



North Head Sanctuary Foundation Inc

Custodians of North Head

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Sanctuary

“a place protected by law where flora and fauna are left undisturbed “

The Macquarie Dictionary

Harbour Trust need your input on its new plans. See <https://www.harbourtrust.gov.au/en/community/public-consultation/north-head-sanctuary-consultation/> Please read all the plans for North Head. It is important to have your say in how you want North Head to be.

Education Room - Bandicoot Heaven

We are open on Saturdays and Sundays 10-4, with a COVID-safe plan in place. New volunteers welcomed. For more information, please contact Judy Lambert on twsombat@iinet.net.au

Native Plant Nursery

We can always use more hands to help with planting and weeding.



If you would like to join us, please call in any Tuesday or Friday morning between 8am and noon to have a look. We do not work in heavy rain. You need to be a member of North Head Sanctuary Foundation to join us. For more details, please send an email to northhead@fastmail.com.au

Fire as a tool in ESBS recovery: An update

Judy & Geoff Lambert

Since 2012, NHSF has been working with fire agencies and botanists with expertise in both coastal heathlands and fire ecology, to examine the impacts of hazard

reduction burns on the Critically Endangered Eastern Suburbs Banksia Scrub (ESBS) at North Head. Like many other plant communities in Australia, ESBS benefits from fire at appropriate intervals to restore its diversity and vigour. Left undisturbed, ESBS becomes dominated by Coast Tea-tree (*Leptospermum laevigatum*). We've previously found that 1-3 years after controlled burns at North Fort and next to the Third Cemetery, the ESBS had more species and more robust plants than had existed before the burn. However, these results were dependent on excluding rabbits (which eat many of the emerging seedlings).

Another planned burn behind the CrossFit gym and along North Fort Road in May 2018 gave us a further opportunity to explore the benefits of fire for maintaining ESBS. With input from the Harbour Trust and Australian Wildlife Conservancy, we put in place 32 5x5metre quadrats in which we worked with botanists Dr Belinda Pellow and then Dr Kate Hammill, to assess the plant cover, numbers and average heights of the various plant species, and their growth stage in four 1x1m plots in each quadrat. In addition to these measures used in the 2018 study, we also assessed the intensity of the burn in each of the 32 quadrats (half of them fenced to exclude rabbits and half unfenced).

Botanical surveys were done before the burn and again in October 2019 and October 2020.

We've not yet finished detailed analysis of the large amount of botanical data collected. However, we have found huge variability from one quadrat to another, but no direct relationships between plots burnt at high, moderate or low intensity.



COOL

HOT



From the top down, 1 year pre-fire, Early post-fire, 2 years post-fire

The results suggest that fire intensity is not a key factor in ESBS restoration after fire.

Comparing the botanical data with rainfall patterns over time strongly suggests that available moisture in the early stages of post-fire recovery is critical, as is exclusion of rabbits during the post-fire period.

As discussed in our presentation at the Nature Conservation Council's recent national Bushfire Conference, this raises serious concerns about the future of ESBS as climate change brings less frequent, but more intense, rainfall events.

Cellular slime moulds

Peter Macinnis

The slime moulds aren't a pest, and they live on the oval at North Head. When I was a lad, they were treated as a fungus, something for mycologists, to work with. They can just as easily be regarded as animals, which reminds me of what my favourite zoology teacher said once when we were discussing the place of echidnas. "There is no law to say that animals have to conform to our laws of science. Rather, our laws have to conform to the animals."

Anyhow, when they get on your lawn, slime moulds make a neat mildew-like coating, which is why they used to be regarded as fungi.



This is what you may find in the early morning.

When we look more closely, we discover a set of independent cells like amoebas. These move around the soil, engulfing bacteria and the like, but at times, the cells begin to release a chemical signal which basically says, "let's have a party!". When the signal is strong enough, all the cells in an area, up to 125,000 of them get together to make something the size of a large slug.

At times, the patch can resemble dog vomit as it creeps over the lawn at about one millimetre an hour, recycling dead stuff. Then when the time is ripe, the white, grey, tan, red, pink or yellow 'mildew' mass makes large numbers of spores and the process starts again.



From the mulch heap, north end of the oval.

Sometimes, this mildew-like covering can block the sun from a few grass leaves, making the leaves yellow, but no real harm is done. A former mycology teacher described to me how somebody we both knew (names have been suppressed to protect the guilty) once worked as a government agriculture and gardening advisor. When people called Mr X and described this problem *thing* on their rose stems, he always told them to hose it off. This, said my teacher with a grin, made conditions even more suitable for the slime moulds. Even down-trodden slime moulds need their friends— and you, as a lawn lover, can afford to be among them!



A close up of a lump about 6cm x 6 cm

Tech extras:

Look them up as *Acrasiales*, *Acrasiomycota*, *Acrasiomycetes* or *Acrasea*. Their method of getting together is called *quorum sensing*, and that's worth a piece on its own, maybe next month.