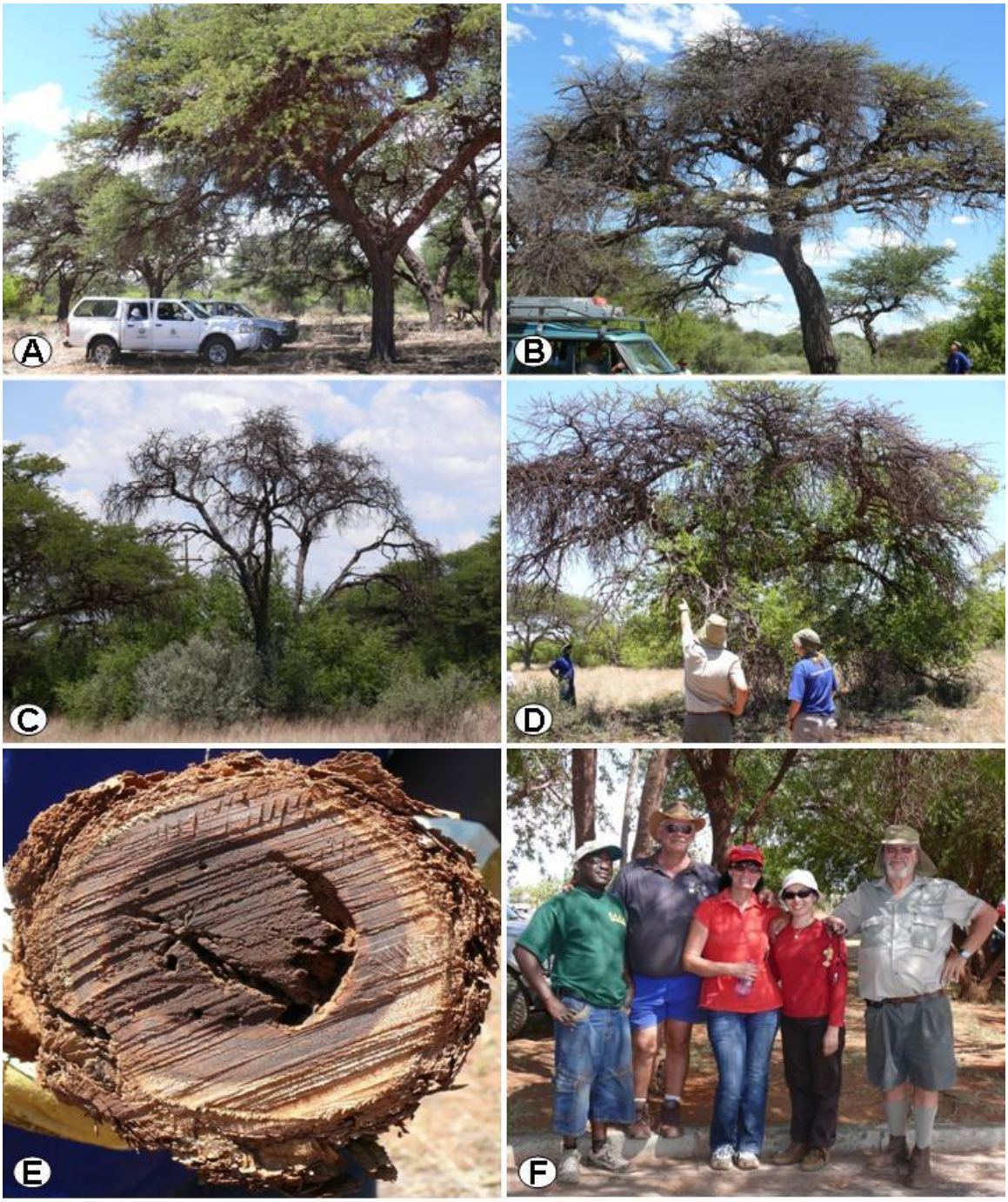
DECLINE AND DEATH OF ICONIC NORTHERN CAPE CAMEL THORN TREES INVESTIGATED

In 2008, Prof. Jolanda Roux from the DST/NRF Centre of Excellence in Tree Health Biotechnology (CTHB), Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, was approached to investigate the cause of death of *Acacia erioloba* (camel thorn) trees in the Kathu forest in the Northern Cape Province of South Africa. Trees in this iconic forest have been observed dying since the early 1990s but to date no cause has been found. In renewed attempts to determine why these trees are dying, Mr. Sarel van der Merwe and other concerned residents of the area have renewed attempts to determine the reason behind the decline and death of these trees in the Kathu area.

Acacia erioloba is a southern African species, characteristic of Kalahari sandveld. Its range extends from southern Angola and Namibia, parts of Botswana, southwestern Zimbabwe, the north west of South Africa and into south west Mozambique (Barnes et al. 1997). In the arid parts of its range, *A. erioloba* is often the only tree in its environment; whereas in moister parts, it is a component of savanna woodland communities (Barnes et al. 1997). The tree's ability to access water deep in the soil makes it especially drought tolerant, allowing it to grow in the driest areas of the region and surviving even through some of the most severe droughts recorded for the sub-region (Barnes et al. 1997).

The trees near the town of Kathu in the Northern Cape are of especial importance as they form part of only two natural forests of these trees. This forest was declared a Natural Heritage site in 1998 and all camel thorn trees in South Africa are protected by law. Since 1991 these specific tree have, however, been observed dying. Several studies have been conducted to determine the possible cause of the death of these trees, with various possibilities investigated. However, to date, no specific cause has been found for the decline and death. For example, mining activities, one of the suggested causes of death, have not been found to be a possible cause of decline.

In January 2009, Prof. Roux, two post-graduate students associated with the CTHB, Donald Chungu (Zambia) and Fahimeh Jami (Iran) and residents of Kathu and Kuruman undertook a preliminary pathology study of *A. erioloba* trees at three sites near Kathu. The sites were selected by Mr. Sarel van der Merwe and other concerned locals from the area and contained trees showing various levels of decline. Over a two day period, 30 trees were thus investigated, a number of which were sampled for signs of fungal and insect attack. Both insects and symptoms of infection were found on all trees. Symptoms of attack by cerambicid beetles were common on dying trees, while symptoms and signs (fungal fruiting bodies) of wood and root rot caused by fungi were found on all dying trees. A number of samples were collected from the trees and these are currently being processed in the laboratories of the CTHB in Pretoria. These will now be studied in greater detail in an ongoing effort to understand the cause of the decline of *A. erioloba* trees in Kathu.



(A) Healthy camel thorn trees, (B) tree showing crown die-back, (C) dead tree, (D) Dying tree, (E) rotten root of dying tree, (F) The team of researchers and concerned residents who undertook the first pathology survey in January 2009 together with Prof. Jolanda Roux of the CTHB, University of Pretoria. Donald Chungu, Corrie and Alta van Rensburg, Fahimeh Jami, Sarel van der Merwe.

Acknowledgements

- Mr. Sarel van der Merwe of Kuruman for organization of the pilot survey, selection of trees for sampling, assistance with the obtainment of the collection permit and help with sampling. Sarel and his wife Francis are also gratefully acknowledged for providing accommodation and meals for the team from the University of Pretoria.
- Mr. and Mrs. Corrie and Alta van Rensburg for bringing the disease to the attention of Sarel and for valuable and enthusiastic assistance during the pilot survey.

- Mrs. J. Mans, Department of Water Affairs and Forestry, Kimberley for assistance to obtain a permit to sample selected trees.
- Hannelie Mitchell of the Sishen Mine and Ronnie Capes of the Golf Club at Kathu for help with obtaining permission for sampling.

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