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Elephants as actors in the political ecology of human–elephant conflict

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This paper examines the agency of African elephants as important actors in the political ecology of human–elephant conflict, and in shaping the politics of land in post-colonial Kenya. The paper is based on field research in Laikipia, northern Kenya. It considers the role of elephants, with their size, sagacity, hunger, mobility and complex interactions with people, as powerful actors in shared landscapes, and therefore in the politics surrounding their own conservation. The paper uses spatial data and interviews to explore elephant behaviour and movements through the landscape and their interactions with people, and explore the way in which those interactions affect the separation of "animal spaces" set aside for conservation and the "beastly places" of smallholder farming and crop-raiding, and the conflict and transgressions involved when elephants cross from one to the other. The elephant is a lively actor in the inter-species power play of Laikipia, and in the politics of conservation and of land. A mutually respectful multispecies politics in northern Kenya demands a clear understanding and acceptance of the needs of elephants.

KEYWORDS
African elephant, conservation, human–elephant conflict, Kenya, non-human, political ecology

1 | INTRODUCTION

A camera trap is installed facing an electric fence in northern Kenya. The fence is supposed to prevent elephants from leaving conservancy land to raid crops on smallholder farms. A GPS collar on one of the elephants and reports from community scouts showed that elephants broke out here last night to raid crops. As dusk falls, a line of ten bull elephants approach the fence, a great ridge of grey. They wait, standing still but kicking dust and curling their trunks above their heads, sniffing the air. Suddenly the group parts as the largest bull, a regular breaker of fences, wearing a GPS collar, walks towards the wires, curls his trunk over his head and pulls back the wires repeatedly with his tusks. The fence sags, and the elephant carefully steps over them, leaving the conservancy where he has spent the day. One by one the others follow. The raid has begun. These elephants are known by local farmers as a source of economic hardship and fear. In an interview, one said of the leader of the group:

> *We all know this elephant. He's big, he leads a group of males. He breaks the fence and comes straight here when it's late and he knows we are sleeping. Last night, when I heard him arriving, I ran out with a torch making noise, but it was no use. He ran towards me. He knows that we can do nothing to stop him. (January 2013)*

The individuality, precision, specificity and level of cooperation in the behaviour shown by the elephants in this story emphasises their power as actors in a landscape shared with people. In this paper we explore how these characteristics mean that elephants are actors in the politics surrounding their own conservation. An increasing number of studies show the importance of animals in shaping conservation outcomes (e.g., Dempsey, 2010; Enticott, 2001; Goedeke & Rikoon, 2008). Hobson (2007) locates animals as subjects in an enlarged political geography and Jepson, Barua, and Buckingham (2011) specifically use elephants as one example of the importance of non-human entities as actors in conservation. But if animals like elephants are indeed conservation actors, what kind of actors are they, how do they act and how do their actions affect others? Moreover, how can such questions be answered, given that elephants cannot speak (cf. Buller, 2013)? If, as Jepson et al. (2011) argue, we need to see elephants effectively co-producing their conservation through relationships playing out in complex actor-networks involving humans, animals, technologies and institutions, we need new ways to understand how they use the landscapes around them.

Hodgetts and Lorimer (2014) argue that human geographers have become accomplished at researching the human view of human–animal encounters, but have been less good at understanding the lived geographies and experiences of animals. For wild animals like elephants, questions of behaviour and landscape ecology have long been the preserve of the natural sciences. Among other new approaches for understanding animal geographies, Hodgetts and Lorimer (2014) highlight the potential insights of scientific methods in ethology, and particularly the capacity of digital technologies for tracking individual animals and the spatialities of animal behaviour.

The use of digital devices to track animals offers opportunities "to observe the otherwise unobservable in the lives of non-humans" (Verma, van der Wal, & Fischer, 2016, p. 76), a means to "let animals in" to human makings of space and place (Wolch & Emel, 1998) and to recognise the agency of non-humans in understanding how humans and other animals cohabit, act and interact in the world (Philo & Wilbert, 2000). Tracking provides insights into the place- and space-making of animal actors, opening up the possibility of writing "lively" (Lorimer, 2010, 2015) or "intradisciplinary" biogeographies (Barua, 2014a).

In pioneering work, Maan Barua (2014a, p. 916) asks how we might write (post)colonial histories "in a way that does not render inert the actions and agencies of nonhuman animals". He argues that landscapes should be understood as "dwelt achievements of people and animals". Working with wildlife biologists, he follows the tracks of four bull elephants through the forests and tea estates of Assam, bringing "the actions and agencies of nonhuman animals" to the foreground. He explores the process of dwelling as "an activity that occurs through lines or tracks" (2014a, p. 923), in a way that is "attuned to how more-than-human bodies fabricate landscapes whilst they are collectively caught up within fields of power" (2014a, p. 917).

Elephants, with their size, sagacity, hunger, mobility, determination and complex interactions with people – ranging from international humanitarian and conservation concern, through tourist economies, to crop-raiding at night in smallholders' farms – are obvious targets for geographers interested in animal agency. The history of interactions between elephants and people is long, and their signature in human culture is deep (Locke, 2013; Wylie, 2008): traces of elephants "litter the histories and geographies of civilisations and everyday lives" (Whatmore & Thorne, 2000, p. 187). Those relations have never been simple. Asian elephants (*Elephas maximus*) have been subjected to hunting, captivity, ecotourism and scientific research in Sri Lanka (Lorimer, 2010; Lorimer & Whatmore, 2009) and have been embedded in human networks of concern, commerce and science between India and the UK (Barua, 2014a).

African elephants (*Loxodonta africana*), on which we focus here,[1] are, like their smaller Asian cousins, big, intelligent and highly social animals. The species is deeply embedded in human culture, not least as a character in children's literature (e.g., de Brunhof, 1931), although it is not widely revered as the elephant is in Hinduism (Stracey, 1963), and has rarely been tamed. The African elephant is perhaps most obviously located as an actor in conservation politics in two ways. First, many African elephants live outside protected areas in pastoral or agricultural landscapes shared with people. In much of Africa, these landscapes have changed progressively as human land use has intensified (Moore, 2009b), bringing rural farmers and elephants into conflict in many countries, creating a widespread and intractable problem (Hoare, 2012; Lee & Graham, 2006; Moore, 2009a). Second, conservation of the African elephant is deeply bound up with the issue of ivory poaching. After being hunted for its ivory and for sport throughout the colonial and post-colonial period (Hutton, Dickson, & Adams, 2009), the African elephant population has suffered several episodes of rapid decline due to poaching, most notably in the 1970s and 1980s and since 2010. The continental population in the 1940s was probably 3–5 million; today, it is between 0.4 and 0.5 million (Thouless et al., 2016). For both these reasons the conservation of African elephants is the subject of global concern, framed by discourses of extinction, crisis and "poachers-as-terrorists" (Duffy, 2014; Lunstrum, 2014).

In Africa, elephants are not "a mute and stable background to the real business of politics" (Hinchliffe, 2008), at least not the politics of conservation. They are actors that shape that politics, both alone and through co-production with human actors (cf. Jepson et al., 2011). In this paper, we consider the agency of African elephants as political actors in rural landscapes in northern Kenya, where crop-raiding is a critical problem, and where the conservation of elephants is important in debates about the ownership and control of land. We do not argue that elephants possess political agency in the rational sense (as Hobson says "they cannot take part in institutional decision-making"; 2007, p. 263), but we understand them as "sagacious and resilient" (Lorimer, 2010, p. 498), adapting to anthropogenic conditions and in their turn being dynamic and powerful actors in the heterogeneous networks that constitute the political ecology of conservation and land use in rural Africa.

We focus on the spatialities of elephants' lives, as demonstrated by their behaviour and movements through the landscape. We extend previous work by Barua by linking analysis of the way the actions of elephants influence the way human actors compete for space. Verma et al. suggest that the mapping of species distributions allows the construction of "wildlife cartographies", delineating the spaces inhabited by wildlife, and the implementation of "effective, targeted conservation measures" (2016, p. 81). We draw on spatial data to show how the ability to chart the movements of animals such as elephants not only provides insights into animal geographies, revealing the "inherent territoriality bound into animal lives" (Buller, 2013, p. 7), but also empowers conservation's claim to territory.

In this paper, therefore, we combine our account of elephants as they interact with people with an exploration of the way that interaction affects the delineation of space for conservation and other land uses. We draw on the distinction set out by Philo and Wilbert (2000, p. 14) between "animal spaces" (zones set apart from intensive human occupation where wild animals are accepted and expected as rightful occupants), and "beastly places" (where animals transgress human spatial orderings and trespass into spaces intended for human occupation, injecting "their own agency into the scene" and creating places "reflective of their own 'beastly' ways, ends, doings, joy and sufferings"; Philo & Wilbert, 2000, p. 14). We explore the demarcation of the landscape between the "animal spaces" set aside for conservation and the "beastly places" of crop-raiding, and the conflict and transgressions involved in elephants crossing from one to the other, particularly their breaking of the fence built to stop them. We also show that elephants are actors in wider politics of land, particularly in the new processes of creating new conservation territories in north-central Kenya.

2 | METHODS

Our study site is Laikipia, a dry plateau (1,700–2,000 m above sea level) north of Mount Kenya and the Aberdare Mountains in north-central Kenya (Figure 1). The area (in total 9,800 km^2) is home to 6,400 elephants (Ngene et al., 2013) and the second highest abundance of wildlife in Kenya (LWF, 2012).

Our research involved a multi-layered and interdisciplinary methodology. Barua notes that "crafting political ecologies that do not deaden non-humans or the landscape demands methodological innovation" (2014c, p. 917). Buller (2015) outlines a triple challenge for methodologies for understanding human–animal relations: first, they must extend beyond collective and abstract categories of non-humans to focus on animals as "embodied individuals living their lives entangled with humans and their own wider environment" (Taylor, 2012, p. 40); second, they must not rely on human representative accounts but find other ways of letting animals "speak"; third, they must move beyond the natural/social science separation to address what matters for humans and animals in their relational combinations and spaces.

Our methodology addresses these challenges, using direct and indirect observations of elephants to illuminate elephant movement and behaviour, and social surveys to understand human responses to it. We draw on over 15 years of research into human–elephant conflict (HEC) in Laikipia (Evans, 2014; Evans & Adams, 2016; Graham, 2007; Graham, Adams, & Kahiro, 2012; Graham, Douglas-Hamilton, Lee, & Adams, 2009; Graham, Notter, Adams, Lee, & Ochieng, 2010; Graham & Ochieng, 2008; Lee & Graham, 2006).

We viewed HEC incidents through human eyes in two ways. First, we created a network of local "scouts" to report the location, time and nature of fence-breaks and crop-raids. Second, we worked closely with an elephant tracker appointed by Space for Giants[2] to identify and track fence-breaking elephants. This was a locally recruited man, trained in the identification of individual elephants by the Amboseli Trust for Elephants,[3] using unique features such as ear patterns (Kangwana, 1996) and equipped with a digital camera, a GPS and a motorbike. Responding to reports from scouts, he travelled to the site of reported fence-breaks and carefully observed elephants breaking in by day, or went to the site of previous breaks to track the footprints of elephants to where they had crop-raided the night before. He once said "I only dream at night of elephants – I think I am becoming elephant" (February 2013).

FIGURE 1 The location of Laikipia in Kenya

We used two methodologies to explore the behaviour of elephants directly as they broke fences. First, we deployed GPS collars on known fence-breaking elephants, as identified by the elephant tracker, to understand how elephants used the wider landscape in space and time. Our collars[4] transmitted the elephant's location every hour via the mobile phone network to an online database that allowed analysis of its movements (cf. Graham et al., 2009). Second, we positioned infrared camera traps[5] along the fence, next to known fence-break locations. Both day and night footage was captured in minute-long clips.

To understand human ideas about and responses to elephants, crop-raiding and fences, we drew on questionnaires, in-depth interviews and focus groups with smallholder farmers, pastoralists, large-scale landowners/managers (hereafter "ranchers") and conservationists, including the Kenya Wildlife Service (KWS).

3 | POSTCOLONIAL ELEPHANTS

In Kenya, as elsewhere in Africa, the interactions between elephants and people are framed by colonial and post-colonial policies for the management of wildlife (cf. Garland, 2008). Elephants were post-colonial arrivals to Laikipia. They were not observed by early European travellers through the area (e.g., Neumann, 1898), or during the colonial period. They began to appear in significant numbers in the 1970s (Thouless, 1994), a decade after Kenyan independence, into a landscape of wildly asymmetrical land rights.

Human–elephant interactions in Laikipia play out within a landscape that has been shaped by long-standing conflict over land. Laikipia's use by pastoral people (Lane, 2005) was altered dramatically soon after the start of British colonial rule in 1895. The Anglo-Maasai Treaty of 1904 designated Laikipia as a Maasai reserve. However, white settler pressure led to a second treaty in 1911 that sanctioned the eviction of all Maasai from Laikipia into a reserve south of Nairobi and opened the area for European settlement as part of the "white highlands". Between 50% and 70% of all Maasai land in Kenya was lost and many people and cattle died in this resettlement (Hughes, 2006).

From 1911, white settlers became established in Laikipia, and their properties gradually became consolidated into large estates, based on commercial cattle ranching (Kohler, 1987). The only Africans on the land in Laikipia at this time

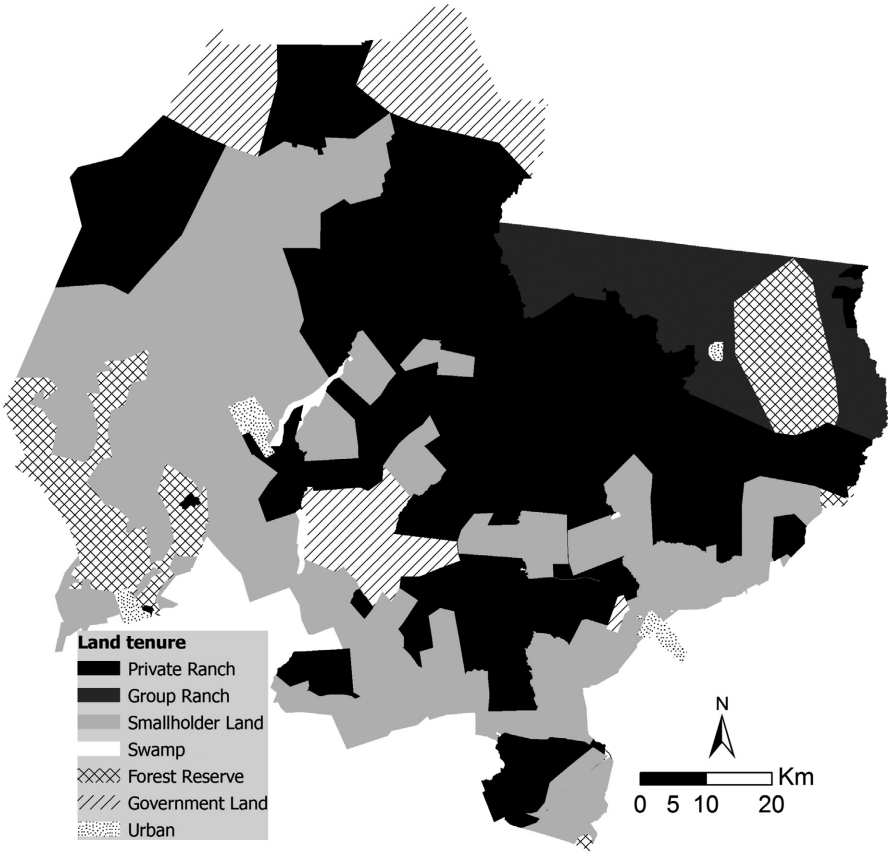

FIGURE 2 Land tenure in Laikipia as of 2017

were farm labourers and "trespassing" pastoralists. After Kenyan independence in 1964, many Europeans sold their ranches to government schemes and commercial land-buying companies made up of the Kikuyu business and political elite. Ranches were subdivided into tiny farms (0.5–02 ha, Kohler, 1987) and settled by Kikuyu smallholders from districts south of Laikipia. However, not all former ranch land was fully allocated, and not all allocated farms proved cultivable due to low rainfall (annual precipitation declines northwards from 800 to 300 mm), leaving a large area of unoccupied land.

Today, several pastoral groups graze their livestock in Laikipia, including Pokot, Turkana, Samburu and Maasai. The Kenyan Government established 11 Group Ranches in Laikipia in 1968 (among others across the country) to encourage Maasai and Samburu pastoralists to settle, commercialise, conserve rangeland and invest in infrastructure (Grandin, 1987). Many group ranches in Kenya failed in these objectives due to their insufficient size and pasture, elite capture and governance issues (Herren, 1991). Since then, pastoralists have had some seasonal access to grazing on ranches in Laikipia, some negotiated with ranchers and some obtained opportunistically without permission. Grazing has also been extensive on unoccupied smallholder land. Conflict among pastoral groups, ranchers and smallholders over grazing and land rights has been significant and is increasing (Waithaka & Kiplagat, 2017). Both Samburu and Maasai pastoralists claim land based on precolonial occupation (Cronk, 2004; Hughes, 2006; Lane, 2005). In 2004, a series of mass trespasses onto ranches in Laikipia marked the 100th anniversary of the first Anglo–Maasai Treaty. Hundreds of pastoralists invaded ranches in Laikipia, and a Maasai elder was shot and killed (Hughes, 2007). In 2010 there was further violence over the eviction of Samburu grazers from Eland Downs ranch (where they had enjoyed de facto access for some years) following its purchase by international conservation NGOs as a new national park. A court case against the evictions by Samburu activists, with support from international human rights groups,[6] began in 2012 and still continues. A Samburu man interviewed on Eland Downs said "We need Laikipia to be returned to us – all of it. We need to be given it freely because it is ours" (November 2013). Samburu grazers have continued to enter ranch land with their animals, with repeated and sometimes violent incidents through 2016 and 2017 in the lead up to the 2017 General Election (Kean, 2017). Attacks on white and black property owners had led some international media to label Laikipia "another Zimbabwe".

Laikipia is a spatially complex patchwork of land tenure (Figure 2; LWF, 2012). This includes 48 large properties (ranging from 8 to 405 km^2; hereafter called "ranches") variously owned by private individuals (Kenyan and non-Kenyan), by

government organisations or various kinds of conservation trusts, most operating some mix of commercial livestock and wildlife enterprises, and comprising 39% of Laikipia's area. Eleven group ranches comprise 7%, government-owned land 8.5%, forest reserves 7%, and urban areas 4.5% (LWF, 2012). To the south and west of the area of ranches, land is occupied by smallholder farmers (34% of Laikipia; Figure 2). In between and among the ranches and smallholdings lies land of unclear tenure, that has either not been allocated to smallholders or not occupied. Most of this is de facto pastoral land. The electrified fence introduced in the vignette that began this paper runs along the boundary between smallholder farms and the ranches (Evans & Adams, 2016).

The idea of an elephant-proof fence to stop elephants leaving ranches and entering smallholder farms was first proposed in Laikipia in the 1980s, but such a fence was only built in 2008 (Evans & Adams, 2016; Thouless & Sakwa, 1995). Despite its purpose, this fence is regularly broken by elephants eager to eat farmers' crops. It is a critical element in the lives of elephants and in the political landscape of Laikipia.

4 | ELEPHANT SPACES

Elephants are powerful landscape-making agents. They are intelligent, with the greatest volume of cerebral cortex of all terrestrial mammals (McComb, Moss, Sayailel, & Baker, 2000). They have extensive spatial-temporal and social memory compared with great apes and humans (Hart, Hart, & Pinter-Wollman, 2008), have unusually extensive networks of vocal recognition and are highly social (Moss & Colbeck, 1993). They show compassionate behaviour to other elephants in distress and have a general awareness and curiosity about death (Douglas-Hamilton, Bhalla, Wittemyer, & Vollrath, 2006). Asian (Barua, 2014a) and African elephants (Bates et al., 2007) are able to distinguish between ethnic communities that persecute them and those that do not. Elephants are quick to learn when a show of force lacks lethal potential. In 2009, one Laikipia ranch trying to prevent elephants raiding crops in neighbouring smallholdings reported that "elephants soon habituated to gunshots and a vehicle and could no longer be driven away".[7]

Elephants are thought to have moved into Laikipia in the 1970s in response to persecution further north in Samburu (Thouless, 1994), part of the surge in the illegal killing of elephants for ivory. Such responses to threat would be consistent with what is known of the capacity of this long-lived and highly social animal to remember and respond to past stress.

Upon arrival in Laikipia, elephants found themselves positioned as powerful actors by virtue of national conservation legislation. Public outcry about poaching (Kenya's elephant population had become seriously reduced by the mid 1970s) had come from all sides: the tourism industry, conservation organisations and animal welfare groups inside and outside Kenya. Trade in African elephant ivory was banned under the Convention on International Trade in Endangered Species in 1989, as a result of campaigns by First World conservation and animal welfare organisations. Ivory poaching became a campaigning issue for animal rights organisations. Within Kenya, the poaching "crisis" led to the creation of a single government wildlife organisation (the KWS), and the development of an armed anti-poaching force employing a controversial shoot-to-kill policy (Adams, 2004; Neumann, 2004). The government banned all killing of mammals in 1977 (Kabiri, 2010), in the process making elephants effectively wards of the state.

Colonial and post-colonial wildlife policy in Kenya has focused on the establishment of protected areas as the basis for a substantial tourist industry (Kabiri, 2010). A wildlife department was established in 1901 and created a series of Game Reserves. Stricter protection was proposed by a Game Policy Committee, established in 1939. A National Parks Ordinance was promulgated in 1945, and national parks began to be created from 1946 onwards (Adams, 2004). In the run-up to independence, an intensified controlled hunting areas programme and new schemes like the community game reserves project were introduced. While conservation projects were embraced by the African elite, local communities gained little from conservation even through the establishment of game reserves in their names (Matheka, 2008). This pattern has persisted, and wildlife numbers have declined both inside and outside parks (Western, Russell, & Cuthill, 2009). Tourism provides employment for rural Kenyans, but there has been limited opportunity for most people to gain economic benefit from conservation, or to receive compensation for the costs of living alongside wildlife (Kabiri, 2010). Instead, benefits primarily accrue to an elite few, primarily investors in wildlife tourism businesses and owners of large areas of land.

Elephants, however, were well catered for by conservation policy. They were the most charismatic (and easiest to see) of the "big five" animals on every tourist's list, and their huge home ranges legitimised above all other species the need for protected areas. In these regulated and tourist-friendly "animal spaces", the elephant had an assured place. However, large as they were, most national parks were too small to contain elephant populations (Corfield, 1973). The availability of land outside government protected areas was essential to the survival of Kenya's elephant population.

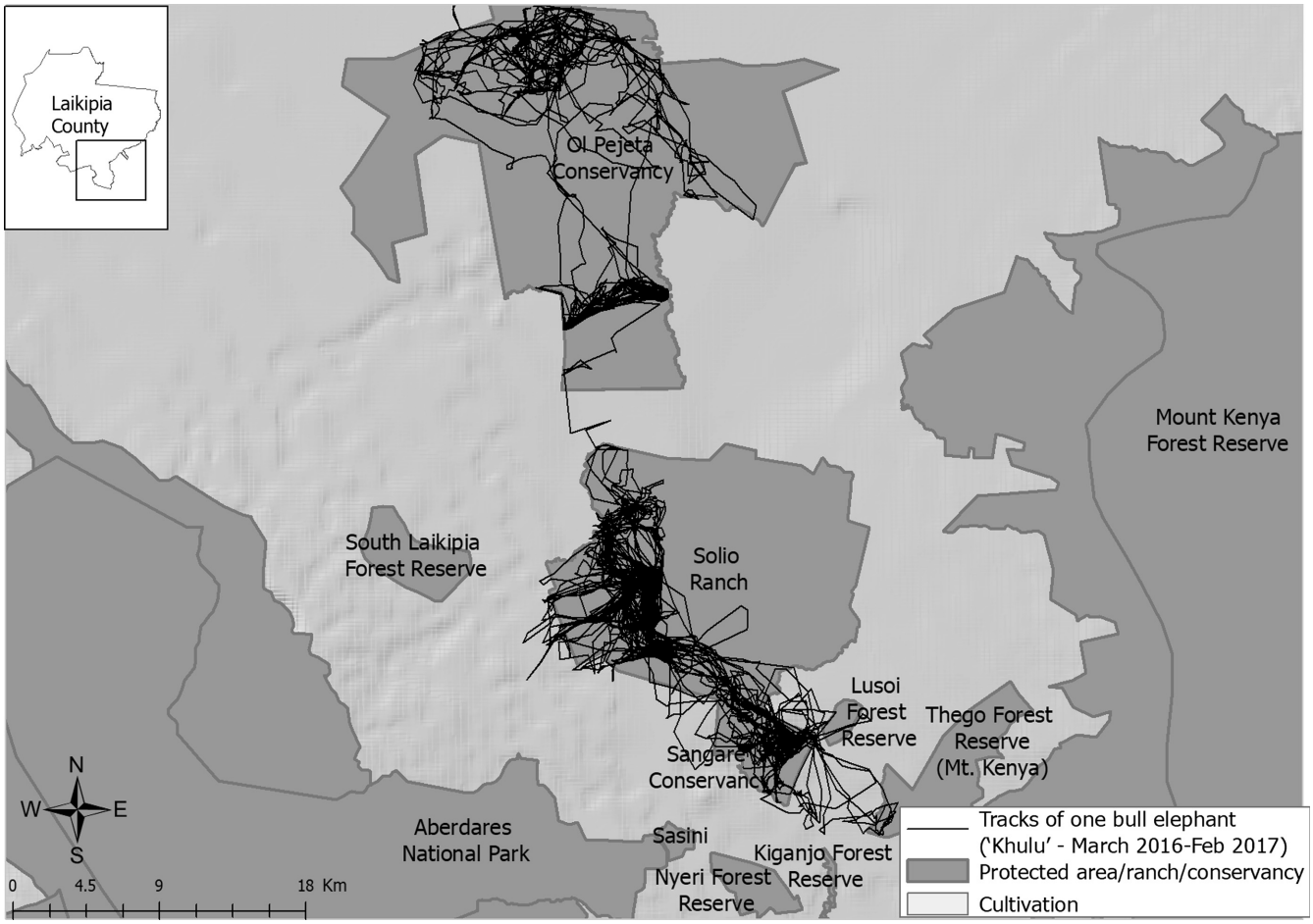

FIGURE 3 Tracks of a GPS-collared bull elephant "Khulu" over one year (March 2016–February 2017)

In Laikipia, most ranchers either tolerated or actively encouraged elephants on their properties, viewing elephants through an aesthetic lens (as symbolic of African "wilderness"), or pragmatically as a commodity that underpinned important tourism income. Wildlife tourism ventures were also established on group ranches in the form of "wildlife conservancies", and pastoralists generally tended to tolerate elephants, although they compete with cattle for water and pasture, and can injure people and cattle.

The large ranches of Laikipia therefore provide a relatively safe haven from poachers and over 3,600 km^2 of continuous elephant habitat (LWF, 2012). Within the "animal space" of ranches, water is more plentiful than outside on smallholder land, vegetation is thicker providing shade and food, and people are fewer (and therefore risk is lower). Elephant tracking shows the importance of this "animal space" to elephants in Laikipia. Figure 3 shows how one elephant over one year moves across the landscape between ranches, with small forays into smallholder agriculture. In February 2013, another elephant, named Gengis Khan because of his persistent attacks on farms, was shot and wounded while raiding farmland. He moved straight to the nearest ranch, and stayed strictly within its boundary, safe from any pursuit.

5 | BEASTLY PLACES

While elephants were free to roam the "animal space" of large ranches in Laikipia, their presence created a major problem for smallholder farmers, because of their predilection for eating their crops. Crop-raiding is a problem in many parts of Kenya (Litoroh, Omondi, Kock, & Amin, 2012), especially where farmland lies adjacent to land managed for conservation, or where settled agriculture has expanded onto rangeland (Graham et al., 2009, 2010). Elephants are the most significant cause of human–wildlife conflict in Kenya, and Laikipia is a recognised hotspot (Litoroh et al., 2012). Human–wildlife

conflict is an emotive and political issue in Kenya, and the media tends to sensationalise the issue and polarise opinions (Lee & Graham, 2006).

So-called human–elephant conflict (HEC) involves both direct and indirect impacts of elephant behaviour on people (e.g., damage to crops or property, food insecurity, social disruption and psychological trauma; cf. Barua, Bhagwat, & Jadhav, 2013), and impacts on elephants (injury or death during crop-raids, or shooting by wildlife authorities as dangerous animals). The KWS lacks the resources and capacity to reduce or respond to crop-raiding adequately. By its nature, crop-raiding is variable in space and time, and is impossible to predict (Graham et al., 2010). Responses by the KWS to complaints by farmers about raiding elephants are hampered by poor communications and limited resources (Graham et al., 2012). Delayed responses to crop-raids and the problem of identifying the animals concerned (leading to the wrong animal being targeted) make official responses often both unsatisfactory and ineffective (Hoare, 2012).

When elephants share landscapes with people, they do so forcefully. For elephants, people are the source of both opportunity, in the form of nutritious crop laid out in unguarded fields, and risk of injury or death at the hands of farmers or wildlife authorities. Elephants are strongly aware of the nature, distribution and timing of risks and opportunities, and respond to them. Over time, elephants shun landscapes where they are intensely hunted (Thouless, 1994).

When elephants raid crops, they impose their own interests on a landscape intensively used by people, and transform farmland into a "beastly place". Here, small farms are scattered across an open semi-arid landscape, holding patches of maize. These are vulnerable to raiding by elephants. Some farms are surrounded by simple fences, with bells attached, some with rickety wooden houses or watchtowers to guard crops from approaching elephants. Some farms have a skinny dog tied up by the crop to bark and alert farmers to oncoming risk. Farmers have little capacity to defend their ripening crops against raids by elephants at night.

GPS collar data reveal day-to-day movements of elephants in Laikipia that indicate a fine-scale awareness and avoidance of risk. Elephants leave spaces where they feel safe and enter only when the risk of injury to them from people is low (at night, when few people are present), and they prefer to raid crops where farms are scattered rather than concentrated and lie near to daytime refuges (Graham et al., 2010). Furthermore, elephants move more rapidly when they leave the safety of ranches and move into smallholder areas, reflecting their awareness of heightened risk (Graham et al., 2009).

Elephants impose cost and risk on smallholder farmers, and do so in a way that minimises risk and maximises opportunity for themselves. This is straightforward elephant behaviour – hunger, group collaboration, dexterity, awareness and avoidance of risk – but it is also an exercise of agency over human actors. In particular, elephants hold the balance of power at night.

Isolated farms are particularly vulnerable. People wait in the darkness to guard crops from elephants, yet are ultimately powerless in preventing a determined elephant from raiding their crops. "An elephant is like a monster coming to your home. It is terrifying. There is nothing you can do. In one visit your whole farm can be destroyed" (Smallholder farmer, Laikipia, January 2013). Various "community-based" measures to reduce crop-raiding (e.g., watchtowers, lights, noise-generation, chili fences and beehives) have been tried in Laikipia. However, they are of limited effectiveness at deterring elephants at a large scale due to the labour and technical skills required (Graham & Ochieng, 2008; Hoare, 2012), and the ability of elephants to learn and distinguish real from imitation risk (Thouless & Sakwa, 1995). The elephant is a lively actor in the inter-species power play over who reaps the benefits of the growing crop.

In speaking of elephants as lively actors in crop-raiding, we are at risk of simply anthropomorphising behavioural ecology. However, it is possible to be more specific and identify elephants as individual actors in fence-breaking and crop-raiding. Tovey argues that perceiving animals as a homogenous entity frames them as "without individual character, knowledge, subjectivity or experience" (2003, p. 197). Lorimer highlights the significance of recognising the ways in which "different animals sense, inhabit and experience anthropogenic landscapes", challenging "the anthropocentrism that governs much conservation practice" (2010, p. 494). Barua (2014c) notes the importance of non-human subjectivities: different animals sense, inhabit and experience anthropogenic landscapes in multiple ways.

Crop-raiding behaviour is known to vary among individuals. Hoare (1999, p. 697) describes "disturbance-tolerant" male elephants in Zimbabwe congregating along boundaries where human settlement and cultivation abut elephant range. Crop-raiding (Chiyo, Moss, Archie, Hollister-Smith, & Alberts, 2011) and fence-breaking elephants (Evans, 2014; Thouless & Sakwa, 1995) are invariably bulls and different individual animals show different aptitude and interest in crop-raiding and fence-breaking. Identified elephants in Laikipia are given names by local conservationists. These names are sometimes adopted by local people and include names of characters of obvious power (e.g., Abe Lincoln, Nelson, Dedan, Tyson).[8] These names reflect the conviction on the ground that crop-raiding is something done by individual elephants, not elephants as a category: crop-raiding is an individual act, not simply generic behavioural ecology.

6 | BORDER CROSSINGS

Ranchers in Laikipia came under pressure to keep elephants off their smallholder neighbours' land in the 1980s. Smallholders (supported by politicians) saw ranchers as benefiting from the presence of elephants through tourism, and began to argue that ranchers should be obliged to keep elephants off their land (Thouless, 1994). Solar-powered electrified fences were increasingly used around ranches (Thouless & Sakwa, 1995). Yet not all ranchers fenced their properties, either because of a lack of resources or because they were fundamentally opposed to fencing and believed that landscapes should remain contiguous and unfragmented (Evans & Adams, 2016). Therefore, although the idea of a single long fence was proposed (Jenkins & Hamilton, 1982; Thouless, Georgiadis, & Olwero, 2002), fencing remained piecemeal. This, to some extent, worsened crop-raiding, by funnelling elephants through unfenced areas, concentrating crop-raiding into areas of smallholder farms in the south and west Laikipia (Graham et al., 2010). By 2007 electrified fences had been built along the boundaries of ten ranches (Figure 4), but a gap remained in western Laikipia, where crop-raiding had become a nightly occurrence. In 2007, a local politician, aspiring for national re-election, sought to gain electoral support from his smallholder constituents by closing this gap. Funds were raised to build a new 120-km "West Laikipia Fence" in 2008, as the ultimate technical solution to the elephant crop-raiding problem (Evans & Adams, 2016; Figure 4).

This fence, and those that preceded it, marked and hardened boundaries in Laikipia that had evolved through the colonial and postcolonial dispositions of land. Electric fences need to be understood as co-productions of elephant and human actors, because they reflect elephants' desire for and capacity to get nutritious crops as well as the political necessity to protect smallholders from these raids (Evans & Adams, 2016). The fence also had the benefit of excluding pastoralists and smallholders from ranches. One Laikipia landowner wrote that although the fence would prevent the movement of elephants "the main aim was to prevent trespassing cattle and goats" (Hartley, 2016).

The West Laikipia Fence was supposed to end crop-raiding, yet as described in the opening of this paper, elephants routinely break this fence. Scouts recorded 593 fence-breaks on a 55 km stretch of the West Laikipia Fence between 2012 and 2013 (Evans, 2014). As the elephant tracker said in March 2013 of fence-breaking elephants: "If these bulls can see crops and there is a poor fence nearby, they will break fences".

By breaking the fence, elephants therefore resisted the human ordering of landscape into spaces for conservation and farming (Philo & Wilbert, 2000). Creswell (1996) defines resistance as actions made purposefully to overstep known limits:

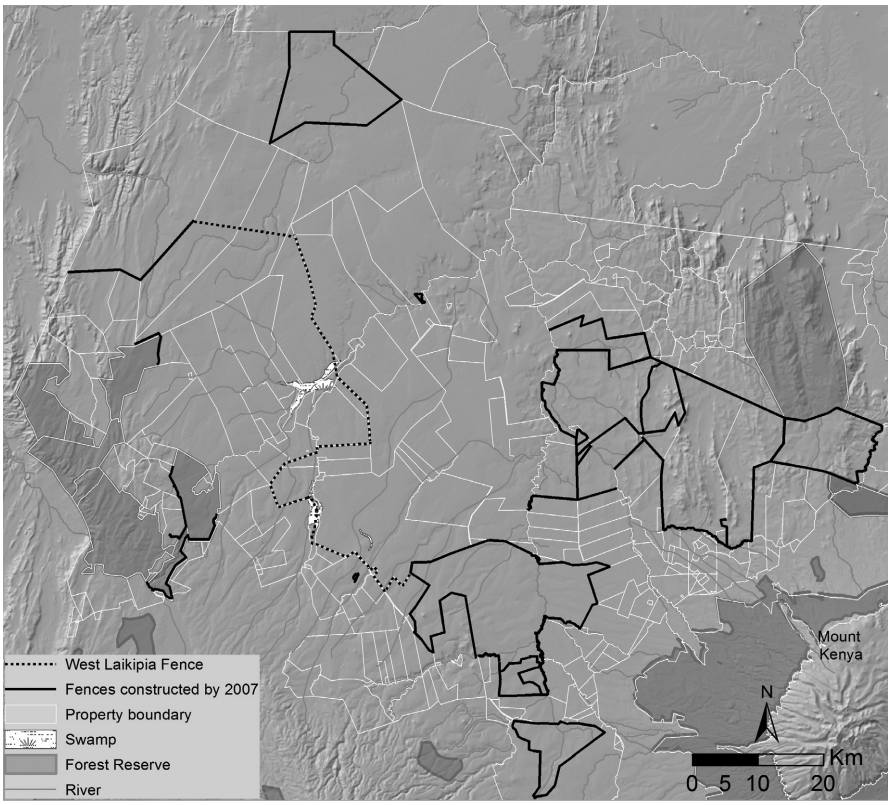

FIGURE 4 The location of electrified fences in Laikipia as of 2017

implying a conscious intentionality. Spatial and temporal patterns of elephant fence-breaking suggest that elephants are aware that fence-breaking is risky, and that they act in a way to minimise these risks. Elephants broke the fence and moved from ranch to crops at around dusk and back into the ranch before or after dawn (Evans, 2014). Fence-breaks, like associated crop-raiding, therefore tended to be carried out under the cover of darkness, when few people were moving. Elephants also tended to break the fence where it had a low voltage, and therefore gave a low shock, and where it was situated close to crops, reducing the time during which they were at risk of reprisals (Evans, 2014). In Figure 5, GPS positions show that one bull elephant (Ismael) mostly broke the fence and crossed to smallholder land at night; the majority of his GPS positions on ranch-land occurred by day.

Particular bull elephants demonstrated individuality in where and how they broke the West Laikipia Fence. The elephant tracker observed three bulls carrying out over 70% of fence-breaks in one year (2012–2013). All three bulls were between 35 and 40 years old – considered to be "old" by wildlife managers in Laikipia, in light of the past and current poaching crisis – and all had been fitted with GPS collars as prolific fence-breakers. Collar data show that individual bulls varied in where they broke the fence (Evans, 2014).

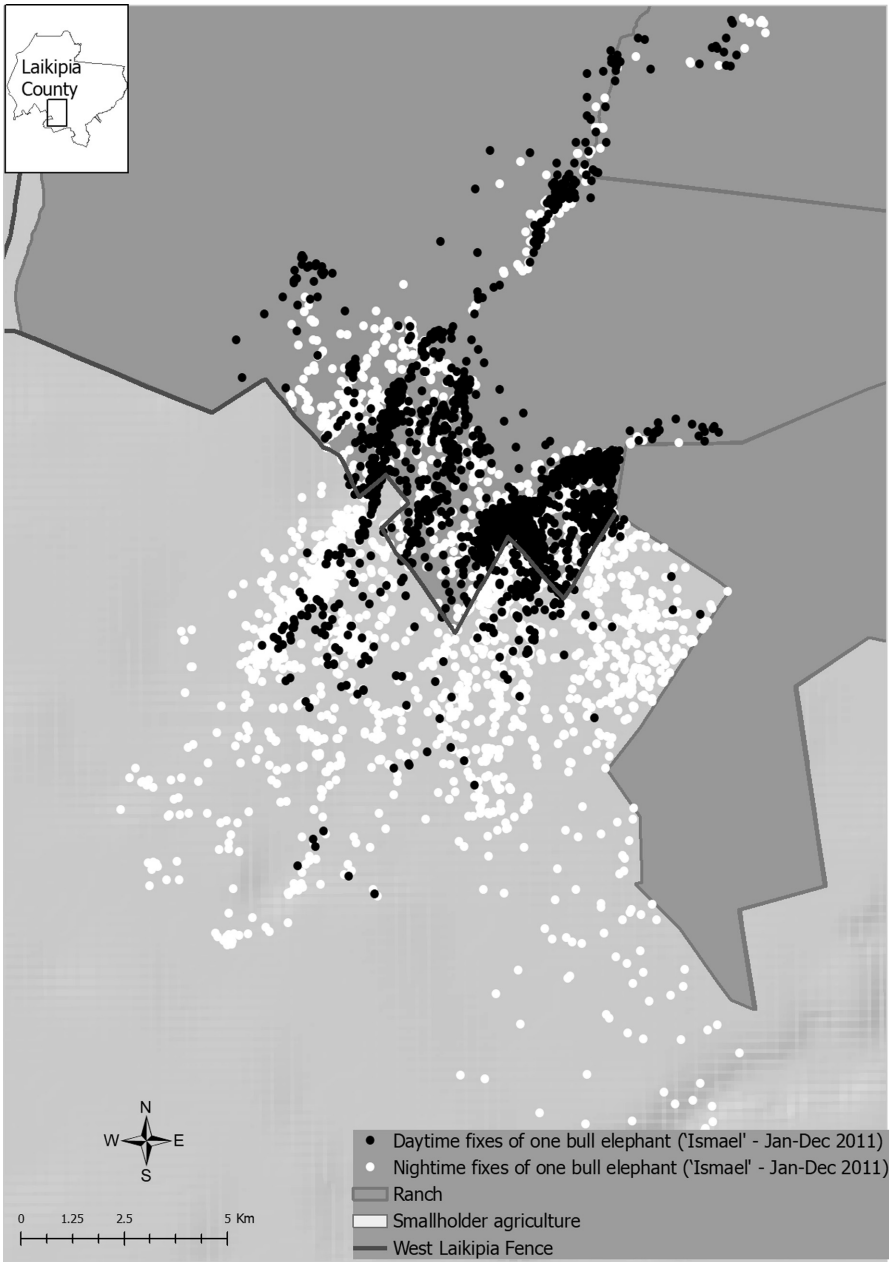

FIGURE 5 Day-time and night-time hourly locations of one GPS-collared bull elephant "Ismael" over one year (January–December 2011)

Camera traps revealed that certain bulls were "breakers" that physically broke the fence, while a group of younger smaller "follower" bulls waited to cross once the fence had been broken by the breaker (Evans, 2014; Figure 6).[9] Fence-breaking behaviour therefore seems to be "learned" and "taught" among bull elephant society. Younger bulls have been shown to associate more with older, more experienced males and like matriarchs, mature male elephants are repositories of social, ecological and spatial knowledge (Evans & Harris, 2008).

"Breaker" bulls represented the frontline of risk-taking bulls – elephants willing to face the risk of injury/mortality posed by humans to raid crops. In Laikipia, it was the spatio-temporal behaviour of these "breakers" that ultimately shaped the human–elephant relationship with smallholders. One smallholder in a crop-raiding hot-spot in south-west Laikipia commented "We are angrier with elephants today than before the fence was built because we have lived with the expectation that the fence will stop our crops being destroyed and these were lies; the same elephants break every night" (November 2012). The rhetoric that surrounds HEC mitigation – that its ultimate aim is to increase tolerance to elephants (Naughton, Rose, & Treves, 1999) – is subverted by the actions of elephants themselves.

"Breaker" elephants, as identified by Space for Giants, were targeted by the KWS with a series of interventions, including de-tusking (removal of part of the tusk to make it harder for elephants to break electrified fences by reducing leverage), translocation (anaesthetisation by dart-gun and transportation on a lorry to a different area), and, if fence-breaking continued, shooting (although since the recent surge in poaching, the KWS has been reluctant to implement this intervention). However, de-tusked elephants continued to break the West Laikipia Fence with their remaining length of tusk (Figure 6). Therefore, in 2012, KWS translocated 12 bulls, including those which had been de-tusked, some 200 km to Meru National Park. Though fence-breaking initially decreased along the West Laikipia Fence, after a year it increased to former levels and other elephants took up the role of those removed: the elephant tracker's observations and camera traps revealed that three elephants that had previously been involved in 10%–12% of breaks had become involved in 60% of breaks (Evans, 2014). Meanwhile, the 12 translocated animals soon associated with other bulls and introduced fence-breaking to Meru National Park, where the fence had never been broken before.

7 | ELEPHANTS AND NEW CONSERVATION SPACES

Elephants are not only powerful actors in HEC in Laikipia, but their actions also intersect with larger scale politics of land, and attempts to create new spaces for conservation in northern Kenya. The separation of Laikipia into land for elephants and areas for local people has become increasingly politically significant. In *The East African*, Mbaria (2006, p. 6) claimed that the West Laikipia Fence was "a ploy to separate white ranchers from peasants". The fence would, he suggested, end up "splitting the country into two unequal parts" as it makes way for a "huge conservation site", dividing the "haves" who benefit from conservation and the presence of elephants and the "have nots" who don't. The then Director of Laikipia

FIGURE 6 Camera trap image of a group of bull elephants breaking an electrified fence

Wildlife Forum[10] developed the same argument in an interview in October 2012: "This perception of a fence separating the haves from the have nots is about land tenure and sense of injustice, like the wall across Gaza – fun on one side and suffering on the other". A smallholder echoed this sentiment, saying "My mouth is bitter because the elephants graze there inside [the ranch] and then they earn money from elephants through tourists, while we go without food as elephants eat our crops. Those people from [ranch] are not our friends – they are our enemies". A local conservationist observed "the [West Laikipia] fence moved away from being about elephant–people conflict to being about people–people conflict" (Interview January 2013).

Elephants, and the fenced landscapes created to protect them, have become an increasingly critical flashpoint for pastoralist resistance to land ownership in Laikipia. The owners of the ranches along whose boundaries the fence lay, used its construction to help secure the legitimacy of their tenure, in the face of growing pastoralist claims to land. It demarcated a secure boundary around their property to trespassers in the name of a technical solution that reduced the costs imposed on their neighbours by elephants (Evans & Adams, 2016). For many pastoralists, the fence represented an attempt at enclosure to which they objected. As one pastoralist said: "I'm not going to let my cows starve, when I look across the fence and see all of that grass" (Interview January 2013).

Since 2015 pastoralists have been breaking through and taking down fences to gain access to ranches with their livestock. In 2016 and 2017 these "transgressions" reached a violent crescendo with Samburu and Pokot pastoralists moving onto ranches to graze with force, resulting in an estimated 80 people being killed (including smallholders, ranch staff, policemen, pastoralists and a white ranch owner). Many pastoralists saw elephants and other wildlife as given favourable access to land in the name of conservation. One Samburu activist asked: "What happens to indigenous communities when they are displaced and rendered squatters in their own ancestral land, giving way to a rich multinational corporation wildlife conservation industry?" (Malino, 2011, np). Elephants have become targets in these bubbling disputes over land rights: 26 elephants were killed by pastoralists between January and May 2017 (Space for Giants, personal communication), often without the meat or tusks being taken (Waithaka & Kiplagat, 2017).

The mobility and range of elephants lies at the heart of new conservation strategies in Laikipia, particularly those that lead to the creation of new conservation territories. Elephants, with their vast requirements for space to access resources that are spatially and temporally scarce and their iconic and charismatic status (Barua, 2011), have become a means for conservationists to achieve landscape-scale conservation. Space for Giants, for example, says: "Our conservation efforts are currently focused around African elephants because it is this species, perhaps more than any other, that effectively captures the challenge of conserving large intact terrestrial natural ecosystems and the species they support" (SFG, 2017, np).

Large-scale conservation demands not just large areas, but connectivity between them. Corridors are increasingly important elements in conservation policy in East Africa (e.g., Goldman, 2009). Such corridors are associated with species that move through landscapes: in Laikipia that species is primarily the elephant. Maintenance of habitat connectivity for wildlife was a key objective of the wildlife conservation strategy for Laikipia (LWF, 2012). National goals for elephant conservation recognise the need for conservation land outside formal protected areas (Litoroh et al., 2012). Mapped animal movements are fundamental to claims for landscape-scale conservation. The Lewa Wildlife Conservancy[11] (a former ranch) wished to secure a 14-km corridor linking the Mount Kenya forests and the Conservancy, leveraging funds from Virgin Atlantic and Virgin Unite to construct an "elephant underpass" beneath a major road (completed in 2010). They justified this by GPS collar data showing the movements of one particular old and audacious crop-raiding bull elephant, named "Mountain Bull", between the forests of Mount Kenya and drylands further north. The creation of this corridor then in turn allowed the inclusion of the Lewa Wildlife Conservancy within the Mount Kenya UNESCO World Heritage Site (Branson, 2015; Ngunjiri, 2014). Mountain Bull's crop-raiding helped secure not only the connectivity of elephant habitat but the tenure of the Lewa Wildlife Conservancy through its listing as a World Heritage Site.

8 | CONCLUSIONS

Laikipia, like many post-colonial landscapes, embodies fraught and contested histories (Barua, 2014c; Lorimer, 2010). It is a landscape shared by diverse actors, some of them non-human. Elephants constitute important actors, both together and as individuals, as fence-breakers and crop-raiders. Elephants are not simply mapped onto this human-occupied landscape, nor are they "dumb actors in diverse politics" (Hobson, 2007, p. 257). They are "mindful, lively, dynamic and differentiated beings" (cf. Lorimer, 2010, p. 493), and powerful in their interactions with humans. Their physical presence, ecology, behaviour, subjectivity and representation in human culture co-create the histories and politics of the landscapes that they share with human actors.

Our attempts to understand the liveliness of elephants as political actors in Laikipia has implications for geographical research in three areas. First, for animal geography; second for political ecology; and third for elephant conservation.

In terms of animal geography, we have followed and extended the approach used by Barua (2014b, 2014c) and suggested by Hodgetts and Lorimer (2015). Our work demonstrates the complexity of animal geographies in space and time, and the importance of the actions of individual animals to the way those geographies evolve. The relations of elephants with fences and farmers shows the dense interactions between human and non-human actors, and the importance of the reciprocal relations between animals and people, within human-controlled and spatially constrained spaces. Animal geographies are increasingly fashioned within landscapes made and structured by humans.

In terms of the role of non-humans in political ecology, our work offers several insights. First, using a diverse methodology, we have shown the role of elephants in the co-construction of the landscape in which they live and move. Elephants move between animal spaces (ranches) managed for grazing and wildlife and beastly places (smallholder farmland). In one, the elephants are regarded as either neutral or beneficial, in the other their crop-raiding imposes significant costs on people who are already poor. By crop-raiding, elephants impact on the actions of people, and their actions stimulate responses (especially fence construction) that in turn impact elephant lives. Elephants cause fences to be built to counter their hungry progress through the landscape. Their response to those fences is active and individual, and creates its own knock-on effects on people in a shared landscape. Conservation offers a fertile hybrid context within which to explore geographies of non-human lives.

Second, we have shown how the agency of elephants influences the evolution of post-colonial politics over land. In their occupation of ranch land, elephants help secure an arrangement of landholding derived from the colonial expropriation of Laikipia for white settlement in the 20th century. Fence-breaking elephants not only cross from animal spaces to co-opt smallholder farmland as a beastly place, they cross a boundary that is highly significant for ranchers, smallholders and pastoralists. The fences built in response to the actions of elephants therefore lie at the heart of the evolving bitter disputes over land rights in Laikipia. The extensive territorial demand of elephants is a factor in the creation of new conservation spaces and is an important part of these disputes, along with the securing of those territories against incursion and hunting. The agency of non-human actors can be fundamental to conservation territorialisation and influence wider human political processes, in this instance over land.

The third contribution of our study is to emphasise that consideration of elephants as individual actors is important to the conservation of elephants. African elephants are not a species that can be protected within protected areas alone. In Kenya, they roam widely beyond the protected area network. The Kenyan *National Elephant Conservation and Management Strategy* (Litoroh et al., 2012) emphasises land use planning, to designate space where elephants are tolerated by people, as a key component for securing a future for elephants and their habitats.

Elephants are too vibrant and awkward to conform to the "binary spatial logic" of orthodox land use planning (Lorimer, 2010, p. 500). Protected areas as currently conceived are too small to accommodate significant numbers of elephants, and too rigidly conceived to accommodate their need to move. A more dynamic and resilient conception is needed to accommodate elephant agency (Bengtsson et al., 2003). That means that elephants and people will continue to mix in the same landscapes, with all the problems this implies. The management of HEC will have to be more dynamic and less narrowly technical, taking account of social factors (Redpath, Bhata, & Young, 2015) and the non-human politics of shared space, and the agency, individuality and subjectivity of elephants. HEC management needs to pay close attention to the individual behaviours, social dynamics and associations of elephants as actors, their predilection for crops and their tolerance of risk. HEC needs to be understood as emerging from interactions of individual elephants and people in specific landscapes, rather than as a standard problem likely to be tackled effectively by a standard solution (such as a fence).

Elephants, collectively and as individuals, are powerful actors, determined in maintaining the landscape as a shared space whatever the wishes of their human protagonists. They make a claim for territory that does not fit with human needs for smallholder agriculture or plans for conservation. What room is there for the agency of elephants in anthropogenic landscapes in the Anthropocene? The elephant is classically an awkward creature, unsettling, recalcitrant and obstinate in the face of human aspiration and endeavour (Lorimer, 2014). Understanding their needs and interests, as a species and as individuals, provides the best hope for future cohabitation in shared landscapes, especially those where people also struggle for subsistence and the opportunity to flourish. A mutually respectful multispecies politics in northern Kenya will depend on a clear understanding and acceptance of the needs of elephants.

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ENDNOTES

[1] Unless otherwise specified, all reference to elephants in this paper are to the African elephant.

[2] This research contributed to the establishment of Laikipia-based international elephant conservation NGO Space for Giants, with which the first author now works (www.spaceforgiants.org)

[3] See http://www.elephanttrust.org

[4] Africa Wildlife Tracking GPS-GSM collars (http://www.awt.co.za/).

[5] Cuddeback Attack IR cameras (http://www.cuddeback.com/).

[6] Survival International and the Centre for International Human Rights Law and Advocacy.

[7] West Laikipia Fence Project Monthly Report July 2009, p. 5, Space for Giants.

[8] After Abraham Lincoln (US President), Admiral Lord Nelson (British naval hero), Dedan Kimathi (Mau Mau leader) and Mike Tyson (boxer).

[9] See https://www.youtube.com/watch?v=C9gzAcekEdA

[10] The Laikipia Wildlife Forum is an NGO established to realise "the goals and aspirations of small holders, community groups, conservancies and large land owners focused on integrated natural resources management" (www.laikipia.org).

[11] See www.lewa.org

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