

Savanna landscapes: defining health

The tropical savannas are managed by people with different viewpoints, who want to know if they are managing the land well. Yet how do we know if the savannas are healthy when 'health' depends upon your point of view?



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In 2000, the Tropical Savannas CRC held two workshops to develop definitions of what we mean by 'healthy' savanna country. This was done because if we want to conserve and use the tropical savannas in the long term, then we need a way of measuring how sustainably we are managing the savannas now, and what changes may need to be made in the future.

In other words we need a way of measuring how 'healthy' the country is, where 'health' is a measure of those properties in the landscape that people value and want to maintain into the future. Thus a healthy savanna landscape might have viable populations of native plants and animals, sustainable pastoral activities or intact Aboriginal cultural values or a combination of all three depending on the scale considered.

Existing measures of landscape health

There are already several measures of the health of the savannas but they tend to focus on a particular set of properties valued by a particular group of people. For example, pastoralists have developed measures of pasture productivity and sustainability; parks managers have developed measures of biodiversity conservation; and Aboriginal communities have long-standing measures of the cultural values of the landscape.

But each measure on its own may not be a satisfactory way of gauging the health of whole regions or catchments as these different values may conflict with each other. The workshops, which involved a varied group of land managers, planners and researchers came up with a broad definition of savanna health as follows:

A healthy savanna

- Maintains basic functions at all spatial scales including:
 - Nutrient cycling;
 - Water capture;
 - Provision of food and shelter for fauna;
- Maintains viable populations of all native species of plants and animals at appropriate space and time scales; and
- Reliably meets the long-term needs (material, aesthetic and spiritual) of the people with an interest in the savannas over the long term.

Under this definition, a healthy landscape needs to have basic functions intact, such as the ability to effectively store nutrients like phosphorous and nitrogen and capture moisture so that it can support pastures, native vegetation, traditional foods etc.

Viable populations of all plants and animals native to that landscape are also necessary—perhaps not at the scale of paddock, but certainly at the scale of a catchment. Over and above these biophysical characteristics a healthy landscape also needs to satisfy various human values such as the ability to graze cattle sustainably and the ability to support traditional Aboriginal practices.

How would this definition be used?

To use this definition, land managers and others need a set of indicators that actually measure health and that would vary with scale. To measure health at the level of a paddock or a reserve only a few indicators might need to be considered: such as the coverage of perennial grasses or a measure of biodiversity. But at the level of a catchment a range of indicators would be needed to cover basic functions, biodiversity, and human values.

The TS-CRC has already coordinated considerable research on a range of potentially useful indicators and properties. A major task for the TS-CRC in the future is to refine a set of attributes of the savannas that different user groups value—and then to develop a set of easy-to-measure indicators that tell us how we are managing these properties. The Centre has therefore sought the views of a wide range of people with interest in savanna management, to help us do this.

To find out more about this concept, you can download a discussion paper from the TS-CRC's website. Go to <http://savanna.ntu.edu.au> and then to our publications section. There are now two free publications available on this concept: a technical discussion paper, or a plain English Summary. To order these booklets, Tel: (08) 8946 6834; Fax: (08) 8946 7107; Email: savanna@ntu.edu.au.

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Defining landscape health in the savannas

