WALKING IN THE SHADE

Protecting our forest paths.

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Walking is considered a low impact activity in fynbos where the nutrients are recycled after a fire. The Cape Peninsula National Park is almost entirely covered by fynbos. Fragmented relict pocket forests represent the afromontane forest that covered the south-western Cape some twenty five million years ago, before fynbos evolved. Obviously the trees do not have a fifteen-year cycle (like most fynbos) but stay put for centuries. The trees are thus entirely dependent on the forest floor mulch for the recycling of soluble nutrients.

In a high rainfall forest such as we have at Newlands, the soluble nutrients are washed away by the downward and lateral movement of excess water. High rainfall forests adapt to this situation by producing a shallow mat of fine, fibrous roots that soak up some of the nutrients before they are washed away. During summer stress it has been observed that the soil just below the root-mat remains cool even when the surface feels hot and dry to the touch.

This root-mat, easily visible after heavy rain, is very shallow. In fact, at Newlands, the mat can be seen to spread on top of some of the rocks. On Ascension Ravine's north bank a fallen tree revealed that the roots were all in the top 15 cm. Below the shallow surface layer, a bank over 2 m deep consisted of dead sand with no roots in it at all. Every tree that topples over in the forest reveals the same shallow root system.

So what about our forest paths? The root-mat creates a spongy feeling underfoot. It is, in fact, more comfortable to walk on the root-mat than on the uneven stones beneath it. Trees have died because a path passed too close to the main stem. When the root-mat and topsoil have been worn and washed away on one side of the tree, then walkers, both two- and four-footed, very often make a path on the other side of the tree thus creating a 'tree-trap'. This cuts off all the lebensraum for the feeding roots and the tree starves.

What to do? The trees cannot adapt to humans, they only adapt to the impacts built into their ecological history. So if you burn a forest, it will re-grow in time; if you cut down a forest most species will re-sprout, but if you wash the soil away, you have to wait for geological processes to re-build the topsoil before the ecosystem can re-establish itself.

There is, however, a shorter process than complete physical destruction of the forest, by which walking in the afromontane forests can become unpleasant. A widened path, where the stressed trees are losing leaves, lets in extra light. This light creates marginal conditions where lianas and scramblers thrive. So although the compacted path is dead, the light will attract scramblers from several metres away. There is thus a ray of hope called *Scutia myrtina* (haak en steek) a thorny scrambler. This eco-friendly star will protect the mulch from compaction and create a protected niche where tree species can grow a new root-mat. These pioneer species will gradually be replaced by shade species and so once more we will have shade. We may, during decades to come, see a proliferation of *Scutia myrtina* such as already occurs in parts of Fernwood Forest.

So please do not jog or proliferate private paths (and short cuts) in the afromontane forests. When you pass a tree in a 'tree-trap' please pause and pack some stones around the tree. If we all make an effort to keep our forest paths narrow, the trees that give shade will be better able to continue shading our forest paths.

A year ago this *Cassine peragua* (Cape saffron) was caught in a 'tree-trap' and showed signs of die-back. Most of the terminal twigs were dead. Students blocked up on side of the trap several times and then began packing stones around the tree so that visitors would have to step over the root space needed by the tree. To our delight and astonishment the *Cassine* began to recover and now has new shoots (the soft pink shoots you can just see at the tips). A few more stones, and this pioneer might in time develop into a shade tree. Ideally all root spaces traversed by paths should be covered with stones.

Reference

'Conservation management of afromontane forest pockets on the Cape Peninsula' by Coert J. Geldenhuys. Report (FW-01/00) prepared for the Afro-Montane Information Forum, c/o The Cape Peninsula National Park, PO Box 37, Constantia, 7848. Feb. 2000.

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