Geoforum xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Geoforum

journal homepage: www.elsevier.com/locate/geoforum

The production of human-wildlife conflict: A political animal geography of encounter

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ARTICLE INFO

Keywords:
Human-wildlife conflict
Human-wildlife interactions
Conservation conflicts
More-than-human geographies
Political animal geography
India

ABSTRACT

This study examines how transformations of a regional rural economy have produced new geographies of encounter between agricultural communities, their livestock, and carnivores surrounding Bandipur National Park in Karnataka, India. We analyze state discourses of human-wildlife conflict alongside the perspectives of rural agricultural communities about changes in human-wildlife interactions. Our study shows how state narratives about human-wildlife conflict mask more foundational changes in the livelihood strategies of agricultural villages in response both to park management and regional economic transformations, and how these changes are inherently woven into the production of new geographies of human-wildlife encounter. Our results suggest declining tolerance for injury and death of cattle by carnivores represents the cumulative impacts of a transformation of the livestock economy and more aggressive protected area management strategies. This research also suggests how political ecology can maintain its commitments to social justice while becoming more attuned to animals as political actors.

1. Introduction

There is growing concern among conservationists and government officials in India that tolerance of rural communities for living with large wildlife is in decline. State and non-state actors often attribute this to lifestyle and cultural transformations, despite long histories of humans sharing space with wildlife (Madhusudan 2003; Madhusudan & Mishra 2003; Velho et al., 2012). In this article we question this discursive framing. Instead, we ask: what are the socioeconomic and historical conditions that account for why tolerance for living with wildlife might decline in a region with a long history of human-wildlife interaction? To address this question, we develop a political animal geography of human-wildlife encounter through the practice of multispecies political ecology (Ogden et al., 2013; Sundberg 2011; Srinivasan, 2016; van Dooren et al., 2016). We take an expanded view of the kinds of actors that together produce 'more-than-human' geographies, landscapes co-produced through the entanglements of human and non-human life (Whatmore, 2006; Sundberg, 2011; Collard, 2012; Lorimer, 2012). Our study region focuses on a set of villages on the fringes of Bandipur National Park (Bandipur), in Karnataka, India (Fig. 1). Our research reveals the multiscalar, economic, and distinctly geographic transformations underlying what both state conservation actors and local agriculturalists describe as an unfolding human-wildlife conflict 'crisis.'

Political ecology, as a shared field of practice engaged in studying the social and political dimensions of human relations within their lived environments, is a well-suited lens for unpacking this discourse of crisis (Neumann, 1992; Robbins, 2012; Neumann, 1998). Combining data obtained from multispecies qualitative research, livestock censuses, and close readings of conservation management plans, we show why the narrative put forward by actors within the Indian Forest Department about declining tolerance for living with large carnivores masks both ruptures in a regional agrarian economy and the production of new geographies of wildlife encounter—the spaces where species meet (Haraway, 2008; Govindrajan, 2015). This paper responds to calls for developing more explicitly *political* animal geography scholarship, attendant to the broader economic and regional forces underpinning the politics of human-animal encounter often missing in various threads of human geography (Srinivasan, 2016; Hovorka, 2018).

Despite the passing of over a decade since Hobson (2007) first suggested the need for a more adequate accounting of animals as political subjects, as Srinivasan (2016) notes, there are still only a limited

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https://doi.org/10.1016/j.geoforum.2018.06.011
Received 27 November 2017; Received in revised form 4 June 2018; Accepted 13 June 2018

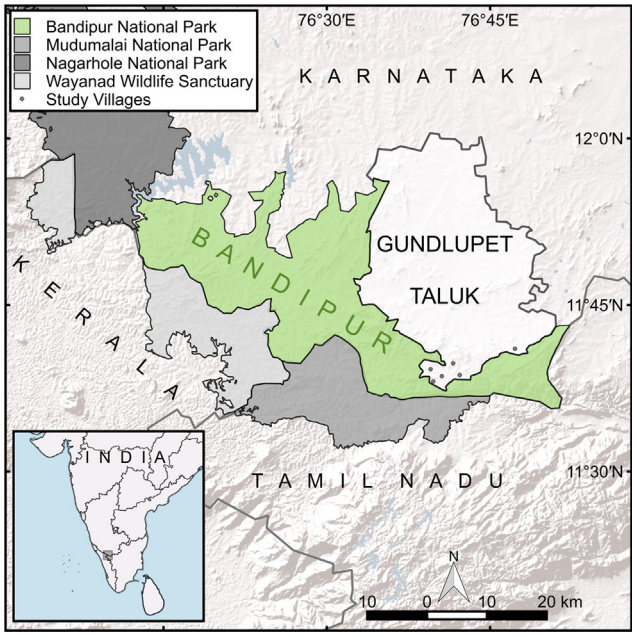

Fig. 1. Map of study area and Bandipur National Park (also known as Bandipur Tiger Reserve) within the broader geographic context of neighboring Mudumalai National Park, Wayanad Wildlife Sanctuary, and Nagarahole National Park (light green). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

number studies that tackle the question of animals as expressly *political* agents in contested geographies (for instance, Buller and Morris, 2003; Sundberg, 2011; Collard and Dempsey, 2013; Srinivasan, 2013; Emel and Neo, 2015). Political animal geography aims to overcome the "serious lacuna" of adequate accountings of politics within the geographic sub-discipline of animal geography on the one hand, and the persistent lack of attention in political geography to animals as actors, rather objects only to be acted upon, on the other (Srinivasan, 2016: 77). A close examination of the politics underpinning discursive formations of 'human-wildlife conflict' as a stable category of human-animal interactions provides an important opportunity to leverage political animal geography's theoretical insights through careful attention to the empirical case of human-wildlife interactions around Bandipur. In particular, we draw on the tools and practices of political ecology in order to put forward an argument to address questions of the political while also giving close consideration to the position of animals in geographies of contestation. We do this through a multispecies accounting of the impact of livestock predation by carnivores on community livelihoods in an agrarian landscape of important conservation value.

This study is therefore positioned as a political animal geography of human-wildlife encounter. It employs a political ecology framework to highlight the political and economic linkages operating across scales of analysis in co-producing changing geographies of encounters between cattle and carnivores. In doing so, this study draws out the value in attending both to the subjectivities of actors within institutions of power engaged in the everyday practice of conservation, as well as animals themselves as agential subjects enrolled in political contestations (Srinivasan, 2014). In the next section, we describe the study area's geography. We then review approaches to human-wildlife conflict as a specific framing of human-animal interaction in the biodiversity conservation literature, followed by a more in-depth engagement with the intervention this paper makes to ongoing theoretical debates in developing political animal geography as an important area of research. After describing our research methods, we move on to our empirical findings, followed by a discussion of the particular merits a multispecies political ecology research approach brings to disentangling discourses of human-wildlife conflict. We conclude with a discussion of how the strengths of fine-grained analyses at the heart of doing political ecology make important contributions to the field of political geography, and how doing so reinforces the merits of advancing political animal geography as a field of research. This includes presenting a global assessment of other locations in which the findings of our study may be relevant in geographies with similar human and animal populations densities in close proximity to protected areas.

2. Study area

This study's primary geographical focus is centered on six villages situated along the Northeastern border of Bandipur within the park's buffer zone along its Kundakere Range boundary (Fig. 1). The study villages fall within the administrative division of Gundlupet Taluk (a minor administrative unit), located within Chamarajanagar District. Covering a core area of 872.24 km^2 and a buffer 'eco-sensitive zone' of 597.45 km^2 (inclusive of 123 villages), Bandipur National Park was first designated by the Maharajah of Mysore as Venugopala Wildlife Park in 1935 (90 km^2) and was expanded and notified as one of the first Tiger Reserves in India in 1974 (Narain et al., 2005; Hosmath, 2015). Prior to its designation as a National Park, Bandipur was actively managed for forestry operations and as a royal hunting ground for the Mysore Maharajah during the British Raj (Hosmath, 2015). Bandipur is a critical part of a larger inter-state protected area complex (Fig. 1). This broader landscape is one of the most critical tiger and elephant habitats in India, with the largest breeding population of tigers and Asian elephants found anywhere in the world (Karanth et al. 2011; Hosmath, 2015; Jathanna et al. 2015). This area is classified as part of Bandipur's eco-sensitive zone (or buffer zone), with legal restrictions in place related to economic activities, land use, construction, and infrastructure development (MoEF, 2012; Hosmath, 2015). The construction of new buildings for commercial tourism, for instance, is prohibited within this zone. The local population, however, must also seek approval of a local eco-sensitive zone committee prior to building or improving their homes.

The villages found within the eco-sensitive zone along the Kundakare boundary are largely dependent on a combination of irrigated and non-irrigated agriculture and agricultural labor, off-farm labor, dairy production, and dung collection for their livelihoods (Appendix 3.1). The six primary study villages of Jakkahalli, Kaniyanapura, Kundakere, Lokkere, Mangala, and Yelachatti have populations ranging from 167 (40 households) in Lokkere to 2,142 (552 households) in Kundakere as of the last Census of India (2011). Chamarajanagar District is the 3rd poorest District in Karnataka, making it one of the more economically marginalized regions in southern India (Appendix 3.1; Census of India, 2011). The economic precarity of households in the study region means the financial impact incurred through the damage and destruction of agricultural crops and livestock by wildlife can be significant, even if occurrences are only intermittent (Karanth et al., 2013a). Within this article's broader study region, Karanth et al. (2013a) found that 15% of households experience livestock loss around Bandipur, primarily to leopards (62 percent) and tigers (37 percent). At the time of their study, average estimated income loss was Rs 2190 (USD ~ $33) and 70 percent of households reported loss to authorities (Karanth et al., 2013a). Approximately 75 percent of primary income earners by household in this region earn less than 5000 Rs (USD ~ 75) per month (SECC 2011; Appendix Table A1).

3. Theoretical approach

This paper makes two primary theoretical interventions. First, we contribute to the growing interdisciplinary field of human-wildlife interaction studies through a critical examination of how the discourse of human-wildlife conflict put forth by state actors in Bandipur masks more complex accountings of the economic and political processes co-