Ngarri-djarrang Grassland
Reservoir

SITE INFORMATION NOTE 6

Special Points of Interest

- **Ngarri-djarrang means 'thigh' in Woiwurrung which is the language of the traditional custodians, the Wurundjeri.**
- **The name was selected by Wurundjeri elder Doreen Garvey-Wandin in 2006 and adopted officially in 2012. This area was formerly identified 'Central Creek' Grasslands.**
- **Area– 9 hectares**
- **Reserve officially gazetted in 2002.**
- **121 species of native plants have been recorded here.**
- **Considered of State significance for conservation due to high diversity of flora including endangered plants and communities.**
- **Merri Creek Management Committee undertakes works here on behalf of the managers, Darebin City Council.**

Nature that needs humans

Conservation still conjures images of saving wilderness where the human touch is absent. However, we have come to understand how some 'natural' landscapes have been shaped by humanity and rely on our continued involvement if they are to survive. Ngarri-djarrang Grassland is helping us re-learn this ancient reality.

An age-old relationship recognised

The best native grasslands are a diverse mixture of native grasses and wildflowers including lilies, orchids, short-lived daisies and other herbs from aged rootstocks. Early European explorers marvelled at the park-like open plains growing on friable, spongy soil. However, these explorers failed to recognise this was not 'natural,' but the result of thousands of years of careful management by the land's traditional custodians.

Evidence from artwork, journals and plant lifecycles show how Aboriginal communities had a profound impact on grassland ecology. Frequent burning and digging for roots of food plants produced a mosaic of habitats at different scales.

Aboriginal's fires removed old, unpalatable grass, promoting new growth that attracted Kangaroos and other grazing animals. Burning also made it easy to find native food plants like Plains Yam Daisy that rapidly re-sprouted. Aboriginal people were presumably well aware that the burnt ground, softened and aerated by digging, encouraged small useful herbs and food plants to germinate and multiply.

European occupation swiftly destroyed this age-old relationship. Only recently has the central role of traditional human management been appreciated around the world in what are sometimes described as 'cultural landscapes.' Today, this area's traditional custodians, the Wurundjeri, are partners in a search to rediscover Traditional Ecological Knowledge that might recover grassland function and diversity.

Community to the rescue

Patches of diverse grassland, like Ngarri-djarrang, survived where fires and disturbance by Europeans inadvertently continued some ecological processes established by the Wurundjeri.

Ironically, it was a freeway reservation in the 1960s that prevented this grassland being covered in houses. Community opposition between the 1970s, and 1990s helped stop the 'Merri Freeway' which was to pass through here. However a second ten-year campaign, led by Friends of Merri Creek, followed to ensure the land was not again threatened by housing development. Finally, in 2002, official protection was extended to this native grassland and Darebin City Council accepted responsibility for its management.

Grassland management today

Over 93 species of unwanted exotic plants, 'weeds', have been found here.

If left untreated, weeds like Canary Grass and Chilean Needle Grass could gradually smother all indigenous plants. Weeds originate from all countries (even Australia), and arrived as garden plants, pasture plants and accidentally. The exotic plants have great survival strategies and no longer have to cope with the predators and diseases of their home countries.

Crews must develop high levels of expertise in order to detect and remove new weeds before they have a chance to establish. One weed here, a South American grass (Piptochaetium uruguense), has been recorded nowhere else in Australia!

Eradication of serious weeds will secure the grassland and permit further improvements to occur. Several weeds have been eradicated from this reserve however weed control will remain a priority for many years to come.

Burning for ecological purposes is applied each year in this grassland.

Burns attempt to mimic the traditional burning patterns inferred from historical records and from studies of other diverse grasslands.

Fires maintain the health and reproduction of indigenous plants. About a third of the grassland is burnt annually, aiming to maintain a mosaic of regrowth and unburnt refuge for wildlife. Control of weeds among native plants also becomes much easier in post-burn conditions.

Burns reduce the risk posed by wildfires and are carefully planned to ensure protection of surrounding property and minimise nuisance to local residents.

Grass? Fire? Snakes? Who wants to live next to a grassland?

Native grasslands don't fit comfortably with traditional notions of suburbia. However, dozens of grassland reserves are being engulfed by Melbourne's mushrooming suburbs. So how might people build a connection with these newly 'urban' grasslands?

Grasslands can seem uninviting. It is a challenge to bring to somebody's attention the beauty and interest they contain. Design features can help. At Ngarri djarrang, boulevard roads and a walking circuit around the grassland allows visitors to comfortably appreciate vistas of waving grasses without disturbing wildlife. Signage, information kits and events invite discussion while they explore grassland wildlife, culture and ecology.

Becoming an urban grassland

A series of historical accidents and deliberate efforts has saved a rare fragment of our region's original landscape.

Pre 1830	For thousands of years management by Wurundjeri fostered and shaped local grassland diversity.
1830s	Europeans introduce grazing by sheep and cattle and at the same time displace Wurundjeri management. Sensitive plants and animals become extinct, weeds invade.
Late1800s	A short-lived attempt to cultivate the rocky ground is suggested by the plough lines still visible on aerial photos today.
1950s	This grassland escaped fertilization and sowing of exotic grasses, a process which destroyed much native grassland in this era.
1960s	A freeway reservation was placed over this land.
1970s	Suburbs grew and a drain was cut across the grassland. Illegally lit fires may have helped the native grassland survive.
1980s	Proposed freeway opposed by community and eventually cancelled. A 1987 flora survey identified this area as significant.
1990s	In 1992, management commenced with ecological burning and weed control. In 1997, fences were erected to prevent damage from illegal vehicles. SEE IMAGE ▶
2000s	Grassland protected and final boundaries established in 2002. Darebin City Council takes on management responsibility and a 5 year Works Plans established.
2010s	Management of the grassland includes trials into wildflower re-establishment and collaborations with Wurundjeri tribe.

Adaptive Management

It is important for land managers in southern Australia to learn the traditions that created native grasslands and to adapt these traditions for current conditions.

Grasslands were only recognised as a conservation priority in the 1970s and reserves began to be established for their protection in the 1990s. The current history of management for grassland reserves is short indeed.

Adaptive management is the use of monitoring and trials to assess and adapt management techniques and actions. It is an important approach where action must be applied before all questions about how to best restore the ecosystem are answered.

- **How do we work with Wurundjeri people to re-learn and apply Traditional Ecological Knowledge?**
- **How do we address the new pressures of exotic weeds and habitat fragmentation?**
- **Is current management achieving gains in vegetation quality?**
- **What is the best way to reintroduce plants?**
- **What sequences and timing of fire will promote plant diversity?**
- **What management is most helpful to local wildlife?**

In partnership with the Wurundjeri Tribe, projects are underway to reintroduce past traditional cultural practices into the grassland management.

Replanting root fragments to replace and increase plants is thought to have been part of aboriginal harvesting of tuberous food plants. Aunty Alice Kolasa, a Wurundjeri Elder, lifted the first Chocolate lily in a trial to help understand the process. SEE IMAGE ▲

Another investigation is attempting to put into practice the theory that soil disturbance, resulting from traditional harvesting played a role in fostering herb populations. Many of these herbs, especially daisies, are now vanishing for want of appropriate soil disturbance. This trial builds on academic research by Victoria University.

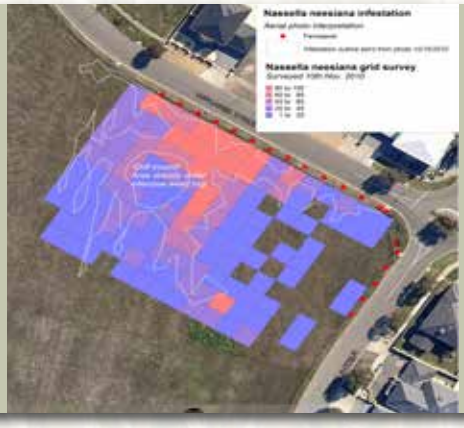
Frequently updated high resolution aerial photography offers a way to improve the mapping and assessment of complex weed infestations. SEE IMAGE ▼

2005

2007

2009

2012



Routine monitoring includes photopoints taken at 23 points across Ngarri-djarrang grassland. Here the pictures document the replacement of weedy Canary Grass with native tussock grassland. Annual quadrat assessments and vegetation quality mapping also track progress toward management goals.

It's not "just grass!"

Benchmarks describing the EVCs in more detail can be found on the Department of Environment and Primary Industries website

Native Grasslands are not uniform.
Wetter, low lying areas and higher, rocky areas support distinct vegetation types that require different management approaches.

EVC 125 Plains Grassy Wetland
Open wetland that is often dry during summer months and dominated by Common Tussock Grass, Small Spikerush, true rushes and Rush Sedge.

EVC 68 Creekline Grassy Woodland
Naturally occuring in low lying areas and dominated by River Redgum with an understorey of grasses including Common Tussock Grass.

EVC 132 Plains Grassland
Treeless grassland on fertile basaltic soil dominated by Kangaroo Grass with a high diversity of other grasses and herbs.

EVC 649 Stony Knoll Shrubland
Shrubland or low non-eucalypt woodland with a grassy understorey. It occurs on low stony rises. The soils are fertile and well drained but shallow with out-cropping rock, causing severe summer dryness.

Stepping stone habitat

Only a small subset of this area's original wildlife still live here. The reserve is cut off from other open areas and surrounded by urban disturbance, in particular, predatory cats. However, some hardy wildlife can make use of such 'stepping stone' habitats.

Wide-ranging birds like cuckoos and Black-shouldered kites breed here. Most surprising has been the survival of a small mob of Eastern Grey Kangaroos which have become accustomed to humans and use culverts and suburban streets to access other Merri Creek parklands.

An evolving vision

Even after twenty years' of management, questions remain about the best way to manage this grassland and what goals we pursue.

Serious weed issues remain. Rare species continue to decline and plant reintroductions appear necessary. Building a community sense of connection to this landscape is an ongoing challenge. The legacy of past impacts is intensified by pressures from climate change and urbanisation.

Emerging knowledge, skills and tools present opportunities to broaden our vision for this reserve's future. In doing so, we hope to generate a case study for similar areas across the Victorian Volcanic Plains.

Opportunities to be involved in this site and information about MCMC's other work can be found at www.mcmc.org.au

Merri Creek Management Committee

Merri Creek Management Committee Incorporated (MCMC) is an environmental coordination and management agency formed in 1989 to achieve a shared vision for the waterway corridors of the Merri Creek Catchment. Its members include all the municipalities in the catchment: the Darebin, Hume, Moreland, Whittlesea and Yarra City Councils plus Mitchell Shire Council, the Friends of Merri Creek and the Friends of Wallan Creek. Representatives of these member groups form a Committee of Management which develops policy and guides the activities of MCMC's approximately 20 staff. The primary purpose of MCMC is to ensure the preservation of natural and cultural heritage, and the ecologically sensitive restoration, development and maintenance of the Merri Creek and tributaries, their corridors and associated ecological communities.

Reinforcing Grassland Ecological Values in the Merri Valley North of Melbourne

CARING FOR OUR COUNTRY

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Printed October 2013 on 100% recycled paper