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**PRESENT STATUS OF FOREST DIE-BACK IN THE HORTON PLAINS  
NATIONAL PARK**

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Forest die-back in the Upper Montane rain forest of Horton Plains does not appear to be a recent occurrence, however, the phenomenon was first reported only in 1978 where forest patches comprised of dead or dying trees were observed on the slope of Totupolakanda, 100 m above the plains. More than 50 % of *Calophyllum* and *Syzygium* trees were found dead or dying. The same phenomenon was reported again on the same location in 1980/81.

The nature, extent and possible causes of forest die-back in the Horton Plains National Park were investigated over a period of two years from May 1997. The vegetation in sixty belt transects (5 m x 100 m) covering a 3 ha. area of representative forest was sampled. A total of 6532 individual trees were closely examined for die-back and the extent of damage and related information were recorded in data sheets. Stem, twig, root, leaf and soil samples collected from die-back sites were investigated in the University laboratory.

The overall die-back situation of the area sampled is significant where 13 % of the canopy and sub-canopy level trees are already dead and another 26 % show symptoms of die-back. Of the latter category, about 50 % of trees were at advanced stage of die-back. Thirty seven species representing 76% of the total tree species belonging to 19 families were recorded as susceptible species to die-back, *Syzygium rotundifolium* being the most susceptible. Of the 37 species susceptible to die-back, 26 (70 %) were endemic to Sri Lanka. Of these 26 endemics, 12 were canopy trees and the rest were sub-canopy trees.

Three major patterns of die-back were observed and the process of die-back, which varied in each, was generally slow. Die-back in majority commences from top and spreads downwards. In others, the decay originates from damaged tissues or cavities at the base of the trunk and progresses upwards. Fungal colonization was invariably present in dead and dying wood tissue. Two major fungal diseases were prevalent, stripe canker and pink disease (*Corticium salmonicolor*). Eight species, including 6 endemics, were susceptible to stripe canker while 4 species, which included one endemic species had *Corticium salmonicolor* infection. It appears in both situations the bark, branch and stem injury may have incited fungal colonization. Strong wind, that causes injury, and moisture act as predisposing factors. *Phytophthora cinnamomi* could not be detected in the soil.