

Landscape management by Indigenous Bush Fire in Northern Territory of Australia

1. Arnhem Land

Arnhem Land (97000km²) is located in north east part of Northern Territory (NT). Arnhem Land that had returned to traditional land holder based on Aboriginal land Rights [Northern Territory] Act (1976) and now managed by representative organization of Aborigines, Northern Land Council(NLC).



Figure. Arnhem Land

Climate in Arnhem Land is tropical savanna and vegetation covering

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<http://www.nomadart.com.au/locations.php>

sandstone is open forest where eucalyptus trees distribute sporadically and shrubbery of *Acacia* and *Asteromyrtus* species spread out. Sclerophyll forests are formed in areas with relative sick sand soil. As for northern Australia generally rainy season starts in November and lasts in April. The average annual rainfall is 1000m-1200mm.

As of 2007, the population number in Arnhem Land is 16230 (Australian Bureau of Statistics 2008). There are only 12 indigenous communities which population is more than 100 people in the land, but many outstations (small hamlets of aboriginal people) are scattered around the communities. Each aboriginal self-governing body manages community and outstations.

2. Aborigine and bush fire

The history of aboriginal bush fire goes back to 50-120 thousand years ago when the ancestor of aborigine migrate to Australia. In general burning is undertaken purposefully from early in the dry season. In the most cases, burning focuses on cured grasses on higher ground, and progressively focuses on moister sites as these dry out with the developing dry season. Such fires are typically of low intensity and small in extent. The net result is a patchy mosaic of burned and unburned areas.



Photo. Bush fire
Source : Cochrane [2005: 9]

Recent ethnographic works explain that aboriginal people use fire as hunting tool. Fire is reported to have been used to produce young grass shoots in burnt areas, which attract game resources such as Macropod and to make easier to hunt them. Such land management practices by using fire called as “fire-stick farming” or “fire-stick ranching”[Murphy and Bowman 2007:238].

3. The impact of Aboriginal bush fire to tropical savanna ecosystems

Since Jones discussed bush fire in late 1960's, many anthropologists and ecologists pointed out its ecological importance. They pointed out that small-scale and well-controlled burning create habitat mosaic of frequently burnt and long-unburnt areas, and such Aboriginal fire management ensured the survival of a diverse assemblage of mammals that are now threatened with localized extinction following the breakdown of Aboriginal fire management[Murphy and Bowman 2007].

It has been also pointed out that regular bush fire contribute to sprees fuels and thereby help to reduce risk of big wildfire causing catastrophic consequences for tropical savanna ecosystem [Yibarbuk et al. 2001].

4. New natural resource management using Aboriginal bush fire

As the ecological importance of aboriginal bush fire to the conservation of biodiversity in tropical savanna become more realized, new natural resource management approach that encourage aboriginal people to undertake traditional bush fire has been applied. For example, in the central Plateau of Western Arnhem Land where bush fire practice had ceased to be undertaken owing to population decrease, CFC (Caring for Country) unit, a implementing body of land management project launched by NLC, started to land management using bush fire in cooperation with Northern Territory Bushfire

Council and local aborigines. CFC unit monitor ecological impact of bush fire to local ecosystem by using aeronautical photographs and satellite picture with the collaboration of Tropical Savanna Cooperative Research Center.

Local aborigines play an important role in land management using bush fire as rangers. This new land management scheme also contribute job creation for Aborigines

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