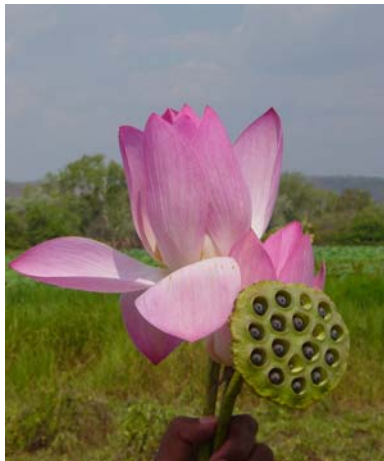


Boggy Plain: Indigenous engagement in fire management

Landscape fire is fundamental to traditional Aboriginal society, playing a key role in natural resource management, as well as serving a variety of cultural and spiritual needs. Regrettably, traditional Aboriginal fire management has been consigned to history throughout most of southern Australia. However, this is not the case in the north, where much of the area is Aboriginal land, and fire management remains an integral part of Aboriginal life. Although Aboriginal fire management has been severely disrupted, much of the traditional knowledge relating to fire management has been retained, and the opportunity still exists to re-apply such knowledge to landscape management.

This opportunity is being realised by a family of traditional owners in Kakadu National Park, who are re-applying Aboriginal fire management at Boggy Plain, a Ramsar-listed wetland on the floodplain of the South Alligator River. Boggy Plain is both a site of outstanding biodiversity and an important place for hunting and harvesting by Aboriginal people. It serves as habitat for species including the magpie goose (historically, up to 85% of the total Northern Territory's magpie geese have gathered there to feed) and the long-necked turtle. These species, along with a range of water plants such as water chestnuts (*Eleocharis* spp), wild rice (*Oryza*) and red lilies (*Nelumbo nucifera*), are important food resources for local Aboriginal people. However, since removal of the Asian water buffalo from Kakadu in the late 1980s, the wetland had become overgrown with hymenachne grass, reducing both biodiversity and food availability for Aboriginal people.



Nelumbo nucifera: an important food resource

To senior traditional owner Violet Lawson, the solution was clear – fire needed to be reintroduced to Boggy Plain. Since 2001, Violet's family have set about burning Boggy Plain based on traditional knowledge handed down from Violet's mother and father. This knowledge has been passed on to Violet's children, and in turn is being passed on to their children. The family has implemented a pattern of repeated burning over November and December when the wetland has limited standing water, and few birds are in residence. The hymenachne is still green, so the first fires just burn the drier bases, causing the grass to fall over and die. This provides fuel for subsequent

fires. The fires are all relatively low in intensity, and the surrounding woodland margins are burnt early in the dry season (April/May) to prevent the flames escaping into the broader landscape.

The family has reintroduced fire into the wetlands of Boggy Plain to re-create a more diverse mosaic of vegetation types. The wetlands, previously covered by dense mats of native hymenachne grass are now much richer in biodiversity and are of greatly enhanced cultural value to Aboriginal people. With support from Parks Australia and the Environmental Research Institute of the Supervising Scientist, Violet's family have been monitoring the changes in vegetation since they began burning. Vegetation change is being assessed using a combination of historical aerial photographs (from 1950 to 1991), Landsat satellite imagery, real-time, high resolution Quickbird satellite images, and ground-based surveys.



Sandra and her son, Calum, burning on Boggy Plain.

More recently, CSIRO has joined the partnership and the project is institutionalised under the national Bushfire CRC. As employees of CSIRO Sustainable Ecosystems, Violet's daughter Sandra McGregor and son-in-law Peter Christophersen are now quantifying the extent to which fire has enhanced hunting and plant harvesting efficiency, and are assessing the contribution this makes to the regional Aboriginal economy.

The project has achieved a range of beneficial ecological, social and economic outcomes, including:

- enhanced biodiversity in Ramsar-listed wetlands within a World Heritage National Park
- enhanced cultural value of the wetlands in terms of increased availability of important food resources for Aboriginal people
- inter-generational transfer of traditional ecological knowledge, from old people to children
- demonstration of the value of combining two knowledge systems, traditional ecological knowledge and western science

The Boggy Plain project serves as an internationally significant model for integrating Indigenous and Western knowledge systems to achieve positive outcomes for both traditional resource use and the conservation of biodiversity. It has received formal recognition as such through its achievement as a finalist in the inaugural Northern Territory Research and Innovation Awards.