

**Rising up
against the
tyranny of
Valentine's Day**
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**It's harvest season and
wine farms have
opened their gates and
hearts to quaffers**
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SPARSE: Table Mountain's Blinkwater Ravine, in 1888, was sparsely covered.



GROWTH: Blinkwater Ravine in 2010. Fewer fires in the 20th century left vegetation to flourish.

Getting to grips with climate change

POPULAR dystopian narratives of a looming global warming episode that leaves Earth universally parched, arid and hostile exasperate biologist Timm Hoffman – mainly because they obscure what's really happening, and what needs our attention.

For Hoffman, the Leslie Hill Chair of Plant Conservation in the Plant Conservation Unit at UCT's Department of Biological Sciences, the popular notion of reasoned climate-change anxiety versus denialism is distracting; nature's complexity does not adhere to simplistic binary opposites, and requires more considered analysis.

He knows this because, together with colleagues and students, he has spent much of the past more-than-two decades examining the landscape – chiefly through painstaking comparisons of historical and contemporary photographs to assess the scale and nature of visible change.

The results have been illuminating and, sometimes, unexpected. In some parts of the country, where creeping desertification was predicted, grassland is expanding, while, elsewhere, woodland is encroaching on open savannah plains. Other parts have remained "stable", or little changed.

The sometimes counterintuitive evidence does not subvert climate-change science, but underscores the value of inquiry and scientific rigour in getting to the bottom of how nature works – and, indeed, how social change impinges on it.

And in this, Hoffman argues, the past, if examined intelligently, has immense explanatory power. This is the crux of the rePhotoSA project which Hoffman and his team at UCT have launched.

They are hoping to draw amateur photographers, botany enthusiasts, or even just the curious, into broadening the reach of scholarship by contributing to the photographic record of our changing landscape. (Details below).

The value of comparing photographs taken decades or even, in limited instances, more than a century ago, with contemporary images of the same landscape is that "you can get a sense of what has changed, thus giving you a trajectory from which it is possible

UCT biologists have launched an ambitious citizen scientist project to get public help in better understanding our altering landscape, writes **MICHAEL MORRIS**



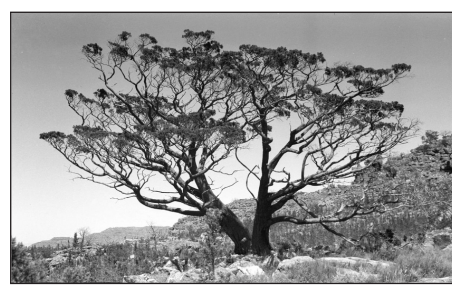
COMPLEXITY: Two views of Middelburg, Karoo veld, from 1971, top, and 2010, above.

extrapolate a little about the future".

For instance, he said, expansion rather than decline of indigenous forests and thickets on the Cape Peninsula since the

late 1800s means one can safely predict that the trend will hold for the next while.

"You cannot extrapolate too far ahead, but you can still use historical trends to test



LOSS: Cedar trees, once common in the Cederberg (the left-hand photograph was taken in 1941), have declined sharply, as is evident from the second image, from 2012.



CHANGE: Magersfontein in 1899, top, and, with thicker vegetation, in 2010, above.

some of the theory."

Similarly, some early climate change models "suggest the eastern Karoo would become more arid and there would be

general desertification... but the photographs show that, if anything, it has gone in the other direction".

However, in KwaZulu-Natal and the

former Transkei, for instance, the encroachment of woody plants, mainly acacias and invasive aliens, into the grassland environment has been "quite dramatic", with one potential factor being atmospheric carbon dioxide enrichment.

In this way, Hoffman argued, the photographic record "grounds us in the realities".

The objective is finding ways to understand change, or its absence – and the multiplicity of "drivers" or causes, of change.

These could include dramatic changes in land use, grass-burning regimes and farming; in the Karoo, small-stock herds have decreased significantly since the 1950s, so the land is grazed less intensively.

In the eastern parts of the country, with rising urbanisation, and welfare benefits, cultivation – less a subsistence feature than it once was – has declined, leaving room for trees to move in. Equally, over time, farming and settlement have reduced or displaced large herbivores such as elephants which in the Kruger National Park naturally limit woodland expansion.

Understanding the landscape is of more than academic interest: good conservation practice depends on it and, where woodland is encroaching on grassland, there are implications for biodiversity and, down the line, tourism and related industries.

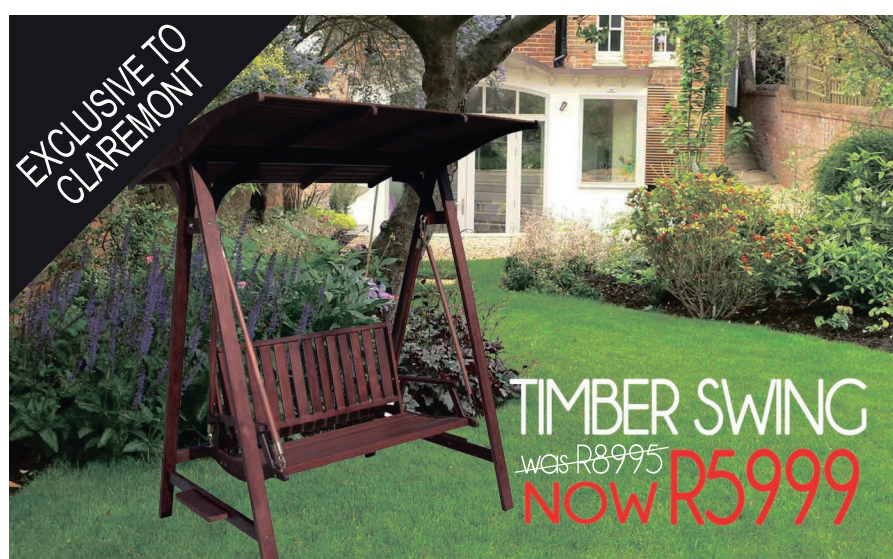
Gaining a better grasp of these variables is at the heart of rePhotoSA.

Participants can pick an existing historical photograph, take another one from the same spot and upload it to the rePhotoSA site. The success of the initiative depends on a high degree of accuracy in determining as close as possible the position from which the original shot was taken, and in submitting a field data form (provided on the website).

The website, which maps the distribution of existing photographs in the unit's database, provides a detailed guide to willing "citizen scientists", who will be publicly acknowledged on the site.

The scale of the enterprise is potentially vast; only about 1 500 of the 20 000 images in the database have been paired so far with contemporary images.

● For more information, see <http://rephotosa.adu.org.za>.



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