

Wandoo Recovery GROUP

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Understanding Wandoo crown decline

Wandoo (*Eucalyptus wandoo*), usually known as white gum, is a widespread and ecologically valuable tree species in south-western Australia. It occurs as a major overstorey tree in parts of State forest and many conservation reserves, and is a key component of remnant bushland, roadside vegetation and paddock trees on farmland in the western wheatbelt. Clearing for agriculture has dramatically altered the current range of wandoo. Many of the remaining areas of wandoo are now affected by crown decline.

Decline can be observed in the upper and outermost part of the crown. Individual branchlets brown and die – a symptom known as flagging. The wandoo responds to this by forcing dormant buds (epicormic shoots) in the trunk and limbs of the tree to develop, replacing foliage lost in the initial decline. As the severity of the decline increases, larger branches and stems die off, resulting in loss of the tree crown and in some cases, death of the tree.

The cause of wandoo tree decline may be the result of a number of contributing factors. Factors that impose stress on the trees include reduced rainfall, altered fire regimes, salinity and waterlogging. These predisposing factors may be followed by invasion by insects and pathogenic fungi.

Message from the Minister



In February 2003 I was pleased to announce the formation of the Wandoo Recovery Group to investigate and address the problem of wandoo crown decline. This was in response to concerns expressed by scientific and rural communities.

The group's work is crucial to developing an understanding of the factors contributing to the decline of this ecologically valuable tree species. Their early work and collaboration with other researchers has developed some important preliminary findings that will help to shape research directions.

This research and other actions such as a communication plan and the proposed vegetation mapping of wandoo will provide a sound scientific basis for wandoo conservation and management partnerships between the State Government, landholders and community groups.

Judy Edwards

Dr Judy Edwards MLA
Minister for the Environment



Wandoo RECOVERY GROUP

Wandoo Recovery Group

In response to increasing community concern over the failing health of wandoo, the Environment and Heritage Minister, Dr Judy Edwards, formed the Wandoo Recovery Group (WRG) which met for the first time in February 2003. The top priority for this group is to develop an understanding of the causes and mechanisms of wandoo tree decline. The WRG is also developing strategies and actions to more effectively manage the health of wandoo woodlands. Membership of the WRG comprises representatives from Land Conservation District Committees, government departments, corporate business and research institutions. The Department of Conservation and Land Management (CALM) administers the WRG's activities.

Mapping considerations

Efforts are being made to map the extent of decline across wandoo populations. Understanding where and when decline occurs will help give a more accurate assessment of the extent and health status of wandoo ecosystems.

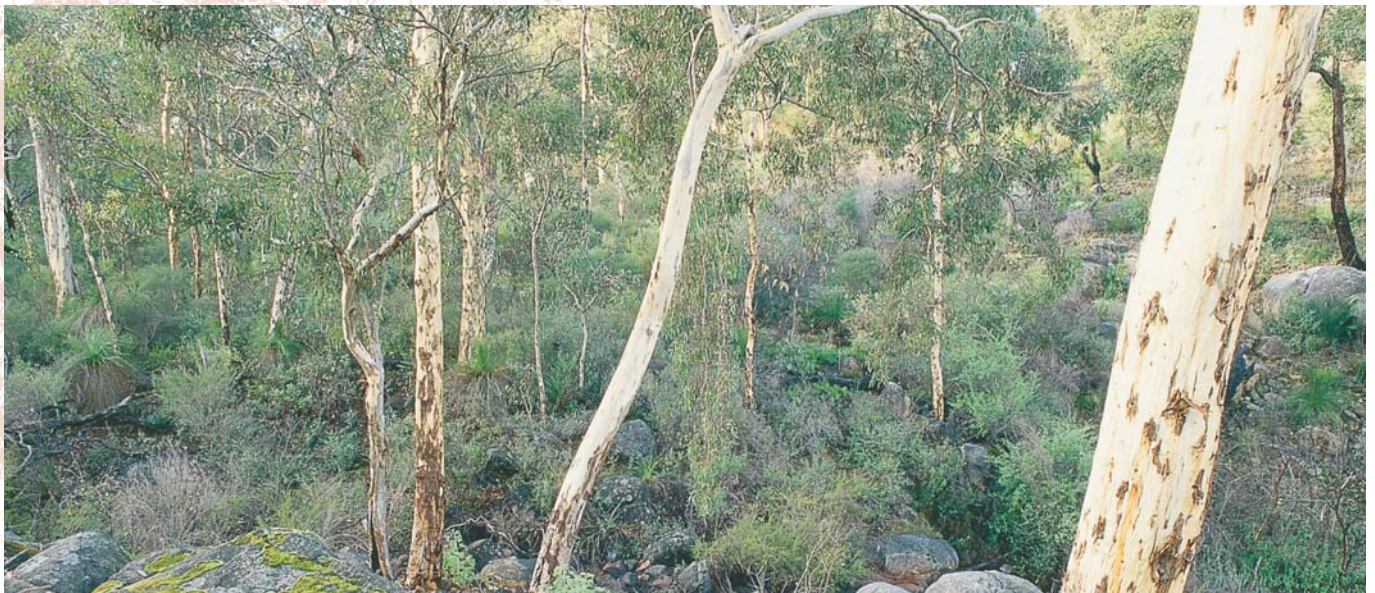
The WRG intends to communicate on the progress of research, current activities and other information to interested sectors of the community. The group will work with stakeholders and communities using newly acquired knowledge to influence future research directions and better understand the nature of the decline.

Research directions

With the support of the WRG, CALM and the University of Western Australia (UWA) have commenced a study into the causes of wandoo decline. Two research lines are being followed. The first examines wandoo's water use patterns and its tolerance to drought as compared to other co-occurring eucalypts. This is especially relevant in the context of the current drought that may have weakened trees making them more susceptible to insect and pathogen attack. Also, the genetic variability of different wandoo populations will be assessed.

The second research line is investigating the role of pests and pathogens in the decline. Research conducted in 2003 found extensive insect damage in bark and sapwood tissues of declining branches. Ringbarking borers were found on healthy and declining trees, whereas a particular type of borer (denoted Type-1) was found to be associated with fungal cankers, on every declining branch sampled. The findings have provided the impetus for a PhD study commenced in 2004 in the area of insect-fungi relationships on wandoo. The project will assess the role and nature of the interaction between Type-1 borer and fungal pathogen(s) in wandoo decline.

Coordination between both research lines will allow a model to be developed to understand the key variables that contribute to the decline of this important woodland species.



Eucalyptus wandoo in valley below North Ledge, proposed Mundaring National Park. Photo - Chris Garnett

Key stakeholders and active partners of the WRG:

CALM, Water Corporation, Greening Australia WA, Beverley Naturalists Club, Worldwide Wildlife Fund (Woodland Watch), Department of Environment, University of Western Australia, Forest Products Commission, Western Power, York LCDC, Cranbrook LCDC, Community Representation.

For further information on the work of the WRG, call Liz Manning, Executive Officer of the WRG, on 0427 412 292, or Chairman Alan Sands on 9368 4399.