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42 **Conservation Geopolitics: existing work, future directions**

43

44 **Abstract**

45 This paper reviews recent work concerning the impact of geopolitics on wildlife
46 conservation (and vice versa), and identifies future priorities in conservation
47 geopolitics research. Geopolitics is understood as both: (i) an analytical focus on
48 geopolitical practices, especially concerning the behaviour of countries with
49 respect to territory and national security, and (ii) a set of theories that have been
50 developed to explain and predict those behaviours. We develop a typology of
51 core geopolitical practices of relevance to conservation, including *territorial*
52 *practices* of colonisation and the management of migrations and borders, and
53 *security practices* relating to military, economic, and environmental security. We
54 proceed by identifying research that considers how these practices affect
55 conservation situations and outcomes, noting the recent emergence of
56 conceptual developments such as 'environmental geopolitics' and 'geopolitical
57 ecology' that draw on multiple fields within the social sciences to theorise the
58 links between geopolitics and environmental management. A 'geopolitical
59 perspective' is defined as a focus on geopolitical practices combined with an
60 explicit engagement with geopolitical theory, and we identify areas where this
61 perspective has been, and could be more effectively brought to bear. In
62 conclusion, we suggest four pressing priorities in conservation research to which
63 the geopolitical perspective might contribute: how political and economic
64 differences between countries affect biodiversity outcomes, how geopolitical
65 practices to address those differences might facilitate or frustrate conservation
66 efforts, how national borders and human and wildlife movements might be

67 better managed for the benefit of both, and how conservation strategies might be
68 best selected to suit existing (and future) geopolitical realities.
69
70
71 **1. Introduction**
72
73 In this paper, we review existing research into 'conservation geopolitics', and
74 suggest priorities for the future. Although not a new area of inquiry (see, for
75 example (Albert 1992)), there have been notable recent developments in
76 geopolitical studies - notably concerning 'geopolitical ecology' (Bigger & Neimark
77 2017) and 'environmental geopolitics' (Dalby 2014; O'Lear 2018) – that are of
78 pressing significance for wildlife conservation. We draw together and
79 contextualise such work, tracing how geopolitics has been understood as both an
80 *analytical focus* on a specific set of practices, and as a *set of theories* that attempts
81 to explain – and influence – such practices. We then identify the relevance of this
82 geopolitical 'perspective' (i.e. the focus and the theories) for wildlife
83 conservation, and review how existing and historical conservation research has
84 incorporated geopolitical concerns. The review allows us to: (i) map the links
85 between situations where geopolitical practices are of importance, (ii) add to
86 theoretical understandings of such situations, and (iii) identify geopolitical
87 practices and situations where further research is needed.
88
89 Geopolitics is a specific form of international politics. It concerns
90 the behaviour of countries (and their many representatives and officials) with
91 respect to **territory** and **security**, primarily (although not exclusively) vis-à-vis

other countries. Territorial practices include, for example, managing international borders, regulating the movements of objects and organisms across such borders (particularly humans), or creating new borders through colonising and decolonising adjacent and faraway lands. Often, such practices are enacted to secure or acquire resources, particularly natural resources. Security practices include, amongst other things, preventing or enacting military action at home and abroad, actions to protect the national economy from external threats (be that trade wars or cyber-attacks), or actions that protect the environmental basis of national life. Geopolitical theories seek to analyse, explain, and predict such behaviours. However, there are many competing theories; we outline two broad schools of geopolitical analysis in the next section.

Of course, geopolitical practices do not occur in a vacuum – as much as Hollywood fantasies about nuclear command centres might suggest otherwise. Instead, they occur within and are part of a wider context of international politics and the multi-scalar networks (social, cultural, political, economic, environmental etc.) that link the globalised world. A few examples will suffice: consider the landless person making an illegal cross-border dash between countries to kill a rhino, with the horn then sold on through illegal trade on another continent. Or consider the artisanal fishing communities whose livelihoods are dependent on, amongst other things, the global agreements about what species can be harvested, and thus also on the diplomatic deals between various countries and international groups that influence such decisions. In both these cases, behaviours that influence conservation outcomes need to be understood all the way from the ground-level to the geopolitical level – they

117 require a 'transdisciplinary' approach (Macdonald in press). Our aim here is to
118 examine how geopolitical analyses can contribute to transdisciplinary
119 understandings of such complex conservation contexts. We thus review existing
120 work in this vein, identify future priorities for conservation geopolitics research,
121 and highlight the distinctive contribution such a perspective offers. As
122 (Sandbrook et al. 2013) suggest, social research can be both 'for' conservation (in
123 the sense of being directly utilised to shape conservation interventions), and 'on'
124 conservation (in the sense of analysing the practices of conservationists and
125 their wider effects). Conservation geopolitics, we suggest, can be understood in
126 both senses: as a way directly to shape conservation interventions, and as a way
127 of understanding the practices of conservation and their contextual settings.
128 That is, we suggest it has both policy relevance and critical purchase.
129
130 **2. Geopolitics**
131
132 The term 'geopolitics' is widely used in popular parlance and the western media
133 to describe the politics of conflict between states – that is, the political aspects of
134 facilitating, or defending against, aggression between countries (war, military
135 conflict or preparedness) and the various additional actions states take to
136 prevent such hostilities (e.g. diplomacy). However, in academic discussion, as
137 might be expected, the term carries significantly more freight. Therein, the term
138 'geopolitics' refers to both i) a range of political practices, and ii) a set of
139 academic theories, developed mainly within the disciplines of international
140 relations (IR) and political geography (for clarity: 'geopolitics' is not a synonym
141 for either IR or political geography as a whole, but refers to a specific subset of

142 theories within both fields). As in many academic disciplines, the main theories
143 and their diverse variants often conflict and compete with each other. More
144 unusually, the theories also have significant influence on the political practices
145 that they seek to analyse. Geopolitical theories and practices thus overlap and
146 interact, negating any claim to analytical separation between theoretical
147 developments and the phenomena they seek to explain.
148
149 ***Geopolitical practices***
150
151 In one sense, then, geopolitics can be understood as an *analytical focus* on a
152 specific set of practices. This specificity is what distinguishes a geopolitical focus
153 from a broader concern with international politics or the international aspects of
154 multi-scalar politics. As outlined in the introduction, primarily they include
155 practices of territorial control (e.g. national expansion, colonisation, managing
156 borders and movements, often concerned with resources of some kind) and
157 practices related to 'national security' (e.g. military, economic, environmental
158 security viewed from a nation-state perspective). In the next section (see Figure
159 2) we will review a significant corpus of existing work in conservation social
160 science that analyses such practices, and demonstrate how they link to
161 geopolitical concerns.
162
163 ***Geopolitical theories***
164
165 As well as an *analytical focus*, geopolitics can also be understood as a set of
166 *political theories* that seek to explain, analyse, and predict these geopolitical

practices. Academic geopolitics has been both extensively theorized and much disputed. The clearest distinction is between 'classical' and 'critical' approaches (Dittmer & Sharp 2014). Indeed, the contrast between them is heightened because they represent poles on a continuum of theoretical approaches in IR, that also includes more nuanced versions of realist theory (neorealism), as well as neoliberalism, and idealism (of which critical IR is a part); within political geography, the situation is somewhat different, with 'classic' approaches to geopolitics representing the mainstream view in the early 20th century, and 'critical' approaches the dominant theory in contemporary work.

Figure 1: Contrasting theories of geopolitics. This table shows the main emphases made in classical and critical theories of geopolitics. These categories are not exclusive – classical approaches can pay attention to 'networks' of states, for example – but they do represent the factors which are assigned the most importance in each theory.

Main emphasis:	**Classical geopolitics**	**Critical Geopolitics**
Actors	States (and their representatives/ officials)	Multiple – from individuals to governments (and their officials)
Practices	Territorial Control (de/colonisation, borders, movements) National Security (military, economic, environmental)	
Claims	States act to protect/expand (depending on the theory) their territory and interests in an uncertain world	Geopolitical practices are enacted in networks of diverse actors, and have (often pernicious) effects felt by individuals
Status of claims	Seeks universal laws	Makes contextualised claims
Links to	Realist and neo-realist approaches to International Relations	Critical social theories

Classical geopolitics (see Figure 1) is often equated with (historically influential) theories about states' interests and behaviours, with states considered as the key geopolitical actors in a struggle for geographical space and territory. It has roots in both political geography and the study of international relations. Its history is fraught and toxic: from the use of Mackinder's geopolitical theories in the politics of empire, to the adoption of 'lebensraum' (derived from Ratzel, and latterly developed by Kjellén and Haushofer) by Nazi Germany as a conceptual justification for territorial expansion. Indeed, the Nazi association led to the term 'geopolitics' falling out of favour for some decades before it was reinvigorated, with markedly different connotations, by Kissinger in the 1970s. Kissinger's notion of geopolitics centred on the avoidance of global conflict rather than territorial acquisition, and relied on states pursuing their national interests to promote equilibrium in international relations through a balance of power; his approach explicitly drew on a longer history of balance-of-power theories and practices stretching back to Thucydides (Dodds 2014). Yet despite the diversity of these various classical approaches, they are united in emphasizing the primacy of states as actors, tend to be constructed from an elite Western perspective, and often seek to identify 'universal' laws of state behaviour (Flint 2017). Classical geopolitics thus shares much ground with 'realist' and 'neo-realist' approaches to international relations, which view inter-state relations as driven by the struggle for dominance between states (Booth 2014), often theorized as occurring in an anarchic system. Realist and neo-realist IR justifies this focus on states as unitary actors as a deliberate attempt to reduce the complexity of international politics, with the IR theorist Kenneth Waltz's Theory of International Politics being exemplary in this regard (Waltz 2010).

Critical geopolitics has emerged, largely but not exclusively within the field of political geography, as an explicit critique of the classical approach (Flint 2017). It challenges the assumptions that underlie classical theories (see Figure 1), particularly its state-centrism, putting much more emphasis on the roles of multi-scalar political, social and economic networks in explaining the behaviour of multiple actors in and beyond the international system. That is, rather than focus on explaining the behaviours of 'states' as the principal actors in an anarchic world, the critical approach (in common with various other approaches to international politics) emphasizes the complexity of relations from the scales of international systems to those of individual bodies. The point here is not that classical theories don't recognise complexity (indeed, the focus on states as unitary actors is a deliberate strategy to cut through that complexity); rather, critical geopolitics rests on the claim that too much is lost when geopolitical practices are explained and understood solely from the perspective of 'the state actor'. But critical geopolitics is also, more importantly, marked by an emphasis on the secondary consequences of geopolitical practices (i.e. going beyond how one states' actions might affect those of another, to consider how specific communities or social groups may be affected), and those consequences that derive from the application of classical theories in particular. Epistemologically it is heavily influenced by post-modernist thought, critical feminist theory's attention to embodied context, and the networked understandings of space developed within human geography (Flint 2017). As such, critical geopolitics is best understood as a diverse set of theories rather than a unitary one, albeit theories that are united by the ways in which they emphasize the importance of

particular contexts, the heterogeneity of political actors (i.e. not just 'states'), and the importance of emphasizing the unequal consequences of geopolitical practices. It proceeds through analysing the words and actions of multiple actors – not simply state representatives, advisors, and the assorted actors with influence in the international system, but also those of people affected directly by regimes of state territorialisation and security (Agnew 2003). It thus focuses on practices such as the (re)creation of national identities, the ways in which geopolitical actions are experienced differently according to gender or race, or the ways in which human migration is facilitated or frustrated through geopolitical logics, policies and infrastructures. Critical geopolitics also, always, turns attention to those who experience the effects of such practices 'on the ground'.

The critical purchase within 'critical geopolitics' comes from locating the (often pernicious, often unseen) effects of particular geopolitical actions within their wider political, economic, and cultural contexts. Here critical geopolitics intersects with a variety of complementary approaches to understanding state behaviours in the contemporary economic global system, not least critiques of neoliberalism offered by economic geography (Smith 2010) and political ecology (Robbins 2012). Recent research at this intersection, that combines the theoretical framework of critical geopolitics with political ecology, has been framed as 'geopolitical ecology' (Bigger & Neimark 2017). In a similar vein, research that utilises critical geopolitics to analyse diverse forms of environmental management practice has been labelled as 'environmental geopolitics' (O'Lear 2018). The particular contribution made by geopolitical

theory is to emphasize how practices of state territorialisation and security contribute to supporting or creating dominant economic and political arrangements, and how these affect environmental and ecological systems.

3. Geopolitical practices and wildlife conservation

In this section, we review existing work deriving from various social science traditions concerned with wildlife conservation that is significantly concerned with geopolitical practices. Such work is by no means new, nor is it often explicitly positioned as 'conservation geopolitics'. However, we suggest that this categorization may help in linking work on geopolitical practices with geopolitical theories around territory and security. We also, therefore, suggest areas where the 'geopolitical perspective' (which we define as a focus on geopolitical practices, while utilising geopolitical theories as an analytical tool to explain those practices) may further existing understandings of conservation.

We have structured this review according to the core geopolitical practices of territory and security. As with any categorization exercise, this involved simplification of the diversity found in geopolitical research and theory. As is the case in much social science, the concerns and empirical focus of geopolitics scholars may encompass a far wider set of practices than those highlighted here. For example, the ways in which national identities and cultures of 'nationalism' are created and re-created is an important topic within critical geopolitics, and such nationalisms and identities can be of relevance to conservation (when they lead to conflict, or by contrast when they are used to support certain 'flagship'

species). Nationalisms, after all, are often fostered through narratives about territory and 'national security'. Nevertheless, we suggest that our categorization is an effective, if broad-brush, representation of the field's central concerns. Given that research addressing geopolitical themes does not always self-identify as 'conservation geopolitics', for this review we have not relied on automated methodologies using common search terms. Instead, based on the cross-disciplinary expertise of the authorial team, we have identified important shared tendencies and overlapping commitments in some diverse recent bodies of work.

Figure 2: Geopolitical Practices and Wildlife Conservation. This Figure maps some of the key example areas covered by conservation geopolitics literatures, but is not intended to be exhaustive.

Geopolitical Practices and Wildlife Conservation			
Territorial Control		**National Security**	
Practice	**Conservation examples**	**Practice**	**Conservation example**
Colonisation /decolonisation	Colonial-era protected areas	Military security	Impact of conflict on biodiversity
Managing borders	Transfrontier protected areas	Economic security	Trade relations and links to biodiversity outcomes
Regulating movements	Non-native species; human migrations	Environmental security	Loss of ecosystem services as threat to national security

Practices of territorial control

Expansion and colonisation. The territorial domination of 'natural' areas through historical and contemporary forms of colonialism is a particularly well-developed area of research. The links between the early wildlife conservation

movement and the apparatus of western imperialism have been well documented (Adams 2004). Many of the world's oldest and most iconic protected areas, especially those in the Global South, were initially created as game (hunting) reserves for the imperial elites. The hunters were, for the most part, western; and local peoples were often forcibly removed (Dowie 2009). Within this well-rehearsed history, a focus on geopolitical practices of territorial control highlights the ways in which the bureaucracies and militaries of certain (western) states were involved in shaping the political-ecological borders within other (colony) countries – see, for example (Neumann 1996). But this is not simply a historical interest, since many colonial-era ecological borders persist, as the bureaucracies of postcolonial states adopted existing national park systems and their accompanying ideologies of 'wilderness' (Neumann 1998; Brockington 2002). Thus, certain contemporary territorial practices and arrangements in conservation (particularly relating to protected areas) remain shaped by these histories of territorial colonialism (Brockington et al. 2008; Bluwstein & Lund 2018).

The territorial logics of conservation do not derive solely from colonial roots; applied conservation biology often requires and promotes the designation of protected areas to address species endangerment. In some cases, the borders and positioning of new protected areas are strongly influenced by the geopolitical practices of states, with those in Antarctica being a prime example (Hughes & Grant 2017). However, the relevant actors in shaping these protected spaces are by no means limited to states, but increasingly include conservation NGOs, who have become relevant political actors at both international and

national scales (Larsen & Brockington 2017), engaged in acts of 'territorialisation' as they enact spatial strategies to create, expand, and connect protected areas of various scales (Dowie 2009; Adams et al. 2014). Furthermore, as the rationale for protected areas has developed over time (towards species and biodiversity conservation), global conservation treaties (and their associated bureaucracies and funding mechanisms) have emerged as important arenas through which ecological spaces *within countries* are shaped. In many places, conservation logics drive government decisions about spatial land management – as the anthropologist Paige West memorably reported of Papua New Guinea, "conservation is our government now" (West 2006). And while colonialism and territorialisation by military means has been in decline in many countries, economic modes of neo-colonialism are rife in the Global South as the world's richer nations (in recent years including China) vie for access (especially for raw materials) and influence (Carmody 2016) – with some significant implications for biodiversity (Igoe et al. 2010; Büscher et al. 2012), especially with respect to infrastructure developments. Indeed, competition for control of natural resources can lead to new practices 'territorialisation' and the emergence of new 'frontiers' (Rasmussen & Lund 2018).

We suggest that there is a need for continuing work in conservation geopolitics that examines how geopolitical territorial practices can and have shaped conservation outcomes – past, present, and future. Priorities include: (i) the ways in which countries utilise their political and economic power to leverage conservation action through the control of territory, and the ethical considerations attached to such actions; and (ii) the role of foreign policies,

355 diplomacy, and international relations in achieving such ends. Such questions are
356 crucially important to understanding and achieving (politically) sustainable
357 conservation outcomes. Furthermore, while there is a long tradition of research
358 (in development studies, political science and human geography) that looks at
359 the ways in which conservation and development priorities (Bigger & Neimark
360 2017) have been combined and/or reconciled, we suggest that such work will
361 continue to be important – and that conservation geopolitics might add to such
362 analyses through theorizing the forms of territoriality occurring when
363 conservation territories are claimed, controlled and disputed by competing
364 states, NGOs, international organizations and local communities.
365
366 **Borders and Movement.** Research highlighting the importance of political
367 borders and cross-border movements to conservation outcomes might also
368 either be considered as a form of conservation geopolitics (given the focus on
369 these specific practices), or be further developed through engaging with
370 geopolitical theories. Much existing work in the geopolitical tradition draws
371 attention to the practices through which borders are made and re-made,
372 examines the relevant decision-making processes, identifies the actors involved,
373 and asks who and what are enclosed or excluded by those borders (Dittmer &
374 Sharp 2014). Extended to practices of wildlife conservation, existing research
375 (especially as developed in political ecology) traces the movements of people and
376 wildlife that are facilitated or frustrated through political borders. Indeed, some
377 recent interventions explicitly combine the insights of critical geopolitics and
378 political ecology, in a form of 'geopolitical ecology' (Bigger & Neimark 2017).
379

We offer four examples (by no means exhaustive) of border situations where the geopolitical perspective is of use. First, various geopolitical interests are sometimes aligned with conservation goals in the creation of protected area borders (and in some cases conservation activities are co-opted to further state geopolitical interests), and such acts of 'territorialisation' (see above) have diverse consequences (Bocarejo & Ojeda 2016; Dwyer et al. 2016; Kelly & Ybarra 2016). Second is with respect to the growing militarization of conservation, particularly the practice of using armed guards to secure the borders of protected areas, and the impacts this might have on both wildlife and local people (Duffy 2014, 2016). Third is in relation to human migrations, since how these are managed (facilitated or prevented) can have significant implications for biodiversity. Human migrations can involve movements across local and national borders (and into protected areas), and the movement of refugees across national borders due to armed conflict, economic hardship, or famine (amongst other things). Not all borders are political: some are economic, others cultural. And fourth, the geopolitical perspective is also of relevance when considering cross-border co-operation on conservation issues – from joint action plans on threatened species, to the creation of trans-border protected areas to improve habitat connectivity (Barquet et al. 2014; Ramutsindela 2017). Examples of the latter include regional negotiations between states to establish corridors for wildlife between their borders such as the MesoAmerican Biological Corridor (Worboys et al. 2010), or transfrontier protected areas such as the Kavango-Zambezi Transfrontier Conservation Area (KAZA) which links habitats across the borders of Angola, Botswana, Namibia, Zambia and Zimbabwe. Indeed, there is some evidence that cooperation on conservation

schemes makes a meaningful contribution towards peace-making between neighbouring states (Barquet 2015). Often such cross-border schemes are promoted or facilitated through the frameworks of global wildlife treaties such as the Convention on Biological Diversity or the Convention on Migratory Species (Trouwborst et al. 2017).

There is significant historic and contemporary work relating to the geopolitical ecologies of borders and migrations, of which just a small selection is listed above. Such research already explicitly engages with geopolitical theory, to make sense of bordering practices, militarization, state actions and related behaviours that shape the contextual realities of wildlife conservation in border areas. We suggest that this kind of research is of increasing importance for wildlife conservation given, for example, the ways that climate change will shift species' ranges (Thomas et al. 2004), or even lead to mass human migrations across political borders, as environmental change and degradation continues to occur.

Practices of 'national security'

Military security. Conservation geopolitics is also concerned with assessing how (often violent) conflicts between humans can affect conservation outcomes – now and in the future. Indeed, this is a topic where much existing conservation science has focussed. Such research shows that warfare tends to have deleterious effects on wildlife, and this is true for inter-state wars (between countries) and civil conflicts (within a country or across several countries) alike. Impacts of inter-state and civil war include significant displacements of people, the

destruction of habitats and the long-lasting ecological effects of munitions and military activities (Lawrence et al. 2015; Gaynor et al. 2016). For example, land mines deployed in Cambodia have continued to claim the lives of wildlife long after the conflict concerned ended (Dudley et al. 2002). Violent conflicts have also been linked to the excessive hunting of bushmeat for sustenance (by military personnel and non-combatants facing disruptions to food supplies), with the impact on wildlife in the Democratic Republic of Congo during repeated wars being a prime example (De Merode & Cowlishaw 2006). Hunting pressure can have a cascade effect on large carnivores who rely on poached prey species for survival – indeed, bushmeat poaching is identified as one of the most pressing threats for lion *Panthera leo* (Linnaeus, 1758) populations across much of Africa (Panthera et al. 2016). In addition, military conflict has, in recent decades, been shown to be prevalent in areas important for wildlife conservation, and ongoing conservation programmes are often seriously disrupted by such activities (Hanson et al. 2009). Similarly, violent conflicts can occur in protected areas because of the sanctuary they offer to criminal groups (see, for example, the links between protected areas and violence in Columbia identified in (Canavire-Bacarreza et al. 2018)). The negative effects of violent conflict on conservation capacity can be long-standing, and persist in post-war periods (Conteh et al. 2017). Furthermore, the link between conflict and environmental degradation can be circular and reinforcing, as conflicts undermine the ecological basis of human society (agriculture, access to water etc.) (Collier 2007). Although there are a few isolated examples of human conflicts deliberately avoiding wildlife areas and even leading to the creation of 'de facto' wildlife refuges (with the Korean de-militarized zone the most

455 prominent example), these are the exception rather than the rule (Dudley et al.
456 2002). In some situations, trade in illegal wildlife and products has been linked
457 to the financing of military campaigns – thus leading to situations where animals
458 are being utilised to fund their own destruction (Douglas & Alie 2014). However,
459 in the case of elephant ivory, the much-cited link between illegal ivory and the
460 financing of terrorism has been questioned (Sommerville 2016). Indeed, a
461 critical perspective on the ivory/terrorism narrative demonstrates how the
462 claims made about ivory and terror groups (based on flimsy evidence) have been
463 utilised by a variety of actors to justify increasing forms of militarization,
464 dispossession, and the enclosure of communally-utilised or locally-held lands
465 (Duffy 2016).
466
467 Conservation activities may be utilised by state or other actors in order to
468 advance political, rather than conservation, aims; as shown in the example
469 above, where a conservation concern (elephant poaching for ivory) becomes
470 linked to a broader geopolitical agenda (combatting terrorism). As another
471 example, research at the intersection of political ecology and geopolitics has
472 demonstrated how concerns about military, economic and environmental
473 'security' (see next sections) have been used to justify increasingly violent
474 approaches to policing in protected areas (Kelly & Ybarra 2016). Indeed,
475 understanding how conservation activities relate to the wider military and
476 quasi-military practices of states is increasingly important given the apparent
477 growth in the militarisation of conservation (Duffy 2014). For example, recent
478 political ecology analyses (that also draw on geopolitical theories) have
479 theorized how the increasing militarization of conservation has led to the

480 emergence of 'green wars' (Büscher & Fletcher 2018). Such work identifies
481 strong links between practices of military security in conservation, and how
482 these support specific political and economic arrangements and regimes
483 (Marijnen & Verweijen 2016). Indeed, such situations are by no means new, as
484 there is a long history of conservation activities becoming (or remaining)
485 'militarized' in order to advance unrelated economic interests (see, for example,
486 (Albert 1992)).
487
488 **Economic security.** States do not only seek to ensure their security from
489 military threats; the 'national interest' also includes promoting and protecting
490 the economic well-being of a country in the face of competition and threats from
491 overseas. Such threats may include (for example) trade wars, the economic
492 impacts of real wars in other parts of the world, or cyber-threats to national
493 economies. Actions to promote or protect economic security can be directly
494 relevant to wildlife conservation. A prime example is the ways in which
495 economic interests relating to commercial activities are linked to the voting
496 preferences of countries at meetings of the various global wildlife treaties, such
497 as the Convention on International Trade in Endangered Species of Wild Fauna
498 and Flora (CITES). For example, the existence of trophy hunting and captive
499 breeding industries in some states has shaped recent votes with respect to
500 uplisting lions (Bauer et al. 2018). A different set of examples relates to how
501 wildlife and environments can be 'securitized' to promote both economic and
502 environmental goals. For instance, the rise of 'ecosystem services' logics within
503 environmental management across the world have been justified in such terms.
504 In turn, the ecosystem services approach has been criticized for its promotion of

505 'neoliberal' forms of economic management that have deleterious social
506 outcomes and self-defeating tendencies with respect to environmental outcomes
507 (Bakker 2010; Dempsey & Robertson 2012; Wynne-Jones 2012). Again, we
508 suggest that including a geopolitical perspective in such analyses can be
509 informative – in the examples above, it would help to more fully explain the
510 behaviour of state delegates in the global wildlife conventions, as well as the
511 influence of 'national security' logics (especially those relating to 'environmental
512 security') in the promotion of ecosystem services regimes internationally. Since
513 economic (as well as military) concerns have become so closely linked to notions
514 of environmental security, we expand on the latter in more detail, below.
515
516 **Environmental security**. The field of geopolitics has engaged more broadly with
517 environmental policy over recent decades, in two (different, but related) senses.
518 First, the end of the Cold War saw a slew of articles published that framed
519 environmental degradation and climate change as a/the 'new threat' to security,
520 (Dalby 2009). Indeed, the debate about the links between climate change,
521 environmental degradation and conflict continue within academic and public
522 venues to this day (Adams et al. 2018; Butler & Kefford 2018). Second, critical
523 geopolitics researchers noted the widespread uptake of this new 'environmental
524 security' approach by national governments, explaining the practices through
525 which contemporary states and international organisations subsequently (albeit
526 not immediately) formulated the environment into a problem that needed to be
527 'secured' (to mitigate the risk of climate change-induced conflicts over resources,
528 or to ensure continuing food supplies, for example). In both senses, national

borders and geopolitical territories have usually remained central to the notion of what is to be made secure.

A geopolitical perspective can, therefore, allow researchers to identify the practices through which the environment and wildlife are 'secured' for the benefit of states (and their peoples), and to critically analyse the theoretical propositions through which such practices are justified – in what has been termed an 'environmental geopolitics' (Dalby 2014; O'Lear 2018). Again, the point is that a full understanding of the contexts in which conservation activities occur requires such an analysis. For example, when applied to the negotiations concerning global treaties on wildlife and the environment, such a perspective emphasizes the geopolitical concerns with 'environmental security', alongside those of military and economic security, that increasingly shape debate and participation. The Convention on Biological Diversity (CBD), to take one treaty, has played an important role in promoting the growth of protected areas globally in recent decades (Chape et al. 2005). The treaty adopted the concept of 'common but differentiated responsibility' (CBDR), which has been further developed in the Climate Convention, whereby environmental protection is recognised as a shared obligation of all states, but with the more industrialised nations recognising their greater responsibility for existing environmental degradation and climate change. The crux of the CBD was thus a deal between the Global North and Global South, wherein the latter countries agreed to protect nationally-located biodiversity for the global good, with significant funding (intended to compensate for the opportunity costs of such actions) coming from the former. There is ongoing controversy over whether the Global North has kept

its part of the bargain (Hicks 2008; Lindsey et al. 2017). Nevertheless, the conservation of biodiversity has become inextricably linked to these global concerns about environmental security, with state behaviours displaying a mix of self-concern (e.g. to secure environmental security for the state requires international action, which may only be practically achievable through accepting the financial burdens of CBDR), or international altruism, depending on how those behaviours are interpreted.

Existing analyses of geopolitical practices related to military, economic and environmental security have recently been included in tools for conservation decision-making. For example, some recent work has incorporated the risks of armed conflict into conservation prioritisation schemes (Dickman et al. 2015; Hammill et al. 2016). Here, we suggest, the priority is not more research, but facilitating more effective collaboration between critical work (regarding 'security' practices) and applied conservation projects. Such 'boundary work' might draw on the many existing techniques available for fostering links between new (and existing) research, policy and practitioners (see, for example, (Clark et al. 2016)). We suggest that future transdisciplinary collaborations incorporating geopolitical analyses – such as those already emerging around 'green wars' and 'green militarization' – can aid (i) more developed contextual understandings of conservation situations, and (ii) the creation of more nuanced conservation planning tools and techniques.

4. Conclusion

579 Geopolitics is about much more than simply military conflict between states.
580 Instead, the conservation geopolitics perspective offers a way of understanding
581 how geopolitical practices (relating primarily to territory and security) and
582 theories (that explain and influence those practices) affect and inform wildlife
583 conservation. In this paper, we have reviewed recent work concerning
584 geopolitical practices and their relevance for conservation, and situated that
585 work within a longer history of such engagements. We have also identified
586 where existing work might be elaborated – either in terms of addressing specific
587 issues, or through the facilitation of more effective 'boundary work' between
588 research, policy and practice. In this final section, we take a broader view, first
589 considering how conservation geopolitics might fit within the wider project of
590 transdisciplinary conservation research, and second through identifying four
591 pressing research priorities to which conservation geopolitics might most
592 urgently contribute.
593
594 One of the benefits of a transdisciplinary approach to conservation is the ability
595 to combine what might be caricatured as 'top-down' analyses (such as a focus on
596 the actions of state actors) with 'bottom-up' analyses (that emphasize sub-
597 national, local, and individual behaviours). Conservation solutions are always
598 context dependent, and one size never fits all – hence the understandable
599 tendency to avoid developing universalized 'top-down' solutions that either
600 prove unworkable in practice (given the heterogeneity of socio-ecological
601 contexts), and/or morally questionable (if such solutions are neo-colonial
602 impositions on local peoples). 'Security' need not be framed at a national scale,
603 and has been reconceptualised at a 'human' level (i.e. the security of people

604 rather than of states) by some United Nations agencies, amongst others (Dalby
605 2009). Dalby suggests that understanding 'security' in the sense of competing
606 nation states concerned with territories and borders (as in classic geopolitical
607 theory) is likely to be counter-productive when it comes to addressing global
608 environmental issues, because such an 'outdated approach' doesn't address the
609 sources or types of these new environmental threats. A re-thinking of territory
610 and security is perhaps necessary if more effective global approaches to
611 environmental challenges are to be instigated, and if conservation is to move
612 from treating symptoms to addressing the causes of wildlife imperilment.
613 Indeed, wildlife conservation has much to gain from engaging with these wider
614 debates within environmental geopolitics. However, for now, at least, states
615 remain important and influential geopolitical actors, whose behaviours shape
616 conservation actions and outcomes at multiple scales.
617
618 Looking forward, we suggest that a focus on geopolitical practices and theories
619 can contribute to understanding the effects on wildlife of political and economic
620 differences between countries, and the role that geopolitics plays in sustaining or
621 mitigating those differences. We have refrained from framing specific hypotheses
622 (although such hypotheses will certainly be required to advance the field), but
623 instead end this review by outlining four broad priorities for future research in
624 conservation geopolitics:
625
626 (1) As a starting point, we need a better understanding of the effects of national-
627 level political and economic heterogeneity on biodiversity – and how this might
628 shape geopolitical practices relating to 'environmental security' in the future.

While there is a significant body of work looking at the socio-political factors that are associated with wider environmental impacts (Bradshaw et al. 2010), or that looks in detail at specific factors such as economic inequality (Mikkelson et al. 2007) or corruption (Smith et al. 2003), and also some initial work extending such work to mammal and bird species (de Boer et al. 2013; Dickman et al. 2015; Barnes et al. 2016; Calabrese et al. 2017) , there is more to be done here

(2) In addition, we need a better understanding of how geopolitical practices have been used, and might be used in the future, to address these differences. Such research would aim at identifying the successes and failures within existing strategies for wildlife conservation that utilise geopolitical means (diplomacy, treaty-making, bilateral assistance programmes etc.), and would make policy-relevant proposals for improving conservation outcomes on this basis.

(3) Third, we require ongoing work that explores how territories are made, borders secured, and movements managed – for people and wildlife – and how these geopolitical spaces might be reformed to better protect both. The new conceptual and empirical concerns of 'geopolitical ecology' and 'environmental geopolitics' have much to offer here.

(4) And finally, we suggest that more attention might be paid towards assessing the likely efficacy of different conservation strategies given (a) existing geopolitical realities, and (b) possible changes in the geopolitical landscape of the future. Additional theories from international relations, including the broad

strands of neoliberal and constructivist thought not explored herein, may be particularly insightful in this regard.

References:

Adams C, Ide T, Barnett J, Detges A. 2018. Sampling bias in climate–conflict research. Nature Climate Change **8**:200-203.

Adams WM 2004. Against extinction : the story of conservation. Earthscan, London.

Adams WM, Hodge ID, Sandbrook L. 2014. New spaces for nature: the re-territorialisation of biodiversity conservation under neoliberalism in the UK. Transactions of the Institute of British Geographers **39**:574-588.

Agnew JA 2003. Geopolitics : re-visioning world politics. Routledge, London.

Albert B. 1992. Indian lands, environmental policy and military geopolitics in the development of the Brazilian Amazon: the case of the Yanomami. Development and Change **23**:35-70.

Bakker K. 2010. The limits of 'neoliberal natures': Debating green neoliberalism. Progress in Human Geography **34**:715-735.

Barnes MD, et al. 2016. Wildlife population trends in protected areas predicted by national socio-economic metrics and body size. **7**:12747.

Barquet K. 2015. "Yes to Peace"? Environmental peacemaking and transboundary conservation in Central America. Geoforum **63**:14-24.

Barquet K, Lujala P, Rød JK. 2014. Transboundary conservation and militarized interstate disputes. Political Geography **42**:1-11.

Bauer H, Nowell K, Sillero-Zubiri C, Macdonald DW. 2018. Lions in the modern arena of CITES. Conservation Letters.

Bigger P, Neimark BD. 2017. Weaponizing nature: The geopolitical ecology of the US Navy's biofuel program. Political Geography **60**:13-22.

Bluwstein J, Lund JF. 2018. Territoriality by conservation in the Selous–Niassa corridor in Tanzania. World Development **101**:453-465.

Bocarejo D, Ojeda D. 2016. Violence and conservation: Beyond unintended consequences and unfortunate coincidences. Geoforum **69**:176-183.

Booth K. 2014. International relations. All that matters. Hodder & Stoughton,, London.

Bradshaw CJA, Giam X, Sodhi NS. 2010. Evaluating the Relative Environmental Impact of Countries. PLOS ONE **5**:e10440.

Brockington D 2002. Fortress conservation : the preservation of the Mkomazi Game Reserve, Tanzania. Indiana University Press ; James Currey ; Mkuki Na Nyota, Bloomington, Oxford, Dar es Salaam.

Brockington D, Duffy R, Igoe J 2008. Nature unbound : conservation, capitalism and the future of protected areas. Earthscan, London ; Sterling, VA.

Büscher B, Fletcher R. 2018. Under Pressure: Conceptualising Political Ecologies of Green Wars. Conservation and Society.

697 Büscher B, Sullivan S, Neves K, Igoe J, Brockington D. 2012. Towards a
698 synthesized critique of neoliberal biodiversity conservation. Capitalism
699 Nature Socialism **23**:4-30.
700 Butler C, Kefford B. 2018. Climate change as a contributor to human conflict.
701 Nature **555**.
702 Calabrese A, Calabrese JM, Songer M, Wegmann M, Hedges S, Rose R, Leimgruber
703 P. 2017. Conservation status of Asian elephants: the influence of habitat
704 and governance. Biodiversity and Conservation **26**:2067-2081.
705 Canavire-Bacarreza G, Diaz-Gutierrez JE, Hanauer MM. 2018. Unintended
706 consequences of conservation: Estimating the impact of protected areas
707 on violence in Colombia. Journal of Environmental Economics and
708 Management **89**:46-70.
709 Carmody PR 2016. The new scramble for Africa. Polity Press, Cambridge.
710 Chape S, Harrison J, Spalding M, Lysenko I. 2005. Measuring the extent and
711 effectiveness of protected areas as an indicator for meeting global
712 biodiversity targets. Philos Trans R Soc Lond B Biol Sci **360**:443-455.
713 Clark WC, Tomich TP, Van Noordwijk M, Guston D, Catacutan D, Dickson NM,
714 McNie E. 2016. Boundary work for sustainable development: Natural
715 resource management at the Consultative Group on International
716 Agricultural Research (CGIAR). Proceedings of the National Academy of
717 Sciences **113**:4615-4622.
718 Collier P 2007. The bottom billion : why the poorest countries are failing and
719 what can be done about it. Oxford University Press, Oxford.
720 Conteh A, Gavin MC, McCarter J. 2017. Assessing the impacts of war on perceived
721 conservation capacity and threats to biodiversity. Biodiversity and
722 Conservation **26**:983-996.
723 Dalby S 2009. Security and environmental change. Polity Press, Cambridge.
724 Dalby S. 2014. Environmental Geopolitics in the Twenty-first Century.
725 Alternatives **39**:3-16.
726 de Boer WF, van Langevelde F, Prins HHT, de Ruiter PC, Blanc J, Vis MJP, Gaston
727 KJ, Hamilton ID. 2013. Understanding spatial differences in African
728 elephant densities and occurrence, a continent-wide analysis. Biological
729 Conservation **159**:468-476.
730 De Merode E, Cowlishaw GUY. 2006. Species Protection, the Changing Informal
731 Economy, and the Politics of Access to the Bushmeat Trade in the
732 Democratic Republic of Congo
733 Protección de Especies, la Economía Informal Cambiante y la Política de Acceso
734 al Comercio de Carne Silvestre en la República Democrática de Congo.
735 Conservation Biology **20**:1262-1271.
736 Dempsey J, Robertson MM. 2012. Ecosystem services Tensions, impurities, and
737 points of engagement within neoliberalism. Progress in Human
738 Geography **36**:758-779.
739 Dickman AJ, Hinks AE, Macdonald EA, Burnham D, Macdonald DW. 2015.
740 Priorities for global felid conservation. Conservation Biology **29**:854-864.
741 Dittmer J, Sharp J. 2014. Geopolitics : an introductory reader. Routledge,.
742 Dodds K 2014. Geopolitics : a very short introduction. Oxford University Press,
743 Oxford.

744 Douglas LR, Alie K. 2014. High-value natural resources: Linking wildlife
745 conservation to international conflict, insecurity, and development
746 concerns. Biological Conservation **171**:270-277.
747 Dowie M 2009. Conservation refugees : the hundred-year conflict between global
748 conservation and native peoples. MIT Press, Cambridge, Mass. ;
749 Cambridge.
750 Dudley JP, Ginsberg JR, Plumptre AJ, Hart JA, Campos LC. 2002. Effects of War
751 and Civil Strife on Wildlife and Wildlife Habitats. Conservation Biology
752 **16**:319-329.
753 Duffy R. 2014. Waging a war to save biodiversity: the rise of militarized
754 conservation. International Affairs **90**:819-834.
755 Duffy R. 2016. War, by Conservation. Geoforum **69**:238-248.
756 Dwyer MB, Ingalls ML, Baird IG. 2016. The security exception: Development and
757 militarization in Laos's protected areas. Geoforum **69**:207-217.
758 Flint C 2017. Introduction to Geopolitics. Routledge, London and New York.
759 Gaynor KM, Fiorella KJ, Gregory GH, Kurz DJ, Seto KL, Withey LS, Brashares JS.
760 2016. War and wildlife: linking armed conflict to conservation. Frontiers
761 in Ecology and the Environment **14**:533-542.
762 Hammill E, Tulloch AIT, Possingham HP, Strange N, Wilson KA. 2016. Factoring
763 attitudes towards armed conflict risk into selection of protected areas for
764 conservation. Nature Communications **7**:11042.
765 Hanson T, Brooks TM, Da Fonseca GAB, Hoffmann M, Lamoreux JF, Machlis G,
766 Mittermeier CG, Mittermeier RA, Pilgrim JD. 2009. Warfare in Biodiversity
767 Hotspots
768 Guerra en Sitios de Importancia para la Biodiversidad. Conservation Biology
769 **23**:578-587.
770 Hicks RL 2008. Greening aid? : understanding the environmental impact of
771 development assistance. Oxford University Press, Oxford.
772 Hughes KA, Grant SM. 2017. The spatial distribution of Antarctica's protected
773 areas: A product of pragmatism, geopolitics or conservation need?
774 Environmental Science & Policy **72**:41-51.
775 Igoe J, Neves K, Brockington D. 2010. A Spectacular Eco-Tour around the Historic
776 Bloc: Theorising the Convergence of Biodiversity Conservation and
777 Capitalist Expansion. Antipode **42**:486-512.
778 Kelly AB, Ybarra M. 2016. Introduction to themed issue: "Green security in
779 protected areas". Geoforum **69**:171-175.
780 Larsen PB, Brockington D 2017. The Anthropology of Conservation NGOs:
781 Rethinking the Boundaries. Springer.
782 Lawrence MJ, Stemberger HLJ, Zolderdo AJ, Struthers DP, Cooke SJ. 2015. The
783 effects of modern war and military activities on biodiversity and the
784 environment. Environmental Reviews **23**:443-460.
785 Lindsey PA, et al. 2017. Relative efforts of countries to conserve world's
786 megafauna. Global Ecology and Conservation **10**:243-252.
787 Macdonald DW. in press. Mammal Conservation - Old Problems, New
788 Perspectives, Transdisciplinarity and the Coming of Age of Conservation
789 Geopolitics. Annual Review of Environment and Resources.
790 Marijnen E, Verweijen J. 2016. Selling green militarization: The discursive
791 (re)production of militarized conservation in the Virunga National Park,
792 Democratic Republic of the Congo. Geoforum **75**:274-285.

793 Mikkelson GM, Gonzalez A, Peterson GD. 2007. Economic Inequality Predicts
794 Biodiversity Loss. PLOS ONE **2**:e444.
795 Neumann RP. 1996. Dukes, Earls, and Ersatz Edens: Aristocratic Nature
796 Preservationists in Colonial Africa. Environment and Planning D: Society
797 and Space **14**:79-98.
798 Neumann RP 1998. Imposing wilderness : struggles over livelihood and nature
799 preservation in Africa. University of California Press, Berkeley.
800 O'Lear S. 2018. Environmental geopolitics. Page 1 online resource. Human
801 geography in the twenty-first century issues and applications. Rowman &
802 Littlefield,, Lanham.
803 Panthera, WildAid, WildCRU. 2016. Beyond Cecil: Africa's Lions in Crisis.
804 Ramutsindela M. 2017. Greening Africa's borderlands: The symbiotic politics of
805 land and borders in peace parks. Political Geography **56**:106-113.
806 Rasmussen MB, Lund C. 2018. Reconfiguring Frontier Spaces: The
807 territorialization of resource control. World Development **101**:388-399.
808 Robbins P 2012. Political ecology : a critical introduction. Wiley-Blackwell,
809 Oxford.
810 Sandbrook C, Adams WM, BÜScher B, Vira B. 2013. Social Research and
811 Biodiversity Conservation. Conservation Biology **27**:1487-1490.
812 Smith N 2010. Uneven development : nature, capital, and the production of
813 space. Verso, London.
814 Smith R, Muir R, Walpole M, Balmford A, Leader-Williams N. 2003. Governance
815 and the loss of biodiversity. Nature **426**:67.
816 Sommerville K 2016. Ivory : power and poaching in Africa. Hurst & Company,
817 London.
818 Thomas CD, et al. 2004. Extinction risk from climate change. Nature **427**:145-
819 148.
820 Trouwborst A, Lewis M, Burnham D, Dickman A, Hinks AE, Hodgetts T,
821 Macdonald EA, Macdonald DW. 2017. International law and lions
822 (Panthera leo): understanding and improving the contribution of wildlife
823 treaties to the conservation and sustainable use of an iconic carnivore.
824 Nature Conservation **21**:83-128.
825 Waltz KN 2010. Theory of international politics. Waveland Press.
826 West P 2006. Conservation is our government now : the politics of ecology in
827 Papua New Guinea. Duke University Press, Durham.
828 Worboys G, Francis WL, Lockwood M 2010. Connectivity conservation
829 management : a global guide (with particular reference to mountain
830 connectivity conservation). Earthscan, London ; Washington, DC.
831 Wynne-Jones S. 2012. Negotiating neoliberalism: Conservationists' role in the
832 development of payments for ecosystem services. Geoforum **43**:1035-
833 1044.
834