example, that there are "considerable differences between the meaning of spirituality in the context of indigenous cosmologies, and the largely secular 'vital materiality' that is advocated by political ecologists such as Jane Bennett."

Knudsen's flattening of the depth ontology of relational perspectives seems connected with his critique of the critique of the Cartesian divide (Knudsen, 2023, p. 5). Here, he appears to focus only on "[t]he eagerness to deconstruct dichotomies" – referred to as "[t]he evil dichotomies" (Knudsen, 2023, p. 7); rather than on concerns with the ways such dichotomies become constructed, perceived and *hierarchized* (Merchant, 1989[1980]; Federici, 2004; Plumwood, 2006; Sullivan, 2013a; 2017a, p. 225-227; Ghosh, 2021). For example:

> [t]he effects of modernity's incomplete movement towards ontological divides between mind and matter, culture and nature, West and Other, masculine and feminine, … are widely understood to be a denigration of bodily, sensuous, and ecological grounds for knowing and feeling. ... this is a

> denigration that frequently also targeted women and non-Europeans as categories of humans considered to be closer to 'the body' and to 'nature'. In parallel, the production of a nature-beyond-the-human that is distant, stilled, and 'outside', has created this nature as usefully amenable to objectification, instrumentalisation, and myriad associated violations. Nonetheless, this semblance of control – this thinking that 'things stand mute and inert' until 'modern man' chooses to speak of them – is frequently accompanied by dismay, as the materiality and unruly agency of natures-beyond-the-human burst through in the environmental and social fall-outs of industrial processes, so as to require corrective and frequently costly responses (Sullivan, 2016, p. 121, drawing on Ingold, 2006; Plumwood, 2006; Abram, 2010; Descola, 2013; Marder, 2013).

In positioning the Cartesian divide as simply reflective of reality, rather than historicizing it as emerging amidst a particular confluence of circumstances that privileged specific interests, its power-effects become overlooked. One of these power-effects in fact seems to be the construction of *flatness*. In promoting the most appropriate gaze on 'the natural world' as one of systematic objectification transforming animals into automata and bodies into machines, it is Cartesian philosophy that arguably contributed a universalizing flat and *flattening* ontology convenient for creating numerical equivalences and substitutabilities, but blind to difference and diverse relational possibilities. This objectifying and distancing view of the world stands in stark contrast to multiple other ways of understanding and relating with the diverse beingness of non-human animals and other others (Green, 2020). It has contributed to a *loss of relational possibilities* that is surely a root anthropogenic cause of the sixth mass extinction event bequeathed by industrial/capitalist modernity and its accompanying impetus towards extractivism, coloniality and accumulation.

## 4. On dipping into critical realism

By tactically removing my qualification of ontologies as philosophies or understandings of being (see Section 3), Knudsen is subsequently able to claim that I do not comprehend the Bhaskar-esque distinction between two conceptual categories important to critical realism: namely, transitive, i.e. the social and contingent dimensions of knowledges about "mind-independent reality," and intransitive, i.e. realities existing independently of an observer (Knudsen, 2023, p. 11). Knudsen (2023, p. 13) writes that,

> Sian Sullivan also dips into critical realism (Sullivan 2017[a], p. 224), but failing to comprehend the distinction between transitive and intransitive, she is unclear on mind-independent reality. She seems to waver between affirming the existence of "one singular true underlying nature of being" (Sullivan 2017[a], p. 234) and thinking that epistemological plurality can be equated with the pluriversialist position of Blaser and others.

Let me first take Knudsen's assertion that I am wavering between one singular true underlying reality and a 'pluriverse' – bearing in mind that I have not used the latter term in my work (see Section 3). I wonder why Knudsen chose to cherry-pick the short phrase – "one singular true underlying nature of being" – from a much longer sentence:

> [w]hilst there may be only one singular true underlying nature of being, it seems that whoever has the say on what this is and how it might be known does so with the help of particular power relations accompanied by specific rules of verification, rather than by any particular direct access to The Truth (Sullivan 2017a: 234).

Does this sentence really indicate that I do not understand the distinction between intransitive and transitive, or that I have no awareness of the effects of power, as implied elsewhere in Knudsen's article (2023: 6)?

It appears to me that Knudsen must have missed that when I talk about "the sometimes significantly different 'natures' being struggled over in such conflicts" (Sullivan, 2017a, p. 217) I am talking about transitive dimensions, i.e. of socially-embedded and historically-situated knowledge-making about 'the world'; in combination with considering the power-effects, as well as world-shaping dimensions, of such differences in knowledges and accompanying practices. For example:

> [f]or me, then, a critical realist perspective (i.e. that assumes a world exists independently of the observer) accepts that this world can be differently and diversely known – this diversity arising from culturally- and historically-inflected negotiations and assumptions regarding the ways that the world is made, so as indeed to differently shape ontological understanding. (Sullivan, 2017a, p. 224)

I would like to invite Knudsen to read these parts of my article again without projecting onto them what he appears to want to think I am saying.

Indeed, my own concern has been very much with the ways that relations of power and privilege contribute to structuring – in historical and socio-political circumstances – how understandings of 'the world' become empowered or marginalized. As Forsyth (2023, p. 195) writes, this impetus is very much in line with an emphasis in political ecology towards "seeking to diversify who gets to frame and generate knowledge" and "to make scientific expertise more sensitive to environmental and social diversity:" an endeavour that is becoming even more pertinent in political contexts of populist authoritarianism (Neimark *et al*., 2019). Concerns with such diversity and with subjugated ecological knowledges are a direct response to the ways that power shapes understandings of reality. On this point I align with Foucault (1971, online) in his statement on the impacts of modes of knowing enacted by 'the west' in relation to 'non-western cultures':

> [i]n order to know other cultures – non-western cultures, so-called primitive cultures – in order to know these cultures, we must no doubt have had not only to marginalize them, not only to look down upon them, but also to exploit them, to conquer them and in some way through violence to keep them silent. ... So, if you will, my hypothesis is this: the universality of our knowledge has been acquired at the cost of exclusions, bans, denials, rejections, *at the price of a kind of cruelty with regard to reality.* (emphasis added, see discussion in Sullivan 2019, p. 14)

No doubt this statement could be construed as essentializing. Given the historical circumstances privileging a rapacious and particular patriarchal coloniality with structural consequences across the globe, however, I rather think that Foucault's conceptualization here – echoed by scholars such as Chakrabarty (2000), Federici (2004) and Ghosh (2021) – holds some legitimacy.

In further relation to my dipping into critical realism and Knudsen's rather derogatory statement of my failure to comprehend conceptual distinctions, let me clarify that I first drew explicitly on 'critical realism' in political ecology work published more than twenty years ago; a fact that should be relevant for Knudsen's (2023, pp. 12-13) focus on the "[u]ptake of critical realism in political ecology." Indeed, it is this long-term engagement with the field of 'Political Ecology' that provides some impetus for wanting to engage with Bormpoudakis (2019) and Knudsen (2023) in order to clarify details and perspectives. Building on political ecology dimensions in my PhD called *People, plants and practice in drylands* (Sullivan, 1998), I co-edited one of the first collections of work in this subject area, namely *Political Ecology: Science, myth and power* (Stott & Sullivan, 2000). In this volume I published a chapter with the title "[g]etting the science right, or introducing science in the first place? Local 'facts', global discourse – 'desertification' in north-west Namibia" (Sullivan 2000). At that time 'critical realism' was very much part of discussions in what was then a consolidating field of 'political ecology.' This was so much the case that I did not specifically cite Roy Bhaskar's 1970s work on critical realism (e.g. Bhaskar, 1975) in the following quote, included to convey the spectrum of engagement with relativism, realism

and science in political ecology discussions at the time. As also affirmed by Forsyth (2023), 'critical realism' was as much an unreferenced circulating term in these political ecology discussions as 'relativism':

> [p]oststructuralist deconstruction of 'received wisdoms' of the environment tends to lay blame at the door of a simplistic and peculiarly western natural science: portrayed as hamstrung by its tendency to bracket research questions from their wider socio-political and historical contexts, yet hegemonic in its ability to assert 'power at a distance'… and thereby constrain people's lives in often brutally repressive ways. The extreme relativist's position is to deny that there can be any validity to scientific analyses of environmental problems, since far from constituting a defensible means of observing 'real world' phenomena such analyses are embedded in particular individual, social and historical moments and cannot be divorced from the power relations they uphold. In other words, to throw the scientific baby out with the bath-water. To the relativist's amusement, the realist might claim instead that we just have to get the science right: that with new tools and techniques, and with new conceptual influences over data collection and interpretation, the 'truth' will be revealed allowing rational planning and management of the environment for the common social and environmental good.
>
> In this chapter I argue that both these perspectives ignore a fundamental aspect of many modern environmental narratives, particularly those relating to the 'developing world.' That is, that they have become accepted as 'fact' in the absence of what most natural scientists would today acknowledge as the praxis of science; i.e. the standardised and 'transparent' collection of data to explore propositional or 'testable' statements, and the interpretation of such data within a defendable, albeit changing and contentious, theoretical framework. …
>
> Nevertheless, assertions of degradation incorporate a number of propositional truths which are amenable to analysis and potential falsification through the praxis of science within the limits of interpretation imposed by spatial and temporal scale… and conceptual framework. Institutional alliances, of course, also constrain the interpretation of data. As reviewed here, however, a critical realist approach to recent independent analyses seems to provide little support for specific claims of widespread desertification in north-west Namibia. Not surprisingly, such analyses also converge with individual oral testimony accounts of ecological dynamics in the area (Sullivan, 2000, pp. 15-16).

The chapter proceeded to use ecological field data from my own quantitative ecological science research to work through, and ultimately refute, propositions asserted by the desertification discourse unfolding in this specific situation at this time.

Nonetheless, both Knudsen and Bormpoudakis seem to think I am ignorant of the practical value and power of the scientific method. I read in Bormpoudakis (2019, pp. 556, 560), for example, that I distrust conservation sciences and ecology because these provide "the quantification necessary for creating the 'credits' that market-based conservation 'trades';" an implication being that I am aligned with an "*in toto* rejection of Western science and reason as that is embodied in ecology and conservation." Although I cannot expect Bormpoudakis or Knudsen to know this, I have myself carried out systematic, quantitative ecology studies. Half my PhD was based on multivariate analyses of a vegetation dataset including almost 3,000 trees I had measured, plus 24 exclosure plots and comparator plots for herbaceous vegetation, producing empirical and theoretical publications from this work *in mainstream ecology journals* (e.g. Sullivan, 1999; Sullivan & Rohde, 2002). Prior work involved quantified ecological assessments to support specific resource use practices (Konstant *et al*., 1995; Sullivan *et al*., 1995). I am aware that ecological field research is a critical part of proactive conservation praxis. Indeed, several years prior to the "landmark essay" (Bormpoudakis, 2019, p. 557) by Walker (2005) entitled 'Political ecology: where is the ecology?' I called specifically for a more explicit "role for ecology in political ecology" (Sullivan, 2000, pp. 34-35), writing:

> [p]erhaps in contrast to a relativist sociology of science, I suggest, therefore, that there might be much room for conceptual exchange between a biophysical science which embraces both form (i.e. structure) and change (i.e. innovation) in living complexes, and an actor-oriented applied social-science grappling with conflicts between local dynamics and national or global structures. In furthering political ecology researches of hegemonic environmental discourses, and in better representing currently obstructed environmental knowledges, I believe the fostering of such communication is critical.[7]

It is through in-depth experience with quantitative ecological field research that I have some understanding of the limits of such engagements; a context I write about specifically in another article that includes detailed case analysis of BDO in practice in England (Sullivan & Hannis, 2017, p. 1461). It is this background of ecological field research and quantitative analysis that means I have experiential knowledge of the tensions between practices of objectification that permit numerical equivalence-making, and a *depth ontology* that more acutely approaches difference (as considered in Section 3).

## 5. What kind of political ecology are we making?

It is upsetting and time-consuming to read and respond to the sorts of portrayals in published and widely read articles[8] such as those engaged with here. If I was to describe how this experience feels, I would say that it is as though my work (e.g. Sullivan, 2017a) has been simultaneously pounced on and skimmed over in the *JPE* articles by Bormpoudakis (2019) and Knudsen (2023). These kinds of writing strategies tend to be sustained through an unexpressed expectation of collusion through silence. Resisting this expectation is one reason for writing this article. At the same time, working on this kind of response, and drawing attention to a large part of my CV to defend against what reads to me as a form of attack, is honestly the last thing I wish to be doing.

What I have been trying to conceptualize and theorize through my work and research is the fact that people individually and variously collectively sometimes have markedly different understandings of what exists or can exist in the world; as well as diverse understandings of appropriate knowledge and ethical practices in relation to perceived and known existents. I have encountered this kind of diversity repeatedly through specific research interactions and reflections, in which I have at times had to unlearn some of my own assumptions so that I can hear what is being shared. Indeed, in its tagline "towards just and plural futures", the most recent Political Ecology Network conference in June 2024 appears to agree with this aim and effort:

> [t]he unfolding and entwined social-ecological crises make the challenge of how to move towards more plural and just futures more pressing than ever. Political ecology provides an important toolbox to explore the unjust and colonial power relations that condition global flows of material resources, money, ideas and people. …[9]

Beyond specific research circumstances, however, it seems to me that ontological pluralism runs prosaically through our lives and interactions. Christian theology and other religious doctrines propose God as an existent that variously asserts agency and determines aspects of our lives; a position disagreed with by adherents to atheism. A belief in the substance and reality of money and other fictitious commodities is

[7] In relation to Knudsen's reference to the "long running debate about 'where is the politics?' (Walker, 2007) and 'where is the ecology?' (Walker, 2005) in political ecology", let me add that in this chapter from 2000 I called for clearer articulations of both politics and ecology in 'political ecology.' Discussion of these themes followed the headings "[p]utting the politics into political ecology" and "[a] role for ecology in political ecology?" (Sullivan, 2000, pp. 33-34), preceding by some years Walker's articles which called for the same things.

[8] At the time of writing (June 2024), the *JPE* website indicates that Bormpoudakis (2019) has been viewed online and downloaded 2,284 and 660 times respectively; for Knudsen (2023) these figures are 7,971 and 1,290.

[9] https://pollen2024.com/

necessary for the existence of contemporary economic structures. Physicists assert varied and contested postulates regarding the foundational nature of being and the methods through which this can be known, a variety of views regarding underlying universal phenomena (particles, strings, plasma, etc.) illustrating this diversity (Sullivan, 2017a, pp. 222-223). It is clearly important to distinguish between ontology and epistemology to avoid committing epistemic fallacy. Yet how 'the world' is socially known also shapes how the world is known to be; additionally shaping practices that 'make the world'.

Writing practices might also be considered as world-making strategies, i.e. practices of worlding, leading me to want to ask Dimitrious Bormpoudakis and Ståle Knudsen the following question: what kind of political ecology are you wanting to create? I am curious, for example, to know why I appear in these strategies of critique when other authors in *JPE* have contributed similar analyses of ontological complexities? – an example here being Anders Burman's thoughtful article on "[t]he political ontology of climate change", also published in *JPE* in 2017. Other questions include: what kind of collegiality are you wanting to foster?, and how much value do you place on literature review of the work of authors you appear to want to discredit through severely truncated representations of their work?

In closing, let me ask the following question more widely: how can we as 'political ecologists' foster engagements that are simultaneously rigorously critical, well-researched, neutral to the extent that this is possible, and comradely? To frame this in an explicitly Foucauldian way: how might we play the games of truth, and the games of power with which they are imbricated, *with as little domination as possible* (Foucault 2000[1984], p. 298)? Political ecology, in my view, is a critical discipline for engaging with and understanding our catastrophic times. Please let us nurture respect, accuracy, and sensitivity to subtle conceptualizations and distinctions, so that this field of study and its diverse community may flourish.

## References


Abram, D. (2010). *Becoming animal: An earthly cosmology*. Pantheon Books.

Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University Press.

Bhaskar, R. (1975). *A realist theory of science*. Routledge.

Blaser, M. (2013). Notes towards a political ontology of 'environmental' conflicts. In Green, L. (Ed.) *Contested ecologies: Dialogues in the South on nature and knowledge* (pp. 13–27). Human Sciences Research Council Press.

Bormpoudakis, D. (2019). Three implications of political ontology for the political ecology of conservation. *Journal of Political Ecology*, *26*, 545–566. https://doi.org/10.2458/v26i1.22014

Burman, A. (2017). The political ontology of climate change: Moral meteorology, climate justice, and the coloniality of reality in the Bolivian Andes. *Journal of Political Ecology*, *24*, 921–938. https://doi.org/10.2458/v24i1.20974

Carver, L. and Sullivan, S. (2017). How economic contexts shape calculations of yield in biodiversity offsetting. *Conservation Biology*, *31*(5), 1053–1065, https://onlinelibrary.wiley.com/doi/full/10.1111/cobi.12917

Chakrabarty, D. (2000). *Provincializing Europe: Postcolonial thought and historical difference*. Princeton University Press.

DEFRA (2013). *Biodiversity offsetting in England Green Paper*. London: Department of Environment, Food and Rural Affairs.

Deleuze, G. & Guattari, F. 1987(1980). *A thousand plateaus: Capitalism and schizophrenia*, trans. Brian Massumi. The Athlone Press.

Descola, P. (2013). *Beyond nature and culture*. University of Chicago Press.

Ghosh, A. (2021). *The nutmeg's curse: Parables for a planet in crisis.* John Murray.

Green, L. (2020). *Rock | Water | Life: Ecology & humanities for a decolonial South Africa*. Duke University Press.

Federici, S. (2004). *Caliban and the witch: Women, the body and primitive accumulation.* Automedia.

Fletcher, R. & Rammelt, C. (2016). Decoupling: A key fantasy of the post-2015 sustainable development agenda. *Globalizations*, *14*(3), 450–467. https://doi.org/10.1080/14747731.2016.1263077

Forsyth, T. J. (2023). Political ecology and ontology: Is literal critical realism the answer? A response to Knudsen. *Journal of Political Ecology*, *30*, 191–197. https://doi.org/10.2458/*JPE*.5546

Foucault, M. (1970.) *The order of things*. Pantheon Books.

Foucault, M. (1971). The lost interview. https://youtu.be/qzoOhhh4aJg

Foucault, M. (2000[1984]). The ethics of the concern of the self as a practice of freedom (an interview with H. Becker, R. Formet-Betancourt, & A. Gomex-Müller). In Rabinow, P. (Ed.). *Ethics: Subjectivity and truth*. *essential works of Foucault 1954-1984, vol. 1* (pp. 146–154). Penguin.

Hannis, M. and Sullivan, S. (2012). *Offsetting nature? Habitat banking and biodiversity offsets in the English land use planning system*. Green House. https://www.greenhousethinktank.org/offsetting-nature/

Harvey, G. (2005). *Animism: Respecting the living world*. Hurst and Co.

Hecht, G. (2012). *Being nuclear: Africans and the global uranium trade*. MIT Press.

Herodotus (1998). *The histories*, trans. by R. Waterfield. Oxford University Press.

Ingold, T. (2006). Rethinking the animate, re-animating thought. *Ethnos*, *71*(1), 9–20. https://doi.org/10.1080/00141840600603111

Jackson, M. (2013). Plastic islands and processual grounds: Ethics, ontology, and the matter of decay. *Cultural Geographies*, *20*(2), 205–224. https://doi.org/10.1177/1474474012454998

Johnson, C. M. (2008). *The social ontology implicit in Wittgenstein*. www.carlsensei.com/docs/essays/wittgenstein-and-watsuji.pdf

Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teaching of plants*. Milkweed Editions.

Kohn, E. (2013). *How forests think: Towards an anthropology of nature beyond the human*. University of California Press.

Konstant, T. L., Sullivan, S. & Cunningham, A. B. (1995). The effects of utilization by people and livestock on *Hyphaene petersiana* (Arecaceae) basketry resources in the palm savanna of north-central Namibia. *Economic Botany*, *49*(4), 345–356. https://doi.org/10.1007/BF02863083

Knudsen, S. (2023). Critical realism in political ecology: An argument against flat ontology. *Journal of Political Ecology*, *30*(1), 1–22. https://doi.org/10.2458/*JPE*.5127

Latour, B. (2007). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.

LeBillon, P. (2021). Crisis conservation and green extraction: Biodiversity offsets as spaces of double exception. *Journal of Political Ecology*, *28*, 864–888. https://doi.org/10.2458/*JPE*.2991

Marder, M. (2013). *Plant-thinking: A philosophy of vegetal life*. Columbia University Press.

Marx, K. (1974[1867]). *Capital*, Vol I (trans. S. Moore and E. Aveling). Lawrence and Wishart.

Merchant, C. (1989[1980]). *The death of nature: Women, ecology and the scientific revolution*. Harper and Row.

Mueller, T. & Sullivan, S. (2015). Making other worlds possible? Riots, movement and counterglobalisation. In Davies, M. (ed.) *Disturbing the peace: Collective action in Britain & France, 1381 to the present,* (pp. 239–255). Palgrave Macmillan.

Neimark, B., Childs, J., Nightingale, A., Cavanagh, C., Sullivan, S., Benjaminsen, T.A., Batterbury, S. P. J., Koot, S. & Harcourt, W. (2019). Speaking power to 'post-truth': Critical political ecology and the new authoritarianism. *Annals of the American Association of Geographers*, *109*(2), 613–623. https://doi.org/10.1080/24694452.2018.1547567

Plumwood, V. (2006). *Feminism and the mastery of nature*. Routledge.

Schulz, K. (2017). Decolonizing political ecology: Ontology, technology and 'critical' enchantment. *Journal of Political Ecology*, *24*, 125–143. https://doi.org/10.2458/v24i1.20789

Seagle, C. (2012). Inverting the impacts: Mining, conservation and sustainability claims near the Rio Tinto/QMM ilmenite mine in Southeast Madagascar. *Journal of Peasant Studies*, *39*(2), 447–477. https://doi.org/10.1080/03066150.2012.671769

Smith, H. (1981). Four cultures: the ontological turn. *Syracuse Scholar* (1979-1991) *2*(1): Article 13, online, http://surface.syr.edu/suscholar/vol2/iss1/13

Stott, P. & Sullivan, S. (Eds.) (2000). *Political ecology: Science, myth and power*. Edward Arnold.

Sullivan, S. (1998). *People, plants and practice in drylands: Sociopolitical and ecological dynamics of eesource use by Damara farmers in arid north-west Namibia*. Unpublished PhD dissertation. University College London. http://discovery.ucl.ac.uk/1317514/

Sullivan, S. (1999). The impacts of people and livestock on topographically diverse open wood-and shrub-lands in arid north-west Namibia. *Global Ecology and Biogeography*, *8*, 257–277. https://doi.org/10.1046/j.1365-2699.1999.00131.x

Sullivan, S. (2000). Getting the science right, or introducing science in the first place? Local 'facts', global discourse – 'desertification' in north-west Namibia. In Stott, P. & Sullivan, S. (eds.) *Political ecology: Science, myth and power* (pp. 15–44). Edward Arnold.

Sullivan, S. (2002). How sustainable is the communalising discourse of 'new' conservation? The masking of difference, inequality and aspiration in the fledgling 'conservancies' of Namibia. In Chatty, D. & Colchester, M. (eds.) *Conservation and mobile Indigenous people: Displacement, forced settlement and sustainable development* (pp. 158–187). Berghahn Press.

Sullivan, S. (2005). 'We are heartbroken and furious!' Rethinking violence and the (anti-)globalisation movements. In Maiguashca, B. & Eschle, C. (Eds.) *Critical theories, world politics and 'the anti-globalisation movement'* (pp. 175–194). Routledge.

Sullivan, S. (2006). The elephant in the room? Problematizing 'new' (neoliberal) biodiversity conservation. *Forum for Development Studies*, *33*(1), 105–135. https://doi.org/10.1080/08039410.2006.9666337

Sullivan, S. (2008). 'Viva Nihilism!' On militancy and machismo in (anti-)globalisation protest. In Devetak, R. & Hughes, C. (Eds.) *Globalization of political violence: Globalization's shadow* (pp. 203–243). Routledge.

Sullivan, S. (2010). 'Ecosystem service commodities' – a new imperial ecology? Implications for animist immanent ecologies, with Deleuze and Guattari. *New Formations: A Journal of Culture/Theory/Politics*, *69*, 111–128. https://journals.lwbooks.co.uk/newformations/vol-2009-issue-69/abstract-8463/

Sullivan, S. (2011). Seeing the forest-spirits for the biodiversity offsets. *The Natural Capital Myth Blog* 29 November 2011, https://the-natural-capital-myth.net/2011/11/29/seeing-the-forest-spirits-for-the-biodiversity-offsets/

Sullivan, S. (2013a). Nature on the Move III: (Re)countenancing an animate nature. *New Proposals: Journal of Marxism and Interdisciplinary Enquiry*, *6*(1-2), 50–71. https://ojs.library.ubc.ca/index.php/newproposals/article/view/183771

Sullivan, S. (2013b). After the green rush? Biodiversity offsets, uranium power and the 'calculus of casualties' in greening growth. *Human Geography*, *6*(1), 80–101. https://doi.org/10.1177/194277861300600106

Sullivan, S. (2016). (Re-)embodying which body? Philosophical, cross-cultural and personal reflections on corporeality, *in* Thomas-Pellicer, R., de Lucia, V. & Sullivan, S. (Eds.) *Law, philosophy and ecology: Exploring re-embodiments* (pp. 119-138). GlassHouse Books, Routledge Law, Justice and Ecology Series.

Sullivan, S. (2017a). What's ontology got to do with it? On nature and knowledge in a political ecology of 'the green economy'. *Journal of Political Ecology*, *24*, 217-242. https://doi.org/10.2458/v24i1.20802

Sullivan, S. (2017b). On 'natural capital', 'fairy-tales' and ideology. *Development and Change*, *48*(2), 397–423. https://doi.org/10.1111/dech.12293

Sullivan, S. (2018). Dissonant sustainabilities? Politicising and psychologising antagonisms in the conservation-development nexus. *Future Pasts Working Paper Series* 5 https://www.futurepasts.net/fpwp5-sullivan-2018

Sullivan, S. (2019). Towards a metaphysics of the soul and a participatory aesthetics of life: Mobilising Foucault, affect and animism for caring practices of existence. *New Formations: A Journal of Culture, Theory & Politics*, *95*(3), 5–21. https://doi.org/10.3898/NEWF:95.01.2018

Sullivan, S. (2023). "Hunting Africa": How international trophy hunting may constitute neocolonial green extractivism. *Journal of Political* Ecology, 30, 1–31. https://doi.org/10.2458/*JPE*.5489

Sullivan, S. & Ganuses, W. S. (2020). Understanding Damara / ǂNūkhoen and ǁUbun indigeneity and marginalisation in Namibia. In Odendaal, W. & Werner, W. (Eds.) *'Neither here nor there': Indigeneity, marginalisation and land rights in post-independence Namibia* (pp. 283–324). Land, Environment and Development Project, Legal Assistance Centre.

Sullivan, S. & Ganuses, W. S. **(**2021). Densities of meaning in west Namibian landscapes: Genealogies, ancestral agencies, and healing. In Dieckmann, U. (Ed.) *Mapping the unmappable? Cartographic explorations with Indigenous peoples in Africa* (pp. 139–190). Transcript. https://doi.org/10.1515/9783839452417-006

Sullivan, S. & Ganuses, W. S. (2022). *!Nara* harvesters of the northern Namib: A cultural history through three photographed encounters. *Journal of the Namibian Scientific Society, 69*, 115–139.

Sullivan, S. & Hannis, M. (2015). Nets and frames, losses and gains: Value struggles in engagements with biodiversity offsetting policy in England. *Ecosystem Services*, *15*, 162–173. https://doi.org/10.1016/j.ecoser.2015.01.009

Sullivan, S. & Hannis, M. (2017). 'Mathematics maybe, but not money': On balance sheets, numbers and nature in ecological accounting. *Accounting, Auditing and Accountability Journal*, *30*(7), 1459–1480. https://doi.org/10.1108/AAAJ-06-2017-2963

Sullivan, S., Konstant, T. L. & Cunningham, A. B. (1995). The impact of the utilization of palm products on the population structure of the Vegetable Ivory Palm (*Hyphaene petersiana*, Arecaceae) in north-central Namibia. *Economic Botany*, *49*(4), 357–370. https://doi.org/10.1007/BF02863085

Sullivan, S. & Rohde, R. (2002). On non-equilibrium in arid and semi-arid grazing systems. *Journal of Biogeography*, *29*(12): 1595–1618. https://doi.org/10.1046/j.1365-2699.2002.00799.x

Sullivan, S., Spicer, A. & Böhm, S. (2011). Becoming global (un)civil society: struggles in the global Indymedia network. *Globalizations*, *8*(5), 703–717. https://doi.org/10.1080/14747731.2011.617571

Walker, P. A. (2005). Political ecology: Where is the ecology? *Progress in Human Geography*, *29*(1), 73–82. https://doi.org/10.1191/0309132505ph530pr

Walker, P. A. (2007). Political ecology: Where is the politics? *Progress in Human Geography*, *31*(3), 363–369. https://doi.org/10.1177/0309132507077086