



North Head Sanctuary Foundation

Custodians of North Head

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Annual General Meeting

Saturday 8 October at 2pm in our Education Room - Bandicoot Heaven – Building 20. There will be a walk around the Nursery and the areas that we have planted nearby including the old oval.

At this meeting elections will be held for all positions and updates given for the last financial year.

If you are not a member of NHSF- please consider becoming one.

Education Room - Bandicoot Heaven

Our community education room is open 10am to 4pm Saturdays and Sundays in Building 20.

We'd welcome some new volunteers to help staff Bandicoot Heaven. If interested, please contact Judy Lambert at twswoombat@optusnet.com.au

Native Plant Nursery

If you would like to join us any Tuesday or Friday morning between 8am and 12noon, planting, removing weeds and doing maintenance, just turn up or email:

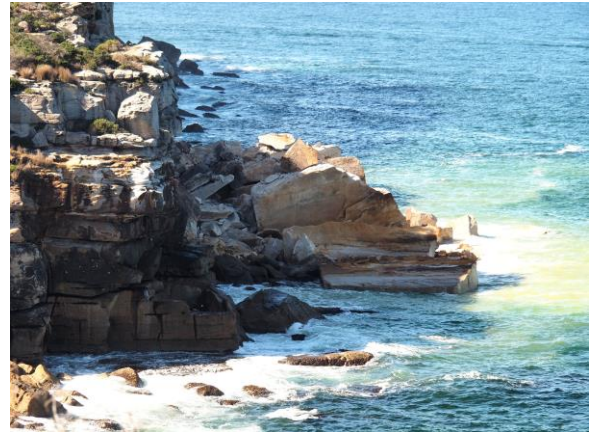
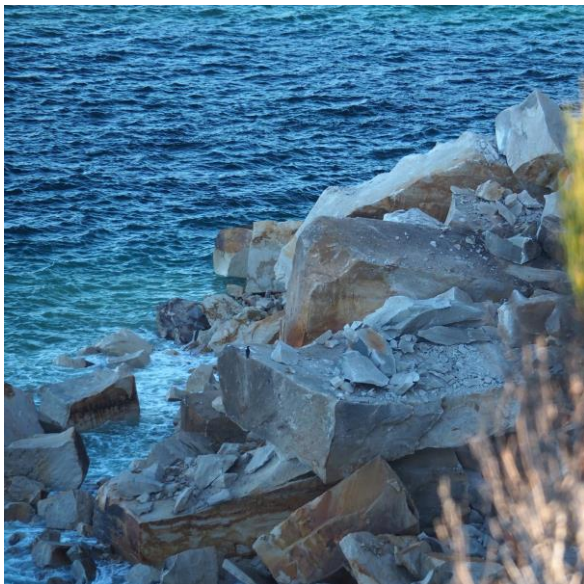
northhead@fastmail.com.au.

The Great North Head Calamity

Peter Macinnis

Philosophers who argue about trees falling in a forest where nobody hears them fall, now have a new conundrum, this one involving a rock falling and nobody hearing it.

At some point, one Wednesday in August, some rock came down off the cliff, between the Hole in the Wall track and Fairfax Lookout. Perhaps somebody heard a bang, or two bangs, but that was it. Nobody seems to be sure.



I picked up a rumour on the web, and hurried off to gather photographs. I was just in time, because the panic-merchants were already reacting wildly, fearing that the whole cliff was about to come down. As I write this, quite a few weeks later, the best access points are still blocked off. The shots above came from those two points, because I beat the authorities to it, assessed the safety, and went in.



The panic was based on a fear that "the whole cliff might come down". It will, one day, but not right now, and they blocked off unrelated bits of coast in any case. I gave up a promising career as a

management consultant in 1990 to avoid dealing with flailing knee-jerk managers like these. To manage risks, you need to understand the facts and the principles.

Rocks are peculiar solids, filled with flaws, planes of weakness called joints, and geologists have a bit of trouble accounting for them. The best explanation is that when the sediment becoming rock is buried deep enough to become rock, it is under pressure, and later, as it rises to the surface when erosion uncovers it, the rock expands and planes of weakness develop. All rocks have joints in them, so there is something missing in that explanation. Anyhow, joints are there, and rock falls off when a joint is sufficiently undermined. The joints shape our cliffs, keeping them vertical.





Our Hawkesbury sandstone generally has two sets of joints, more or less at right angles to each other, and you could write a book about them (in fact, I'm doing two at the moment, one for young people, the other for adults).

Some of the sandstone beds are less resistant to weathering, the way that rocks "rot", some of the beds in the sandstone are more like shale, and erode out, undercutting the beds above. Inner North Head has two clear undercuts.

When the undercutting goes right under a joint, the situation is right for a block to fall, and that is what happened. It wasn't the whole cliff, just a block weighing perhaps 600 tons (my guesstimate): not nice to have land on you, but not Armageddon, either.

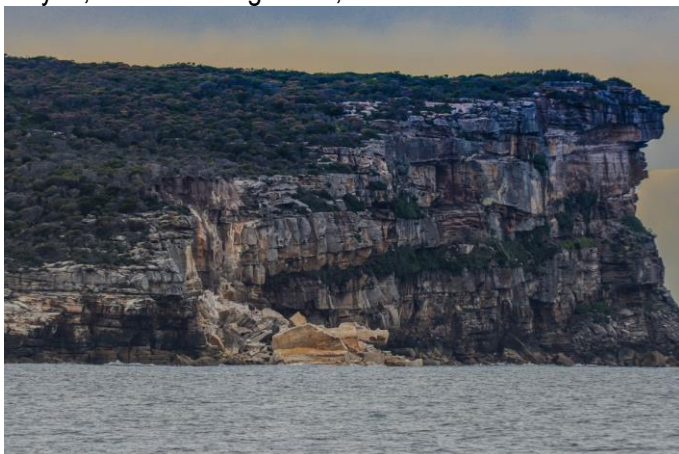


Photo Ian Evans

The last time we saw a fall like that was in January 1931, and it was called a landslide. The process was slower and better observed, beginning with a fissure or cleft near Dog Face Rock. This went from 2 metres to 4.5 metres over a couple of days, and already, "hundreds of tons" had fallen by 27 January — comparable to the whole fall at North Head. Within 24 hours, an alleged 100,000 tonnes had fallen. That puts our fall in perspective, just a bit.

Sir Edgeworth David knew what was what: this process had shaped the valleys of the Blue Mountains, and it had been going on for millions of years, he told the *Sydney Morning Herald* in May 1931. (See <http://trove.nla.gov.au/newspaper/article/16774630>, if you want the full story.)

These events are rare, but inevitable, and for the past few years, I have been photographing likely future fall areas, in the hope of getting a before and after. In geological time

scales, they are frequent, but on our scale, such falls are rare. The sky is *not* falling, Chicken Little!

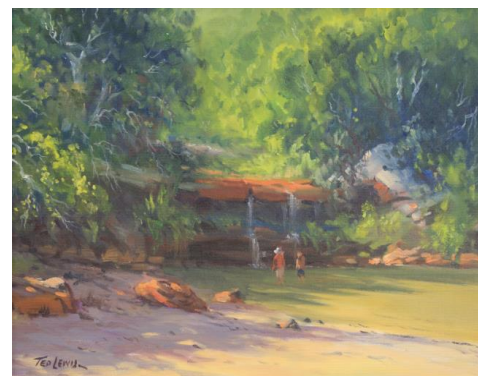
Water on North Head

Geoff Lambert

Every year about 330 megalitres of rain falls on North Head. Where does it go? Unlike Australia as a whole, where only 12% of rain ends up in the sea, most of North Head's rain DOES end up in the sea. At any one time, up to one megalitre is at rest in the "accidental dam" of the Hanging Swamp and a similar amount lies in "Quarry Lake" on the Bluefish Track. A great deal of water — about 100 megalitres — falls on the remnant dune sand of North Head and very slowly seeps out around the edges. The rest flows quickly over the bedrock and into the ocean or Harbour. Some of the latter is sheet flow, but most is in the creeks. These creeks nearly always have at least some water flowing because of seepage from the sand. After heavy rain, the creeks may flow in a spectacular fashion, as sometimes seen in the waterfall at Collins



Beach (photo).



This almost always has some water flowing (Ted Lewis watercolour). Another permanent waterfall exists just

north of the Fairfax lookouts, where the water tumbles some 80 metres into the Pacific Ocean. It exists because of the North Fort tunnel drainage system which funnels a lot of rain through a sump near the cliffs. The creeks are (naturally) very short and total little more than 1.3 km. Some of them reach the sea through spectacular cracks in the sandstone, created by the weathering of softer volcanic rock intrusions.

There is a display of the hydrology of the Hanging Swamp on the wall in Bandicoot Heaven.