FIRES, VEGETATION HETEROGENEITY AND SMALL VERTEBRATES IN HUMMOCK GRASSLANDS.

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Fire is a profound and regular disturbance in the hummock grasslands of arid Australia. It may act to create, enhance or diminish "patchiness" in vegetation. The impact of the associated vegetation structural and spatial changes on vertebrates are little understood. Since the decline of Aboriginal burning by the mid-1900's, fire regimes appear to be increasingly dominated by summer wildfires, which may have led to more homogenous vegetation communities. A return to Aboriginal-style patch-burning has been widely advocated as desirable for nature conservation, although there is sparse supporting evidence. Some earlier studies are reviewed.

At a study site in the great Victoria Desert, the relative impacts of spring and summer fires on plant species richness and vertebrate assemblages were studied over six years. In the Gibson Desert, survivorship of reptiles in different-sized refugia within a fire-scar has been examined for four years.

The season of fire (usually correlated to its intensity) proved to be important in determining the extent and distribution of post-fire cover. Major changes in species composition of small mammals and reptiles followed both types of fires. Whilst spring fires usually resulted in increases in species richness in reptiles, some species rapidly colonised and increased their population sizes after summer fires.

The size of refugia was crucial for the survival of many species following fire. Fires which leave few, very small or widely spaced refugia are likely to delay recolonisation by many species for long periods, and may lead to local extinctions if fires are frequent.

ABSTRACTS

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