Conserving Africa's Mega-Diversity in the Anthropocene

The Hluhluwe-iMfolozi Park Story

Centring on South Africa's Hluhluwe-iMfolozi Park, this book synthesizes a century of insights from the ecology and conservation management of one of Africa's oldest protected wildlife areas. The park provides important lessons for conservation management as it has maintained conservation values rivalling those of much larger parks, sometimes through and sometimes despite strong management interventions, including the rescue of the white rhino from extinction. In addition, the book highlights the ecological science produced in the park, much of which has become widely influential, including the megaherbivore concept, new functional approaches to understanding biomes, and new understandings about the role of consumers in shaping ecosystems. The volume is ideal for researchers and policy makers interested in the conservation of relatively small, isolated, protected areas.

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Edited by

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Foreword

Ezemvelo KZN Wildlife is a biodiversity conservation organization with the challenging but rewarding responsibility for nature conservation and development and promotion of ecotourism activities within the province of KwaZulu-Natal (KZN), South Africa. Its core aims are biodiversity conservation, wise and sustainable use of natural resources, the creation and management of partnerships with stakeholders and communities, and the provision of affordable ecotourism destinations within KZN. Hluhluwe-iMfolozi Park (HiP) is a figurehead for our entire organization – being the genetic home to the southern white rhino and a world-famous ecotourism venue. We are very proud of the conservation story of HiP, and of the generations of park managers and scientists who have worked to ensure that this park conserves our natural resources, provides educational opportunities, and creates wealth for the people living in the region. This book is the culmination of many years of work and is fully endorsed by our organization. No biodiversity agency can operate without scientific input, and Ezemvelo is no exception. We are proud of the scientific advances that have been enabled by the work in HiP, and we are especially pleased to see evidence in this book of how many of these advances have led to tangible improvements in management operations.

We believe that our experiences in HiP have much to offer the world – especially other small protected areas in Africa. For this reason we hope that this book will be widely read.

Dr M. D. Mabunda, CEO of Ezemvelo KZN Wildlife

Preface

The area that was to become the Hluhluwe-iMfolozi Park (HiP) was among the first in Africa to be formally protected: the Hluhluwe and Umfolozi Game Reserves were proclaimed in 1895, a few years ahead of the game reserve that became the Kruger National Park. They were separated by a large stretch of land that functioned as a corridor for animals, which has since been amalgamated to form a 950-km^2 conservation area spanning a diversity of land forms, climates, and vegetation types. The game reserves were established because of concerns about the disappearance of wildlife as a result of hunting in the region then known as Zululand, especially triggered by how few white rhinos remained. HiP is considerably smaller than Africa's flagship national parks, the Kruger National Park (19,500 km^2) and Serengeti National Park (14,763 km^2), and unlike most protected areas in eastern Africa, its boundaries are completely fenced. However, despite its small size, the park hosts a diversity of vegetation types and animal species that can rival much larger protected areas. Its steep rainfall gradient (550–950 mm) means the park's vegetation ranges from semi-arid to mesic savanna, and the park supports a full suite of the megaherbivores (animals weighing more than 1000 kg when adult) and large mammalian carnivores typical of African savanna ecosystems. HiP's rolling mix of grassland and forest in the north-east and more gently undulating thorn savanna in the south conserves key habitats, including several threatened and endemic plant species.

HiP shares with Kruger and Serengeti national parks a long history of ecological monitoring and scientific research spanning close to a century. This experience has been well documented for both Kruger (du Toit *et al*., 2003) and Serengeti (Sinclair and Norton-Griffiths, 1979 and subsequent volumes) and we now contribute a similar synthesis for HiP. Because of the small size and turbulent history of the two game reserves following their proclamation, a laissez-faire management policy has never been adopted. Nevertheless, the park managers attempted to retain or restore the ecological processes that had formerly operated on a much

larger scale. Much has been learnt from the success and failures of conservation management and by the pioneering ecological research that has been undertaken to gain better understanding of the intrinsic dynamics of this microcosm of Africa. These lessons are particularly relevant for attempts to conserve and restore savanna systems elsewhere in protected areas that represent small relicts of vaster ecosystems.

We have divided this book into three parts. *Part I* sets the scene by covering historical and prehistorical human influences (Chapter 1), the heterogeneous biophysical template (Chapter 2), and documentation of long-term vegetation (Chapter 3) and large herbivore dynamics (Chapter 4). *Part II* records how research conducted within HiP has contributed to advancing ecological understanding. Much of this research has had significant impacts on our understanding of the structure and function of savannas globally, as well as their response to anthropogenic and other drivers of change. A study on white rhinos led to the concept of mega-herbivores, their substantial impacts on the vegetation, and consequences for coexistence of other herbivore species (Chapter 5). Moreover, HiP has been the testing bed for seminal research on the roles of climate and consumers – both fire and herbivory – in impacting savanna vegetation dynamics (Chapters 6, 7, and 10). This has led to new perspectives on functional trait syndromes of woody plants and alternative biome states (Chapter 8). Functional contributions by smaller organisms, particularly termites, dung beetles, and rodents, are covered in Chapter 9. Many of these scientific advances have contributed towards the management of the reserve. *Part III* shifts attention to these management interventions more broadly, highlighting several examples of effective collaboration between science and management. Contrasting management strategies for black and white rhinoceros are described in Chapter 11. Problems encountered in the restoration of the large carnivore community and their resolutions are covered in Chapter 12, while interventions to contain the impacts of both indigenous and alien wildlife diseases are presented in Chapter 13. Chapter 14 describes the re-introduction of elephants in HiP and potential responses to their burgeoning population, while Chapter 15 addresses measures used to control alien invasive plants. Finally, Chapter 16 synthesizes findings from these various studies and management actions, evaluates the 'success story' of the HiP, and looks ahead to future challenges in coping with the pervasive human influences typifying the 'Anthropocene' epoch.

A magical transformation is experienced once you cross through the gate into HiP and encounter elephants, rhinos, buffalos, and large

predators in place of the domestic livestock and human settlements pervasive outside. This small African park therefore captures the mind and soul of all who visit it, and has driven generations of managers, scientists, and their students to devote their time and energy to understanding and protecting it. It is our hope that some of their passion will reach you, the reader of this book, and that this compendium of science and conservation management will contribute towards ensuring that the next generation will still have this experience both within HiP and elsewhere in Africa.

Explanation of Some of the Names Used in this Book

Some explanation of the names and naming conventions adopted in this book is needed. The area that the park encloses is rich in local Zulu names, indicating the long history of human presence in the landscape (see Appendix). At the time of the first proclamation of the two reserves, the names derived from the local Zulu language were rendered as 'Hluhluwe' and 'Umfolozi'. However, it became recognized that the latter spelling was incorrect according to Zulu orthography, because of a distinction between the prefix and the word that follows. Different classes of nouns are associated with distinct prefixes, and in this case the correct prefix should be 'i', not 'u'. This means that the name of the game reserve should be rendered as iMfolozi, with the second letter capitalized. Hence the acronym 'HiP' became adopted for the combined Hluhluwe-iMfolozi Park. This did not fully resolve the naming issue. If one wants to be consistent, Hluhluwe should be rendered with its prefix as 'umHluhluwe'. To add to the confusion, the official proclamation of the combined park in 2012 spelt the name as Hluhluwe-Imfolozi Park, incorrectly capitalizing the prefix. In this book, we follow the widely adopted convention of referring to the combined protected area as the Hluhluwe-iMfolozi Park (acronym HiP). In contexts prior to the consolidation of the park, we use the original names applied to the Hluhluwe and Umfolozi game reserves. Furthermore, we apply the spelling 'Mfolozi' (omitting the prefix) to the White and the Black Mfolozi rivers as well as for the region of the park south of the Black Mfolozi river. The 'Corridor' refers to the region between the two original game reserves (see Chapter 1).

Another important naming issue that we had to deal with in the book is the still controversial splitting of the genus *Acacia* into multiple

genera. African species have been assigned to new genera *Vachellia* and *Senegalia* (Kyalangalilwa *et al*., 2013). We will continue to use *Acacia* as a genus name throughout the book to avoid confusion with the preceding ecological literature concerning this group of species.

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Further Details on Zulu Place Names in the Hluhluwe-iMfolozi Park

JIM M. FEELY

Zulu Place Names in Hluhluwe-iMfolozi Park: Some Recurring Features

This appendix presents a list of Zulu place names and their location in the Hluhluwe-iMfolozi Park that probably originated during the pre-Colonial era and thus are relics of the Late Iron Age (Tables 0.1–0.3; see also a map with these Zulu names in the online Supplementary Material). It excludes names from the twentieth century. There are recurring features in the Zulu place names in the Park which refer to topographic features or to wild animals (see below). Among the old names are those of the Park itself: Hluhluwe probably referring to the climbing plant *Dalbergia armata* (thorny rope), and Mfolozi to the zigzag pattern on baskets and pottery, among other meanings. The game reserves were named for the main rivers traversing the park, the Hluhluwe and Mfolozi rivers. Both river names are probably very old, so that now there can only be speculation concerning any connection between them and their meaning. The climbing plant, for example, is distributed along many rivers in KwaZulu-Natal, so why is this one so-named?

Topographic Features

(S) from Black Mfolozi river southward, (C) between Black Mfolozi river and Hlabisa-Mtubatuba road (R618), (N) from Hlabisa road northward.

Cairn (stones) *isivivane*, accumulated by travellers along a footpath, usually over a hill, to avoid bad luck on a journey: (S, C, N) *eSivivaneni* (3).

Table 0.1 *Places southward of Black Mfolozi river*[a] *(Magqubu Ntombela)*

Place name	Feature	Place name	Feature
uBhocozi	stream	**iMbulunga**	hill
uBizo	thicket/stream	**uMduba**	hill
eCekaneni	ridge	**uMeva**	area
iChibi elibomvu	pan	**iMfolozi eMhlophe**	river
iChibilembube	pan	**iMfolozi eMnyama**	river
iChibilentungunono	pan	**uMfulamkhulu**	stream
iChibilenyathi (2)	pans	**eMgqizweni**	area/pan
iChibilethangwe	pan	**uMhlanganobhedu**	stream/area
iChibilokumbiwa	pan	**eMhlanganweni**	confluence
uCiyane	hill	**uMhlolokazana**	hill
uDadethu	stream/pan/area	**uMhlolwana**	hill
oDakaneni	stream	**uMhluzi**	stream
uDengezi	hill	**eMndindini**	area
iDlaba	stream	**uMomfu**	hill/stream/cliff
eDuduseni	area/ridge	**uMpekwa**	area
eFuyeni	stream	**uMphafa**	stream
uGidiyoni	stream	**uMphanjana**	hill/area
uGome (2)	streams	**iMpila**	ridge
eGqolweni (= eMapulankweni)	ridge	**iMpila encane**	hill
oGqoyini	stream	**iMpila enkulu**	hill
oGunqweni	area	**eMsasaneni**	hills
kwaHlathikhulu	bush	**uMthombokandleke**	spring
iKhandaledube	stream	**eMthonjenikakhaya**	stream
oKhetheni	stream	**iMunywane**	stream
uKhukho	hill	**eMzaneni**	area
uLubisana	hill/stream	**uNcoki**	hill
uLuthelezi	hill	**uNdleke**	hill
eMachwetshaneni	hill	**iNdlovuma**	stream
eMachitshaneni	area	**uNdlovusiyashikana**	stream/area
uMadlozi	stream	**uNdomba**	stream
eMadwaleni	ridge	**eNgonyamaneni**	hill
eMahobosheni	ridge/area	**iNgwenyama**	stream
uMagunda	area/bush	**iNgwenyemnqini**	pan
kwaMakhamisa	place (R. H. T. P. Harris' camp)	**uNkawu**	stream
uMakhamisa (= uBulunga)	stream (Harris worked with donkeys)	**uNkobenkulu**	area/stream/ thicket
uMakhokhelweni	ridge/area	**uNobiya**	stream
iMantiyana (2)	hills	**uNoma**	hill
uManya	hill/stream	**uNozibunjana**	bush
uMasango	stream	**eNqabaneni**	hill
aMatshemhlophe	hill	**uNqokotshane**	stream
aMatshemnyama	hill	**uNqolothi**	hill
eMawuzi	area	**eNqutshini**	area
iMbhuzane	hill/stream	**eNselweni**	ridge/area

Table 0.1 *(cont.)*

Place name	Feature	Place name	Feature
eNsikaneni	stream	**iSiwasempila**	cliff
iNtabayamanina	hill	**uSokhwezele**	hill
iNtabayamaphiva	hill	**uSoncunda**	hill
uNtoyiyana	hill	**uSontuli**	hill/area
uNtshiyana	stream	**uTeke**	stream
iNyamakayithengwa	stream	**uThobothi**	stream
uNyonikazana	stream	**iThumbu**	stream
uQaqalwempisi (3)	hills/ridges	**iTshele likaFosingi**	hill
iSabokwe	hill	**eTshenilentombi**	area
iSalathiyela	stream	**iTshenteka**	cliff
uShoshangesisila	hill	**uTshokolwana**	hill
uSilevana	hill	**eZigubeni**	area
eSivivaneni	hill/stream	**eZikhayenizenkosi**	hill
iSiwasamagunda	cliff	**eZimbokodweni**	area
iSiwasamsasaneni	cliff	**eZimenyaneni**	hills
iSiwasamanqe	cliff	**eZintunzini**	range of hills
iSiwasamhlosheni	cliff	**eZintuthwaneni**	area
iSiwasemfene	cliff		

[a] eNgilandi was on this list and the map in error, and has been removed. This area is in the Hluhluwe sector. No member of NPB staff from the 1950s to the 1970s, including me, knew of such an area in Mfolozi GR (J. Anderson, J. Forrest, P. Hitchins, R. Porter, J. Vincent, A. Whately, *in litt*., 2015).

Table 0.2 *Places northward of Black Mfolozi river to main road (R618) (Magqubu Ntombela)*

Place name	Feature	Place name	Feature
eBhavulomu	area	**eMpindisweni**	ridge
oBhembedwini	stream	**uMsinyane**	stream
uBhokosa	stream	**eMsokosokweni**	stream
uCaya	hill	**uMtshongweni**	stream
uDlogodlo	ridge	**uNcengeninhliziyo**	hill
uDomu	stream	**eNdlovaneni**	stream
uDonsagolo	hill	**iNdondwane**	stream/hill
eDuduseni	ridge	**iNgceba**	ridge
esiFusamvini	ridge	**oNgeni**	hill
eGobhe	stream	**eNhlonhleniyamathonga**	area
iGoqo	ridge	**uNkonyane**	hill
eGwalagwaleni	stream	**uNondubela**	ridge
uHlathikhulu	ridge	**uNonqishi**	area
uHlaza	hill	**eNqunyeni**	stream

(*cont.*)

Table 0.2 *(cont.)*

Place name	Feature	Place name	Feature
uHlebomunye (= Mshukulo)	area	**iNtabakamayanda**	hill
uHlekuzulu (= eNtuzuma)	ridge	**iNtabakamthwazi**	hill
iHlengwa	stream	**iNtabayamaphiva**	hill
iKhandalomuntu	ridge	**iNtabayentombi**	hill
eKushesheni	ridge	**uNxabo**	stream
Kwesemvivi	ridge	**iNyalazi**	stream
Kwesogada	ridge	**uNyongwana**	stream
eLabelweni	stream	**uPhondo**	stream
uLubisana	stream	**uQikiyana**	area/stream
eMadotsheni	stream	**eSangcobeni**	ridge/stream
uMagqayiza	area	**uSangobo**	stream
uMagula	area	**uShiyane**	ridge
eMashashangeni	ridge	**eSigoqweni**	hill
uMajojoyi	stream	**uSikhovana**	hill/stream
eMakhandeni ezindlovu	stream/ ridge	**eSivivaneni**	col on hill
eMalalaneni	stream	**eSiyembeni**	hill
aManzimhlophe	stream	**uSokosoko**	stream
uMasi	ridge	**uThekwane**	stream
uMasimba[a]	hill/stream	**iTshelamabhunu**	ridge
uMasimba omncane	hill	**eTsheni**	ridge
eMasundweni	hill	**eTshenteka**	ridge
uMatelembana	stream	**iTshevu**	stream
aMatshemnyama	ridge	**iZalani**	ridge
eMazondweni	hill	**oZengwaneni**	ridge/stream
uMchachazo	stream	**eZibozini**	stream
uMcibilindi (2)	streams	**eZihlabeni**	ridge/stream
uMcobosi	ridge	**eZiklebheni**	area
uMcumane	stream	**eZimambeni**	stream
uMfulawembuzi	stream	**eZinhlonhlwaneni**	stream
eMguthwaneni	stream	**eZinqunyeni**	stream
iMona	stream	**eZinqwambeni**	ridge
eMondini	stream	**eZinsisheni**	stream
iMpelenyane emhlophe	stream	**eZishamashameni**	ridge
iMpelenyane emnyama	stream		

[a] Ntombela suggested *Masinda* for the visitor facilities, as an inoffensive alternative to *Masimba* (dung heap) nearby. This was not traditional, as Ntombela acknowledged (I. C. Player, *in litt*., 2014).

Table 0.3 *Places from Hluhluwe Sector southward to main road (R618) (Thembeni Mthethwa)*

Place name	Feature	Place name	Feature
uBelebane	stream	**iMpongo**	forest
eBomvini	stream	**uMthole**	hill
uCakula	stream	**uMuntulu**	area
iCalalendlu	area	**uMunywana**	stream
eCekaneni	area	**eMunywaneni**	area
iChibilamanqe	pan	**uMzini**	stream
iChibilezangoma	pan	**oNcobeni**	stream
oDakaneni	stream	**iNdabakazipeli**	ridge
eDubeni	hill	**uNdantsha**	stream
uFuzula	stream	**uNdimbili**	stream
uGontshi	hill	**iNdlunkulu**	stream
eGunjaneni	stream	**iNdodanye**	stream
uHidli	hill	**uNgalonde**	ridge
uHlathikhulu	thicket	**eNgilandi**[a]	area
uHlaza	hill/stream	**iNgqungqulu**	stream/ridge
uHlokohloko	hill/stream	**iNgwenyaneni**	stream
iHluhluwe	river	**iNhlabashana**	stream
uKubi	stream	**uNhlayinde**	hill
uMabombothelana	stream	**uNkonono**	hill
uMacabuzele	stream	**uNkwakwa**	hill
eMagangeni	ridge	**uNomageje**	stream
uMagwanxa	hill/stream	**uNombali**	ridge
eMahlabathini	area	**uNqodi**	hill
aMahlungulu	hill	**eNqoklweni**	area
uMahwanqana	ridge	**iNqumela (2)**	streams
uMakhokhoba	hill	**iNsizwa**	hill
uMalikayiko	stream	**uNtabamhlophe**	hill
aMansiya	stream	**iNzimane**	river
aManzamnyama	stream	**uQholwane**	hill
aManzibomvu	stream	**uQololenja**	hill
aMaphumulo	ridge	**eSaheni**	area
uMaqanda	stream/thicket	**uSankoya**	ridge
uMashiya	hill	**uSeme**	hill
uMatikalala	ridge	**eSikelemeni**	stream
aMatshemhlophe	hill	**iSikhalasomoya**	hill
aMatshovozo	stream	**uSiqwashu**	stream
aMawane	forest	**uSisuze**	area
aMawuzi	forest	**iSitezi**	hill

(*cont.*)

Table 0.3 *(cont.)*

Place name	Feature	Place name	Feature
uMbango	area	**uSithole**	hill
uMbhombe	forest	**iSivivaneni**	hill
eMcibilindini (2)	streams	**iSiwasamakhosikazi**	cliff
uMcincinya	ridge	**uSomaxekwane**	ridge
eMfukuzweni	stream	**oThiyeni**	bush
uMgovuzo	stream	**iTsheliyamfoma**	stream
uMjantshi	hill	**iTshempofu**	hill
uMkhombe[b]	hill	**iVivi**	hill/forest
uMlebezi omkhulu	stream	**uVumbe**	stream
uMlebezi omncane	stream	**uZangomfe**	hill
uMnqabatheki	ridge	**eZidonini**	area
iMpanzakazi	hill	**eZimbokodweni**	stream
iMpisaneni	stream	**eZincakeni**	hill/dam
iMpolomba	stream	**eZiqhumeni**	ridge
		eZisengeni	ridge

[a] Eastward of the confluence of the Hluhluwe and Manzibomvu rivers; omitted from the original list. It refers to where Captain H. B. Potter attempted to introduce English fallow deer and pheasant in the 1940s. They did not survive for long.

[b] Westward of the confluence of the Hluhluwe and Manzibomvu rivers. Vaughan-Kirby (1920) records that Zulu guards in Hluhluwe used this name for large male black rhino. They had never seen a white rhino, because they did not occur north of the Black Mfolozi river early in the twentieth century. However, the name could derive from an even earlier time when white rhino probably occurred there. They are there now.

Cliff *isiwa*, usually on the outside of the bend along a major perennial stream: (S) *iSiwasamagunda*, *iSiwasamsasaneni*, *iSiwasamanqe*, *iSiwasamhlosheni*, *iSiwasemfene*, *iSiwasempila*, (N) *iSiwasamakhosikazi*.

Hill (mountain) *intaba:* (S) *iNtabayamanina*, *iNtabayamaphiva* (2), (C) *iNtabakamayanda*, *iNtabayentombi*, (N) *iNtabamhlophe*.

Pan (pond) *ichibi*, with temporary water after rain, used as a wallow by elephant, rhinos, buffalo and common warthog, thus enlarging with time: (S) *iChibi elibomvu*, *iChibilembube*, *iChibilentungunono*, *iChibilenyathi* (2), *iChibilokumbiwa*, (N) *iChibilamanqe*, *iChibilezangoma*.

Stream amanzi (water), minor perennial: (C) *aManzimhlophe*, (N) *aManzibomvu*, *aManzamnyama*.

Total 27 places.

Mammals, Birds, and Reptiles Occurring in Place Names

imbube, lion; *indlovu*, elephant; *idube*, zebra; *imfene*, baboon; *uhobosha*, puff-adder; *igwalagwala*, purple-crested turaco; *ingonyama*, lion; *ingqungqulu*, bateleur eagle; *ingwe*, leopard; *ingwenya*, Nile crocodile; *inkawu*, vervet monkey; *umkhombe*, white rhino; *i(ama)nqe*, vulture(s); *inyathi*, buffalo; *iphiva*, waterbuck; *impisi*, spotted hyena; *impofu*, eland; *iseme*, Denham's bustard; *uthekwane*, hamerkop; *intungunono*, secretary bird. Total 19 taxa.

List of Place Names (June 1968)

The Zulu spelling of the place names in Tables 0.1–0.3 accords with the list produced by Magqubu Ntombela, Thembeni Mthethwa, and Reg Mayne at Hluhluwe Hilltop Camp in June 1968 (338 places, provided by John Vincent *in litt*., 2014). This list gives an average of around one place name per 2.7 km^2 in the Park, as shown on the 1979 map (see online Supplementary Material). It was duplicated for official use by the Natal Parks Board, although not published before. These names omit the initial lower-case vowel and have the initial consonant capitalized.

Magqubu Ntombela[1] and Thembeni Mthethwa[2] provided an oral rendering, in each other's hearing, of the Zulu place names in the southern and northern sectors, respectively, of the Hluhluwe-Mfolozi Park (P. M. Hitchins *in litt*., 2014; J. Vincent *in litt*., 2014). This was done at a two-day meeting arranged by the Natal Parks Board (NPB) at Hluhluwe Hilltop Camp in June 1968. They were illiterate men in their 60s who spent their working lives as game rangers in the Park. The former was stationed in the Umfolozi Game Reserve and the latter in the Hluhluwe Game Reserve, as the southern and northern sectors of the Park were then known. For management purposes these sectors included the intervening unreserved State land known as 'the Corridor', with each sector extending to the Mtubatuba-Hlabisa main road (R618).

Indeed, Ntombela was born and grew to manhood in the southern Corridor, at his father's homestead on a hill (*oNgeni*) overlooking the Black Mfolozi river, at the turn of the twentieth century. His father, a member of the iNgobamakosi regiment who fought at Isandlwana in 1879 (I. C. Player, pers. comm., 1979), would have been born around 1853

[1] Hugh Dent, a fluent and literate Zulu linguist who knew him well, corrected the spelling from 'Maqubu Nthombela' that was used in earlier documents (H. R. Dent, pers. comm., 1973).

[2] Mtethwa or Mtetwa in earlier documents.

(Faye, 1923). He and Mthethwa acquired their knowledge in the traditional way by remembering precisely: (1) the teaching of their parents and other elders, and (2) the information provided by their contemporaries as well as their own observations while walking over the ground for many years. Their memories were prodigious and reliable.

The place names were transliterated by Reg Mayne, a retired high court interpreter of Zulu–English who was fluent and literate in each. He listened carefully to the spoken names and their discussion of them, in order to spell them correctly and learn their meaning where known. These he dictated to John Vincent and Peter Hitchins of the NPB scientific staff, emphasizing the importance of distinguishing the prefix from the stem of a noun. They compiled his spellings in an alphabetical list based on the first consonant, and prepared a map with these place names (P. M. Hitchins *in litt*., 2014; J. Vincent *in litt*., 2014). The list and map were duplicated for the use of NPB staff. This use must have been discontinued because at a meeting in 2008, staff members of Ezemvelo KZN Wildlife seemed to be unaware of either (N. Turner *in litt*., 2014).

The list in Tables 0.1–0.3 is resurrected from Peter Hitchins' notes and a copy held by John Vincent. As an archive of indigenous knowledge obtained up to a century and more ago (mid-nineteenth century), it cannot be replicated. As such, this list can be regarded as a more reliable record of tradition than any obtained in the present century. The names in the list below are given on a map available through the online Supplementary Material of this book (made in 1979 by Hitchins and Vincent).

There is a notable difference between the orthographic convention used in this list and in the standard dictionary (Doke and Vilakazi, 1953). The latter gives *im-Folozi* as the name of the second river for which the Park is named. However, Ntombela gives *iMfolozi* in Mayne's transcription (below). Chief Mangosuthu Buthelezi also used *iMfolozi*, rather than *imFolozi*, in having the name of the game reserve corrected from Umfolozi (I. C. Player, personal communication, 2014). Both probably follow the accepted spelling convention of the time, capitalizing the initial consonant. However, the Park's legal name is Hluhluwe-Imfolozi (KZN Provincial Gazette Extraordinary, Vol. 6 No. 799, Provincial Notice No. 83, 30 August 2012). The dictionary has no entry for the Hluhluwe river. It has *um-Hluhluwe* for: (1) the thorny rope, a climbing plant (*Dalbergia armata*), and (2) the spur on a cock's leg (that the plant's thorns resemble).

Official policy in KwaZulu-Natal (KZN) is to include the whole prefix in the writing of isiZulu place names. This is not so in the Eastern Cape Province. There, official policy continues to omit the lower-case initial

vowel from the written prefix in an isiXhosa place name, e.g. *Mthatha*, *Mzimvubu*, *Dutywa*.

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Acknowledgements

One of the unique features of HiP is its well-equipped research station where external researchers can rent a room and use common facilities and interact with the researchers employed by the park. The camp has become affectionately known as 'Dungbeetle' because some of its initial infrastructures were funded by an Australian dung beetle research programme. This excellent research facility has ensured that South African and international universities have been able to run several large research programmes within the park. For many years, up to 20–30 external researchers (from BSc student to Professor) spent many months together at the station. This meant that the Dungbeetle kitchen was often filled with lively discussions of research projects, the ecology and management of the park, and other earthly matters. Often, this initiated new ideas and collaboration among projects. This open, enlightened, atmosphere at Dungbeetle has strongly contributed towards the nature of this book, indicated, for example, by co-authors of many different institutions sharing chapters. The first ideas for this book also originated, in the late 1990s, from dinner table discussions among researchers at Dungbeetle. As Park Ecologist at that time, Dave Balfour was important in these initial discussions. Much later, some of these ideas were formalized during two workshops in 2007, one in the park and one at the Society for Conservation Biology's conference in Port Elizabeth. Sue van Rensburg and Han Olff were important in driving these workshops. During the more recent years, Dave Druce facilitated the book process on behalf of the park's management authority Ezemvelo KZN Wildlife. We are grateful for the Dungbeetle spirit and the many people that have helped creating and maintaining it.

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