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STEP Events, Walks and Talks:

Check our web site www.step.org.au for details of any changes

Sunday, 19 June: Beecroft – Cheltenham Link Track Walk

The Chilworth and Castle Howard Reserves are remnants of earlier bushland that remains following the building of the Hills M2 Motorway, which was opened to traffic in May 1997. This walk will take us through both reserves which are now part of the Beecroft – Cheltenham Link Track – which has been developed by Hornsby Shire Council with sponsorship from Transurban M2. This is an interesting area of majestic Blackbutt Gully Forrest which shows the impact of urban development on our bushland and the work that has been done to preserve the remaining bushland within a suburb community environment

Meet: Western end of Mary Street Beecroft. Park in Mary or Welham St. (Gregory's Map 98 G10 or Sydway Greater Sydney Map 234 B7). Meet @ 9.45 am.
Length: 4km
Duration: 2 hours estimated
Difficulty: Easy/moderate
Bring: Water and sunscreen. At the end of the walk you may join us for coffee at Beecroft Village
Book: By contacting Robert Bracht at Robert.bracht@hotmail.com or 0422 088 305

Tuesday, 21 June talk: The Natural History of Sydney

8 pm, St Andrews Hall, Corner Vernon and Chisholm Streets, Turramurra

David Wilks is the Biodiversity Officer at Ku-ring-gai Council and will present a talk based on his paper in the proceedings of the Royal Zoological Society's "The Natural History of Sydney" which explores the natural history and biological diversity of the Ku-ring-gai Local Government area.

Sunday, 24 July: Historical and Scenic Walk in Garigal National Park, Seaforth

From Ararat Reserve, Grattan Cres, French's Forest walk to the Bluff, check out the Drum Cave, then climb down to the water level and walk around to Bantry Bay Wharf, then climb up to Seaforth Oval and return via the Engravings Track. The focus of the walk is the scenery, rock formations, the historical aboriginal engravings and war time buildings on the foreshore. Option of afternoon tea and strudel at the Austrian Club after the walk.

Meet: At Ararat Reserve outside the Austrian Club at 12.45 pm for a 1 pm start. Gregory's Map 256 F10
Length: 5 to 6 km
Difficulty: Moderate. The walk down from the Bluff involves steep, slippery steps followed by a fairly rough track around the water's edge to Bantry Bay, then steps up to Seaforth Oval
Bring: Suitable shoes, water, snacks, a hat, sun screen, insect repellent and wet weather gear if necessary
Book: Please express your interest (so we have an idea of numbers) and direct inquiries to Jill Green on 9489 8256, 0408 470 043, or email jillpgreen@gmail.com

Continued on the back page

Ku-ring-gai Council gets it half right: things are getting a bit overcrowded

There has been uproar around Ku-ring-gai for many years now caused by the imposition of urban consolidation by the State Government. In the process heritage precincts have been, and are still being, bulldozed to make way for high-rise apartments. Tree cover and bushland has been lost and roads made even more congested. There has been conflict galore, a Planning Panel was imposed to take decision making away from the elected councillors and the consolidation went on inexorably.

We have said in this newsletter often enough, and otherwise to anyone who will listen, that complaining about or opposing something is useless unless you work out what is driving the matter and deal with that at its source. The problem for Ku-ring-gai, and indeed for the rest of Sydney, is that the population of Sydney has been growing and is projected to continue to grow; in fact to double every 50 or 60 years. The state governments over the years haven't had a clue how to handle it. We have lurched from having urban sprawl to having urban consolidation or to having a bit of both. The Green Belt policy of the County of Cumberland Plan was released in 1948 and gazetted in 1951 as a result of the McKell Government realising that post-war growth would put pressure on Sydney's footprint. It, and all the plans following it, have failed dismally as Sydney has just rolled on over farm and bush as successive governments made year-to-year ad-hoc plans to deal with the additional people. We have just seen another lurch as the new State Government has opted for more sprawl and less consolidation. Give it a year or two and that will be reversed and reversed again as panic induced policy ricochets around.

Whenever we have told state politicians or local councillors that unless they confront the population issue they are wasting their time talking about planning, the answer has always been the same: that it's a Federal Government matter about which they can do nothing. That's patent rubbish of course, the proposed carbon tax is a federal matter and the Coalition put it high on the agenda in the last state election. There's something about population that they are frightened of. There's a taboo in the way.

In his Mayoral Message of 19 April in the Council E-Newsletter Mayor Ian Cross, for the first time to our knowledge, has got to the heart of what is causing all the grief. He points out that since the 2006 census Ku-ring-gai has grown from 105,500 people to more than 114,000 and continues to grow at 3,000 per year. He notes that Ku-ring-gai is the eighth fastest growing local government area in NSW. He gets top marks for identifying the cause of the problem but no marks at all

for the solution. Rather than saying that enough is enough, that this cramming in of people has to stop, he advocates more roads, public transport, schools, hospitals and other infrastructure. Given that Ku-ring-gai is already well developed it's interesting to think about where all these additional people and infrastructure is to go year by year. The answer most probably is that, unless someone stops the madness, the infrastructure will go in the national parks surrounding Ku-ring-gai and the people will go into more and more high-rise.

If we just look at roads we can see problems straight away. The Pacific Highway from Hornsby to Artarmon could be widened to 8 lanes and it would still be just as congested as it now is as people took advantage of the additional capacity and decided to drive rather than catch the train, leave for work later, live further from work and so on. It has always been that way and always will be unless mechanisms such as fuel becoming prohibitively expensive or congestion taxes are introduced. And if the highway was widened, immeasurable harm would be done to the businesses and residences along the way. Similarly, the eventual construction of the F3 to M2 link under Pennant Hills Road will not ease congestion in Ku-ring-gai.

Perhaps more trains are the solution but the trouble there is that the existing rail lines are at full capacity and will be even more loaded up by the additional 3000 people every year. Widening the rail corridor is also not an easy construction job. We could do with a university in the area but UTS at Lindfield is being closed down instead of being expanded and instead, of course, we are getting hundreds of apartments.

The excellent Adventist Hospital at Wahroonga will probably solve Mayor Cross's hospital and some of the school needs as, being the beneficiary of a Part 3A determination, it has plans to double the size of the hospital and, of course, add hundreds of apartments. A brand new K-12 school on Fox Valley Road will cater for many more students but the congestion there and on surrounding streets will be awful. Tinkering with the intersections will have no effect, as the Pacific Highway and the Comenarra Parkway are already full in peak times.

Of course it's difficult for Council. It is really just a creature of the State Government which can over-ride or sack it. It seems to us, however, that councillors have an obligation to future generations to stop the rot rather than to meekly acquiesce in the rotting. It's time to clear away the taboo and confront the issue before Ku-ring-gai has 200,000 people and little built or natural heritage left.

The STEP Committee

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The newsletter editor for this edition is John Burke who has written everything not otherwise accredited. Send complaints, praise, comments or letters to the editor to secretary@step.org.au. The STEP Committee does not necessarily agree with all opinions put forward in this newsletter.

Ku-ring-gai Draft Integrated Transport Study

Council called for comment on this study, you can find it at <http://www.kmc.nsw.gov.au/www/html/4438-draft-integrated-transport-strategy.asp>. Rather than commenting on our comments we have printed the STEP submission in full. We would be very interested to hear any views that members have on the issues raised in the Draft Strategy and in our response to it. There is an overlap in subject matter with the previous article *Ku-ring-gai Council gets it half right* but some arguments do bear repeating.

2 May 2011

Dear Sir

Draft Integrated Transport Strategy, S08355

This is a brave undertaking in the context of most of the variables to transport being in the hands of the State Government while the behaviour of adjacent LGAs and their residents is largely out of the control of Ku-ring-gai. Further changes to the planning regime are likely now that there is a new State Government and thus some of the assumptions will become invalid. Nevertheless, there are some worthwhile recommendations coming out of the report. We comment as follows.

1. Sustainability

'Sustainability' refers to a situation where the proposed actions don't downgrade the opportunities or environment for future generations. There is nothing sustainable covered in this report as Ku-ring-gai heads towards an over-populated and over-crowded future.

2. Managing congestion

Various methods of reducing congestion are discussed. For instance building the F3 to M2 connection, restricting parking, better public transport, improving intersections and pinch-spots and so on. The reality is, however, that for Ku-ring-gai it will never be possible to build enough roads to ease congestion. Any happening such as the F3 to M2 connection will simply allow more people to drive instead of catching the train, to decide to live further from work and to leave later in the morning, until the congestion again reaches the point when the reverse decisions are made.

The huge increases in population planned for Ku-ring-gai and, more importantly, for surrounding suburbs including the Central Coast will ensure that any improvements in road capacity are short-lived. That notwithstanding, many of the proposed improvements will improve safety and accessibility outside peak periods and thus are worthwhile.

One factor that would reduce congestion is cost. Significant increases in the cost of fuel might well lead to different transport choices and demographic changes. Similarly, congestion pricing on roads will, if severe enough, also reduce congestion. Despite these possibilities being outside the direct control of Council it is nevertheless appropriate that Council understand them, be prepared for them and to lobby for or against them. Real reduced congestion would of course allow buses to replace cars with huge consequent benefits in cost and greenhouse gas production.

The *NSROC Sustainability Plan* highlights that the use of private cars is trending upwards, despite increased road congestion. Given the goals of the *NSROC Plan*, Ku-ring-gai Council should consider including in the ITS a proposal for the introduction of an urban based levy on the owners of private cars which travel more than a set distance each calendar year. This would serve as a de facto cost increase for local commuters who choose not to use the public transport system.

3. Trains and buses

The North Shore line is already congested and has limited additional peak capacity. Buses will mostly have to battle through narrow roads with other traffic. It is difficult to understand how these modes will be of much help as population inexorably increases.

4. Community transport services – an out of the box solution?

The ITS also identifies a heavy reliance by Ku-ring-gai residents on private vehicles, together with a high level of vehicle ownership and a high proportion of residents who either work from home or are no longer working. It also points out that only 25% of residents live within walking distance of a rail station. These factors happen to combine to provide the basis for a potential solution for residents to enjoy safe and convenient access to and from their nearest rail station. This could occur via an innovative "community taxi" system using local resident's private vehicles to provide access to local and intra-regional bus and railroad systems. Participating home based residents with vehicles in Ku-ring-gai could reach paid pooling agreements with neighbours and local residents, so as to pick them up from home and to drop them off at local transport destinations, both in the morning and the afternoon. This idea is based on successful "privateer" systems which operate in some overseas cities. It would clearly

need State Government legislative support to become operational, but its attractions lie in its use of existing resources to fill many of the needs identified in the draft ITS.

5. Bikeways

The proposal to extend the cycling network is to be applauded. It should be noted, however, that a narrow strip on the side of a narrow road with car parking allowed along it will not attract many users; they are simply too dangerous. It is therefore better to build no bicycle routes than to build dangerous ones.

It should be noted that the proposals for mountain bike trails have almost nothing to do with road cycling and that reference in the report is inappropriate.

6. Major developments

No reference is made to the congestion that will be added to the system from the huge development planned at and around the Adventist Hospital, the UTS site at Lindfield and the sporting complexes and further residential development proposed at the end of Bobbin Head Road at Turramurra. In the first instance the hundreds of additional dwellings, the doubling of the hospital and the construction of a K-12 school on Fox Valley Road will throw that area into chaos that no amount of fiddling with intersections will fix. In the second, the hundreds of additional dwellings having only one exit at Eton Road will cause difficulties there and Bobbin Head Road is at risk of having traffic snarls to rival those that occur on Saturdays at Canoon Road.

7. Time frame

In our view the time frames of 5 years for short-term and 10 for long-term are far too short. 5, 10 and 25-year horizons would be more appropriate. Even if Sydney grows more slowly than the rest of Australia at, say, 1.2% p.a., it will be 33% bigger in 25 years. Some of that will be loaded into Ku-ring-gai but, disastrously for traffic, much will be located to the West and North as well as in the immediately surrounding suburbs. It behoves us to consider the implications of that.

8. Aging

There is discussion in the report on the age demographics. It's true enough that there is a larger aged cohort coming along. It would be a mistake, however, to assume that will be the case forever. One of the great difficulties we have is breaking free from the assumption that social or financial trends are permanent. They never are. For example, 20 years ago the Greiner Government wanted to sell half of Warrawee Public School because enrolments had almost halved in the preceding years. They claimed that the decline would continue because no young people could afford to live in Ku-ring-gai; presumably the houses were to remain empty as the older people moved on. The community argued that that was simply a demographic bubble and that numbers would rebound and won the day and, indeed, the numbers have rebounded. So it will be with the need for aged care; it will reach a peak and then decline and fluctuate.

9. The environment

Most every report that is produced talks about protecting the environment. Every time we add another thousand people to Ku-ring-gai we lose part of our built heritage and natural ecosystems as trees are displaced and bushland appropriated. Transport needs will inevitably produce demands for roads and rail through bushland as well as for other infrastructure. Polluted stormwater runoff will increasingly degrade our streams and their surrounds. The concept that the environment will be protected in these circumstances is risible, and claims that it will all be sustainable are clearly nonsense.

10. Lobbying

The report refers to the need for Council to lobby the State Government and elsewhere regarding needs outside Council's control. We submit that all too often Council has been too compliant in this respect and should be much more outspoken on the very real threats to the quality of life in Ku-ring-gai, so many of which are reflected in the future for transport. There is nothing sustainable about unlimited growth and we face a very unsustainable future.

11. In summary

We recommend that the matters raised above be considered in finalising the Draft Strategy.

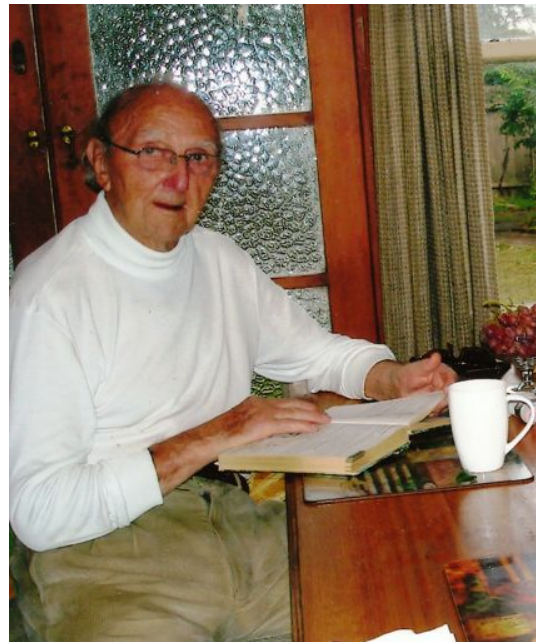
Member note: Don't forget to put the dates for STEP walks and talks in your diary! Details of those in upcoming weeks are on the front and back covers of this newsletter. Of particular interest will be the talk by Kirsty Ruddock on 9 August. Kirsty, the Principal Solicitor for the law firm, The Environmental Defenders Office, has been, is, and will be involved in some of our society's headline environmental issues. A talk not to be missed?

Farewell Ken Double (1926-2011)

STEP member Ken Double tragically passed away on Thursday 7 April at his home in Thornleigh. Ken and his wife Wendy were instrumental in gathering together a group of concerned Thornleigh residents in 1987 to oppose a proposed rubbish dump in the bushland behind Thornleigh Oval. The rubbish dump proposal was finally defeated and together Ken and Wendy went on to form the Thornleigh Area Bushland Society (TABS). Ken and Wendy played active roles in TABS over the ensuing years, with Wendy serving as President and Ken as Secretary for many years. It was as a result of the work done by TABS that Hornsby Council adopted its first bushland code of practise. TABS amalgamated with STEP in 2007.

Ken was born in New Zealand in 1926, but moved to the UK at an early age. He completed his schooling to gain entry to the Queens University, Belfast, where he enrolled in a Bachelor of Science degree, majoring in Geology and Geography. Ken later completed his MSc. During World War 2 Ken served in the RAF, where he developed a healthy and life long scepticism for hidebound authority – ‘rank without brains’ as he once put it. After a stint working in New Zealand, Ken accepted a role in early 1959 as Senior Tutor in Geography at the University of Melbourne. This was followed by a Lectureship at Monash University. Following the death of his first wife Pat, Ken returned to the UK for while before moving back to Australia to join the management team at Sydney University’s International House. It was in Sydney that Ken met and married Wendy.

Ken was renowned for his dry wit, his mordant sense of humour and the breadth, flexibility and acuity of his intellect. He had an exceptionally wide range of his interests, great personal



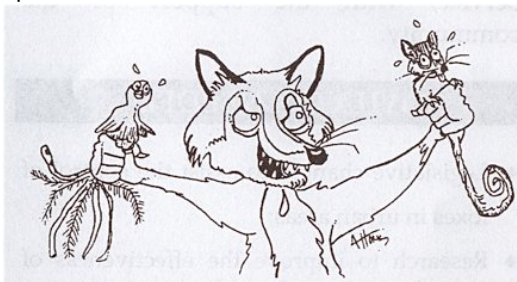
integrity and, above all, enormous charm and sociability. He was constantly both curious and questioning, always challenging and pushing accepted boundaries with his incisive, erudite explication of some current scientific debate. In recent years this was almost always the latest piece of evidence advancing or more commonly, at least in his view, undermining the case for human-induced climatic change. Also commonly expressed was his sometimes despairing take on the latest political contretemps in Macquarie Street or Canberra.

Farewell, Ken. May you rest in peace.

Barry Tomkinson

Turning the table on the feral fox

A baiting programme that has been underway for over 10 years in the Sydney region has met with obvious success. The return of wallabies, brush turkeys and bandicoots, to the chagrin of some of the more garden-proud amongst us, is testament to that. (One Wahroonga resident has had 5 bandicoots drown in his swimming pool in recent weeks but still has abundant



Cartoon thanks to Urban Feral Animal Action Group

daily diggings.) Baiting, while effective in reducing fox numbers, will not eliminate them and research into biological control is under way.

The Urban Feral Animal Action Group reports that it is crucial that there is community support for fox control, that control is supported by legislation, that control programmes are coordinated across jurisdictions and that research into control, and hopefully into elimination, methods are funded. So get used to the turkeys and bandicoots and drive carefully – wallabies are frequently killed near to Sydney bushland, these days even around the Lane Cove Valley.

More on Algae

In Newsletter No. 157 we reported on the use of Algae to take up carbon, to provide fuel and much else. A further report from Giles Parkinson of the Climate Spectator tells of progress.

Algae in the outback

Giles Parkinson

One of the world's leading algae demonstration projects has begun operations in Karratha, in Western Australia's mining-rich Pilbara region, in what could be a prelude to the world's first commercial-size facility of its type.

The Californian-based Aurora Algae officially opens its eight hectare project this week; a \$10 million, six-pond facility – partly funded by a \$2 million state government grant – that will grow algae to be used for fuel, for the pharmaceutical and food industries, and as an animal feedstock.

Algae has been hailed as one of the potential breakthrough products of the 21st century, not just for its ability to act as a replacement fuel – the US Department of Energy recently suggested algae could replace nearly one fifth of imported fuel needs by 2025, and there have been suggestions that an Australian algal fuel industry could be worth \$20 billion – but also for its ability to sequester carbon dioxide and deliver other profitable bi-products.

Aurora originally intended to focus on the fuel market (it used to be called Aurora Biofuels), but because of the strains of algae it grows in its salt water ponds, it has decided to focus – at least initially – on the high yielding omega-3 market. Potential customers include pharmaceutical and food groups seeking a natural, sustainable and cost-effective alternative to fish oil and fermented products.

"This project will be profitable," says Matthew Caspari, the general manager of Aurora Algae's Australian subsidiary. "Omega-3 helps get us there quickly."

Once that profitability is established, however, and the company builds scale, it will focus more on the biofuels and biomass markets. Caspari says the company is already in talks with local mining companies, looking for a substitute to expensive diesel, as well as airlines. It is also looking to sell algae as a protein-rich feedstock, most likely to aquaculture, and as protein-rich powder products for the food and beverage industry.

Aurora Algae has been operating a pilot plant in Florida for four years and, once the demonstration facility is proven, Caspari says he expects a "relatively quick" decision on going ahead with a commercial-scale facility – which it hopes to start production in early 2013.

The key to that will be finance. The \$100 million needed to build the facility is likely to come through an IPO of the parent company, an IPO of the Australian offshoot, or by bringing in more venture capital from the US, where three investors have already put \$50 million into the company. If the company is right about the economic prospects of

the plants, then financing should not be a problem.

Karratha has been chosen as a location because – apart from the state funding – it has plenty of land, sun, and seawater; not to mention emissions to use as a feedstock. And algae needs plenty of each. And it's flat. And it is warm.

Karratha is also home to a large fertiliser plant and other heavy-emitting industries, so Aurora sees no problems in finding a feedstock for its operations.

The commercial-sized facility will be around 400 hectares in size and, Caspari suggests, will produce about 100 tonnes of algae biomass per hectare per year. The capital cost includes a processing plant – the biomass produced in the demonstration plant is being shipped back to the US for processing.

Caspari says producing algae is a lot like farming. "Instead of fields and rows of soybeans or corn, we've got shallow salt water ponds filled with algae," he says. "We do not want to compete with agricultural resources. We are using marginal land and marginal water."

And the beauty of algae is that doubles in mass every day. "Our algae strain is pretty unique. We have spent a lot of time and money growing many different types of algae, and we've developed a lot of knowledge around that. It's a bit like identifying the best variety of corn."

Although algae will play a crucial role in sequestering CO₂, and was a key motivation for the funding under the state government's Low Emission Energy Development fund, Caspari says the company is not building its business case around any carbon credits that it may be able to generate. "We think we are economically viable without them. We didn't want to base the business on something that could change. It's a strong incentive, but the economics don't rely on it."

Nor is he getting carried away by the promise of algae as a cure-all for the anticipated fuel crisis – but he knows it should have a key role to play. "You need a feedstock to create fuel, so we are using waste CO₂. Algae is truly scalable, so you can make a dent in addressing in fossil fuel problems. This will take time, but I do think algae holds more potential than anything else in addressing those problems."

Just last week, the Karratha plant was identified by the US-based *Biofuels Digest* as one of the three key projects in 2011 that may give some indication on whether the level of hype and investment in the algae industry is justified, or whether the sceptics are right. "If their production data and off-take contracts continue to line up and pile up, this is a hot candidate for the next IPO," the magazine wrote.

The new reality: less water, less food, but more people

“China is now at war. It is not invading armies that are claiming its territory, but expanding deserts. Old deserts are advancing and new ones are forming like guerrilla forces striking unexpectedly, forcing Beijing to fight on several fronts. And in this war with the deserts, China is losing.” *Lester Brown, Earth Policy Institute.*

An observant reader of the daily media cycle would have recently noticed a new topic beginning to gain more media space and repeated mentions: food security. The Earth Policy Institute (EPI) in Washington has studied this issue at some length and more details can be found at their web site at <http://www.earth-policy.org/>. In the meantime Barry Tomkinson has put together a selection of recent updates from the EPI which highlight a frightening trend:

3 May 2011

‘... after more than 20 years of wheat self-sufficiency, the Saudis announced in January 2008 that this aquifer was largely depleted and they would be phasing out wheat production. Between 2007 and 2010, the wheat harvest of nearly 3 million tons dropped by more than two thirds. At this rate the Saudis likely will harvest their last wheat crop in 2012 and then be totally dependent on imported grain to feed their Canada-sized population of nearly 30 million people.’

“Yemen, with one of the world’s fastest-growing populations, is becoming a hydrological basket case. With water tables falling, the grain harvest has shrunk by one third over the last 40 years,

while demand has continued its steady rise. As a result, the Yemenis now import more than 80 percent of their grain. With its meagre oil exports falling, with no industry to speak of, and with nearly 60 percent of its children physically stunted and chronically undernourished, this poorest of the Arab countries is facing a bleak and potentially turbulent future.”

“Jordan, with 6 million people, is also on the ropes agriculturally. Forty or so years ago, it was producing over 300,000 tons of grain per year. Today it produces only 60,000 tons and thus must import over 90 percent of its grain. In this region only Lebanon has avoided a decline in grain production.’

26 April 2011

‘Already in 2011, the U.N. Food Price Index has eclipsed its previous all-time global high; as of March it had climbed for eight consecutive months. With this year’s harvest predicted to fall short, with governments in the Middle East and Africa teetering as a result of the price spikes, and with anxious markets sustaining one shock after another, food has quickly become the hidden driver of world politics. And crises like these are going to become increasingly common. The new geopolitics of food looks a whole lot more volatile -- and a whole lot more contentious -- than it used to. Scarcity is the new norm.’

“More alarming still, the world is losing its ability to soften the effect of shortages. In response to previous price surges, the United States, the world’s largest grain producer, was effectively able to steer the world away from potential catastrophe. From the mid-20th century until

1995, the United States had either grain surpluses or idle cropland that could be planted to rescue countries in trouble. When the Indian monsoon failed in 1965, for example, President Lyndon Johnson’s administration shipped one-fifth of the U.S. wheat crop to India, successfully staving off famine. We can’t do that anymore; the safety cushion is gone.”

“That’s why the food crisis of 2011 is for real, and why it may bring with it yet more bread riots cum political revolutions. What if the upheavals that greeted dictators Zine el-Abidine Ben Ali in Tunisia, Hosni Mubarak in Egypt, and Muammar al-Qaddafi in Libya (a country that imports 90 percent of its grain) are not the end of the story, but the beginning of it? Get ready, farmers and foreign ministers alike, for a new era in which world food scarcity increasingly shapes global politics.’

19 April 2011

‘We need an economy for the twenty-first century, one that is in sync with the earth and its natural support systems, not one that is destroying them. The fossil fuel-based, automobile-centred, throwaway economy that evolved in western industrial societies is no longer a viable model—not for the countries that shaped it or for those that are emulating them. In short, we need to

build a new economy, one powered with carbon-free sources of energy—wind, solar, and geothermal—one that has a diversified transport system and that reuses and recycles everything. We can change course and move onto a path of sustainable progress, but it will take a massive mobilisation—at wartime speed

23 March 2011

'Despite China's herculean efforts to expand grain output, several trends are now converging that makes it harder to do so. Some, like soil erosion, are longstanding. The pumping capacity to deplete aquifers has emerged only in recent decades. The extraordinary growth in China's automobile fleet and the associated paving of

land have come only in the last several years.

Overplowing and overgrazing are creating a huge dust bowl in northern and western China. The numerous dust storms originating in the region each year in late winter and early spring are now regularly recorded on satellite images.'

9 March 2011

'Estimating world grain production is becoming more complex and difficult. On the demand side of the equation, there are three sources of growth: the addition of 80 million people per year, some 3 billion people moving up the food chain consuming more grain-intensive livestock products, and the massive conversion of grain to fuel ethanol in the United States.

On the supply side, there was a time when grain production was on the rise almost everywhere. That world is now history. In a number of countries, grain harvests are shrinking because of aquifer depletion and severe soil erosion. Rising temperatures are also taking a toll. And some agriculturally advanced countries have run out of new technology to raise land productivity.'

23 February 2011

'Time is running short, but we can pull back from the edge. While security is a major concern for the world's governments, we have inherited a definition of security from the last century, one dominated by two world wars and the Cold War. Rather than armed aggression, today we are at risk from the fallout of climate change, population growth, water shortages, poverty, rising food prices, and failing states. Military spending worldwide exceeds \$1.5 trillion annually; yet traditional defence outlays do little to address these true threats to our future. Diverting just 12 percent of global military spending can meet the goals of eradicating poverty, ensuring basic health care, stabilizing population, and restoring the earth's natural systems.'

UTS Lindfield sold

Members will remember the long-running saga of the University of Technology campus at Lindfield. The University wanted to sell the whole site to raise funds for development at Broadway. You can catch up on the history at <http://www.step.org.au/UTSlindfield.php>. Community pressure achieved the retention of the university buildings and a significant section of bushland in public hands as well as retaining a full sized oval for community use and a reduction in the amount of housing.

The site has been sold to Defence Australia. University courses will be phased out by the end of 2015.

It remains to ensue that the bushland excised from the site, and that continuous with it, is transferred to Lane Cove NP.

Out with the cat, dog and guinea pig - in with the quoll and sugar glider



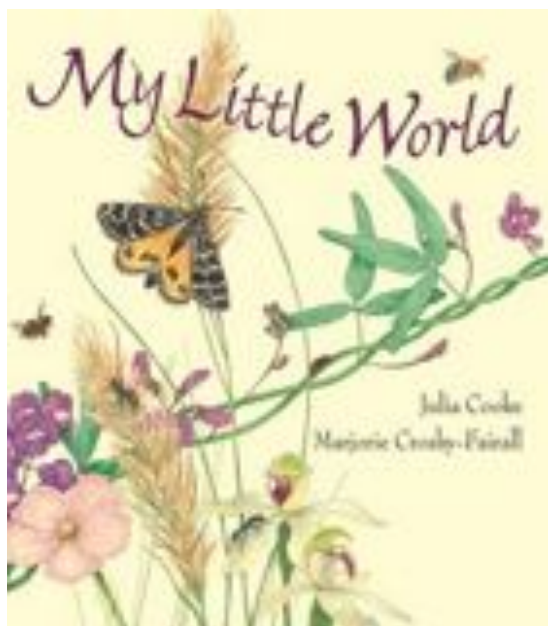
The CSIRO on-line publication, Ecos, has reported that keeping native mammals as pets may help preserve dwindling populations in the wild. It seems, however, that there are potential problems. Most don't breed easily in captivity, have a short life span and could increase their poaching from natural areas in the wild. It seems that sugar gliders (pictured) are already popular pets in the USA but it is illegal here to keep most Australian mammals as pets.

A report in favour was prepared by Dr Rosie Cooney and published by the Rural Industries and Development Corporation. She warns that tight regulation would be required. Daryl Dickson, a wildlife carer is sceptical, 'In my experience, while pet owners love their animals, this does not always translate into interest in their ecology or habitat in the wild' he said. So don't retire the family pet just yet.

STEP member, Julia Cooke is a PhD student in the School of Biological Sciences at Macquarie University. She has written a children's book set in the bush and here relates the process she went through to make sure that the descriptions of the plants and animals was accurate.

Getting the science right in *My Little World*

My Little World is the story of a child finding a world of tiny animals and plants when they can't see the birds and mammals that the grown-ups see on a bush walk. The main message is that you can find the most amazing things by looking carefully - and a different perspective can be useful too. But how could we encourage careful observation in a reader unless we had taken care in selecting and presenting real species?



Full credit for the illustrations, of course, goes to award winning illustrator Marjorie Crosby-Fairall. Her use of colour to create different micro-habitats and her attention to detail is magnificent - to me the pages are bustling with life. I can't speak for Marjorie about the production of the beautiful illustrations, so this post will focus on some of the research behind them in which I was involved.

My Little World is set in Canberra, the bush capital, on Black Mountain (it has the iconic telecommunications tower on top). I visited the site, took photos and wrote the story around what I had seen. This research was sufficient for my English assignment (the reason I wrote the book in the first place), but when it came to producing a real book, we needed more species and full identification. As a plant ecologist, I could use my knowledge of scientific resources to contribute species lists, reference images and check details for Marjorie. It was very different research to my normal studies, and it was fun but quite a challenge!

Creating a plant list was facilitated by online records that amateurs and professionals had compiled (including from online herbaria) specifically for Black Mountain and I could identify species on the mountain myself. *My Little World* includes several species of eucalypt (red box, red stringy bark, inland scribbly gum, candle-bark gum) and a range of plant families including Poaceae (kangaroo and white-top wallaby grasses), Fabaceae - Mimosoideae (red stemmed and box-leaf wattles), Fabaceae - Faboideae (purple coral pea and twining glycine), Liliaceae (nodding blue lily) and ferns, a moss, a sundew and an orchid. The book is set the book in October, when many species are flowering and we used floras to check flowering times.



Scribbles on *Eucalyptus haemastoma* © Julia Cooke

For invertebrate species I identified the species I had seen on site and searched the online records from the Australian National Insect Collection (ANIC) for species collected on Black Mountain and Canberra. The search was a great starting point (possibly the location of CSIRO Entomology/Ecosystem Sciences at the foot of Black Mountain helped!), though not all ANIC records are available online. Other species, such as the blue-banded bee, I was introduced to at a friend's house and was delighted to be able to include. I also wrote to more than a dozen researchers, often with suggestion of species to check details of their distribution and for reference images and sometimes for the suggestion of a snail or fungus for which readily available records and information are more limited. The generosity of the people I contacted was amazing. A range of insect orders are featured including Hemiptera, Coleoptera, Orthoptera as well as a spider (Araneae). We chose species that are easily seen, and those that are harder to spot such as the pollen feeding katydid

(*Zaphrochilus australis*).

Marjorie needed good reference images for all species. The internet was a wonderful resource providing ready access to both amateur and professional pictures. Where an image was heavily relied on, we contacted the photographer for permission to use their images or to request a higher resolution images. Again, we received very generous responses. For some species, photo references just were not available. Line drawings and scientific descriptions were used, and in some cases we took further reference images ourselves. I photographed scribbles, the mines of the larvae of *Ogmograptis* spp. (which differ in morphology between *Eucalyptus* species), and I photographed the head and wing scales of a Meadow Argus specimen borrowed from a university colleague.

As with the plants, we checked the phenology of the animals to ensure they could be seen in October. The Christmas beetle (*Anoplognathus montanus*) which, as their name suggest, are often abundant in December, may be stretching this a little, but as there were several records of Christmas beetles on Black Mountain from October, I let it in!

Species with contrasting distributions were also selected. The meadow argus (*Junonia villeda*) is found throughout Australia, so almost any reader in the country could see one. But then there are other species that have a much more limited distribution, such as the lemon cap orchids (*Caladenia cucullata*). It is the suite of species rather than an individual species that make it specific to the Canberra region. We included two endangered species, the sun moth (*Synemon plana*) and perunga grasshopper (*Perunga ochracea*), which may now be extinct on Black Mountain, but *could* still be found there and deserve attention.

During this process, I realised that an illustration shows more than just morphology. The illustrations depict behaviours, interactions and species co-existence - the way a bee flies, the pattern on a spider web, the way a caterpillar moves. There is a eye-patterned gum hopper (*Platybrachys vidua*) on one of the early pages. When I first wrote the book, the gum hopper I saw was on some grass - I spotted it because the brown animal stood out against the green leaf. The nymphs are more normally found, but better camouflaged, on eucalypt trunks, but are easily disturbed and jump away, often ending up in unlikely places. So, was it better to present typical behaviour or what I actually saw? In this case I chose to portray what I had seen (though a grass tree was substituted for some grass) and we did put a eucalypt on the page too, as a reference to their normal habitat.

Most of the species in the book have their common name written next to them, cleverly incorporated by the designer so that they do not distract the eye from Marjorie's illustrations. At the back of the book I

have provided notes on the focal species from each page, giving the scientific name and some brief ecological details. I hope children will ask questions about the plants, animals and fungi they see in the pictures and these names and information will provide some of the answers. I've compiled teacher's notes too (available [here](#)) that use the book to introduce life cycles, nature diaries, phenology, scientific names, animal behaviour, animal signs, micro-habitats, camouflage, valuing invertebrates and many other issues that are scientific but accessible, important and fascinating for children.



Julia Cooke on Black Mountain

© Shannon Cornish

I hope *My Little World* makes a small contribution to encouraging children to delight in and appreciate nature, and in turn to conserving the natural world. It is unlikely that you would find all the species depicted in *My Little World* if you went for one walk on Black Mountain, but you *could* find them there. I'm sure I didn't get all the details right, but I gave it my best shot and hopefully readers will appreciate that.

Title: My Little World

Author: [Julia Cooke](#)

Illustrator: Marjorie Crosby-Fairall

Publisher: Omnibus Books

Publication Date: April 2011

ISBN: 9781862917903

Format: Hard cover

For ages: 4+

Letter to the editor

Managing bushfire risk – STEP ‘ignorant’?

In the last newsletter we reported on a submission made to Ku-ring-gai Council in response to their Draft Study on managing bushfire risk and have received the following letter from STEP member Irene Timmins.

I disagree with STEP’s recommendation to Ku-ring-gai Council to change the current Tree Preservation Order so that it removes the protection of trees within 8 metres of a dwelling. I also disagree with your recommendation to sever canopy connectivity of trees on all Council land as that would include parks, reserves and bushland.

The long-term interests of conservation are not met by advocating the destruction of critical habitat. The destruction of critical habitat will lead to the extinction of wildlife species dependent on that habitat. STEP has failed to identify that trees and vegetation in close vicinity to bushland and connectivity of canopy is critical habitat. Furthermore, STEP has not recognised the disastrous impacts its recommendations will have on narrow bushland and riparian corridors.

I find it objectionable, how you have stated your case by diminishing the value of good ecological function and setting it against the need to protect human lives and property. All existence is dependent on good ecological function and it is a human survival imperative. STEP also fails to evaluate the cost to endangered species and ecological communities from the loss of good ecological function, which is sadly ironic. How has STEP attempted to offset the significant loss of habitat, hollow bearing trees and the functioning of canopy connectivity, essential to the survival of many native wildlife species, including their vulnerable babies?

In the case of the 1994 devastating Sydney fires, the Lane Cove Valley had almost 85% of the bushland burnt, however, no lives were lost but 13 houses were destroyed. Due to the availability of corridors, abundance of suburban vegetation and larger bushland pockets in the region at that time, impacts to some species of wildlife were minimised. The rampant clear felling of trees and vegetation in our suburbs in recent years, further landscape fragmentation and increased urban impacts have destroyed important corridors and areas of refugia for wildlife.

The recent extinction of species within our region is largely due to land clearing with widespread failure to identify, provide or protect wildlife’s habitat needs. An integrated land management plan that identifies critical habitat and provides for the habitat needs of all indigenous wildlife and migratory bird species within a regional landscape matrix, will avoid disaster. Critical habitat areas should be identified, zoned and protected as WCPZ’s - wildlife corridor protection zones. Biodiversity is a most valuable asset and worth protecting!

From your own submission - ‘The Study makes it clear that there is no prospect of there ever being enough hazard reduction burning done to substantially reduce fire risk to life and property’. STEP has chosen to endorse narrow and ignorant views that set trees as being a threat to human safety. In pursuing such a negative view, STEP has handed to Ku-ring-gai Council a map for the destruction of critical habitat and the extinction of wildlife species in our region.

Editor comment: It is not correct that the submission recommended severing ‘canopy connectivity of trees on all Council land’ including ‘parks, reserves and bushland’. The recommendations related only to bushland adjacent to homes in bushfire prone zones. The fact that there were no lives lost in the 1994 fires does not mean that there could not be huge loss of life in a future fire. We would be keen to receive other member comment – on this or any other topic.

STEP submissions

Readers will soon be able to find all STEP submissions on the web site. We are continually responding to opportunities or requests to make submissions, big and small, on a vast array of issues. Some of these are outside our area of interest and are passed up but many are responded to. These are normally tasked to individual committee members who have expertise and interest in the matter at hand. They then may be reviewed by other committee members who have expressed an interest and may be discussed at the monthly committee meetings. The President is the public face of STEP and signs all external communications. Copies of submissions have often been placed on our web site and a new section is being set up on the site to house all major submissions.

It is not expected that all STEP members or even committee members will agree with every point in every submission. Indeed, it would be surprising if that were the case as we see our role as promoting community debate and, where it seems needed, questioning the conventional wisdom and ideas held dear by some of us in the environmental movement. Committee work on STEP submissions, this newsletter and the like consume between 50 and 100 hours per week.

We of course welcome and encourage input from members and wish that it were a more common occurrence.

Fungi have been abundant and early this season

STEP committee member Dr John Martyn has been recording the bumper crop of fungi. You can see them in full colour in the newsletter section of our web site.

Fungi can pop up at any season during wet weather, but are most prolific in bushland in autumn and early winter. In most years this is May to early June but this year we had almost double our March and April rainfall averages and so, for the past month, you have hardly been able to step off a bush track without squashing a toadstool. And possibly wishing you knew which of them were edible.

This season seems to have brought a proliferation of boletes in the upper Lane Cove Valley. Boletes possess typical toadstool shape but have pores under their caps instead of gills. Internationally the most famous is *Boletus edulis*, or "ceps", a Northern hemisphere native whose culinary qualities are highly regarded, especially in France. Ceps are not native to Australia but have been introduced locally. You are unlikely to see them in our bushland but we do have a number of other bolete species which you will find most commonly in forest and woodland, particular at the bases of eucalypts and sheoaks. The first picture below left is of a smooth-capped species, possibly *Boletellus obscurecoccineus*, where the cap edge is turned up making the pores visible. However, many of the local boletes have extremely shaggy caps, and colours ranging from deep-red to almost white (pictures below, right).



And then there are the normal gilled toadstools in abundance. One type that is common on the margins of bush tracks and trails belongs to the genus *Russula*. The most striking of these have dull pink to magenta caps and white gills (previous page, left bottom) and you will often see them in groups. There are several red-capped *Russula* species. If you see a deep purple, egg-shaped form breaking the leaf litter this will almost certainly be *Cortinarius archeri*. Its colour changes to light-purple then tan as the cap spreads and ages.

Shaggy caps are not just a feature of boletes. The picture at right is of a toadstool of the genus *Amanita*. These pop up through the leaf litter as an egg shape covered by a veil. As the cap assumes a toadstool shape the veil remnants break up and litter the cap with shaggy fragments, and the frill around the stem is also a veil remnant. There are many species of *Amanita* in our bushland. And the famous white-spotted red toadstool of European pine forests (and now Australian *Nothofagus* forests) is an *Amanita*, (the white spots are veil remnants) as is the death cap, the most deadly poisonous of European fungi, introduced here but fortunately only associated with oaks.



Toadstool form is but one of the shapes you will see. Sometimes the cap and stem merge into one concave, fan-shaped cap. Such is the oyster mushroom (below). If you find these, usually growing from dead timber, you might like to drop by at night. Often they glow with a greenish luminescence that is strong enough to be recorded by a camera on a tripod. But beware: unlike the similar-shaped, edible oyster mushrooms of Asian supermarkets, these fellows are poisonous.



And then here are the coral fungi including *Ramaria* and *Artomyces* (at right), tree brackets such as the colour-banded *Trametes versicolor*, and chains and rings of little discs of *Coltricia* in the leaf litter – they have a beautiful, radial silky lustre if you look closely.

These examples are a tiny sample of the fungi world. Estimates vary, but one of them puts the potential number of species in Australia up near 250,000. As far as the Sydney area goes, if you want further information and identification <http://www.sydneyfungalstudies.org.au/> is the site for you; and the best Australian identification book is probably Bruce Fuhrer's *A Field Guide to Australian Fungi* (I bought my copy at Abbey's).

Budget 2011: Lean on Clean

Here in full is an article by Giles Parkinson in *Climate Spectator*, an on-line business publication that can be accessed at <http://www.climatespectator.com.au/>

This was not a good budget for the clean energy industry.

A whole host of schemes were either cut, closed, recycled or pushed back beyond current spending horizons. Some of the measures were expected, or even warranted. Others reflect that Australia finds it hard to see itself as an innovator and developer of new technologies. The importance of the green revolution, the multi-trillion dollar clean-tech industry that the world's largest companies predict will emerge within the next decade does not seem to register in our policy-making.

The most egregious example of this is the so-called Renewable Energy Venture Capital Fund, using \$100 million to try and help develop new technologies and new ventures to overcome the so-called "valley of death" – the funding drought that looms like a grand canyon in Australia.

Such funds normally have a five, seven or 10 year investment cycle – it is usually the time that a new technology or business needs to either fail or move on to the next stage. The government, however, which hopes to leverage private capital, has deferred \$70 million of planned expenditure over 2011/12 and 2012/13 and pushed the spending out to 2024. Perhaps this is a new definition of patient capital.

Elsewhere, funding decisions reflect the government's lack of urgency. The emerging renewables fund, a \$100 million fund designed to help technologies like wave and geothermal develop pilot and demonstration plants (and mostly funded from unused monies allocated elsewhere in past years), remains intact, but the election promise to allocate some of the funds by June 30 will not be met because applications will only be called "in the next few months."

Australia's other big opportunity to lead the world in clean technology – large-scale solar – is also being snubbed. As promised in the election, some \$220 million of the \$1.5 billion Solar Flagships program is being re-directed and pushed over the forward estimates.

This will not affect the two large projects – one solar PV and one solar thermal – that will be chosen for round 1, but it does push out the round 2 developments beyond 2015/16; applications will not be called until 2013/14. The industry considers that it is this second round – with the potential of multiple, smaller projects involving a range of technologies – that is essential for solar to bring its costs down towards wind and provide some **real and much needed competition** in the local renewables market.

The government also appears as reluctant to spend

money on the development of carbon capture as the coal industry itself. It has cut \$421 million over the next four years from the program, with just \$260 million to return beyond 2015. Around \$60 million will be redirected by the government to support the establishment of a National CO2 Infrastructure Plan, essentially looking for sites to store CO2, but about \$12.8 million has been cut from the \$160 million National Low Emissions Coal Initiative, which is designed to support the development and deployment of technologies to reduce emissions from coal use.

As promised in the election campaign, the government has also reduced funding for the much-vaunted Global Carbon Capture and Storage Institute by \$45 million over two years from 2011-12.

Meanwhile, the government is winding up the national solar schools program – which helped schools install solar and other renewable energy systems, solar hot water systems and rainwater tanks – in mid-2013, two years earlier than planned. This will save \$156.4 million over four years.

Some of the money will be redirected. The government is providing an extra \$53.2 million over four years for the Office of the Renewable Energy Regulator, to help it cope with changes to the renewable energy target, while \$13.7 million is added to the solar cities program, \$20.2 million for public information on greenhouse gas emissions by large corporations and \$13 million for additional energy efficiency initiatives. A further \$20 million is being provided to meet the election commitment to establish a biofuels research institute.

What was most welcome were the anticipated changes to the fringe benefits tax relating to company car use, which will generate savings of nearly \$1 billion. But green groups lamented the fact that few of these savings will benefit clean energy or energy efficiency projects. John Connor, from the Climate Institute, said funding commitment for bringing the Carbon Farming Initiative into reality remained unclear.

He also noted: "The Budget papers graphically highlight the economic costs of extreme weather events with a \$9 billion slug on economic growth and extra \$6.6 billion Government expenditures. While it is difficult to say any event is directly linked to climate change it is clear from the climate science acknowledged by the Treasurer that extreme weather events will increase in severity under unmitigated climate change.

"This Parliament is yet to sit the biggest test on how seriously it takes climate change when it considers legislation that can make large companies finally

start to pay for their carbon pollution and allow use of industries and help protect those struggling with bills.”
revenue raised to reduce pollution, grow cleaner

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Lane Cove National Park Plan of Management

This Plan, a while in the making, is now nearing completion and we understand it has passed through the stage of internal consultation and is close to being released for public comment. We look forward to that.

See this newsletter in colour on the STEP web site www.step.org.au

Tuesday, 9 August talk: All about the Environmental Defender's Office

8 pm, St Andrews Hall, Corner Vernon and Chisholm Streets, Turramurra

Kirsty Ruddock, the Principal Solicitor at the Environmental Defender's Office will explain the purpose, role and history of the EDO along with typical case histories and outcomes. The EDO is a not-for-profit community legal centre specialising in public interest environmental law. It has been involved in many high-profile cases and successful in many of them.

Current cases include the Australians for Sustainable Development Inc v Minister for Planning, Lend Lease (Millers Point) Pty Ltd and Barangaroo Delivery Authority and Bat Advocacy NSW Inc v Minister for Environment Protection, Heritage and the Arts & Royal Botanic Gardens and Domain Trust. The Office has been involved in many cases where built or natural heritage was at risk or biodiversity threatened.

Sunday, 21 August: Quarry Road Track Walk, Hornsby Valley

This hilly walk follows a fire trail that leads down into the Hornsby Valley. We shall see the Steele Military Bridge which was installed in 1964-65 to provide access for fire-fighting vehicles from Hornsby to Dural. We shall walk part of the Great North Walk along Berowra Creek and return via Fish Ponds to Manor Road, Hornsby. Access from the track to Manor Road is via a 2 metre ladder.

At the end of the walk join us for refreshments at Manor Road. It's then a 10 minute walk to return to the cars in Stewart Avenue.

- Meet:** At 9.45 at end of Stewart Ave., Hornsby. Gregory's Map 77C2 or Sydway Greater Sydney Map 194M19
- Length:** 4-5km.
- Duration:** Approximately 3 hours
- Difficulty:** Moderate/difficult, steep ascent/descent. Final ascent is via a 2 metre ladder.
- Bring:** Water and sunscreen
- Book:** By contacting Robert Bracht at Robert.bracht@hotmail.com or 0422 088 305
-



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