Influence of herbivores on the vegetation and fire fuels of the Perup Forest region of Western Australia

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Abstract

Studies in the southern jarrah (*Eucalyptus marginata*) forest situated in the Perup Nature Reserve indicated significantly higher cover values for plant species inside wire-mesh exclosures after 10 years compared with outside the exclosures. Particular species that were favoured by herbivore exclusion included *Bossiaea ornata, Billardiera variifolia, Opercularia hispidula, Logania serpyllifolia* and *Tetrarrhena laevis*, among others. Plant species showing the greatest decrease in cover outside wire enclosures were found in the faecal pellets of the herbivores of the region. Faecal analyses documented a preference for 42 forest species by the Western Grey Kangaroo (*Macropus fuliginosus*), the Western Brush or Black-gloved Wallaby (*Macropus irma*) and the Tammar Wallaby (*Macropus eugenii*). The Common Brushtail Possum (*Trichosurus vulpecula*) consumed not only leaves of the dominant trees, but sampled species from the understorey, including *Leptomeria cunninghamii* and *Hakea lissocarpha*. Faecal samples of the Western Ringtail Possum (*Pseudocheirus peregrinus occidentalis*) included only forest canopy species. Overlaps in the diets of herbivores indicated the possibility of competition for plant resources, but the polyphageous nature of all Perup Forest herbivores and an ability to shift resource

preference would indicate the food resources are probably not limiting in this region of the forest despite some habitat fragmentation. The polyphageous nature of the native herbivores also indicates that rare plants are probably not endangered due to feeding effects by the animals. Herbivory has strong implications for fire management in the animals ability to reduce fuel loads and preferential feeding choices on fire-regrowth could affect particular species populations.