

Mimosa Oval

It's environmentally damaging
to replace natural grass with
artificial turf:
read on and find out why

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STEP Inc.



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Mimosa Oval: geological and physical setting and flora

Overview and conclusions

This report describes aspects of the setting of Mimosa Oval that should preclude it from consideration for artificial turf. The bushland fringing the north and west side (at slightly lower elevation) is not standard sandstone ridgetop woodland but should be considered as endangered Duffys Forest Ecological Community due to its close resemblance botanically and geologically to bushland already formally classified thus next to North Epping Oval 2 km away on the opposite flank of the Lane Cove Valley. It could easily be at risk from heavy rain flowing off impervious sportsfield surfaces.

The general risk to bushland from adding yet another impervious surface to a landscape already overburdened with concrete, brick and bitumen is well illustrated by the death of mangroves by unmanaged overflow from the Blackman Park sportsgrounds at Lane Cove West, illustrated herein by a series of Google Earth images. *Blackman Park is a far bigger sportsground than Mimosa and a significant area of natural grass remains there, but this is not an option at Mimosa!* Ku-ring-gai Council, which rightly prides itself for its sound environmental management, should not risk environmental damage by carrying out this conversion.

Geological and physical setting

Mimosa Oval lies at around 115 m asl on a broad, gently undulating ridgetop. It's flanked to the east by a valley approximately 60 m deep through which flows the creek system that feeds Avondale Dam and eventually the Lane Cove River to the south.

Broadly speaking, the geological framework of the landscape is Hawkesbury Sandstone but this is overlain on ridgetops by Ashfield Shale of the Wianamatta Group, with the sandstone leading up to shale via a narrow zone of shale-sandstone transition strata called the Mittagong Formation. It's the latter that underlies bushland reserves such as Auluba and the gentle lower sweep of Sheldon Forest downhill

from the scout hall. This strata also forms the platform for several bushland reserve sites on the opposite shoulders of the main Lane Cove Valley, and it is also the capping to the ridgetop at Mimosa Oval. Mittagong Formation shales and sandstones tend to be iron rich and their usual ridgetop setting has made them susceptible to laterite formation (opposite).

It's important to understand this geological setting and its potential influence on flora and disregard the government-published small-scale (1:100,000) geological mapping which largely overlooks the Mittagong Formation.

Flora of the oval margins

Mimosa Oval is bordered on its north-west and north-east margins by around 2 ha of dense, low woodland that is unique in the area in the common presence of one particular tree species, Narrow-leaved Stringybark *Eucalyptus sparsifolia*. This small to medium tree you will spot immediately from its stringy bark and rather sparse, straggly appearance. It closely resembles the Common Sandstone Stringybark *E. oblonga* seen in Ku-ring-gai Chase and with which it can hybridise. Some botanists do not recognise the two as separate species, but the juvenile leaves of *E. sparsifolia* are narrower, hairy and indented as pictured opposite. The tree is accompanied by scattered Red Bloodwood *Corymbia gummifera* and Broad-leaved Scribbly Gum *Eucalyptus haemastoma*. In 2009, Gosford Wattle *Acacia prominens* was photographed (opposite) in the bushland. This uncommon but beautiful species may have been a garden escape, but *Baeckea diosmifolia* (opposite), also uncommon, was photographed in flower at the time of writing and is definitely indigenous.

Correlations and implications of geology and flora

In the presence of narrow-leaved Stringybark and the lateritised sandstone-shale transitional geological setting, the plant community strongly resembles that of the bushland adjacent to North Epping



Mimosa Oval bushland geology and flora

1: Weathered and lateritised siltstone fragments in shallow stony soil along one of the access tracks. Such rocks and their shallow soil are typical of the transitional strata at the top of Hawkesbury Sandstone and are common hosts for Duffys Forest Ecological Community

2: Dense woodland dominated by Narrow-leaved Stringybark and Red Bloodwood. The inset illustrates regrowth of juvenile stringybark foliage.

3: *Baeckea diosmifolia*, an attractive shrub to 1 metre tall and in flower at the time of writing.

4: Gosford Wattle *Acacia prominens*, one of the most beautiful wattles in flower, and distinguished by a prominent gland on the margins of its phyllodes. Photographed in 2009 but not relocated currently.



Oval. This has been formally mapped as Duffys Forest Ecological Community in the Hornsby Shire flora survey carried out and periodically revised by Peter and Judy Smith (P&J Smith Ecological Consultants). Smith and Smith have taken a necessarily broad view of the Duffys Forest community, and Brown Stringybark *Eucalyptus capitellata*, sometimes regarded as a key species, is often not present, and actually isn't recorded at Duffys Forest itself where the common stringybark is *E. oblonga*, already highlighted above as close cousin of *E. sparsifolia*.

Conclusions

The lateritised sandstone-shale transitional geological setting, the presence of a tree species that is unusual in the area, and the similarity therefore to the Duffys Forest bushland adjoining North Epping Oval makes a special case for the Mimosa bushland. If it hasn't already been considered as Duffys Forest Ecological Community then it certainly should be, and urgently. But whatever the determination, this vegetation is protected as a Biodiversity Stewardship Site. Its risk from potential drainage flooding from impervious artificial turf is shown by the freshwater drowning of mangroves at Blackman Park (next section).

References

- Eucalypts of the Sydney Region, 2nd edition; Van Klaphake, 2010
- Field Guide to the Bushland of the Lane Cove Valley, John Martyn, STEP Inc, 2010
- Native Plants of the Sydney Region, Alan Fairley and Philip Moore, 3rd edition, 2010
- Native Vegetation Communities of Hornsby Shire prepared for Hornsby Council by P & J Smith August 2007
- Native Vegetation of the Cumberland Plain, map 10, NSW National Parks and Wildlife Service, October 2002

Disruption of natural drainage in our landscape has already gone too far and must be curtailed where possible

The following series of historical Google Earth images illustrates what can happen when a project underestimates the extremes of climate, thereby exposing the landscape to the destruction of significant portions of a plant community. The sequence from 2014 to 2018 is of Blackman Park in Lane Cove West where a sports oval was converted to artificial turf in the period 2014-15.

Image 1: 1/1/2014

This pictures the sportsground area in its original grassed form created from leveled waste in a site that had been quarried for sandstone. Healthy mangroves of both local species fringe the river in a border some 30 m wide.

Image 2: 8/10/2015

The conversion of the eastern oval is now complete, with drainage and detention pond fully functioning, designed to cope with runoff from the impervious surfaces, but there's already a sense that the mangroves below the exit of the drainage are changing colour for the worse.

Image 3: 10/10/2016

Only a year later, the mangroves are now largely dead along a 40 m stretch fringing the river at the point of drainage outflow.

Images 4 and 5: 12/3/2018

Damage complete: there's no recovery and natural revegetation hasn't occurred.



Image © 2019 Aerometrex





8/10/2015

2

2002

Image © 2019 Maxar Technologies



Imagery Date: 8/10/2015 33°48'52.17" S 151°08'49.83" E elev 13 m eye alt 736 m



10/10/2016

3

Image © 2019 Maxar Technologies



2002

Imagery Date: 10/10/2016 33°48'52.17" S 151°08'49.83" E elev 13 m eye alt 736 m



