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Callitris woodlands in southern Western Australia: ancient landscapes,
contemporary issues

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Abstract: Western Australia is renowned for its iconic tall forests of jarrah, karri and tingle in the mesic south-west corner of the state. Less well known, but of equal interest and importance are the extensive woodlands of the semi-arid zone. These ecosystems occur on land surfaces of great antiquity, with *Callitris* sp. prominent as a small to medium sized tree. Five species of *Callitris* occur in Western Australia, two of which are endemic to the state. Of these, *C. preissii* and *C. columellaris* exhibit remarkable flexibility in the sites on which they occur and in their growth form, varying from small stunted trees on granite and ironstone substrates through to tall trees on more favourable sites. Their longevity and distinctive growth rings make them well suited to dendrochronological studies which could be of considerable significance given projected climate change scenarios for south-western Australia. Limited studies undertaken to date have demonstrated the feasibility of establishing cross-dated chronologies extending back 400 years. Reliable tree ages from *Callitris* are also valuable in re-constructing fire histories within woodlands. Extensive fires are a regular occurrence in the southern woodland zone, and there is uncertainty as to whether this was the case in pre-European times. Much of the northern woodland zone has been managed as pastoral lease for more than a century, with some areas in obvious decline. Recent strong demand for iron ore exports has stimulated exploration and mining of banded ironstone formations throughout the semi-arid zone. The forestry profession has a long association with the woodland of southern Western Australia through its management of harvesting operations for sandalwood and mining timber. Opportunities for the profession in the future include raising awareness of the value of woodlands, managing fire regimes to optimize carbon sequestration in long-lived woody vegetation, and unlocking information about past climate variability.