

History of the Subtropical Thicket Restoration Project (STRP)

The project had its origins in Easter 1999 when Professor Richard Cowling of the Nelson Mandela Metropolitan University (NMMU) successfully negotiated with the Global Environment Facility (GEF) - an organization concerned with the fate of the world's biodiversity and formed after the first Earth Summit in Rio de Janeiro in 1992) to fund the Conservation Farming Project. This was aimed at a number of biomes (grasslands, forest, karoo and thicket). Administered by the South African National Biodiversity Institute (SANBI), the Project began in 2000 with a sub-project in the subtropical thicket region.

There was a strong emphasis on ecosystem services, and in particular, a study of the impact of farming practices on soil carbon and quality by Ant Mills. His results showed that extraordinarily high soil carbon stocks are found in thicket relative to other vegetation types. In 2002, it became clear from the work of Richard Cowling's PhD student, Richard Lechmere-Oertle, that litter production in thicket near Steytlerville was also high - equivalent to that of certain forest ecosystems. Cowling and Lechmere-Oertle then approached Mills as the carbon specialist in the Conservation Farming Project to discuss the implications and processes behind the anomalous soil carbon stocks and litter production in dry spekboomveld systems. When Andrew Skowno, a co-worker on the Conservation Farming Project, together with Mills and others provided estimates of biomass of spekboomveld, the extraordinary size of total carbon stocks in thicket became apparent.

The findings showed that spekboomveld stores huge amounts of carbon - as much as some subtropical rainforests - and the bulk of this is contributed by spekboom. Their joint findings led to much discussion and collaboration between Ant Mills based at the University of Stellenbosch/SANBI, and Richard Cowling, Richard Lechmere-Oertle, Ayanda Sigwela and Graham Kerley based at NMMU, resulting in a joint scientific paper submitted in mid 2003 and published in 2005. In June 2003, Cowling approached Tony Palmer of the Agricultural Research Council and Guy Preston the National Programme Leader of the then Working for Water Programme, to kickstart a project using spekboom plantings for carbon sequestration. (The original plan was to drive the project via the Subtropical Thicket Ecosystem Planning (STEP) Project with Andrew Knight playing a role, as STEP had identified restoration as an essential activity. However, STEP was abandoned by SANBI.)

Cowling and Mills realized that there was a vital element missing if they were to build a case for carrying out large-scale veld restoration to be funded by carbon credits. The key measurement needed was a measure of the *rate* of carbon sequestration. In July 2003, Cowling approached both Bool Smuts of the Baviaanskloof Project Management Unit (administered by the Wilderness Foundation) and David Daitz, the CEO of CapeNature to provide funding to determine rates of carbon sequestration.

It was fortunate that there existed a few stands of spekboom planted some decades ago which would allow these measurements to be made. A situation was provided on Graham Slater's farm where he had planted stands of spekboom at different periods extending back 27 years. Funding by both organizations was granted and work started in mid October. The final report was submitted in Jan 2004 and published in 2006 by Mills and Cowling.

This research provided the case for the launching of the Subtropical Thicket Restoration Project (STRP) in 2004 which was ultimately adopted by the now Department of Environmental Affairs' Natural Resource Management Programmes (which includes Working for Water with its land restoration sub-programmes) in conjunction with Wilderness Foundation's Baviaanskloof Project

Management Unit. At this stage Mike Powell came on board to manage the pilot work on spekboom plantings in the Baviaanskloof over the next three years. The actual field work was done by teams of previously disadvantaged individuals funded by the government's Expanded Public Works Program, administered by the Natural Resource Management Programmes under the management of the implementing agency, Gamtoos Irrigation Board.

During 2007, work started on developing a Project Design Document (PDD). Also in this year, monitoring and evaluation of plantings of spekboom truncheons continued in order to determine optimal methods, including the use of drills driven by generators, also augurs, with concomitant monitoring of time-motion studies. The scientists decided that in addition to large-scale plantings in degraded areas in nature reserves, there was a very real need to determine optimal areas for maximum productivity. Hence began, probably one of the widest field scale experiments across the 550 km extent of spekboomveld, referred to as the "thicket-wide plot" experiment (TWP).

Good relations were built up with local conservation authorities that enabled the start of large-scale plantings in Addo Elephant National Park. Local communities around Peddie also agreed to planting of spekboom. Other partners who came on board were the Eastern Cape's Department of Economic Development and Environmental Affairs (DEDEA) and the Department of Land Affairs (DLA) with LandCare.