Political Ecology in Transition in the Global South: Examining the Interplay of Environment, State, and Society in Colonial India (1800-1947)

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Abstract: This paper presents an analysis of how historical transitions occurred, emphasising human actions and their interactions with the natural world, geography, climate, and the planet Earth. Anthropogenic actions have influenced changes in ecology and the environment throughout history. This impact intensified since the Industrial Revolution in England during the nineteenth century, spreading across the globe through the colonial and imperial pursuits of Western European nations. The paper adopts a methodological framework for understanding how historical transitions unfolded within the realm of political ecology in the Global South, drawing examples from colonial India under British rule. British colonial rule and its politically and economically driven ideologies drastically affected India's natural environment, including its flora and fauna. This led to a reduction in ecological biodiversity from the latter part of the nineteenth century until the end of their rule in 1947. By employing transition theory as the primary method of historical investigation, this study aims to illustrate how the colonial state and its ideologues and officials influenced the Indian environment and society and how the transition framework can inform significant ecological changes in the Indian subcontinent during the nineteenth and early twentieth centuries.

Keywords: Political ecology, transition theory, colonialism, British India, environmental history, modern history, Global South.

INTRODUCTION

This paper aims to offer the idea of transition, taking colonial political ecology as a framework for understanding the historical milieu in the Global South with particular emphasis on colonial British India. Transition describes the process of shifting from one era to another, providing a useful framework for understanding various aspects of South Asian history, particularly in the Indian subcontinent. Political ecology in the transition framework intends to explore the significant changes in India's landscapes, plant life, and wildlife due to human impact and extensive colonization under the British since the early nineteenth century. This study asks the following questions: How did the state and society in colonial India propel the ecological transitions, leading to significant changes in India's landscapes, plant life, and wildlife by the early twentieth century? What aspects and effects of 'transitions' do environmental history and animal studies inform about modes of production and the functioning of political ecology in colonial India? Political ecology[1] is a field that examines the relationships between the forces in the realm of political, economic, social, and environmental aspects, which is the central theme of this paper vis-à-vis the framework of transition. How did the 'political ecology concept during the transition period shed light on how political and social dynamics in colonial India, influenced by the British colonizers and the indigenous Indian knowledge systems, shaped the understanding of Indian ecology and its diverse species? This paper uses a colonial-environmental and political ecology perspective, building on a critical appraisal of extant historical scholarship, to problematize the concept of environmental transitions. Thus, such developments may offer fresh insights into the colonial environmental history of countries like India in the Global South.

Over the later twentieth century, extensive research has been conducted on the history of the environment and ecology in the West[2]. The last three decades have seen a significant focus on these topics in Global South

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[1]Roberts, Jason. "Political ecology". In The Open Encyclopedia of Anthropology, edited by Felix Stein. Facsimile of the first edition in The Cambridge Encyclopedia of Anthropology (2020), 2023.

[2]Hughes, Donald J.What is Environmental History? (Wiley, 2016); Hughes, Donald J.An Environmental History of The World New York: Routledge, 2001), 'Introduction. History and Ecology', pp. 1-11; Hughes, J. Donald. What is Environmental History? (Oxford: Blackwell Publishing, 2006); McNeil, J.R. Something New under the Sun. An Environmental History of the Twentieth Century (London: Penguin, 2000); Simmons, I.G., An Environmental History of Great Britain from 10,000 years ago to the present (Edinburgh: Edinburgh University Press, 2001); Worster, Donald, The Ends of The Earth. Essays In Modern Environmental History(Cambridge/New York: Cambridge University Press,1988), 'Doing Environmental History': 289-308;Ritvo, Harriet.The Animal Estate: The English and Other Creatures in the Victorian Age (Cambridge, Mass: Harvard University Press, 1987); Thomas, Keith. Man and the NaturalWorld: Changing Attitudes in England 1500–1800(London: Allan Lane, 1983).

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countries[3]. These studies have generated substantial and critical scholarship on the history of the environment, the relationship between the state and the environment, settler colonialism, colonialism in the Global South, resource exploitation, Indigenous ecologies, and resistance movements. However, the historical studies concerning the South Asia/Indian subcontinent have been limited by their focus on the anthropocentric framework, placing humans at the center of the study of the environment and ecology while overlooking the agency of the environment and the flora and fauna that have inhabited and shaped the culture and society on the peripheries of the subcontinent. The methodological framework presented in this paper outlines the processes of historical environmental transitions. This framework can be used to analyze how the codes of political ecology during the colonial period contributed to a more nuanced understanding of India's colonial and Indigenous contexts in relation to environment, flora, and fauna.

Much of the historical scholarship acknowledges that British colonial rule was directly responsible for India's extensive degradation of forests and natural resources[4]. However, this process was complex, with various transitions occurring as the colonizers began to explore different environments and geographies of the Indian subcontinent. Despite their victories in the Battle of Plassey in 1757 and the Battle of Buxar in 1764, the British colonizers had limited knowledge of the Indian environment, flora, and fauna until the end of the eighteenth century. Only from the early decades of the nineteenth century, particularly from the 1820s onwards, the British began to take a keen interest in observing and documenting the Indian environment, flora, fauna, and mountain landscapes[5].

One of the main arguments that arise when examining "transitions" in political ecology is the development of colonial epistemology on India's natural history, whether this was born out of curiosity, adventure, or the need to expand the colonial exploitative state-making process across the countryside and forest regions of India. The study of India's natural history has also been linked to benefiting European enlightenment thinking and the development of the history of ideas. This has involved using print cultures, observation through memoirs and letters, and understanding India's environment, plant and animal life, rivers, and mountains. This knowledge can be valuable for historians, researchers, policy-makers, forest and environmental institutions, and conservationists. When we combine this with examining indigenous repositories, oral histories, and vernacular sources on the Indian environment and wildlife, a better historical picture emerges about understanding the "transition" in the colonial period.

The ecological or environmental transitions in colonial India cover three main areas:

1. Indian forests and mountain geographies.
2. Flora and fauna.
3. Colonial infrastructural development in the fringe territories.

The colonial political ecology in transition(s) can be better understood when these three components are studied in detail. The chronological framework of the political ecology in transition in colonial India can be divided into three phases: the first half of the nineteenth century (1800-1857), the second half of the nineteenth century (1858-1900), and the first half of the early twentieth century (1901-1947).

POLITICAL ECOLOGY IN TRANSITION (EARLY PHASE OF 1800-1857)

In the early decades of the nineteenth century, many areas of land and interior landscapes were sparsely inhabited and far from civilization. Indian regional satraps, princely and zamindari rulers, had minimal intervention in these areas, which lacked transportation facilities and were filled with carnivorous wild animals, dangerous beasts of prey, venomous snakes, and dense foliage. The curiosity and active interest in studying the Indian environment and writing about it began to emerge only after the British gained political control of significant agricultural and fringe

[3]MacKenzie, John M.The Empire of Nature (Manchester: Manchester University Press, 1988); Rangarajan, Mahesh.Fencing the Forest: Conservation and Ecological Change in India's Central Provinces, 1860-1914 (Delhi: Oxford University Press, 1996); Sivaramakrishnan, K.Modern Forests: State Making and Environmental Change in Colonial Eastern India, (Stanford: Standard University Press, 1999); Barton, Gregory."Empire Forestry and the Origins of Environmentalism", Journal of Historical Geography Vol. 27 (2001): 529-552; Arnold, David and Guha, Ramachandra (eds.), Nature, culture and imperialism (Delhi: Oxford University Press, 1995); Grove, Richard H.Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860 (Cambridge: Cambridge University Press, 1995); Beinart,William.The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950 (Oxford: OUP, 2008); Guha, Ramachandra. "Writing Environmental History in India", Studies in History, Vol. 9.1 (1993), pp. 119-129;Grove, Richard, Vinita Damodaran, and Satpal Sangwan (eds.), Nature and the Orient: The Environmental History of South and Southeast Asia: Studies in Social Ecology and Environmental History (New Delhi: Oxford University Press, 1998).

[4]Gadgil, Madhav and Ramachandra Guha.This Fissured Land: An Ecological History of India (New Delhi: Oxford University Press, 1992); Rangarajan, Mahesh.Fencing the Forest: Conservation and Ecological Change in India's Central Provinces, 1860-1914 (Delhi: Oxford University Press, 1996).

[5]Letter, 'From Calcutta 1 FANE 6/4/3/8 dated 26 April 1836', Lincolnshire Archives (UK).

areas of India after wars like the Anglo-Mysore, Anglo-Maratha, and Anglo-Sikh wars. Thus, as soon as the mercantilist enterprise of the English East India Company once became a political enterprise of the colonial state-making process and created presidencies like Bengal, Madras, Bombay, United Provinces, and North-West Provinces. This has resulted in many British men being appointed as administrators, collectors, revenue officers, judges, medical and military officers, and soldiers who gained access to the interior landscapes of India, including forest environments and its diverse flora and fauna.[6]Some English women who were born in India or who accompanied their brothers or husbands to the upper levels of colonial administration wrote about their experiences and firsthand observations of Indian forest landscapes, environment, climate, and wild predators. Thus, this paper suggests that political ecology in transition began from the 1820s onwards concerning the study of Indian ecology when the British started to formulate their policies, colonial culture, consolidating imperial ideologies, and an Anglo-Indian identity (different from Eurasian identity). During the English Company rule, the terra firma of the Indian subcontinent was distributed into different topographies and ecological zones, and the contemporary colonial sources provide closer scrutiny of the ecosystem and society inhabiting these environmental zones. Given that history is reconstructed by examining available archives, it is essential to note that most of these archives come from primary sources of the colonial English language rather than written indigenous sources from the early nineteenth century. Therefore, to understand the changes in ecology during the English Company period, it is necessary to analyze these accounts with caution, if not admiration.

Initially vigilant and observant during the early nineteenth century, the British colonial enterprise began formulating policies towards Indian ecology and the environment in the later decades. Elsewhere, in the extant literature, it has been argued that shikar, or hunting, was intrinsically connected with imperial governance and predatory care[7]. The Britons also appropriated Indian ecological wealth of flora and fauna to create their principles of masculinity and imperial prowess built around the ecology of hunting in colonial India[8]. Shaped by their active involvement with Indian ecological landscapes, Britons created a hyper-masculine and militarized culture that became the hallmark of British imperialism in India's fringe and forest landscapes. Later, this hyper-masculine imperial culture was disseminated and popularised through print and publications back in Britain from the mid-nineteenth century onwards. These transitions indicate the evolving political ecology during the colonial period, connecting the Indian Empire's wild adventures with the British metropole. This perspective is useful in understanding the history of power dynamics that were intrinsically linked to the environmental practices of the British official stratum in India. By examining the political, economic, and cultural exploitation of the Indian environment, including its flora and fauna, one can see differences in the articulation and practice of imperial masculinity that stand in contrast not only to their upper-echelon counterparts in the metropole but also to Indigenous populations and Adivasi groups of India. Hence, this paper puts forward a much deeper perspective beyond the arguments presented in Thomas R. Metcalf's book "Ideologies of the Raj"[9]. Metcalf's book discusses how British liberalism created a dichotomy of the ideas of similarities and the ideas of differences when administering the colonies or powerful empires like the British Indian empire[10]. After the Revolt of 1857 in the later British Raj, ideas of difference between Britons and Indians were emphasized to tighten the colonial rule that became crucial in sustaining the British political enterprise in India[11]. In this context, a question is worth contemplating: what about British liberalism and the history of mentalities that flourished on Indian ecological and environmental zones?

This paper argues that when Britons began documenting their observations on Indian ecology and the environment, the impact of metropolitan ideologies on their colonial experiences was quite limited. The evolving field of political ecology facilitated new kinds of

[6]Kaye, John William. The Life and Correspondence of Henry St. George Tucker (London: Richard Bentley, 1854); Gombrich, Richard F. 'Henry Thomas Colebrooke(1765–1837)', Oxford Dictionary of National Biography (Oxford University Press, 2004); Kaye, John William.Lives of Indian Officers: Illustrative of the History of the Civil and Military Service of India, volume.1 (London: A Strahan & Co, 1867).

[7]Mandala, Vijaya Ramdas.Shooting a Tiger: Big Game Hunting and Conservation in Colonial India (New Delhi: Oxford University Press, 2018); Pandian, Anand S. "Predatory Care: The Imperial Hunt in Mughal and British India", Journal of Historical Sociology, Vol. 14, No. 1 (March 2001): 99.

[8]McKenzie, Callum."The British Big-game Hunting Tradition, Masculinity and Fraternalism with particular reference to 'The Shikar Club'", The Sport Historian, No.20, 1, May 2000, pp. 70-96; Sramek, Joseph. "'Face Him like a Briton": Tiger Hunting, Imperialism, and British Masculinity in Colonial India', 1800-1875. Victorian Studies, Vol. 48, No. 4. (Summer 2006): 659-680.

[9]Metcalf, Thomas R. Ideologies of the Raj. India: Cambridge University Press, 1997.

[10]Ibid. 66-160.

[11]Ibid. 66-160.

colonial articulations and rationale for the British colonizers in India, who identified themselves as Anglo-Indians across the subcontinent. The culture of political ecology suggests that colonial thinking influenced the Britons' ways of life and policies in India during the nineteenth and early twentieth centuries, which often combined duty with leisure activities. This influence also aimed to expand and strengthen British political and economic control in outlying areas under the guise of hunting and conservation. Following the onset of colonial rule, interest in Indian ecology gained momentum, especially from the 1820s throughout the subcontinent. This enthusiasm demonstrates the British colonizers' budding ambition to expand their political and economic control in India, especially hitherto ignored forest territories with flora, fauna, and geological resources. The British manipulated the interior ecological landscapes of the colonies in the Global South, exerting control over rural and tribal communities through various strategies, including alliances, protection, and oppression. New kinds of ecological epistemology became crucial to realizing these colonial agendas.

Maintaining close ties with the locals also helped the British obtain information about rebels or dissenting groups operating from jungle areas. Shikar, or hunting, was initially engaged to strengthen political alliances with indigenous aristocracies. It offered protective assistance to populations threatened by dangerous predators, patrolled the peripheries of settled areas, and actively tracked raiders and bandits who threatened civilization or the expansion of British political and economic hegemony in the fringe landscapes. The nineteenth-century British attitudes toward Indian ecology, flora, and fauna illuminate the importance of hunting in everyday administration, developing strategic policies, and legislative actions. Thus, this paper suggests that political ecology in transition during the first half of the nineteenth century should be seen in the institutionalization of British colonial and economic agendas. The British colonial agendas in the appropriation and the exploitation of the Indian environment (a significant transition) impacted both the people living in the rural hinterlands as well as the Adivasi population in the interior and fringe landscapes, yet at the same time, facilitated metropolitan economic growth back in Britain.

The political ecology in transition also had gendered experiences on the peripheries of the empire. Early British women during the English Company rule articulated India's environment through their exotic imaginings of wildlife and flora, partly because of their privileged upper-echelon backgrounds in Britain[12]. Thus, Emily Eden and Fanny Eden came to India as the sisters of George Eden, the Earl of Auckland and the Governor-General of India, between 1836 and 1842[13]. The letters written by the Eden sisters in India also illuminate how observations of the Indian ecology derived from the imagination of British women and in what manner its meaning was transmitted by reinforcing Britons' view of the empire as an entrancing and exotic place[14]. There was the presence of tiger huntresses in the Company Raj. For example, Theresa Cockerell (1809–53) and another British woman regularly rode on the backs of shikari elephants and went out tiger-hunting regularly, with endangering pursuits in the Rajmahal jungles in the Santhal Parganas (today's Jharkhand state) of the Bengal Presidency[15]. Theresa Cockerell sometimes embarrassed the English governor-general's sister, Fanny Eden, when they talked about "the excitement of the tiger's spring and the excellent day it was when they saw eight tigers killed"[16]. The interaction of these British women with Indian ecology provided them a certain legitimacy, notwithstanding prevailing gender barriers, to uphold their ecological rationality and approve the British colonization and governance of both marginal and cultivable landscapes. The upper-echelon British women experienced a romantic environmental transition through India's natural wilderness, enriched by its vibrant biodiversity on the fringes of the empire[17]. After the 1857 revolt, the early colonial perceptions of the Indian wilderness transformed significantly. The lush woodlands became a focus for colonial ambitions of empowerment, civilizing mission, and control. This shift indicates that the initial picturesque aesthetics of Indian forest terra firma ultimately became a testing ground for enforcing key imperial governing ideologies in India.

While this kind of "imperial" privilege was accorded to the Britons in colonial India, the transitions in political ecology demonstrate another unkind, often ruthless, treatment meted out to some of the indigenous societies living on the fringes of the empire. Through a

[12]Mandala, Vijaya Ramadas. "Tiger huntresses in the Company Raj: Environmentalism and exotic imaginings of wildlife, 1830–45", International Review of Environmental History (November 2019) Vol. 5: 97-113. https://doi.org/10.22459/IREH.05.02.2019.04
[13]Dunbar, Janet. Golden interlude: the Edens in India, 1836-1842. United Kingdom: A. Sutton, 1985.
[14]Mandala, Vijaya Ramadas. "Tiger huntresses in the Company Raj," 105.
[15]Ibid. 105-106.
[16]Ibid. 105-106.
[17]Ibid. 106-107.

historiographical re-evaluation, the subsequent pages explore the interplay between culture, power, and history in India's political ecology. The famous Subaltern Group historian Ranajit Guha's essay, "The Prose of Counter-Insurgency," is germane here[18]. While colonial rule as an idiom of power and legitimization of sovereignty benefited the British colonizers, the rural peasants and Adivasi tribals across India were relegated to "an intolerable condition of existence"[19]. As the Britons exploited India's fertile lands and diverse environments for a resource-driven economy, on the other hand, rural peasant communities and Adivasi tribals faced oppressive policies. The insensitive and reckless approach of British colonial governance led to numerous revolts and uprisings across India. Guha refers to several rebellions, including the Barasat Rebellion led by Titu Mir (1831), the Santal Hool (1855), and the 'blue mutiny' of 1860[20]. In each case, the indigenous leaders attempted peaceful means, such as petitions and deputations, before resorting to war against their oppressors. Additionally, Guha refers to revolts by the Kol (1832), the Santal, and the Munda (1899-1900), as well as the Rangpur Dhing and the jacqueries in Allahabad and Ghazipur districts during the Sepoy Rebellion of 1857-58[21].

Thus, the ecological transition of India by the mid-nineteenth century also underwent cataclysmic disruptions, as opposed to the exotic imaginings of Indian ecology among the privileged sections of the British colonizer society discussed in the earlier decades. This transition initially appeared as exotic and charismatic descriptions and articulations of British encounters in the Indian wilderness and ecology created political tremors like, for example, the Santhal rebellion of 1855-56. A recent study by Peter B. Andersen, "The Santal Rebellion,1855–1856 -The Call of Ṭhąkur,"[22] is germane to understanding this dichotomy of political ecology in transition in colonial India. Andersen's book presents a fresh interpretation of the Santal Rebellion or the Santhal Hul of 1855–1856, examining various colonial sources and indigenous Santal memories[23]. This work criticizes postcolonial approaches for not highlighting unique tribal perspectives and considers the Santhal Hul a class-based (Adivasi) peasant rebellion in colonial India (today's Jharkhand state)[24]. This criticism applies to the works of Ranajit Guha, Sumit Guha's classification of Indian ethnic groups' identity in his book "Environment and Ethnicity," and Indian sociologist G.S. Ghurye's writings on the Scheduled Tribes[25]. The ecological distributions of forests are integral to Santhal's social and cultural identity, yet historical scholarship has often neglected these historical foundations. Mobilization among the Santals was led by two prominent leaders, Sido and Kąnhu, who claimed upon the commands of Ṭhąkur or a spiritual supreme godhead[26]. The Santhal Rebellion transpired because of the excessive intervention of the British capitalist mode of agricultural production and the lopsided taxation system. The colonial legal and judicial systems also favored and facilitated the usury practices of local merchants and Bengali zamindari groups. As Peter B. Andersen compellingly puts it:

Santals discovered that bringing virgin lands under the plough was hard work, and landlords prized agricultural results more than sweat, so many Santals moved from one area to another to find soil of sufficiently high quality to afford them more control over their lives. The Damin-i-Koh has been such a place. Nevertheless, it was in the Damin-i-Koh that the rebellion broke out, as Santals here also suffered under the rent levels demanded by the EIC and the corrupt collection of that rent[27].

The conflict between the Santhal Hul people and their adversaries, the British East Indian administrators and Bengali landlords was driven by human actions[28]. The Santhal Hul people sought to protect their freedoms, while the administrators and landlords aimed to impose capitalist agricultural production in the interior landscapes of the Santhal Parganas in Jharkhand[29]. In response to this unequal economic order, the Santhal Hul leaders, Sido, and Kanhu called for humanitarian laws based on universal principles[30]. They advocated for the rights of tribal and Adivasi people against Zamindari and merchant

[18]Guha, Ranajit. Chapter 11: "The Prose of Counter-Insurgency" in Culture/Power/History: A Reader in Contemporary Social Theory, Nicholas B. Dirks, Geoff Eley and Sherry B. Ortner (eds.), 336-371. Princeton: Princeton University Press, 1994. https://doi.org/10.1515/9780691228006-014
[19]Ibid. 336-371.
[20]Ibid. 336-371.
[21]Ibid. 336-337.
[22] Andersen, Peter B. The Santal Rebellion 1855-1856: The Call of Ṭhąkur, United Kingdom: Routledge, 2023.
[23]Ibid. 1-56.
[24]Ibid. 259-274.
[25]Ibid. 259-274.
[26]Ibid. 259-274.
[27]Ibid.273.
[28]Ibid. 272-273.
[29]Ibid. 272-273.
[30]Ibid. 265-272.

intermediaries[31]. The Santhal rebellion led to the deaths of thousands of rebel fighters at the hands of native infantry and English troops armed with high-velocity rifles, but the rebels resisted fiercely[32]. Despite this, the interior ecology provided a refuge for the tribal fighters, allowing them to continue their uprising from 7 July 1855 until it was eventually suppressed in the spring of 1856. After the English East India Company's military operations were halted in February 1856, it is noteworthy that in response to the rebellion and the significant loss of Adivasis' lives, the administrative districts were reorganized[33]. A new district called Santal Parganas was created, providing the Santals and other tribal groups access to British colonial authorities for the first time[34].

The selection of the Eden sisters as a case study is based on the historical significance of English women exploring the wilderness of eastern India from 1836 to 1842, as well as juxtaposing this to the Santhal rebellion of 1855 to 1856 to show how the same political geography was undergoing a historical transition not for the better. This illustrates the significant shift taking place in political ecology under the English Company's rule in the picturesque geography of the Rajmahal Hills, situated in the Santhal Pargana division of present-day Jharkhand state in India. These hills are located on the northern edge of the Gondwana supercontinent. They are still home to the Sauria Paharia people, with the valleys predominantly inhabited by the Santhal people. Even though the Indian ecology was often described as exotic, filled with beauty and danger due to the presence of tigers, elephants, wild boars, and rhinos, rose bushes, lush green lakes, on the contrary, the Santhal rebellion served as a strong message to the British. The taxation policies revealed the unjust, exploitative nature of colonial capitalist enterprises. Introducing usurious merchants and landowners from the plains into Adivasi territories could serve as a powerful historical lesson (i.e., Santhal upheaval and political destabilization) for the British, prompting them to reconsider their colonial imperialistic endeavors within the context of Santhal's political ecology.

Whether under the stewardship of English East India Company officers like James Outram or John Malcolm, who stabilized the fringe and forest landscapes in western India and the Bombay Presidency during the 1820s to 1840s[35] or the case study of tiger huntresses during this period from the personal memoirs of the Eden sisters, whereas the opposite colonial spectrum of the Santhal rebellion in 1855-56 shows power operating at the core of political ecology. Scholars like Greenberg and Park highlighted the role of political ecology in creating synergy between political economy, power distribution, ecological analysis, and economic activities within the spectrum of bio-environmental relations[36]. Another scholar, Bryant, observed the environment's discursive struggles and material conditions in the Global South, resulting in unequal power relationships and creating adverse outcomes concerning the functioning of the political climate[37]. According to Robbins, political ecology refers to how environmental changes are connected to power. Thus, in the first part of this paper, we discussed some aspects of how colonial power was responsible for significant transitions and upheavals in the first half of the nineteenth century[38]. This was due to the anthropogenic actions of humans, particularly an alien power, the British, in transforming the ecological landscapes of India into their power and political economy nexus while simultaneously creating aesthetics of the tropical world for themselves.

HERBARIUM: A DIFFERENT TRANSITION IN COLONIAL POLITICAL ECOLOGY

Another aspect of environmental transition was the development of colonial science, such as botany and zoology, due to European travelers and company officials who had been passionately interested in exploring the unchartered territories of Indian ecology since the days of the Portuguese and the Dutch. Europeans were exploring plant life and exotic fauna for various reasons, including survival against tropical diseases and knowledge gathering and dissemination—financial considerations were large in the later part of the colonial rule but not in the beginning. Three different colonial powers, the Portuguese, the Dutch, and the English, have shaped

[31] Ibid. 265-272.
[32] Xalxo, Abha. "The Great Santal Insurrection (Hul) of 1855-56." Proceedings of the Indian History Congress 69 (2008): 732–55.
[33] Andersen, Peter B. The Santal Rebellion 1855-1856: 192-222.
[34] Ibid. 192-222.
[35] Mandala, Vijaya Ramadas, 'Imperial Culture and Hunting in Colonial India', Shooting a Tiger: Big-Game Hunting and Conservation in Colonial India (Delhi, 2018; online edn, Oxford Academic, 21 Feb. 2019), https://doi.org/10.1093/oso/9780199489381.003.0002, accessed 5 Sept. 2024.
[36] Greenberg, J. B. & Park, T. K., (1994) "Political Ecology", Journal of Political Ecology 1(1), 1-12.
[37] Bryant, R. L. (1998). Power, knowledge and political ecology in the third world: a review. Progress in Physical Geography: Earth and Environment, 22(1), 79-94.
[38] Robbins, Paul. Political Ecology: A Critical Introduction. United Kingdom: Wiley, 2004.

the development and growth of Indian botany by exploring these plant species from different ecological zones of the Indian subcontinent since the latter half of the sixteenth century[39]. The colonial botanical end-eavor of 'herbarium' became a reality when scientific curiosity intersected with the Indian environment, particularly the flora of the Indian empire[40].

'Herbarium' as a colonial botanical endeavor also formed into a professional collection of plants, classifying their taxonomy and the systematic cataloging process of different plants and their usage. The Portuguese, Dutch, and English produced books called 'herbals'[41]. These books contain names and descriptions of plants and information about their medicinal, tonic, culinary, toxic, hallucinatory, aromatic, or magical properties. This aspect illustrates the birth and zenith of colonial botanical science and its interaction with India's flora. However, the colonial botany's development was not a monolithic enterprise under the British. Many professionals and amateurs from Europe and part of the East Indian Company were genuinely interested in developing critical epistemology about Indian plants' benefits in curing many diseases and ailments.

The beginning of the nineteenth century witnessed an impetus for botanical exploration of plant species across the Indian subcontinent, as many of these men also worked for the English Company. An English compendium of botanical knowledge in the creation of medical knowledge was published in 1810 in a book called *A Catalogue of Indian Medicinal Plants and Drugs*,[42] attesting to the passionate rise of economic botany under the English East India Company. Although D. Chatterjee in 1948 alleged that the Royal Botanical Garden in Calcutta was founded under the auspices of the English Company in 1787, the rationale behind the British political ideologues supporting this venture for expanding commercial profit such as the cultivation of cardamom or other exotic varieties "and not for the advancement of botanical knowledge in India and elsewhere"[43]. The founder of the Royal Botanical Garden, Colonel Robert Kyd(1746–1793), an army officer of the East India Company, himself admitted when writing to the Governor-General John Macpherson, seeking his permission for this garden stated that the rationale for establishing this garden would be "identifying new plants of commercial value, such as teak, and growing spices for trade" and augment Indian empire's commercial assets[44].

Nathaniel Wolff Wallich (1786-1854)[45], a botanist and surgeon of Danish origin, initially worked at the Danish settlement of Calcutta and later for the Danish East India Company and the English Company. He was one of the individuals who made a series of efforts to develop and grow the Royal Botanical Garden in Calcutta[46]. Wallich collected many new plant species and created an extensive herbarium corpus distributed to European collections[47]. The English Company's Herbarium became known as the 'Wallich Herbarium' (K-W), the most significant separate herbarium now located at Kew Gardens near London[48]. Nathaniel Wallich's herbarium comprises diverse specimens he collected during his travels and service in India and many other collectors he inspired. This collection consists of 9149 species systematically arranged and represented by material from multiple localities, totaling 20,500 gatherings[49]. This discussion examines the rise and development of colonial botany, highlighting the transition from scientific exploration to discovering disease cures to a commercial enterprise under the control of the English Company. Even with this shift, some officers engaged in botanical explorations in India became advocates for forest conservation, which started gaining momentum in the 1850s. Curiosity and

[39]'Tractado de las drogas y medicinas de las Indias Orientales' (1578) is a Spanish translation of a key Portuguese text resulting from the search for medicinal spices by the Estado da India. 'Hortus Indicus Malabaricus' (1678–1693) is an illustrated Dutch botanical work produced by the VOC (Dutch East India Company) that definitively maps Indian medico-botany for centuries to come.

[40]Axelby, Richard. "Calcutta Botanic Garden and the Colonial re-ordering of the Indian Environment." Archives of Natural History, 35 (1), 2008: 150-163.

[41]Costa, Christovam da (1540-1599CE). Tractado de las drogas, y medicinas de las Indias Orientales, con sus plantasdebuxadas al biuo (Spain: Burgos, M. de Victoria, 1578);Fournier, Marian. "Enterprise in Botany: Van Reede and His Hortus Malabaricus–Part I." Archives of Natural History 14, no. 2 (June 1987): 123–58. https://doi.org/10.3366/anh.1987.14.2.123; Fleming, John. A Catalogue of Indian Medicinal Plants and Drugs with Their Names in the Hindustani and Sunscrit Languages. [Reprinted from Asiatic Researches Vol. 11]. India: 1810.

[42]Fleming, John. A Catalogue of Indian Medicinal Plants and Drugs: With Their Names in The Hindustani and SanscritLanguages (Calcutta: printed at the Hindustani Press, by A.H. Hubbard, 1810).

[43]Chatterjee, D. "Early History of the Royal Botanic Garden, Calcutta". Nature 161, 362–364 (1948). https://doi.org/10.1038/161362a0

[44]See Ray Desmond, "Kyd, Robert (1746–1793)" in Oxford Dictionary of National Biography. https://doi.org/10.1093/ref:odnb/15814

[45]http://apps.kew.org/herbcat/gotoWallich.do (accessed on 31 August 2024).Wallich N, East India Company Museum. Numerical List of Dried Specimens of Plants in the Museum of the Honl. East India Company. [publisher not identified]; 1849.

[46]Axelby, Richard. "Calcutta Botanic Garden and the Colonial re-ordering of the Indian
environment." 150-163.

[47]Wallich, Nathaniel. Plantae AsiaticaeRariores : Or, Descriptions and Figures of a Select Number of Unpublished East Indian Plants (Treuttel and Würtz : TreuttelJunr. and Richter, 1829);Nathaniel Wallich 1832, RCIN 1071009, Royal Collection Trust Archive, London.

[48]http://apps.kew.org/herbcat/gotoWallich.do (op cited).

[49]Ibid.

scientific inquiry into the tropical world's natural history were crucial to the evolving colonial political ecology.

So, the "transition" in nuancing Indian political ecology during the colonial period should be seen in how anthropogenic actors were interacting and crisscrossing the challenges and opportunities provided to them within the sphere of Indian ecology. A flipside of this early phase of political ecology in transition was that human settlements, agriculture, trade, commerce, and the colonial economy were expanding at the expense of India's flora, fauna, and geological and natural resources. Anthropomorphic, utilitarian, and rationalist approaches to Indian ecology can be seen during this early phase of the colonial transition.

FRESH IDEAS AND COLONIAL ENDEAVOURS IN ECOLOGICAL TRANSITION (1858-1900)

The British colonial rule brought pivotal changes in how India's ecology and different societies transformed after the 1857 revolt. Colonial appropriation of shikar or hunting took a new zenith in the later Raj with the widespread use of high-end technology of guns and firearms among British colonial hunters and officers. The latest ideas on the construction of 'imperial masculinity' took a literary discourse with voluminous writings on the big-game hunting exploits of man-eating tigers, ferocious leopards, venomous snakes, dangerous beasts of prey, wild boars, 'rogue' elephants threatening the lives and livelihoods of rural and hinterland populace as well as highland mountain peripheries of the Indian Adivasi hamlets. This paper argues that ruling legitimacy in the later British Raj was more systematized and institutionalized soon after the 1857 revolt than under the Company period.

As human settlements and civilization grew, there was a heightened awareness of Indigenous and local identities in more significant opposition to colonialism, particularly after the 1857 revolt. Unfortunately, the natural world, including forests, plants, and animals, became targets for exploitation. This was done to further the interests of the British colonial administration and serve the greed-driven colonial global economy and knowledge systems for posterity. India's environment was in transition due to varied historical implications. The biocentric and eco-centric thinking was minimal due to the utilitarian-driven colonial model of British administration across Indian ecological and mountain landscapes. Perhaps shikar or big-game hunting was the biggest ideological institutionalization that strengthened British rule across fringe and forest territories of India. Until the 1860s, India's fauna, like tigers, lions, leopards, elephants, a variety of deer and antelope species, exotic birds, and ducks, were killed by British rifles with no regard to wild species sustenance[50]. This was done for British imperialism's political and economic legitimization towards developing natural history and zoological museums, colonial science and wild animal epistemologies, and the taxidermy industry back in Britain[51].

Indian ecology and wildlife played a critical role in shaping Britain's 'imperial' image on the global stage, portraying this nation as powerful and dominant over non-European territories. While the extant environmental historiography focused on the economic exploitation by British colonizers in colonial India, it overlooked the cultural significance of how Britons constructed their image by drawing on the exotic flora and fauna of Indian ecology, which became superimposed political ecology that underwent a significant transition. The British Empire's political, social, cultural, and economic symbolism and literary and governing discourses heavily relied on India's fiercest wild animals, like tigers and leopards, and majestic creatures, like wild elephants, as well as the imposing tropical climate and enigmatic forest and mountain landscapes. In the historical context, one of the main motivations for ordinary British men to join the imperial services was the opportunity to participate in 'blood sports' and big-game hunting, which were not accessible to them at home, particularly in India and other overseas territories. It can be argued that the deployment of colonial men in the nineteenth century contributed to the careful and systematic surveillance necessary for maintaining British control over Indian forest territories. The British conquest of jungle and woodland areas led to the implementation of "vermin eradication" programs across different British India presidencies, which portrayed big-game species such as tigers, leopards, wild pigs, and elephants as significant threats to civilization and Indian agrarian and

[50] Stockley, C.H. Lieut. Colonel.Big Game Shooting in the Indian Empire (London; Constable and Company Ltd, 1928); Baldwin, J.H. Captain.Large and Small Game of Bengal and Northwestern Provinces of India, (London, Henry S. King & Co, 1877); Baker, Samuel.Wild Beasts and Their Ways (London: Macmillan & Co., 1890). Also see Ritvo, Harriet.The Animal Estate: The English and Other Creatures in the Victorian Age (Cambridge: Harvard University Press, 1989); McKenzie, Callum. 'The British Big-Game Hunting Tradition: Masculinity and Fraternalism with Particular Reference to 'The Shikar Club,' The Sports Historian, No.20, 1, May 2000: 70-96.

[51] Ito, Takashi.London Zoo and the Victorians, 1828-1859 (Suffolk: Boydell & Brewer Ltd, 2014); Colley, Ann C. Wild Animal Skins in Victorian Britain: Zoos, Collections, Portraits, and Maps (Surrey, England: Ashgate, 2014).

revenue clusters. Colonial hunting became the primary method for "vermin eradication,"[52] which became British colonizers' official policy and political ideology. It was carried out by imperial officials, including colonial administrators, civil and military personnel, soldiers, planters, governors-general, and viceroys who formed a core group of hunters relied upon by the colonial government since the days of the Company Raj.

I suggest that colonial governance, whether for better or worse, was a new experience of ideas and experiments for the British colonizers and Indian societies across the subcontinent. This was a significant shift and transition compared with the pre-colonial period. Encounters with Indian ecology, climate, flora, and fauna facilitated the Britons in India to develop the field of natural history, botany, zoology, and taxidermy industries back in the British metropole.

Existing research on British liberalism and colonial India has a shortcoming in illustrating how the complexities of political ecology allowed colonizers to formulate and refine their policies regarding the administration and management of peripheral and forest landscapes. This perspective is informed not by the British Whig or Tory liberal tradition but rather by insights obtained from firsthand experience in the colonies and often drawn from indigenous knowledge systems, as discussed in this paper. The existing historical debate on the modes of production that arose in colonial India concerns the "transition" theory. Dipesh Chakrabarty's framework[53] is relevant since it problematizes how Indian history and societies underwent various stages and facets of civilization and material culture. His work mainly involves both pre-capitalist/non-capitalist and 'capitalist' processes, interwoven with premodern/pre-colonial with modern/colonial frameworks. This reveals an intermingling of local production methods and British mercantilist and capitalist systems while maintaining their distinct local and regional identities. In this transition, the dominant mode of production was the capitalist mode, which intersected with the provincial, regional, and local channels of indigenous economies and commercial systems. This study elucidated the extent to which colonial production methodologies were shaped by Indian ecology, pushing substantial transitions across British-ruled territories in India.

One of the significant aspects of this second stage transition in colonial political ecology was the Governor-General of India Dalhousie's Forest Charter of 1855, which gradually led to the establishment of the Indian Imperial Forest Department in 1864, which became foundational to modern scientific forestry and the development of multispecies knowledge[54]. The Britons did not have expertise in managing the woodlands of India until the 1850s. During the Company period, most forest usage techniques were learned or borrowed from Malabar or Burma or during the Anglo-Mysore and Anglo-Maratha wars. The initial interest of the British in Indian forests was stepped from their war needs and support for their shipbuilding industry. Indian ecology, which was deemed abundant and endless with natural resources, including flora and fauna, has thenceforth begun to change its course due to colonial interest in forest exploitation. We know that today, the Malabar Coast moist forests are critically endangered, especially its bio-diversity prosperity. Recurrent landslides and floods are happening due to the government's lack of interest in the biocentric management of mountain and forest peripheries and the colonial-centric approach to commercial forestry.

Since the beginning of the 1800s, forests in the British Malabar have been opened for increasing agriculture, human settlements, and teak and commercial plantations. Michael Mann's excellent study on "Timber Trade on the Malabar Coast, c. 1780–1840"[55] illuminates how the pre-colonial modes of political economy and ecology resisted the British mercantilist enterprise of capitalist and laissez-faire ventures in the timber trade. Before the British monopolization of the Malabar forests in the early nineteenth century, there was a historical example where the Travancore raja Kartika Tirunal Rama Varma (who reigned from 1758 to 1798) treated the forests as royal property. Nevertheless, the usage rights were managed in a liberal manner[56]. There were no duties levied on teak collection under this ruler up to the 1760s, and it was only when Europeans and coastal trade across the Malabar coasts brought demand on

[52]The Monthly Review, or, Literary Journal, 39 (London: 1802), pp. 25-26. Also see, Fayrer, Joseph.The Royal Tiger of Bengal, His Life and Death (London: J. & A. Churchill, 1875), Journal of the Society of Arts (London, 1878): p. 198; Davidson, C.J.C. Diary of Travels and Adventures in Upper India (London: Henry Colburn, 1843), 301; Jubbulpore Roads, Mirzapore, Measures for Destruction of Tigers (1834-1837), OR/Z/E/4/14/R495 (BL).

[53]Chakrabarty, Dipesh.Provincializing Europe: Postcolonial Thought and Historical Difference (Princeton and Oxford: Princeton University Press, 2000): 47-71.

[54]Barton, Gregory."Empire Forestry and the Origins of Environmentalism", Journal of Historical Geography Vol. 27 (2001): 529-552.

[55]Mann, Michael. "Timber Trade on the Malabar Coast, c. 1780–1840." Environment and History 7, no. 4 (November 2001): 403–25.

[56]Ibid. 407.

timber that the duties were levied for the export of timber outside the raja's territory[57]. Raja Rama Varma granted specific rights to "farmers" to cut timber in the forests of Travancore, but these rights did not allow them to cut trees indiscriminately. Like the system in Mysore-Malabar, timber traders would formulate agreements with the "farmers" or the forest owners and pay a set amount for each tree they felled to the local revenue collector known as the *kattikanam*[58]. Thus, in early modern or pre-colonial India, the political economy exploited forest resources for various uses, particularly the hardwood timbers of Travancore, Malabar, and Kanara.

For centuries, the merchants and traders in Malabar used the timber for export and ship construction purposes. The indigenous internal trading structures operated by these trade merchants resisted attempts by new rulers to transform them under their political orbit. Thus, Michael Mann's evocative study demonstrates how, in the 1790s, the British colonial regime tried to restructure the trading system but failed due to a lack of power and means to pursue such a policy. European private traders' avarice for timber for the European shipbuilding market brought the Bombay Presidency's ecological imperialism to the Malabar environment, as pointed out by Pamela Nightingale[59]. Yet, the Company Raj's endeavors were limited. Eventually, the authorities in Bombay had to adjust to the social and economic conditions in the Malabar province and neighboring areas in the early nineteenth century. According to Mann, the local 'agency' in Malabar resisted the British regime until at least the mid-nineteenth century[60]. This discussion facilitates understanding the pre-colonial and colonial transition modes within the ecological zones of southwestern India up to the 1850s - when a new series of transitions commenced.

Hence, political ecology underwent a new transition after establishing the Imperial Forest Department in 1864 in India. The passionate interest in colonial botany and zoology led to vivid writings on India's natural history by British colonizers, European explorers, and travelers. These writings, in turn, alerted the British colonial administration across India to the alarming levels of nature's degradation and exploitation of forest resources. Different topographies, mountain landscapes, and ecological zones witnessed the epoch of transition due to new human actions and interventions during various periods in the later British Raj. The creation of the Indian Forest Service and Imperial Forest Department began in the 1860s to protect reserved forests under colonial scientific and commercial forestry. Also, the impetus for creating imperial forestry in mid-nineteenth century India was to secure timber for building the Indian railway lanes and networks to safeguard the political suzerainty of the empire in the aftermath of the 1857 revolt. However, big-game shooting expeditions severely affected India's wildlife biodiversity and the continuation of 'vermin eradication' policies till the latter half of the nineteenth century.

Extant historical writings have focused on breakthrough critical research on regional studies of the Bombay Presidency and Western India, Bengal Presidency, Central Provinces, and other regions of colonial India[61]. These studies examined how the colonial state-building process impacted the traditional rights of local rural and Adivasi communities. These communities were stripped of their right to access forest resources and their freedom to roam in the forest, hunt, and gather for a living, a right they had under pre-colonial Indian rule. As a result, resistance movements were often carried out by some of the defiant Adivasi tribes and rural populace across the Indian subcontinent through covert and non-cooperative means, which continued during the later period of British rule. This aspect underscores the significant influence of the British state-making process on the peripheries of Indian ecology, elucidating not only the development of colonial perceptions of flora and fauna but also the challenging realities these communities stumbled upon.

Despite these disputed areas highlighting the shortcomings of British colonial governance, establishing the Imperial Forest Department in the late nineteenth century led to the appointment of specialized forest officers. Benjamin Weil noted that the establishment of the Imperial Forest Department in 1864 and the appointment of Dietrich Brandis, a German forest officer, as the Inspector General of

[57] Ibid. 407.
[58] Ibid. 407
[59] Ibid. 420.
[60] Ibid. 403–425.

[61] Skaria, Ajay. Hybrid Histories: Forests, Frontiers and Wildness in Western India. India: Oxford University Press, 2001; Singh, Chetan. Natural Premises: Ecology and Peasant life in the Western Himalayas, 1800-1950. India: Oxford University Press, 1998; Hardiman, David. Histories for the Subordinated. India: Permanent Black, 2006; Rashkow, Ezra. The Nature of Endangerment in India: Tigers, 'Tribes', Extermination and Conservation, 1818-2020. United Kingdom: Oxford University Press, 2023.

Forests created a genuine interest in studying flora and fauna[62]. Brandis served in this position for twenty years. This led to dedicated forest officers collecting Indigenous knowledge systems and practices through hunting and naturalist hobbies and adventures. These developments in colonial political ecology suggest that "vermin eradication" and later preservation and conservation were anthropomorphic governing ideologies and a significant transition in the colonial Anthropocene epoch.

The political ecology in transition during the latter part of the nineteenth century illustrates how British colonial rule subjected India's wild animals, including tigers and elephants, to varying policies. The Elephant Preservation Act by the Madras Presidency in 1873, followed by the All-India Elephant Preservation Act in 1879, which also applied to British Burma, shows how one animal was protected for its utilitarian and economic value while the tigers continued to be killed under the guise of big-game shooting and vermin eradication programs for the threat they posed to the same. This demonstrates that political economy and colonial vested interests were prioritized over species protection, even with the idea of sustenance, instead of animal welfare. While works of Ramachandra Guha, Gadgil, and Velayutham Saravanan have shown the colonial agency directly responsible for the cataclysmic change, on the other hand, Mahesh Rangarajan argued that 'material interests' and 'value-based preferences' preoccupied the colonial forest policies since their inception to maturity by the end of the nineteenth century[63]. Richard Grove and Gregory Barton argue that modern environmentalism is rooted in colonial India's empire forestry. Grove also suggested that state-controlled forestry evolved from the exchange of European and Indian ideas, constant interaction, and a mix of colonial and local experiences.

LOPSIDED GOVERNANCE AND ECOLOGICAL DESTRUCTION: THE TRANSITION FROM HUNTING, PRESERVATION TO CONSERVATION (1900-1947)

Benjamin Weil's work shows that despite the Indian Forest Service being instituted to conserve valuable forests by the twentieth century, driven by colonial government ideologies, it had become almost exclusively devoted to the profitable exploitation of the forests across the Indian subcontinent[64]. Taking quantitative primary source analysis of colonial forest officers' writing in *The Indian Forester*, Weil associates a critical transition from "conservation to extraction to shifts from the dominance of generalists to that of bureaucratic specialists and from ad-hoc holism to reductionism"[65]. In the early days, the forest service comprised naturalist hunters and military and medical officers who later became foresters and preservationists. As science, technology, and environmental awareness grew, Oxford and Cambridge graduates started taking over the Indian Forest Service at the beginning of the twentieth century[66]. However, they showed less interest in forestry and conservation and instead focused on devising new mechanisms for timber extraction and engineering to benefit the forests of the later British Raj. Thus, the transition in Indian environmental history also changed across three spectrums. In the first half of the twentieth century, the political ecology in transition witnessed a decline in aesthetic and conservation environmentalism but emphasized resource exploitation for profit for the empire.

The early twentieth century witnessed the ideas of conservation, prompted by the declining fortunes of flora and fauna across the Indian empire. The environmental changes brought forth by the British colonizers across the fringe territories of India also impacted rural and Adivasi societies during the later part of the nineteenth to early twentieth centuries. Environment, state, and society in colonial India by the turn of the early twentieth century was a different historical trajectory, as large-scale wildlife across India had witnessed indiscriminate destruction both by the British colonial hunters as well as indigenous societies, who were active anthropogenic agencies in the colonial exploitative economy. Briton's shikar, or big-game hunting, grew as an institutional apparatus based on exchanging ideas and borrowings from indigenous knowledge systems while using their high-end firearms and ammunition. Literary genre by the colonial imperial hunter-officers, administrators, soldiers, and planters created a discourse on 'imperial masculinity' based on their closer encounters with tigers, leopards, and often 'rogue' elephants for a lucrative market and audience back in Britain.

[62]Weil, Benjamin. "Conservation, Exploitation, and Cultural Change in the Indian Forest Service, 1875-1927." Environmental History 11, no. 2 (2006): 319–43 at 326.
[63]Rangarajan, Mahesh. "Imperial agendas and India's forests: The early history of Indian forestry, 1800-1878". The Indian Economic & Social History Review, 31(2), 1994: 147-167.
[64]Weil, Benjamin. "Conservation, Exploitation, and Cultural Change in the Indian Forest Service, 1875-1927": 319–43.
[65]Ibid. 322-343.
[66]Ibid. 328-338.

While the above discussion helps us to understand how hunting was brought into play across the colonial world for symbolic and practical purposes, Britons in India also placed conservation on an equal footing with hunting, suggestive of the administrative expediency and economic exploitation that went into the state-making process, a significant transition from the mid-nineteenth century to the early part of the twentieth century. Thus, in colonial India, the passion for hunting enabled Britons to study nature more closely, specifically flora and fauna, while deployed on imperial duty. The ideologues in the British Raj used hunting and conservation in multiple ways – toward stabilizing colonial rule, surveillance, safeguarding its revenue base, and smooth governance – all rolled into one. As Nicholas B. Dirks has pointed out, after all, 'Colonialism was itself a project of control…in certain important ways, (imperial) culture was what colonialism was all about'[67]. The objective was to subjugate the Indigenous populace and to accumulate and appropriate their natural resources for the benefit of the British. Thus, in the Indian empire, colonizers appropriated the idea of conservation to safeguard hunting big game as an exclusive privilege for themselves while restricting the natives through colonial arms and forest legislation acts, denying them the right to hunt, and curtailing their customary rights and access to forest resources.

It was evident that the ecological change and deforestation that occurred in India during the colonial period was a by-product of the British colonial expansion, correlated with trade and commerce, and increased agricultural production levels in fringe areas. Forest Acts were subsequently enacted to promote British hegemony over Indian forest resources, flora, and fauna[68]. Colonial government reports of the 1860s show that 'large quantities of timber were supplied to the Navy, the Army, and Public Works Department'[69]. Increasing demand for timber supply for multiple colonial needs necessitated the government to take up the forest conservation program.

What about the Indian groups, whether the mainstream rural populace or the Adivasi tribes across the fringe, forest, and mountain landscapes, which were under the direct orbit of British administration across the Indian subcontinent? Was political ecology in transition's intersection between environment, state, and society a smooth process in colonial India in the later British Raj? Colonial advocacy for creating wildlife sanctuaries raised the politically explosive issue of customary rights to land and forest resources. labeled intruders and encroachers by the Indian imperial forest officials were a population displaced by the colonial wildlife protection legislation[70]. This naturally resulted in poaching and isolated hunting activities, which, though now criminalized, remained persistent[71].

The historical scholarship also illuminates the instances of resistance, whether direct or indirect or through articulating ideas based on ecology and Indian wildlife, ecological-based discourses, and dissent against the British colonial suzerainty from the 1857 revolt to the 1880s to the early part of the twentieth century. For Indian groups, political ecology as a transition differs from that of British colonials. It is a reclamation of their indigenous identity, the local or regional culture imbued with emotional and poignant meanings, Indian ecology, flora, and fauna as symbols of asylum, recovery, and resurgence. Thus, political ecology in transition created dichotomies of historical curves, recalcitrant eco-political spaces, and contested conservation politics, different from the mainstream rising tide of Indian nationalism in the first part of the twentieth century. Transitions in colonial India's political ecology created varying developments and the rise of indigenous consciousness and resistance movements that were different and distinct from the pre-colonial modes of production.

From the later part of the nineteenth to early twentieth century India, roadways, railways, bridges, and canals were built, principally by cutting down thousands of trees and clearing woodland areas for colonial infrastructural development. The metropolitan Indian society was expanding and undergoing colonial modernity because the British Indian government was building modern infrastructural projects at the cost of exploiting forest wealth and ecological resources in the fringe territories of India. While British imperialism envisaged these development projects to amplify tax revenue and self-attest their colonial govern mentality, colonial modernity, unfortunately, was driven by the

[67]Dirks, Nicholas B. Colonialism and Culture (Michigan: University of Michigan Press, 1992), 3.
[68]The Indian Forest Act, 1878, Govt of India Legislative Department (Calcutta: 1894), p. 9, NAI; 'Animals include elephants, camels, buffaloes, horses…dwelling in forest lands' now constitute part of the government property. Govt of India, The Indian Arms Act, 1878: as modified up to the 1st of July 1892 (Calcutta: 1892), NAI.
[69]See, Rao, V.S. 100 Years of Indian Forestry, 1 (Dehradun: Forest Research Institute, Government of India Press, 1961), 75.
[70]Michael Lewis, 'Cattle and Conservation at Bharatpur: A Case Study in Science and Advocacy,' Conservation and Society, Vol.1 (2003), 1-19.
[71]Eardley-Wilmot, Sainthill.Forest Life and Sport in India (London: Edward Arnold, 1910): 30, 40.

exploitation of the empire's wealth rather than unprejudiced concern for non-human species. This was also true of Indian princes who aligned with the British and were equally part of the natural world's destruction. What is striking is that political ecology in transition shaped Indian nationalism and nationalist ideas of the twentieth century, deriving from the socio-economic and political unrest stemming from the peripheries of India since the mid-nineteenth century India.

Thus, the first part of twentieth-century, political ecology in transition offers how individual British men closely maintained a personal engagement with their immediate natural environment and articulated profound ideas about the holistic conservation of tigers and other Indian wildlife despite their conservation appeals and attempts being turned down by the British Indian government during initial years. The anthropomorphic and utilitarian perspective of the British Raj was transformed into an ecological and eco-political undertaking of preservation and conservation before India gained its independence in 1947, that too after considerable destruction of biodiversity and forest cover across the Indian subcontinent.

CONCLUSION

In the context of understanding transitional histories in the Global South, this paper deliberated on the political ecology of the transition in colonial India. It examined how the environment, state, and society were affected and how the transition framework can inform significant ecological changes. This study also illuminated the emergence of new ideas and interactions, forming fresh epistemologies in the modern history of colonial India. Emerging new thoughts, ideas, and discourses surrounding the Indian environment, flora, fauna, and identities rooted in the periphery, as well as forest ecology, environmental nationalisms, preservation, and conservation, were key markers of transition in the later British Raj. This paper focused on political ecology within the transition framework from the perspective of colonial India in the Global South, but its arguments and discussions regarding ideas and interactions should inspire further research on the nature of transition concerning forest societies, marginalized groups like Adivasi tribes, and other lesser-explored regions across the Indian subcontinent.

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