Burning for biodiversity in a timber production landscape

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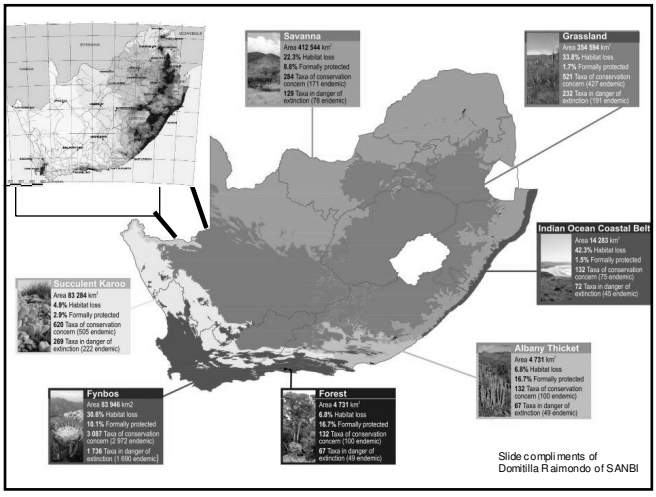
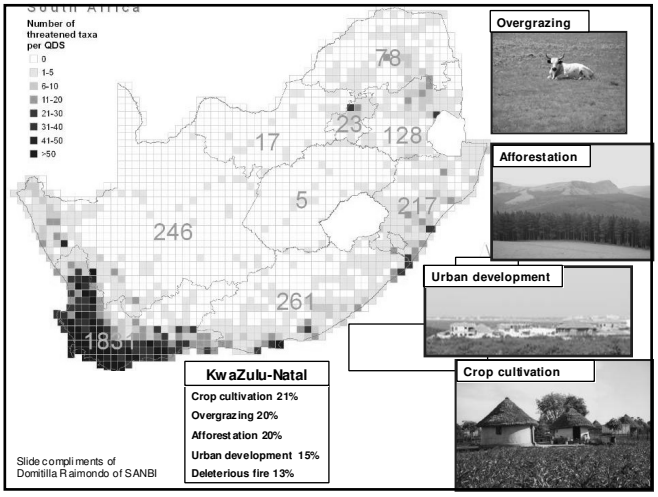
Principle 1

Fire is a natural ecosystem driver that is necessary to maintain biodiversity however, because we are no longer dealing with natural ecosystems, fire needs to be managed!





Principle 2

The fauna and flora of our rangelands represent a wide range of fire tolerance levels and habitat requirements. Heterogeneous burning regimes are recommended to meet these requirements. This is achieved through creating a patchwork mosaic of burnt and unburnt areas of different ages.

Principle 3

Species need their habitat to survive and habitat health is directly linked to the maintenance of ecosystem processes (e.g. soil formation, water production, nutrient cycling and carbon storage). So, whatever fire regime you choose to apply, it first and foremost has to support ecosystem processes. This is achieved by maintaining a cover of vegetation and its litter on the soil.

The Goldilocks principles

Principle 4

Don't burn too frequently!

Principle 5

Don't burn too infrequently!

Timing is everything principles

Principle 6

Don't burn too early!

Principle 7

Don't burn too late!

Principle 8

Not all animals and plants can tolerate fire, some only survive by avoiding it. These species contribute to the overall biodiversity of the landscape. Fire refugia therefore make a critical contribution to biodiversity.

Realities of burning in a timber production landscape are that:

1. Forestry companies exist to produce timber
2. Timber is destroyed by fire
3. Therefore fire risk needs to be mitigated

So how do we apply these principles to plantation forestry lands?

1. All properties that can support fires are legally obliged to have firebreaks around their boundaries. These should be put in as early as possible and maintained through the season.
2. Properties should be divided into burning block by internal breaks for management purposes.
3. Identify those important features within each burning block that require special attention and implement protection measures early (e.g. wattle crane nesting site).
4. Identify and maintain your natural fire refugia using a system of firebreaks and by starting fires from their margins and burning outwards.
5. Aim to create a mosaic of burnt and unburnt blocks each season that will help check uncontrolled fires while still providing unburnt habitat.

So how do we apply these principles to plantation forestry lands? – Cont.

6. Including firebreaks, try not to burn > 50% of your property in one year. Ideally you should be working on a biennial to triennial rotation for your grasslands. (*N.B.* fire refugia will help offset firebreaks).
7. Try not to burn firebreaks in the same place year-after-year. One way to prevent this is to alternate breaks on either side of the fence.
8. Keeping records of when and where unplanned burns started can help one predict the most likely points of ignition. These can then be countered with wider firebreaks, supplemented with earlier block burns.
9. Arsonists all too often dictate our burning programs, but where possible fires need to be spread across the burning season, with the majority of burns conducted as close to the first spring rains as possible.
10. The reality is that some blocks may need to be sacrificed (i.e. burnt every year, early in the season), but with some planning these can be offset by better managed blocks that allow biodiversity to be retained on the property.