

Bookshelf Special Feature Part 1: National Park Science by Jane Carruthers

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Bookshelf

We were delighted to welcome **Jane Carruthers** back to the Rachel Carson Center this autumn. Jane has a longstanding relationship with the RCC; she served on its advisory board for six years, the latter three as its chair, and was a great influence on the center in its formative years. She was made an honorary Carson fellow in 2014 in recognition of her enormous contribution to the work of the center. After all the support the RCC has had from Jane, it was a great pleasure for us to host a celebration of the publication of her latest book ***National Park Science: A Century of Research in South Africa* (Cambridge University Press, 2017)** here in Munich.

Jane spoke about her book to staff and students as part of our Tuesday Discussion series, and was joined by two other influential environmental historians, **Bernhard Gißibl** and **Libby Robin**, who talked us through the contribution that her book makes to the field. We are pleased to present written versions of the three scholars' remarks on the new book on *Seeing the Woods*. A full review of *National Park Science* by Bernhard Gißibl will appear in an upcoming issue of the journal ***Environment and History***, an edited draft of which will be featured here on *Seeing the Woods* next week.

(*These are edited versions of the talks presented at the Tuesday Discussion. All photos are courtesy of Jane Carruthers.)

An Introduction to *National Park Science: A Century of Research in South Africa*

by Jane Carruthers

The book I have written owes much to the RCC. Not in terms of research done at the centre, but in terms of the overall encouragement that what I was doing was important, and also because in every seminar, or in any discussion with peers, there are nuggets of information and insight that, often unconsciously, feed into one's own thinking

and improve it. To have been associated with an institution such as the RCC—one that combines excellent scholarship with the most collegial, helpful, and supportive environment—has been the highlight of my academic life. In writing my book, I have stood on the shoulders of many others—including several environmental historians—associated with the RCC, especially **Don Worster**, **Harriet Ritvo**, Libby Robin, Bernhard Gissibl, and **John McNeill**.

Much of my work is about the cultural and political aspects of environmental nationalisms and justice: land rights and restitution, access to environmental health, opposing and challenging ideas of nationalism. More recently, however, I began moving in the direction of the history of science, having developed a bee in my bonnet about the continuing divergence—or perhaps parallel tracks—between C.P. Snow’s **Two Cultures**. I also began to wonder, in a country like South Africa that has a high reputation for its nature conservation science, exactly what it was that our national parks accomplished that was so noteworthy. Indeed, I wondered about the very essence of “conservation science” as a mission-driven, value-laden cluster of ever-changing disciplines that, at its core, engages with society and politics. Hence this book.

Although the title proclaims “national park science,” and the national parks themselves—all 19 of them—form the reference points and the general focus, the book in fact deals with other protected areas (private and provincial) and also, importantly, other institutions that were engaged in environmental science. These include the museums, universities, literature, technology, unaligned research bodies, and particularly the CSIR—the Council for Scientific and Industrial Research, which was a trendsetter in the 1980s. As an apartheid state, South Africa had a fraught relationship with international organisations and indeed other governments. Thus, the story I tell is unusual because of the country’s isolation—and its attitude of self-importance and self-justification—relating to events and ideas in the rest of the world.

My aim in the book has been to uncover the threads of an intellectual tapestry that is rich and complicated. There is no other work of its kind for South Africa. Like everyone in this room who has written a paper or a book, the first step is to decide what shape it will take. What will be the hooks on which we can hang the evidence? Having done some thinking, research, and writing, I chose to divide the twentieth century into three overarching phases through which I could unpack the dominant philosophies and paradigms. I used the shorthand: the 3Ps, 3Ms, 3Is. They are not mutually exclusive; they overlap. Sometimes aspects disappear only to rear their heads again in later years.

- **1900–1960 Protecting, preserving, and propagating**
- **1960s–1990s Measuring, monitoring, and manipulating**
- **1990s–c. 2010 Integration, innovation, and internationalisation**

The first part covers a period of 60 years, during which a philosophy and field of study are dominated by ideas of scarcity—the scarcity of wildlife in southern Africa and the need to protect, preserve, and propagate (the 3Ps) what was left after the decimation of many species during the nineteenth century. Until about 1960, these ideas were firmly held, not only in South Africa but around the world. By the 1960s, the national and international context was different. So successful had the 3Ps been, that it became possible to monitor, measure, and ultimately manipulate (the 3Ms) the biota in the protected areas that had become national parks. The humility of the period of the 3Ps was replaced after World War II by a measure of arrogance and a belief in the ability of humans to control protected areas within the fences that bound and demarcate them. It was also a period in which the South African state was, with a few exceptions, increasingly ostracised by the international community and, at the same time, faced with violent insurrections by the majority black population within the country. The epoch of the 3Ms was eventually replaced in the 1990s by the modern era of a democratic South Africa (although that is not the sole cause of the change), that I have characterised as the 3Is: integration, innovation, and internationalisation.

The book comprises 12 chapters, divided chronologically into three themed parts. The entire period covered is just more than a century. The parts are not equal but rather demonstrate a prevailing scientific paradigm or philosophy. I had a number of audiences in mind for my book. Obviously, the major one was the large community of environmental historians and also the scientific community in South Africa and elsewhere. Not all of them appreciate how the fundamental reasons for conserving nature have changed over time, or are aware of how their philosophies are moulded. I wanted to investigate the myths, the “heroes and villains”—and do more than describe the past, but to analyse it with, I hope, clarity, and impartiality.

Science in the Public Interest: A Comment

by Libby Robin

Thank you, Jane, for this magisterial book full of wonderful stories about science in South Africa’s national parks over a whole century. *National Park Science* sheds light on

many other fields and gives important comparisons in thinking about protecting nature in other places.

National parks were very different places in earlier times. Who manages them, and how, has changed much since South Africa first protected nature. Over the decades, science has played important roles in the management and research focus of national parks. The science itself has evolved too: it is a two-way street. This book shows how science is entangled with issues of environmental and social justice as it grapples with managing nature in the public and planetary interest.

Science is frequently tied to policy making, but government science is especially so. In the case of South Africa, government departments, the National Parks Board (now **SANParks**), the **Council for Scientific and Industrial Research** (CSIR), and other quasi-government initiatives have all been tied to the “public interest.” They influence national policy, create data for international Big Science (like **IUCN Red Lists**), and build pathways to “evidence-based policy making.” Government science is responsible to the taxpayer in every country, but in South Africa, also to its poorest citizens, who don’t earn enough to pay tax. The promotion of a healthy environment as a right for all citizens is a principle embedded in the South African constitution.

Adopting the structure of *National Parks Science*, I here consider briefly the public vs the private in protecting nature. The outstanding and influential individual in the “protecting, preserving, and propagating” years up to 1960 was James Stevenson-Hamilton, a civil servant in the government of the Transvaal colony who fostered connections with the wider imperial world.^[1] He wrote for groups like the British-based Society for the Preservation of the Wild Fauna and Flora of the Empire. South Africa’s National Parks Board (NPB), established in 1926, was a formal body but outside the public service. It had much less power than a government department. It was ruled over by trustees who were not necessarily well informed or scientifically trained.

Meanwhile government science of a sort began in 1945 with the CSIR, a post-war initiative of then prime minister Jan Smuts. Like similarly named organisations in other parts of the British Commonwealth, it was an independent authority. In purpose, South Africa’s CSIR was very different from the CSIR established in Australia 20 years earlier. The latter was almost wholly concerned with agriculture.^[2] South Africa’s CSIR did not do agriculture: that was the task of the very large and strong Department of Agriculture, which employed botanists and veterinarians; since CSIR was more concerned with astronomers and

physicists, it had very few biologists. The NPB was staffed by practical managers, game rangers, and technicians, among others; nonetheless, scientific work on national parks in South Africa was quite significant internationally. As a nation, South Africa could not be a member of the IUCN (the apartheid regime isolated South Africa from the rest of the world), but some of its institutions were admitted, including the NPB.

Science within South African National Parks became self-contained and, from the 1960s until the 1990s, turned to the 3Ms. The national framework moved away from British Commonwealth influences toward an Afrikaner style. Research was reported in Afrikaans, not English. Numbers however, did translate across the language barrier.

Counting and comparing were ever more important in management and policy making, part of an international trend of *Trust in Numbers*.^[3] Big data sets are the basis for modelling and data presentation in digital formats. The NPB initiated the first computer modelling of South Africa's national parks: the mantra in this era was to collect a national park for "every habitat"—something that was happening in Australia in the 1970s too, following the World Parks Congresses of 1962 and 1972. Jim Davidson, an Australian historian, mocked it as "stamp collecting."

In South Africa in 1975, the National Programme for Ecosystem Research (NPER), which was part of the International Biosphere Programme (IBP), was an important channel for scientific effort, closely associated with the CSIR but outside of the ambit of the national parks. Despite political isolation, South African scientists were part of the modelling revolution as it unfolded.

Modelling's most famous poster child project was perhaps the MIT Limits to Growth Report of 1972, edited by Donella and Dennis Meadows. Forty years later, Jane and I were both part of an event that celebrated the work of Dennis Meadows. This was one of RCC's important early initiatives, right here at the Munich Town Hall on 4 December 2012.

The last part of the book, the 3Is, covers the "rainbow nation" years of South Africa. By this time the principles behind the IBP, especially the idea of climax ecosystems, which had been challenged in the NPER studies, were internationally shifting. It was no longer possible to collect habitat types into National Parks—moreover, the borders were shifting with climate change.

At the same time, South Africa returned to the international world—which included the increasing coming-and-going of many South African scientific leaders working elsewhere in the world during the apartheid years. Scientific ideas developed in South Africa’s national parks and, in wider landscapes, were becoming increasingly influential in the rest of the world. One important international travelling scientist in this story is Brian Walker, a leader in South Africa’s NPER.^[4] Walker brought his skills in modelling and resilience thinking to CSIRO in Australia, and then took on science from both places to Sweden, where the **Stockholm Resilience Centre** was established in 2007. Jane’s book shows how the local ecologies of Africa and the thinking around national parks shaped the interdisciplinary scientific work of Walker and others, and how this in turn has shaped many of the big international theories of science today.

Crucially, the case of South Africa is a reminder of the importance of science—and especially public science—in building environmental justice. In this very poor nation, the role of conservation and wildlife management as employment, as livelihoods, and as part of a sense of place and community shines through as integral to science. Caring about nature can be a public good, for the local people who live in and near national parks, and for the people who come and visit them. Science draws on big international ideas, but it also needs context, very local observations and applications, to work to its full potential. Good history and contextual understanding is an essential ingredient for science to translate into wisdom. That’s what Jane’s book is all about.

[1] See also Jane Carruthers. *Wildlife and Warfare: The Life of James Stevenson-Hamilton*. Pietermaritzburg: University of Natal Press, 2001.

[2] When Australia’s CSIR changed its name to CSIRO in 1949, it launched a small “wildlife ecology” section. It was the only part of this enormous public science outfit to consider “wildlife,” but the culture of the organisation defined animals through the lens of agricultural problems. The famous rabbit problem was its major work for many years.

[3] Theodore Porter. *Trust in Numbers*. Princeton: Princeton University Press, 1995.

[4] Brian Walker is now my colleague at the Fenner School of Environment and Society at the Australian National University. He was Chief of Australia’s CSIRO Wildlife and Ecology (1985–1999).