Brittleness Scale

Introduction

What is it?

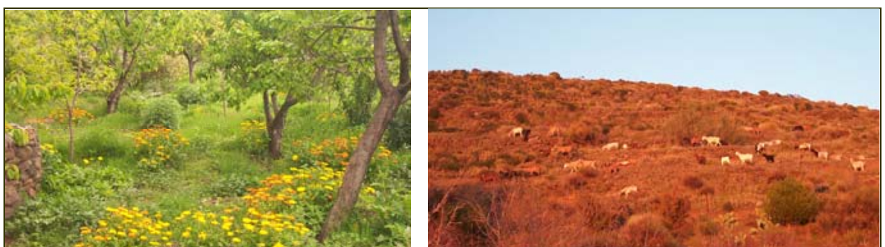
The Brittleness Scale was devised by biologist and conservationist, Allan Savory, creator of the holistic decision-making framework, Holistic Management®. It categorises landscapes by the extent to which they have year-round moisture. This informs the way the ecosystem processes function in each category of landscape on the Brittleness Scale.

Why is it important?

It enables those involved in land management to determine the most appropriate tools to ensure environmental sustainability, whether as farmers, pastoralists or conservationists. Ignorance of the Savory Brittleness Scale is resulting in the spread of desertification on a global scale as northern temperate management practices are applied inappropriately.

The Scale

The Savory Brittleness Scale classifies all environments along a scale of 1 to 10, where one represents a true rainforest and ten a true desert, although there is no clear distinction between these extremes. A single plant category may cover a wide range on the brittleness scale. Grasslands, for instance, may lie anywhere from 1 to 9 or 10 on the scale; forests from 1 to 7 or 8. It is difficult, therefore, to point to a geographical region and declare it brittle or non-brittle.



↑ (3) ↑ (9)

1 2 3 4 5 6 7 8 9 10

Rainforest → Desert

Non-brittle Very Brittle

Contrast with Fragility

Brittleness is not the same as fragility. There are areas within many environmental classifications that are very easily upset by a variety of forces and other communities that are much more robust. However, fragile communities may exist in a nonbrittle environment (for example, delicate fern-dominated glade in a forest), and some fairly brittle environments may be non-fragile (for example, the African savannas and the American prairies).

Misconception about Rainfall

There is a clear correlation between the two extremes on the Brittleness Scale and total rainfall, but this can be misleading, hence the misconception that an environment's vulnerability is solely due to low rainfall. The features that distinguish any environment's position on the Brittleness Scale are:

- the distribution of precipitation and humidity throughout the year, and hence
- it's vulnerability to inappropriate land management.

Positions on the Scale

Toward the very brittle end of the scale, environments characteristically experience erratic distribution of both precipitation and humidity during the year. The pattern determines the degree of brittleness. A 30 to 50 inch (750-1250mm) rainfall area that typically has very dry periods in the middle of its growing season and a long dry season, is likely to be very brittle.

The Role of Decomposition

As the ability of plants to decompose and recycle their nutrients is crucial to the health of the whole environment, determining the degree of brittleness becomes a prime factor in the management of any environment. Toward the non-brittle end of the scale, environments characteristically experience increasingly reliable moisture in the growing season. Even though total precipitation may seldom top 20 inches (500mm) a year in some of them, the distribution is such that throughout the year, atmospheric humidity does not drop severely. In completely non-brittle environments, both precipitation and humidity would be constant and high, whereas in completely brittle environments, precipitation and humidity would be erratic and low.

Other Determining Factors

The distribution of the precipitation, as well as the elevation, temperature, and prevailing winds, clearly affects the day-to-day distribution of humidity and this links very closely to the degree of brittleness. The poorer the distribution of humidity, particularly in the growing season, the more brittle the area tends to be, even though total rainfall may be high. Very brittle environments commonly have a long period of non-growth that can be very arid.

The Implications for Land Management

Non-brittle and very brittle environments react quite differently to many land management practices. For example, the old belief that *all* land should be rested or left undisturbed in order to reverse its deterioration has been proven wrong. Environments lying close to the non-brittle end of the scale do respond this way. However, in environments tending toward the very brittle end of the scale, prolonged rest will lead to further deterioration and ultimately desertification.

Where a landscape stands on the Savory Brittleness Scale will also inform how other tools, such as fire, animal impact, technology, grazing and living organisms will be used in a sustainable way to improve the health of the ecosystem processes.