



## Fire management in northern Australia

### The Issue

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Fire is such an important part of the northern Australian landscape, like it is in savanna environments throughout the world. Most of the fires are deliberately lit by people, including conservation managers. The most common management practice is to burn extensively early (May - June) in the Dry Season when fires tend to be low in intensity. This reduces the extent of higher intensity wildfires that inevitably occur later in the dry season. Land managers and scientists all agree that fire needs to be actively managed in the Top End. The question is not 'Should the country be burnt?', but 'How (when, where and how often) should it be burnt?'. The ecological effects of different fire regimes are inadequately understood, so there is uncertainty over precisely what fire regimes are best for nature conservation.

### CSIRO Research

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In the late 1980s CSIRO established a landscape-scale fire experiment at Kapalga in Kakadu National Park, to test the effects of a range of fire regimes on savanna woodlands. The study covered a wide range of topics, including fire behaviour, atmospheric chemistry, nutrient cycling, hydrology and stream dynamics, vegetation, arthropods, and all vertebrate groups.

CSIRO research showed that most savanna plants and animals are remarkably resilient to fire. High intensity fire did not have as much effect as was expected. Indeed, many species are affected more by whether or not fire occurs, rather than by how intense the fire is. This suggests that savanna biodiversity would benefit from improved management of fire frequency, for example burning country once every 3-5 years rather than every year.

Working in partnership with the Bushfires Council NT, the Northern Land Council and the Aboriginal people of Arnhem Land, CSIRO has helped develop the Arnhem Land Fire Abatement (ALFA) Project. The project aims to reduce the frequency of intense fires in Arnhem Land, thereby benefiting both Aboriginal communities and natural ecosystems, and also providing greenhouse abatement.

CSIRO is also collaborating with the NT Government's Territory Wildlife Park on a fire education and research project, as part of the Bushfire Cooperative Research Centre. The fire exhibit, the first of its kind in Australia, will provide visitors with first-hand experience of the effect of fire on biodiversity, and will also serve as a unique long-term education and research facility. Nowhere else in Australia will students (at all levels) and researchers have such an opportunity to study the ecological effects of fire.

#### Research Staff

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#### Collaborators

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