

Biodiversity responses to alternative silvicultural treatments in the Silvicultural Systems Trial (SST)

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Forestry Tasmania established the Warra Silvicultural Systems Trial (SST) to compare clearfelling with alternative treatments in wet eucalypt forests. An important objective for an alternative harvesting system is that it can maintain and/or more rapidly regain mature forest biodiversity elements compared to clearfelling.

A series of long-term studies was therefore established in the Warra SST to monitor important types of forest biodiversity in clearfelling and unlogged forest and in the following alternative silvicultural systems: clearfelling with

understorey islands, dispersed retention, and aggregated retention. Some groups were also surveyed in stripfell and small-group selection systems. The research focussed on vascular plants, bryophytes, lichens, birds, ground-active beetles and habitat trees. These biodiversity studies found that alternative silvicultural systems were advantageous for many mature forest biodiversity elements, but the degree of effectiveness varied both among biodiversity groups and among silvicultural systems.

Aggregated retention was more effective than dispersed retention or clearfelling with understorey islands at maintaining mature forest species and structures in the coupes for the first three years following harvesting. For example, the aggregates provided relatively undisturbed habitat for many birds with habitat preferences for understorey, mid-storey and canopy layers. Beetle species with preferences for mature-forest were also present in aggregates, although some very sensitive species were in lower numbers than in unlogged control forest. Habitat trees (oldgrowth trees with potential nest-hollows for birds and mammals) were retained in much higher numbers in aggregated retention than either dispersed retention or clearfelling with understorey islands.

This research, along with research into eucalypt seedling regeneration, safety, economics and social acceptability, has helped guide Forestry Tasmania towards using aggregated retention as the primary form of harvesting in wet oldgrowth forest.



Aggregated Retention and the Warra Silvicultural Systems Trial