

Hot on the trail of solutions to the threat of wildfire

By Joanne Smetherham

The climate dice are loaded in favour of bigger wildfires that are more difficult to control – and unless we develop a greater understanding of how to manage wild fire, it will become increasingly difficult to reduce the damage to people, the economy and the environment.

Nowhere is this more evident than in the Western Cape, predominant home to the Fynbos Kingdom, the smallest yet the richest floral kingdom in the world with the highest known concentration of plant species.

Fynbos covers the mountains, valleys and coastal plains of South Africa's southern and south-western Cape, in a crescent shaped band from Niewoudtville in the north to Cape Town in the south and Grahamstown in the East.

Recent big runaway fires stretching from Hermanus to Franschhoek have reignited the debate about unplanned and unmanaged wild fire, and how much of a threat it is to the preservation of plants, some of which most likely will never recover if the fynbos burns too frequently.

Not often mentioned is the threat that unmanaged wildfire also poses to wildlife – including birds, which depend on healthy fynbos for their survival.

Historically, wildfire management has been heavily dependent on suppressing unmanaged fire and pre-emptive, planned burning. Recently more sophisticated tools to help fire management have become available as have advances in fire modelling and improved fire weather prediction.

There is consensus now that fynbos needs fire, which can be an agent of rebirth or an inferno of destruction- the question is how frequent and how hot.

If fynbos is burnt every seven to twenty years, aging plants are killed off, many kinds of seeds burst into life and bulbs start to grow again. “Without fire, there would be no fynbos – it’s as simple as that,” says Dr Brian van Wilgen of the CSIR’s natural resources and environment department and Stellenbosch University’s centre for invasion biology.

However it's not altogether so simple. Different species of fynbos plants are favoured by fires of different frequencies within roughly 7 – 20 year range, says Professor Guy Midgley, head of the South African National Biodiversity Institute's (SANBI) climate change programme.

If fires come too soon and too frequently, or too seldom, then some species may be eliminated.

Fire researcher, Diane Southey, found in her Masters thesis recently that there have been rising numbers of fires of large extent in recent years.

“Although this is still a tentative finding, this could be the result of more high-fire-risk days – and an early signal of a changing climate,” says Midgley.

Dr Tony Rebelo of SANBI suggests that fires in veld over 25 years old, or due for a burn within two years, should be allowed to run. However, he points out it has not been established who would make such a decision or which risk factors should be considered.

Guy Preston, Deputy Director General of the Department of Environmental Affairs, agrees that some fires, such as those in parts of the Cedarberg and other remote areas, could be left to burn under certain circumstances.

One problem with this, he points out, is that many of these areas are infested with invasive alien vegetation. These “fuel loads” can lead to greater intensity of fires, with negative consequences for indigenous seed banks.

Moreover, this can also lead to a mass germination of invasive alien plant seedlings. If the dexterity is not in place to then deal with the follow-up clearing of these invasives, it can lead to massive additional clearing costs at a later stage, and many very negative ecosystem service impacts, such as water loss, biodiversity loss, impact on the productivity of land, and much more – ironically including the likelihood of worse fires in years to come..

While this complex debate continues, there appears to be agreement on a single underlying principle: fires should be managed.

When he was manager of the Cape Peninsula National Park, which later became Table Mountain National Park (TMNP), Howard Langley foretold the need for integrated fire management when he remarked philosophically that we would have succeeded when we can “burn for biodiversity without burning houses down”.

Developing a model for better management, is one of the aims of the GEF Fynbos Fire Project launched late last year. The project is a multi-million rand

initiative between the South African Government, the United Nations Development Programme and the Global Environment Facility (GEF).

Its goal is to develop sustainable interventions to reform the approach to managing veld fire. Its brief is to implement strategies critical to good practice under the possible conditions of climate change in the fynbos regions of the Western and Eastern Cape.

The broad aim of the project is to change the approach from a reactive one, fighting veld fires whenever they are detected, to one of Integrated Fire Management. This is a holistic approach that includes fires awareness and prevention, the optimal co-ordination of resources, early warning of high fire-danger weather, the planned reduction of dangerously high fuel loads created by invasive alien plants and veld that is too old, as well as fire fighting.

In December last year temperatures in Stellenbosch, near Franschhoek, were 2⁰C hotter than the long-term average, which is in line with climate projections and would have left the fynbos extremely dry, with a high fuel says Dr Peter Johnston of UCT's Climate Systems Analysis Group.

"The ferocity of the fire in the Franschhoek mountains was in line with the strength of fires expected as the effects of climate change kick in," he says.

He, too, forecasts that more fires of this strength can be expected in coming years.

"Climate change is already affecting us in myriad ways and it's going to get worse before it gets better, with wildfire one of the consequences," according to Duncan Hindle, special advisor to Minister for Agriculture, Forestry and Fisheries.

"We do not have forests to burn; we do not have extra land or water or fishing stocks to waste," he said. "We must look after what we have."

In the view of Fynbos Fire project managers, the first tentative steps in this direction are being taken, by gathering of critical scientific data about climate change, monitoring wild fire behaviour encouraging the formation of Fire Protection Associations, (FPA's) by means of which landowners work together practicing integrated fire management.

The project is importantly encouraging experts from a wide range of related disciplines to research their work together and encourage open public debate with the aim of avoiding the threat of destructive fires wreaking irreversible damage to the people, homes, the economy and the environment.

- The GEF Fynbos Fire Project was established to support adaptation and technology transfer in all developing countries party to the United Nations Framework Convention on Climate Change (UNFCCC), has granted the funding over three years to the project. Co-funders of the project include the South African National Department of Environmental Affairs, through the Working for Water and Working on Fire Programmes, the Department of Agriculture Forestry and Fisheries, (Western Cape), Fire Protection Associations, the FFA Group of Companies and the United Nations Development Programme.

* Jo-Ann Smetherham is a journalist who was commissioned to write for the Fynbos Fire Project.