



Gert Fourie

G&H: How serious is the bush encroachment problem in South Africa?

Patrick: In some areas, really serious. I have seen serious encroachment mostly in the northern bushveld areas, but also in Zululand and the Kalahari. Namibia falls outside our borders and is even worse than SA.

Chris: Very serious.

Nico: Most of the savanna areas in southern Africa, including South Africa, are seriously encroached. In South Africa it may be as many as six million hectares or more.

G&H: How successful are the rehabilitation projects?

Patrick: Many are not successful because the landowners don't realise that they should be in for the long haul. Success has been achieved where the management was committed to long-term projects. An example is Thaba Tholo, who has been constantly controlling bush for many years, rehabilitating thousands of hectares to open grassy savanna.

Chris: My estimation is that approximately 80% are successful.

Nico: It all depends on the definition of "success". Is success measured in relation to the number of trees that were killed/removed for the money spent, is it measured in relation to the response of the grass layer, or are there other criteria? Restoration of bush-encroached areas should comply with two important requirements before being considered successful: It should be ecologically responsible and economically justifiable. Based on these criteria, many short-term successes, but very few long-term successes have been reached and the results often do not meet the expectations of land owners.

➔ *Continued on page 55*

A bushy problem

I was very surprised when I saw the photographs. The aerial photographs were taken in 1955, 1980 and 2006 respectively. The changes were obvious: This farm used to be an open grassy area with scattered trees and over the last 50 years had turned into very dense woodland.

This is one example of the "savanna" habitat of South Africa that has changed drastically over the last 100 years, due to bush encroachment occurring from the Eastern Cape to the Kalahari and all the way to Messina.

The available habitat for many animals has been altered to such an extent that some species have become endangered. The sable antelope is a good example: this animal has lost its prime habitat and the whole population has been affected by altered habitat.

The causes for the extent of the bush encroachment can be summarized as:

- over utilization of veld, especially by continuous overstocking with grazers;
- absence of sporadic fires – the major controlling agent of bush;
- a lack of browsing animals on some farms.

In this issue, three experts/role-players in the industry were consulted:

Patrick Cairns, bush-clearing consultant and project manager of selective bush clearing projects at a herbicide company distributing selective herbicides; Chris Richter, grazing ecologist, bush clearing contractor and herbicide dealer; and Professor Nico Smit, lecturer at the University of the Free State.



A bushy problem

→ Continued from page 53

G&H: What should the approach be in terms of selectivity?

Patrick: Control bush as selectively as possible.

Chris: Controlling selectively is important, but do not go overboard with selectivity. Evaluate the problem area – in some cases chemical control with non-selective herbicides are necessary to minimize costs.

Nico: Understand the ecosystem. There is a reason why a dense stand of woody plants (bush encroachment) has developed. The moment bush is cleared, a vacuum is created that will be filled either by grass or more woody plants. I prefer selective control where a structure with larger trees is the end result. It has been scientifically demonstrated that in some savanna areas, large trees suppress the growth and establishment of young plants and new seedlings. Loss of large trees will often encourage rapid re-encroachment and the result may be worse than before. Selective thinning allows the remaining trees to increase in size, thus increasing the area where new seedlings will be suppressed. In time, this will result in a more stable ecosystem, far more resistant to bush encroachment. However, total control is sometimes preferred for financial reasons and to create open grassy areas. In this case I don't consider these areas as natural rangeland. It is transformed land, similar to planted pastures that need to be maintained on a regular basis to keep it in the unnatural, open state. Is this really more cost effective over the long term?

G&H: What are the common mistakes made during rehabilitation projects and what is your advice to land owners?

Patrick: Wrong application of herbicides, use of non selective herbicides, people not seeking advice and not following through. Land owners should seek advice from experts, commit financially to a long-term process.

Chris: Bush control is not a once-off project. A follow-up within three years is imperative to ensure successful clearing.

Nico: Many land owners address the problem without seeking the cause. While the process of bush encroachment is still not understood to the full, it is imperative that bush control is not applied without first addressing management problems, such as over-stocking of grazers. Ensure stocking of correct herbivore numbers and do not overgraze during wet seasons. Bush encroachment is more prone during wet seasons and reduced competition from grasses may lead to the germination of large tree seedling numbers.

Identify priority thinning areas – prioritise rehabilitation of areas with a higher grazing potential rather than low potential areas, for example on shallow, rocky soil.



For more information on bush clearing, consultancy services and contacts of contractors, contact Gert or Nanette Fourie at Ekofocus – 082 9295277 or info@ekofocus.co.za

Gert's comments:

Complete a thinning project within a vegetation unit or within a complete camp (cattle farm) to prevent area selection and over utilisation after the thinning. This is a continuous project that will require regular follow-up management. There are no quick solutions.

During 14 years of consulting game farm owners, we have visited 263 game farms. On 15% of these farms no bush encroachment problems were recorded, 34% had an encroachment problem, but had not done rehabilitation, 27% of the owners had undertaken unsuccessful clearing operations, which had been aborted, and 24% of the land owners had done successful clearing operations.

The low success rate can be ascribed to:

- landowners not having a clear understanding of the scope of the rehabilitation process;
- landowners not being prepared to shoulder the costs involved;
- landowners having difficulty with human resources or skilled labour;
- landowners not following up on their initial efforts;
- a lack of knowledge, preventing them from undertaking the projects;
- poor results leading to aborted projects.

The **first question** the landowner should ask is, "Why do I want to control the bush?" Objectives could be:

Conservation – the restoration of land to its original state. The encroached area may, for instance in its current state, not provide suitable habitat for other plants or animals and biodiversity is limited.

Production – very often encroached areas are associated with poor grazing areas. Clearing leads to higher grass production, with benefits in terms of animal production.

Esthetical – land is often bought for the experience rather than for productive or economic reasons. Encroachment negatively influences the esthetical value and game viewing experience on the land.

Secondly, learn from past mistakes and seek advice from experts.

Thirdly, determine what the costs are going to be – for initial control and follow-up operations.

Fourthly, decide whether to undertake the project yourself or make use of a contractor.

Fifthly, commit to a long-term project.

And last but not least, take a holistic look at the problem. Are you applying healthy management practices that will minimise re-occurring, abnormal bush densities? 