

## ABSTRACT

The remains of the timeworn Aravalli Mountains that extend through Delhi are known as the Ridge. The range exists in four main segments today and these are legally protected as conserved forests. This book presents an examination of the conflicts and negotiations that led to the establishment of conservation as the dominant discourse in the Ridge, highlighting the role of different actors and the unequal outcomes of these deliberations.

The framework used here is based in post-structural political ecology and draws on concepts of hybrids and metabolism developed in urban political ecology. An actor approach was taken to analyse discursive interactions regarding the conservation of forests in Delhi. In particular argumentative discourse analysis with its concepts of storylines and discourse coalitions was used to understand the conflicting, changing and overlapping components of various discourses and the unequal power relations embedded in these negotiations. This analysis is contextualised in the broader processes of urban development that conservation conflicts are mediated by.

The demands for conservation of the Ridge have been temporally and spatially fragmented. Therefore, a historical overview of conservation of parts of the landscape and an examination of beginnings of environmental activism surrounding the issue, are followed by a detailed analysis of trajectories of the three specific parcels where active conservation and restoration projects are being undertaken. It was found that the conflict of interests and variation of outlooks between state agencies and the demands of middle class environmentalists have enabled the establishment of specific legal and administrative arrangements in each of the three areas. These conservation projects have negative implications for marginalised populations in the vicinity in terms of restriction of access and eviction. However these groups have not been able to participate in debates that lead to policy formulation due to their positioning in the dominant discourse as illegal and detrimental to conservation and due the fragmentation in political participation in Delhi.

The study contends that the forested spaces of Delhi must be understood as implicated in the socio-political structures of the city rather than attempting to create pristine wilderness areas. This would be a necessary first step towards holistic decision-making regarding socio-environmental problems, which is crucial if urban conservation policies are to be sustainable both socially and environmentally.



## ZUSAMMENFASSUNG

Die geologischen Überreste des präkambrischen Faltengebirges der Aravalli Mountains durchziehen Delhi als Bergücken und werden als Ridge bezeichnet. Heute sind vier Teilbereiche dieses Bergückens als Wald gesetzlich geschützt. Die vorliegende Studie untersucht die Konflikte und Aushandlungsprozesse innerhalb der Naturschutzdiskurse, die zum Schutz dieser Waldbestände geführt haben. Hierbei wird besonders auf die Rolle der verschiedenen Akteure und deren ungleichen Einflüsse eingegangen.

Der Untersuchungsrahmen basiert auf dem Ansatz der post-strukturellen politischen Ökologie und bezieht Hybrid- und Metabolismuskonzepte mit ein, die in der urbanen politischen Ökologie entwickelt wurden. Ein Akteursansatz wurde für die Analyse der diskursiven Interaktionen im Zusammenhang mit dem Schutz der Wälder in Delhi gewählt. Hierbei werden die unterschiedlichen Handlungsstränge und Diskurskoalitionen mit Hilfe einer argumentativen Diskursanalyse herausgearbeitet, um die unterschiedlichen, sich verändernden und überlappenden Bestandteile der verschiedenen Diskurse und die zugrundeliegende ungleichen Machtverhältnisse zu verstehen. Diese Analyse der Naturschutzdiskurse ist eingebettet in die übergeordneten Stadtentwicklungsprozesse.

Die Forderungen im Hinblick auf den Schutz der Ridge variieren sowohl zeitlich als auch räumlich. Aufbauend auf einen historischen Überblick über die Diskurse zur Ridge sowie einer Untersuchung der Anfänge des Umweltaktivismus erfolgt eine detaillierte Analyse der Entwicklungspfade von drei ausgewählten Fallstudien, die sich auf Teilflächen beziehen bei denen aktiv Naturschutz- und Wiederaufforstungsprojekte durchgeführt werden. Die Ergebnisse der Untersuchung zeigen, dass Interessenskonflikte und unterschiedliche Auffassungen zwischen den Behörden und Naturschützern aus der Mittelklasse zu spezifischen gesetzlichen und verwaltungstechnischen Regelungen für die jeweiligen Teilflächen geführt haben. Diese unterschiedlichen Naturschutzprojekte haben jedoch negative Auswirkungen für marginalisierte Bevölkerungsgruppen in der Nachbarschaft der Gebiete und haben u.a. zu Zugangsbeschränkungen und Räumungen von Siedlungen geführt. Da die Bedürfnisse der marginalisierten Gruppen jedoch dem vorherrschenden Naturschutz-Diskurs (conservation discourse) widersprachen, und sie als illegal und ihre Praktiken als unvereinbar mit dem Naturschutz eingestuft wurden, konnten sie nicht an den Debatten, die zur Formulierung der gesetzlichen Richtlinien führten, teilhaben. Dieses ist Ausdruck der Fragmentierung der politischen Beteiligung in Delhi.

Die Arbeit argumentiert, dass der Schutz der Ridge nicht als Versuch verstanden werden darf ursprüngliche Wildnis wieder herzustellen, sondern die Entwicklungen sind vielmehr Ausdruck der sozio-politischen Strukturen innerhalb der Stadt. Dieses anzuerkennen erscheint als ein erster notwendiger Schritt hin zu

einem holistischen Verständnis von sozial-ökologischen Problemen und Grundvoraussetzung für sozial sowie ökologisch nachhaltige Entscheidungsfindung im Hinblick auf den Schutz der Ridge.

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## LIST OF ACRONYMS

ABWLS	Asola Bhatti Wildlife Sanctuary
CEC	Centrally Empowered Committee
CEMDE	Centre for Environmental Management of Degraded Ecosystems
CGWA	Central Ground Water Authority
CPQLW	Citizens for Protection of Lakes and Quarry Wilderness
DCF	Deputy Conservator of Forests
DDA	Delhi Development Authority
DPTA	Delhi Preservation of Trees Act
DSIDC	Delhi State Industrial Development Corporation
DSMDC	Delhi State Mineral Development Corporation
EIA	Environmental Impact Assessment
EIAA	Environmental Impact Assessment Authority
EPCA	Environment Pollution (Prevention and Control) Authority
ETF	Environmental Task Force
GNCT	Government of National Capital Territory
GSI	Geological Survey of India
IFA	Indian Forest Act
INTACH	Indian National Trust for Art and Cultural Heritage
JJ	Jhuggi Jhopri (refers to shanties/slums)
JNGO	Joint NGO Forum to Save the Ridge
LG	Lieutenant Governor
MLA	Member of Legislative Assembly
MoEF	Ministry of Environment and Forest
MP	Member of Parliament
MPD	Master Plan Delhi
MPISG	Master plan Implementation Support Group
RBA	Ridge Bachao Andolan
RMB	Ridge Management Board
RWA	Resident Welfare Associations
MCD	Municipal Corporation of Delhi
NCR	National Capital Region
NCT	National Capital Territory
NCTD	National Capital Territory of Delhi
NDMC	New Delhi Municipal Corporation
NGO	Non-governmental Organisation
NGT	National Green Tribunal
PIL	Public Interest Litigation
STF	Special Task Force
TCPO	Town and Country Planning Organisation
TSM	Total Station Method

UPE	Urban Political Ecology
WLPA	Wildlife Protection Act
WII	Wildlife Institute of India
WWF (I)	Worldwide Fund for Nature (India)

# 1 INTRODUCTION

## 1.1 SOCIAL CONSTRUCTION OF URBAN FORESTS IN DELHI

Having walked dusty tracts among shrubs and stunted trees for about an hour chasing a sighting of the rare and elusive sandgrouse, we climb a small hillock so the Nature Education Officer can point out where leopard pug marks were found a few weeks ago. Standing on this slight elevation within the Asola Bhatti Wildlife Sanctuary, one is at once affronted by the sights and sounds of the bustling metropolis that is Delhi; the constant growling and honking of distant traffic and the humming and hammering of construction sites are carried by the wind, puncturing the quiet of the forest. From this height, the multi-story apartments that are quickly rising in the horizon on the other side of the state boundary and Asia's largest 'unauthorised colony' bursting at the seams at the edge of the sanctuary, are clearly visible. One is prone to the feeling that the city is poised to swallow this last refuge of nature within it. It was perhaps similar sentiments that have driven calls to 'save the Ridge' by citizens in different parts of the city through the years. These various demands for conservation and protection of the forests have led to the establishment of the aim of maintaining the Ridge in its 'pristine glory' in the master plan of the city (DDA, 1990, p. 3).

Such sentiments of nostalgia and the fear of losing 'Eden' characterise preservationist thinking that presents spaces set aside for nature conservation as representing a primordial, undisturbed nature (Neumann, 2003). Certain areas have been historically invested with romantic ideas of being places of contemplation and beauty as opposed to areas meant for production and profit, obscuring the power relations and conflicts embedded in the creation and sustenance of these areas (Cosgrove, 1984; Neumann, 1998; Williams, 1973). An overview of the history of the Ridge disproves any idea of it being a pristine forest, and a deeper analysis of its trajectory reveals that rather than being an antithesis of the city, the forest is implicated in the material, socio-political, economic and historical fabric of Delhi.

It is argued in the following chapters that the Ridge has been socially constructed. Social construction of nature refers to the material and physical construction of environment, as well as construction of concepts and ideas regarding the environment which are dynamic and geographically and historically situated (Castree, 2003; Demeritt, 2002; Escobar, 1999). These two elements are intimately linked as it is through the social construction of the concepts of nature and the negotiation between these concepts that society comes to shape the material world and to interpret the changes it affects (Demeritt, 2002). Smith uses the term 'ideology of nature' to refer to the false belief in the ontological fixity of

natural environment and presents the idea of social construction of nature as a refutation of this ideology, he suggests:

“What jars us so much about this idea of the production of nature is that it defies the conventional, sacrosanct separation of nature and society, and it does so with such abandon and without shame. We are used to conceiving of nature as external to society, pristine and pre-human, or else a grand universal in which human beings are but small and simple cogs” (Smith, 1984, p. xiv).

The aim of re-framing natural environment as socially produced is to provide a political critique that exposes the power relations embedded in the formation and implications of such environments. This research is based in the fields of post-structuralist political ecology and urban political ecology which focus on the debates on socio-political conditions regarding the definition, experience and solutions to environmental problems (Blaikie & Brookefield, 1987; Forsyth, 2008a; Robbins, 2012; Zimmerer, 1993). Through the political ecology framework, this study presents spheres of politics, society, state, legality and that of environment as interactive and interdependent and argues that they need to be seen as such while making policy decisions regarding any landscape. So while political economy studies economic distribution of conflict, political ecology studies ‘ecological distribution of conflict’ i.e. “social, spatial and temporal asymmetries or inequalities in the use by humans of environmental resources and services” (Guha & Martinez-Alier, 1997, p. 31). Rather than seeing urban and nature as separate entities, political ecology engages in a consideration of urban natures as embodiments of the socio-political elements that produce them (Swyngedouw, 1996).

## 1.2 AN INTRODUCTION TO THE DELHI RIDGE

Delhi has long been a centre of strategic and political importance in Northern India (Spear, 2002). As a capital city to several ruling governments of the region over the decades (Frykenberg, 1994), the city has undergone multiple phases of urban re-structuring. The seat of the British colonial government was shifted from Calcutta to Delhi in 1911, giving rise to ‘New Delhi’ which was to be planned and built to reflect imperial power (Legg, 2006). Delhi continued to be the capital of independent India and since 1957 has been subjected to modern state-led zoning plans (Batra, 2010; Baviskar, 2003a). Recent metropolitan transformation in Delhi is linked to a shift towards neo-liberalism that accelerated in the early 1990s, due to structural adjustments made in India’s economic policy (Dupont, 2011). The present governance structure of the city is complex, due to its status as National Capital Territory (NCT). India has a federal system of government and the central government of India is based in Delhi, but the city also has an elected state legislature headed by a Chief Minister. The civic administration (Delhi Administration) is headed by the Lieutenant Governor who represents the President of India at the centre and not the Chief Minister.

The city occupies an area of 1483 square kilometres with a population density of 11,029 persons per square kilometre and a floating population of 0.3 to 0.4 million people per day (Census of India, 2011). With an expanding population within city limits and a rapidly densifying urban agglomeration in the surrounding areas, the pressure on land is high and increasing (GNCTD, 2014). Despite this, 20.08 per cent of the total geographical area of the city consists of forests and tree cover while in 1993, this figure stood at merely 1.48 per cent (FSI, 2013). Legally recorded forests (under forest conservation laws) cover 5.73 per cent of the land area, of this around 91 per cent is Reserved Forest area and the rest is Protected Forest land<sup>1</sup> (FSI, 2013), all of which lie on the Ridge. The conflicts and deliberations that led to the establishment of conservation areas, which are part of the reason behind the increase in forest cover in Delhi in the last two decades, are traced in the following chapters.

The Ridge is one end of the Mewat branch of the Aravalli Range that extends through the neighbouring states of Gujarat, Rajasthan, Haryana and Delhi in the Northwest of India. The Aravalli is the oldest mountain range in the country that has eroded over time, now existing as low hills at a height of 2.5 to 90 meters in Delhi (Singh, 2006). The range extends for about 35 kilometres in the city, from Wazirabad in the north and curving around Bhatti Mines in the south, with some intermittent, scattered outcrops (Sinha, 2014), evidence to a larger area covered in the past of which four distinct patches are legally protected as forest land today. It is suggested that the Ridge once covered as much as 15 per cent of the geographical area of the city (Agarwal, 2010). However by the 1980s, an administrative note stated that 40 per cent of this had already ceased to exist as a distinctive landscape<sup>2</sup>. An idea of the extensiveness of the original range can be gleaned from the sketch of Delhi's environs in (circa) 1807, showing an unbroken hilly outcrop extending through the city (see Map 1). Further evidence towards the fact that the Ridge was once a continuous landscape is contained in the toponymy of the city. Historian Narayani Gupta traces the erstwhile extent of the Ridge through the names of localities that signify their hilly origins:

“The Ridge [...] was once a distinct range of hills. Muradabad Pahadi<sup>3</sup> in Vasant Vihar, Pahad Ganj and Pahadi Dhiraj in Central Delhi, Raisina Pahadi on which the President's house stands, Bhojla Pahadi which is the base of Jama Masjid, Anand Parbat in West Delhi, are reminders of the hills we have lost” (Gupta, 2010, p. 96).

The flora of the Ridge is classified as tropical thorn forests (Champion & Seth, 1968), consisting of a semi-arid open scrub type of vegetation. The dominant tree groups here are Acacia and the related Mimosa (Krishen, 2006). These have been

- 1 ‘Reserved Forest’ is a legal category of conserved forests where all uses are prohibited except those specifically sanctioned. ‘Protected Forests’ are those in which certain uses are specifically banned
- 2 Town and Country Planning Organisation, 1982, ‘Note on the Status of the Ridge in and around National Capital’. The note refers to a study conducted by the Delhi School of Planning and Architecture which provides this figure (Ganguli, 1975)
- 3 The words ‘pahad’, ‘pahadi’ and ‘parbat’ mean hill/mountain in Hindi

mixed with exotic species, especially *Prosopis juliflora* (Ekta, 2014). In 1883-84, a large variety of fauna was noted to be found in the Ridge including foxes, wolves, jackals, mongoose, wild pigs, nilgai (blue bulls), blackbucks, chinkaras and leopards (Gazetteers Organisation, 1999). While most of the large mammals are rarely sighted today, the nilgai is common, foxes, jackals, porcupines can be seen occasionally and the leopard is known to stray intermittently into the Southern Ridge from the other side of the Haryana border (Sinha, 2014). The city has a rather high bird population of 110 resident species and 200 migrant species of birds (a third of the total bird count of the subcontinent) (Sinha, 2014).

The Ridge and the river Yamuna, the two main environmental landmarks of Delhi, formed the boundaries of the city historically (Dhawale, 2010; Mandal & Sinha, 2008). The Delhi Districts Gazetteer of 1883–84, mentions in its description of Delhi:

“The tract thus limited [by the river and the Aravallis], though exhibiting none of the beauties of mountainous districts, possesses a considerable diversity of physical features, and in parts is not wanting in picturesqueness. This it owes to the hills and to the river” (Gazetteers Organisation, 1999, pp. 1–2).

Reasons for the location of the city in the triangle between the river and the Ridge included the availability of water and the strategic defence provided by the hills (Shokoohy & Shokoohy, 2003). While the city may have grown beyond its original natural boundaries, the Ridge continues to function as a protective barrier from the dust and hot desert winds from Rajasthan, as Delhi lies in the leeward side of the Aravallis (Agarwal, 2010; Dhawale, 2010). Other noted advantages of the forests in Delhi include lowering of temperatures, provision of a noise buffer and reduction of pollution levels (Kothari & Rao, 1997; Srishti, 1994). The Ridge was also a source of several water channels that fed the Yamuna in the past. Most of these are now lost or turned to sewers (Misra, 2010). Quartzite rock that is found in abundance in the Aravallis is fairly porous and enables the Ridge to function as a ground water recharge zone; according to one estimate, 80 per cent of the rain falling in this area is recharged (Soni, 2007). For a city that lies in the semi-arid climatic zone, with a fast depleting water table (Shekhar, Purohit, & Kaushik, 2009), this is an important function.

There is no clear definition or delimitation of what exactly qualifies as the Ridge in Delhi today. Different authorities have argued according to their own viewpoints. Moreover contestations between various actors (including local residents, environmentalists, planning and forest bureaucracies and courts) have resulted in a montage of legal and administrative and arrangements across the Ridge. The Delhi Development Authority (DDA), the planning body of the city, in the Master Plan for Delhi, 2001 offers this vague definition:

“The Ridge in Delhi is defined as a rocky outcrop of the Aravalli range stretching from the University in the North to the Union Territory boundary to the South and beyond” (DDA, 1990, p. 53).

Administratively, the DDA defines the Ridge as the four distinct segments that received legal notification as Reserved Forests in 1994 (see Map 2). These seg-

ments are: The Northern Ridge which is the smallest section of around 87 hectares lying in old Delhi in the northern campus of the University of Delhi. The Central Ridge<sup>4</sup> spread across 864 hectares lies in the administrative centre of Delhi. These parts are largely fenced-in and have well defined boundaries. The South Central Ridge or the Mehrauli Ridge is highly fragmented by built-up area and contains the Sanjay Van (around 633 hectares). This segment is dotted with medieval monuments including the Qutab Minar and the Mehrauli Archaeological Park as well as university campuses of the Jawaharlal Nehru University and the Indian Institute of Technology. The Southern Ridge or the Tughlaqabad Ridge is the largest segment of around 6,200 hectares and contains the Asola Bhatti Wildlife Sanctuary. This segment lies on the periphery of Delhi coinciding with the southern state border (DDA, 2007; Sinha, 2014; Srishti, 1994).

These four segments however, do not cover the entirety of the Ridge. The Forest Department has defined the Ridge as all areas displaying the morphological characteristics of the Aravalli hills according to Geological Survey of India (Sinha, 2014), which is a much larger area spread across the city. In a segment of the South Central Ridge, not included in the DDA's administrative definition, a long drawn contestation by environmentalists and local residents resulted in the establishment of the Aravalli Biodiversity Park for the conservation and active restoration of forests in the area. It can be summarised that though city planning itself is an outcome of the interaction between actors, contesting visions of the Ridge as a landscape have led to the establishment of fragmented and varied forest conservation spaces in Delhi that the plan does not capture.

To one unacquainted with the Ridge, it may seem a surprising fact that within a congested megacity lie a wildlife sanctuary, a biodiversity park, a citizens' forest restoration project and large areas of landscaped parks, all under the label of the 'Ridge'. Each of these conservation units represents an aspiration to preserve the city's forests for different reasons. There is little interaction between these various models of conservation as each bounded segment is administered separately and has resulted from different contextual histories. This research examines the discursive construction of these spaces as worthy of conservation and the outcomes of such ideas in practice. In other words, the following chapters examine how the need to 'save the Ridge' was established as the dominant discourse but also raise and answer questions regarding how, why, by whom, for whom and against whom is the Ridge being saved.

### 1.3 OUTLINE OF THE BOOK

A review of the vast and contested field of political ecology is presented in the next chapter in order to locate this study within the field and define key concepts and ideas. This study synthesises the aims and concepts of two distinctive branch-

4 The present day Central Ridge was labelled the Southern Ridge in earlier notifications. The current nomenclature is used throughout the book

es of political ecological traditions which have developed from different roots, namely post-structural political ecology and urban political ecology.

Chapter 3 presents the research questions, methodology and methods used to study the Ridge. Actors were analysed using argumentative discourse analysis that provides the concepts of storylines and discourse coalitions to capture how complex environmental issues are deliberated upon (Hajer & Versteeg, 2005; Hajer, 1993, 1995, 2006). The second half of the chapter details the methods of data collection.

A historical background to the Ridge as a space of degradation and a site of afforestation projects is provided in chapter 4, along with a review of various orders and notifications that have established conservation spaces in the Ridge since 1913. The aim of the chapter is to provide a background of the legal and administrative status of the Ridge as well as to introduce the idea of the forest as socio-politically shaped.

Chapter 5 is dedicated to unpacking the variety of aims and motivations of the state, a task which many political ecology studies have been accused of ignoring (Robbins, 2012). Three main state agencies involved in shaping the Ridge have been examined to argue that the state is not one but many actors and these must be studied in their elements rather than as a given whole. This chapter also serves as a background to the detailed discussion on the establishment of conservation units in the Ridge, as state agencies are central actors and state policies provide a context for socio-political struggles (Bailey & Bryant, 2005; Walker, 1989).

Beginning in 1979, student groups brought the issue of conserving the Ridge to the attention of the highest executives in the city. This phase of environmentalism, examined in chapter 6, presents an early example of a sustained citizens' movement to preserve urban green spaces in India. Though it did not continue past the mid-1990s, it led to the solidification of conservation in official discourse as reflected in policy documents and administrative boundaries.

Chapter 7 provides a localised analysis of the three distinct conservation projects located in the Ridge. Apart from compiling micro-histories of these spaces to elucidate the evolution of these three parcels of land as being based in the historical development of the city, the chapter examines the various discourses around these and their interaction to locate reasons for discursive domination and subordination of the claims of certain groups.

The question of why certain claims are effective in the formation of conservation spaces while other discourses remain unrepresented in the current situation is further deliberated upon in chapter 8. The chapter presents the struggles regarding the Ridge as related to wider socio-political structures by engaging with literature related to environmentalism, conservation, urbanism and political participation in India to identify patterns of power, injustice and inequality.

The penultimate chapter re-constructs the discursive struggles related to the conservation of the Ridge through the concepts of storylines and discourse coalitions to illuminate the motivations, practices and outcomes related to various actors. The metaphor of metabolism is used to illustrate this unequal flow of discourses and benefits.