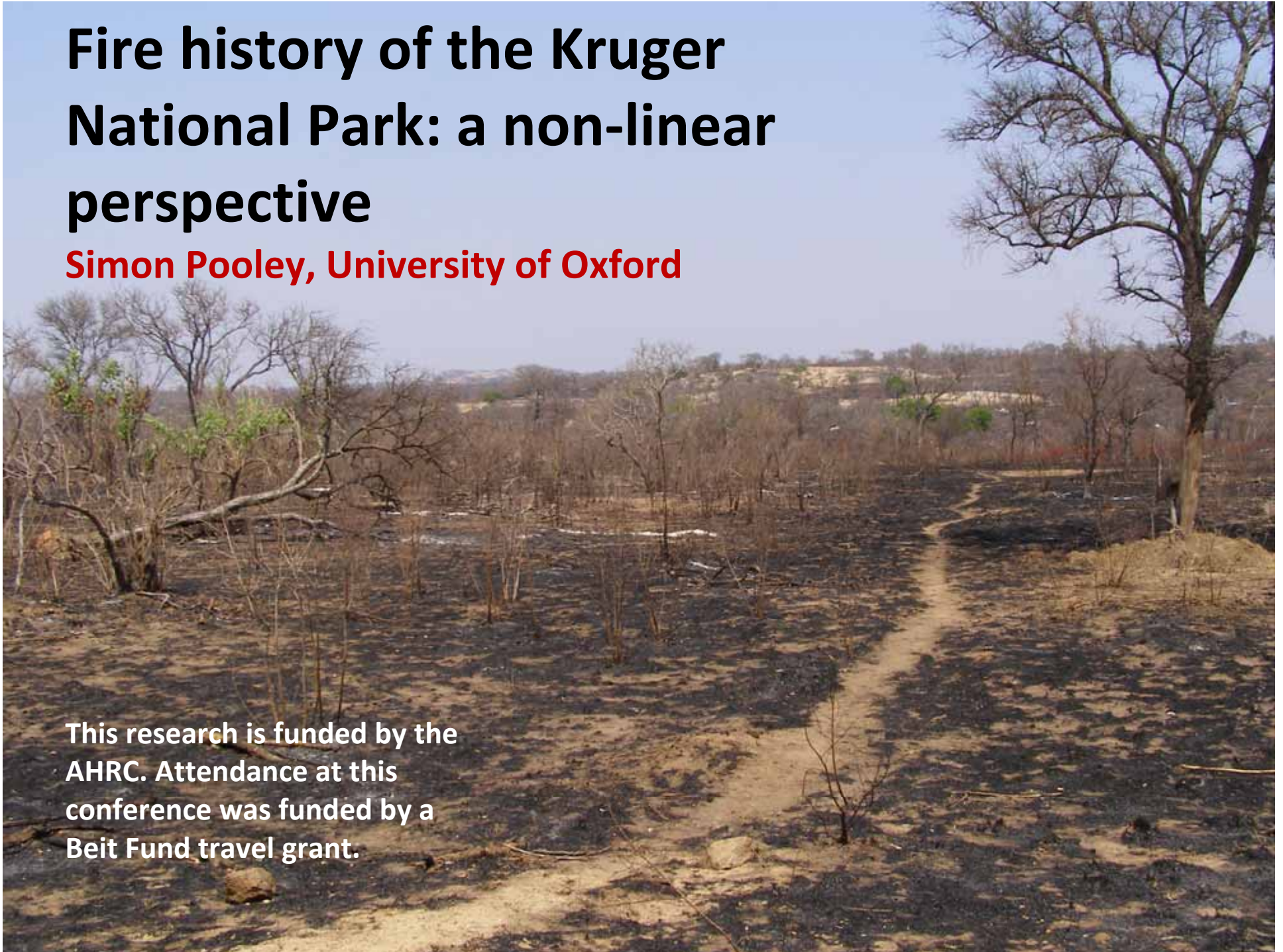


Fire history of the Kruger National Park: a non-linear perspective

Simon Pooley, University of Oxford

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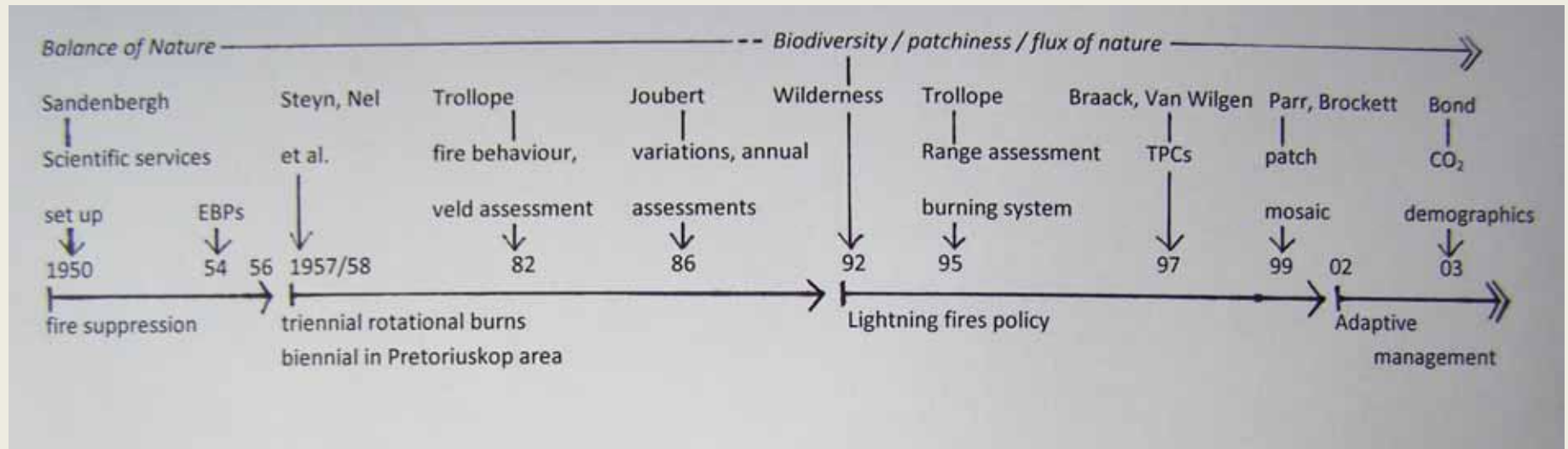
Aims

Provide a non-linear perspective on the history of the management of Kruger's ecosystems.

Through a case study I will:

- 1. Show how key early ecologists shaped agricultural research in South Africa;**
- 2. Trace lines of influence from John Bews, South Africa's first ecologist, through the 'Natal school' of agriculture, to Winston Trollope;**
- 3. Show the chance connections that brought the study of fire behaviour to South Africa;**
- 4. Show why Trollope's particular skill set and interests chimed with the needs of Kruger National Park management in the early 1980s.**

Example of a linear history of scientific work on fire in Kruger



Notes:

Linear history can lead to what I call 'the Cheshire Cat effect', where:

Individuals are reduced to names, or referred to collectively, obscuring the differences in their backgrounds, influences and approaches.



An orderly progression of policies is implied, obscuring the overlapping and competing influences in play at any one time.

John William Bews

1884—born on Pomona in the Orkney Islands

1902—enrolls at Edinburgh University

1907—graduates and starts teaching at the University of Manchester

1908—Assistant Prof of botany, Edinburgh

1909—signs up to teach in Colony of Natal

1910—starts lecturing as SA's first Professor of Botany at Natal University College.



Above: the Orkneys are NE of Scotland

Below: Orkney landscape, near Hoy



John William Bews



John Bews in 1937

‘Man’s interference always tends to send back the plant succession. ... Over wide areas of climax grassland this is undesirable, for the earlier wire-grass stages are less palatable...

‘On the other hand in forest climatic areas it may be a good thing to replace trees and shrubs by earlier pure grassland stages.

‘A careful study of the plant succession can show us when burning the grass is necessary and when it is not.’

‘The Ecological Viewpoint’, 1931

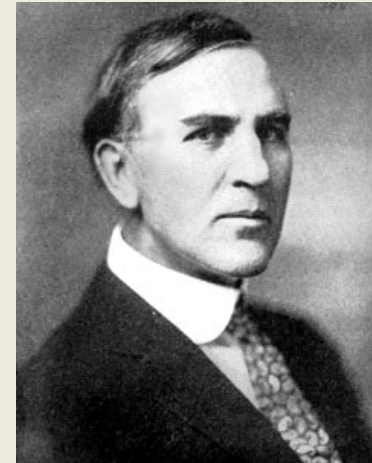
Frederic E. Clements

***Plant Succession* (1916)**

Definitive statement of his theory of dynamic vegetation change

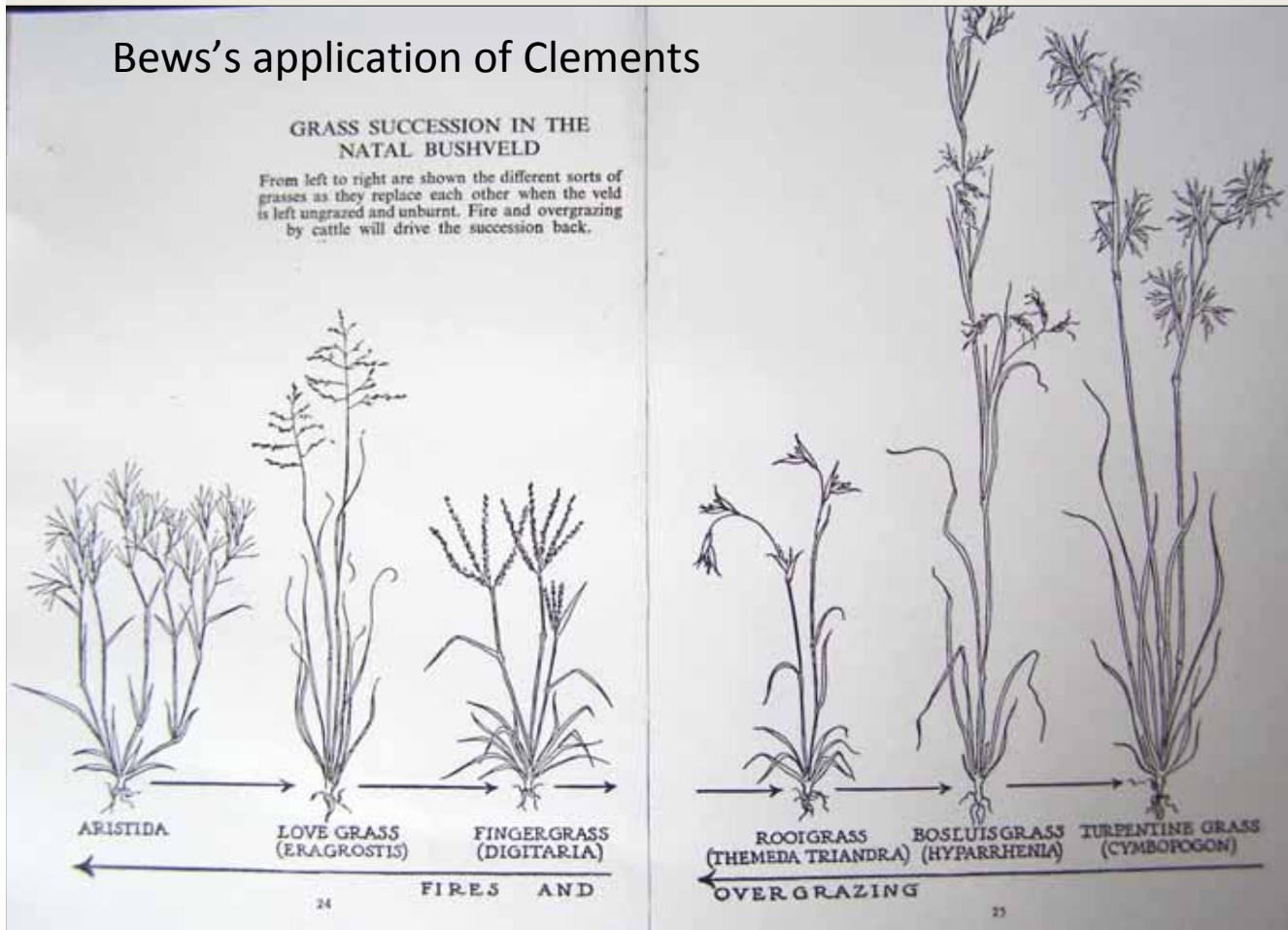
***Plant Indicators* (1920)**

Ideas adapted by range ecologists to develop 'increaser / decreaser' approach to pasture management



Frederic Clements

Bews's application of Clements



Left: Illustration from Roux's *The Veld and the Future* (1946)

John F.V. Phillips



J.F.V. Phillips
(courtesy of WSW Trollope)

Views on veld burning:

Phillips, like Bews, cautiously advocated judicious veld burning, at a time when the practice was almost universally condemned by agricultural experts.

‘This burnt offering to the God of ignorance’

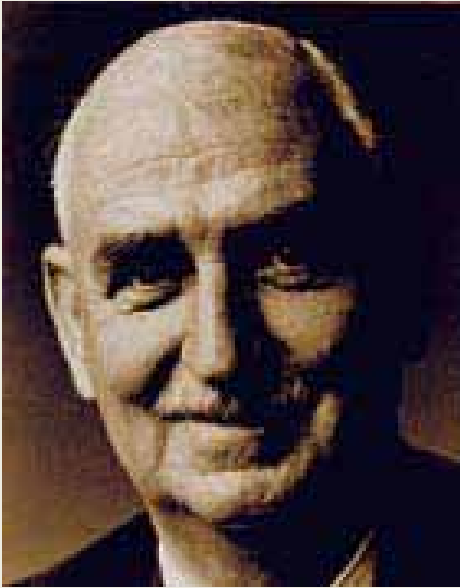
— Sir Frederick Keeble

‘Fire in Vegetation: A Bad Master, A Good Servant, and a National Problem’

— John Phillips

Phillips took an ‘holistic’ approach to ecology, arguing that it is necessary to think in terms of ‘biotic communities’, not separate plant or separate animal communities.

J.D. 'Hamish' Scott



Above: Prof. Scott, when Dean of Agriculture, University of Natal.

'The object of grassland management is to maintain veld or pastures at the best state in the succession for grazing.' (1955)



Above: The veld burning experiments Prof. Scott set up in 1950 at Ukulinga, the University of Natal's experimental farm, are still going today, under Prof. Kevin Kirkman.

Edwin V. Komarek, Sr.



Komarek was a pioneer of fire ecology in the USA who had been developing prescribed burning techniques on the Birdsong Plantation (longleaf pines and flammable wiregrass) in Georgia since the 1930s. By the early 1960s, he was a director of the Tall Timbers Research Station based in Tallahassee, Florida, USA.

Winston S.W. Trollope

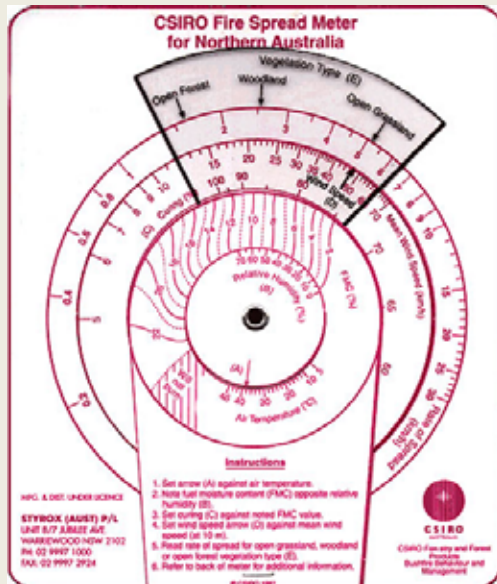
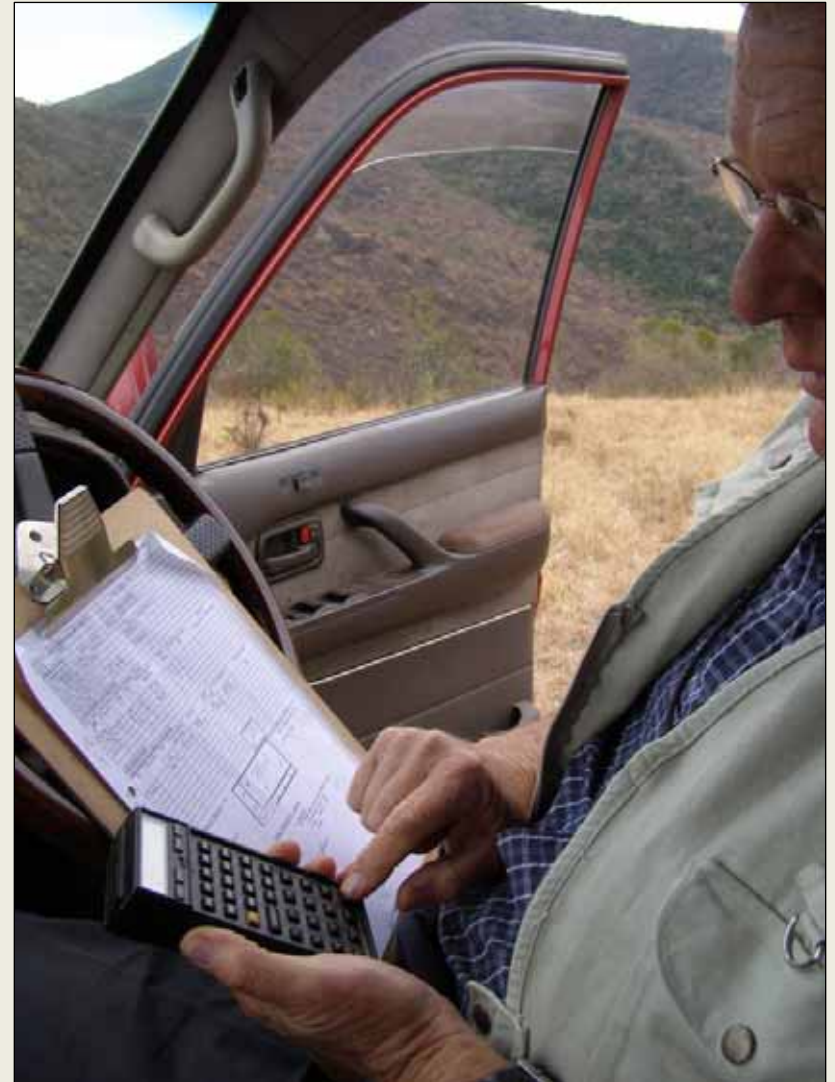


Above: Winston on one of his burn treatments on the research farm of the University of Fort Hare.

Right: Winston surveying the effects of a 'humdinger' of a fire on a farm near Fort Beaufort, Eastern Cape.



Fire Behaviour Studies



Above: A young Rothermel working on fire behaviour in his high-tech lab.

Left: CSIRO hand-held fire spread meter.

Right: Winston calculates the intensity of a burn.

Winston in Kruger



Those magnificent men and their fire fighting machines: Winston Trollope and Andre Potgieter attend a burn in Kruger in the 1980s.
(courtesy of WSW Trollope)

Summary

Ideas and individuals from many parts of the world have shaped botanical and agricultural thinking in South Africa

Clear lines of influence extend from Frederic Clements to John Bews, South Africa's first ecologist, through the 'Natal school' of agriculture, to Winston Trollope

Ed Komarek's interest in John Phillips' thinking about veld burning led to Winston Trollope's interest in fire behaviour studies

Trollope's skill set chimed with Kruger management's desire to scientifically assess and manage grazing in the 1980s.

This case study reveals a non-linear dimension to the history of fire and veld management in the Kruger National Park.

A non-linear history of influence

