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Burning Table Mountain: an environmental history of fire on the Cape Peninsula

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[Simon Pooley](#)

Imperial College London

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Simon Pooley

Chapter outline

Introduction

Part 1, Fire at the Cape from Prehistory to 1900, comprises two chapters giving an account of the long-term history of human relations with fire in the fynbos biome of the southwestern Cape region of South Africa, as follows:

Chapter 1: Fire at the Cape from prehistory to 1795

This chapter first briefly introduces the region's major vegetation types and their fire regimes. It spans the period from c.100,000 years ago, through the arrival of Khoikhoi herders (c.2000 ago), to the end of the first period of European settlement (1652-1795). The human impacts of burning for hunting and grazing, transhumance, and settled farming with the conversion of landscapes for agriculture are treated. The first attempts at fire regulation and management by the Dutch East India Company are discussed. These latter are investigated through official documents and journals but also through the vivid accounts of famous scientific explorers of the region, including Carl Thunberg, Anders Sparrman and François le Vaillant.

Chapter 2: Fire at the Cape: British Colonial Rule, 1795-1900

The chapter recounts the impacts of the incorporation of the Cape into the British imperial trade network, including an increase in land conversion for wheat and wine, and debates over timber supplies for the navy. The observations and opinions on fire of the famous scientific travellers Heinrich Lichtenstein and William Burchell provide eyewitness accounts of contemporary uses and opinions on fire and its impacts in the region. The influential interventions of the colonial botanists Ludwig Pappé and John Croumbie Brown are related. So are the impacts of some huge fires in the 1860s, the resulting legislation and the establishment of a professional forestry department in 1876. Key figures include the British foresters Joseph Storr Lister and David Hutchins (both of whom had worked in India) and the Frenchman Count Médéric de Vasselot de Regné. The chapter concludes with a formative public debate over the afforestation of Table Mountain in the 1890s, raising key themes for book including the role of introduced species with regard to fire and water supplies.

Part II, Fynbos Fire Research and Management, comprises two chapters investigating the history of research, policy and management of fire in fynbos, as follows:

Chapter 3: Science, Management and Fire in Fynbos, 1900-45

The chapter begins with a history of botany in South Africa in the period, and the views of key botanists on fire. A history of plant ecology provides a framework for understanding approaches to researching and managing vegetation in this period. This is further explored through an account of pasture science, which was galvanised by fears of famine, drought and soil erosion sparked by the 'dustbowl' experience in the USA. Key concepts included Frederic Clements' idea of vegetation succession to a stable climax state of vegetation, and the idea of 'secondary vegetation' with fire implicated in converting 'pristine' vegetation into degraded 'secondary' types. The formation of the National Botanical Society and Kirstenbosch National Botanical Garden is discussed, as is the thunderous anti-burning rhetoric of its second director, Harold Compton. A history of state plantation forestry provides a framework for understanding management approaches to the catchment areas of the region, and a backdrop to the major debates over afforestation and fire between the forestry and agricultural sectors in the 1930s. The chapter concludes with an account of the hydrological research at Jonkershoek, and the commission on the conservation of the montane

vegetation of the southwester Cape chaired by the forestry researcher Christiaan Wicht, published in 1945.

Chapter 4: Science, management and fire in fynbos, 1945-99

This chapter covers the period in which fire science and management moved from the anti-burning approach developed by agricultural researchers working in grasslands, and pushed by a high-profile post-war soil conservation campaign, to a cautiously pro-burning approach advocated by conservation foresters for the fynbos. The impacts of increasing fire incidence as the forestry department expanded its afforestation programme, and a series of hydrological controversies, are outlined. Despite Wicht's careful advocacy for controlled burning, these militated against burning being adopted as a policy option. Finally, a series of very large fires which occurred despite elaborate anti-fire measures, and the realisation that some charismatic fynbos species might go extinct in the absence of fires, resulted in the adoption of prescribed burning as state forestry policy in fynbos catchment areas. The role of international scientists, organisation and research initiatives are explored, notably from the USA and Australia. The Fynbos Biome Project and a new generation of forestry researchers led a series of breakthroughs in our understanding of the ecology of fynbos and the role of fire. The management implications were worked out, but the collapse of state forestry as a result of the crumbling of Apartheid resulted in ineffective implementation and a management vacuum by the late 1990s.

Part III, Fire on the Cape Peninsula, 1900-2000, comprises five chapters, each of the first four focusing on a key theme in the history of fire on the Cape Peninsula in the twentieth century. These thematic discussions inform Chapter 9, which provides an integrated history of fire incidence and management on the Cape Peninsula in the period.

Chapter 5: Fire Geography and Urbanisation on the Cape Peninsula

This chapter first explores the biophysical template of the Peninsula, including its geology, climate and biotic influences on biodiversity, the unique vegetation and the Peninsula's fire regimes. It then describes how Cape Town's urban development in the 20th century altered the fire environment.

Chapter 6: Conserving Table Mountain

This chapter explores the cultural dimensions of residents' relationships with the landscapes of the Peninsula, aesthetic and utilitarian, and the local history of nature conservation. Key figures include the statesman Jan Smuts, and the mining magnate Cecil Rhodes. Visiting and local worthies, such as Director of Kew Sir Arthur Hill, and the Randlord Lionel Phillips and his wife Lady Florence, respectively, stoked local debates over introduced plants and fire on the Peninsula. Public debates on afforestation with inflammable introduced trees are recounted. These debates remained central to arguments over the development of the Peninsula for the remainder of the century, and this chapter explores the long drawn out campaign to protect the remaining natural heritage of the Peninsula, culminating in the declaration of the Cape Peninsula (now Table Mountain) National Park in 1998.

Chapter 7: Afforestation, Plant Invasions and Fire

This chapter narrates the history of the afforestation of the Peninsula with introduced trees and shrubs by state foresters, municipal officials and private individuals, and discusses the social and ecological impacts of the ensuing biological invasions. The chapter concludes with a consideration of the impacts of the Working for Water programme and campaign against 'invasive alien plants' following the big fires of January 2000.

Chapter 8: Socio-economic causes of fire: population, utilisation and recreation

This chapter focuses on the contested influence of population growth and socio-economic impacts on fire incidence. The racially-motivated spatial partitions of the Peninsula over the course of the twentieth century, and how this impacts on theories linking population growth with fire incidence, are interrogated. The suggestion is made that increases in recreation and tourism rather than of informal settlements of impoverished African and Cape Coloureds have influenced increasing fire incidence over the century. Subsistence activities of Cape Town's poor which impacted on fire incidence are assessed, including flower selling, wood collecting, and burning to get work as fire beaters.

Chapter 9: Fire on the Cape Peninsula, 1900-2000

The chapter begins with an overview of the biophysical template of the Peninsula with fire management and fire fighting in mind. Fire causes are summarised, and fire fighting and control institutions profiled. Fire management is discussed in 5 sections, based on fire brigade records as proxies of fire incidence trends, as follows: 1900-38; 1939-59; 1960-79; 1980-93; and 1994-2000. Each of these sections covers overall fire incidence, major fires and fire fighting, fire policy and management. The chapter concludes with an account of the wildfires that torched 8,370ha of the Peninsula between 16 and 21 January 2000.

Conclusion

The concluding chapter offers a summary and reflection on the history of attempts to understand, regulate and fight fires on the Cape Peninsula and in the wider region. It makes a plea for widening the fire regime concept to incorporate social as well as ecological elements.

Appendix 1 offers detail on the Cape Peninsula's vegetation and interrelations with climate, weather and fire, and **Appendix 2** on fire causes.

Endmatter: There are 36 pages of notes, 15 pages of references, and 25 pages of (4) thematic indexes.