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Benefits of adaptive management and synthesis of biodiversity

Australian Forestry article released

Authors Sue Baker and Steve Read from the Division of Forest Research & Development, Forestry Tasmania, the CRC for Forestry and the School of Plant Science, University of Tasmania, Hobart discover the biodiversity benefits that come when a variable retention approach to forest harvesting and regeneration is used.

Released in *Australian Forestry* (Vol 74 Number 3), “Variable retention silviculture in Tasmania’s wet forests: ecological rationale, adaptive management and synthesis of biodiversity benefits” notes that clearfell, burn and sow silviculture is a practical approach to harvesting wet eucalypt forests, and gives good regeneration in harvested coupes, but is predicted to lead to losses at the coupe-level of mature-forest species and structures that would survive into stands regenerating following natural wildfire. Variable retention silviculture is guided instead by the spatial patterns of the natural disturbance regime, which in the case of Tasmania’s wet sclerophyll and mixed forests is occasional, intense wildfire.

Baker and Read have synthesised biodiversity findings across many taxa and habitat features (birds, litter beetles, vascular and non-vascular plants, lichens, fungi, tree hollows, and coarse woody debris) from the various configurations of variable retention in the Warra Silvicultural Systems Trial, established in 1997. The results from Warra show that retaining forest in aggregates is the optimal way to ensure coupe-scale persistence of mature-forest biodiversity. In addition, aggregates will facilitate recolonisation of harvested areas by mature-forest species (‘forest influence’), and provide connectivity across the forest stand, especially as the regrowth forest increases in height. Variable retention thus leads to biodiversity benefits for mature-forest species within the harvested area, and complements the reservation of forests elsewhere in the landscape. The success of the Warra trial has led to harvesting of more than 50 aggregated retention coupes in mature forest across Tasmania in the last few years.

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